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Annual Narrative Report

October 1, 1980 – September 30, 1981



**north carolina**  
**AGRICULTURAL**  
**EXTENSION**  
**SERVICE**

**a&t and n.c. state universities**

*JCBalock*

Associate Dean and Director

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STATE NORTH CAROLINA  
TABLE I. EXPENDED PROFESSIONAL STAFF YEARS BY PROGRAM AREA 1/  
1862 INSTITUTIONS  
FY 81

	PROGRAM COMPONENTS (See definitions in Section III)				PROGRAM AREAS								TOTAL	
	AMR		CPD		HE		4-H							
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
1. Crop production	193.5	48.8	4.4	11.0	1.8	1.0	1.4	.9	201.1	26.1				
2. Livestock production	90.9	22.9	1.4	3.5			8.2	5.3	100.5	13.1				
3. Bus. mgt. & economics	41.2	10.4					1.7	1.6	42.9	5.6				
4. Agr. mkg. & farm supplies	23.0	5.8							23.0	3.0				
5. Natural resources	27.8	7.0	.5	1.2					28.3	3.7				
6. Mech. sc., tech. & engrn.	17.0	4.3							17.0	2.2				
7. Safety			.3	.8					.3					
8. EFNEP-Fed. funded 2/					21.9	12.2	8.4	5.4	30.3	3.9				
9. EFNEP-Non-Fed. funded														
10. Food and nutrition			1.1	2.8	38.2	21.2	3.9	2.5	43.2	5.6				
11. Pers. & fmlly. res. mgt.			1.0	2.6	17.6	9.8	42.8	27.8	61.4	8.0				
12. Family life, etc			.6	1.6	20.8	11.6	.8	.5	22.2	2.9				
13. Textiles and clothing			.6	1.6	19.2	10.7	4.9	3.2	24.7	3.2				
14. Human health					.4	.2	.2	.1	.6	.1				
15. Housing & home environment			2.0	4.9	43.4	24.1	1.7	1.1	47.1	6.1				
16. Leadership development			18.4	46.0	10.0	5.6	42.8	27.7	71.2	9.2				
17. Org. devel. & maintenance	3.2	.8	2.6	6.5	6.1	3.4	37.2	24.0	49.1	6.4				
18. Comp. comm. planning			2.4	6.0					2.4	.3				
19. Comm. ser. & facilities			3.1	7.7					3.1	.4				
20. Ec., dev., mpwr. & careers			.6	1.3					.6	.1				
21. Govt. oper. & finance			1.0	2.3					1.0	.1				
22. Leisure & cult. education														
TOTAL BY PROGRAM AREA	396.6	100.0	40.0	5.2	179.4	73.3	154.0	70.0	770.0	100.0				
PERCENT BY PROGRAM AREA		51.5												
									GRAND TOTAL 3/					

1/Staff year allocations account for total available FTE's. Calculate to one decimal place. Staff resources allocated to administration, management, staff development, etc., are to be allocated to relevant program components and program areas. This table should account for all staff years available in 1862 institutions.

2/Staff time allocated to EFNEP should be consistent with the EFNEP budget guidelines.

3/Grand total - professional staff years.

POW&R FY 81  
Section V-4  
9/79

NORTH CAROLINA  
(STATE)

TABLE III. EXPENDED PARAPROFESSIONAL STAFF YEARS BY PROGRAM AREA <sup>1/</sup>  
1862 INSTITUTIONS

FY 81

PROGRAM AREA	PARAPROFESSIONAL STAFF		
	No.	%	
ANR	6.1	2.8	
CRD	.6	.3	
HE	EFNEP--Federally funded	127.5	58.8
	EFNEP--Non-federally funded		
	OTHER	2.8	1.3
4-H	EFNEP--Federally funded	40.8	18.8
	EFNEP--Non-federally funded		
	Other	39.2	18.1
TOTAL	217.0	100	

<sup>1/</sup>Expended paraprofessional staff years account for total FTE's expended for each program area. Calculations should be carried to one decimal place. Staff resources allocated to administration, management, staff development, etc., are to be allocated to relevant program areas. This table should account for all available staff years.

AGRICULTURE AND NATURAL RESOURCES

1. CROP PRODUCTION

The North Carolina Agricultural Extension Service focuses its educational thrust at the county level where an advisory leadership system assists county extension staffs with need identification and prioritization among activities. A back-up support staff on campus provides background information, suggestions for possible program content, interpretation of recent research results, infusion of federal and state priorities, and assistance in implementing and evaluating county programs.

The two primary crop production on-campus departments, together with personnel from several other non-commodity departments exchange information and plan new thrusts through Extension Commodity Coordinating Committees. Subject matter department heads are now being involved in extension program development to a greater degree.

Despite drought periods, most North Carolina farmers report good crops in 1981. Unfavorable prices paid/received relationships are creating financial pressures upon many farm operators.

Unfavorable prices paid/received relationships are creating financial pressures upon many farm operators. The 1980 average of \$1.41 per pound. Prices paid this season are well above the 1981 support price of \$1.33 and yield/acre receipts are significantly lower than in 1980.

The most serious being received from tobacco. It is a tremendous loss to the farmers of living and financial status of tobacco farmers and states nationwide. The increase in gross returns of the 1981 program crop in North Carolina is expected to be 30 million dollars although total production is down 25 due to a quota reduction.

Contact person  
Name and title  
Organization  
Address  
City, state, zip code  
Telephone  
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ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

A Program to Increase the Quality of North Carolina Flue-Cured Tobacco.

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>A program was initiated to increase tobacco quality and market demand by reducing applications of nitrogen from last year's 100 lbs/A (estimated) to the 60-80 lbs/A range. Excess nitrogen reduces maturity, curability, market demand, and contributes to excess sucker growth and certain insects and diseases. The suggested reduction in applied nitrogen rates should increase domestic and world demand for U.S. grown flue-cured tobacco, and reduce the amount of immature and unripe grades received by the Flue-Cured Cooperative Stabilization Cooperation.</p> <p>Producers of flue-cured tobacco were acquainted with leaf buyer concerns about low quality tobacco and with the detrimental effects of high nitrogen rates on leaf quality. Growers were also shown the detrimental effects of excessive nitrogen rates on sucker control and the subsequent use of excessive rates of maleic hydrazide to control increased sucker growth.</p> <p>Growers made a dramatic reduction in nitrogen applications and there has been a significant improvement in leaf quality, as reflected by buyer demand for the cured leaf. Market prices for the 1981 crop are expected to average near \$1.70 per pound, up sharply from the 1980 average of \$1.41 per pound. Prices paid this season are well above the 1981 support price of \$1.59 and stabilization receipts are significantly lower than in 1980.</p> <p>The gross returns being received from tobacco will be a tremendous boost to the standard of living and financial status of tobacco farmers and related agribusiness. The increase in gross returns of the 1981 flue-cured crop in North Carolina is expected to be 30 million dollars although total production is down 6% due to a quota reduction.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>David Smith, Gerald Peedin, and W. K. Collins  Crop Science Extension Specialists - Tobacco  N.C. State University  P.O. Box 5155  Raleigh, NC 27650 (919) 737-3331</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

A Program to Increase the Quality of North Carolina Flue-Cured Tobacco.

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>A program was initiated to increase tobacco quality and market demand by reducing applications of nitrogen from last year's 100 lbs/A (estimated) to the 60-80 lbs/A range. Excess nitrogen reduces maturity, curability, market demand, and contributes to excess sucker growth and certain insects and diseases. The suggested reduction in applied nitrogen rates should increase domestic and world demand for U.S. grown flue-cured tobacco, and reduce the amount of immature and unripe grades received by the Flue-Cured Cooperative Stabilization Cooperation.</p> <p>Producers of flue-cured tobacco were acquainted with leaf buyer concerns about low quality tobacco and with the detrimental effects of high nitrogen rates on leaf quality. Growers were also shown the detrimental effects of excessive nitrogen rates on sucker control and the subsequent use of excessive rates of maleic hydrazide to control increased sucker growth.</p> <p>Growers made a dramatic reduction in nitrogen applications and there has been a significant improvement in leaf quality, as reflected by buyer demand for the cured leaf. Market prices for the 1981 crop are expected to average near \$1.70 per pound, up sharply from the 1980 average of \$1.41 per pound. Prices paid this season are well above the 1981 support price of \$1.59 and stabilization receipts are significantly lower than in 1980.</p> <p>The gross returns being received from tobacco will be a tremendous boost to the standard of living and financial status of tobacco farmers and related agribusiness. The increase in gross returns of the 1981 flue-cured crop in North Carolina is expected to be 30 million dollars although total production is down 6% due to a quota reduction.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>David Smith, Gerald Peedin, and W. K. Collins          Crop Science Extension Specialists - Tobacco          N.C. State University          P.O. Box 5155          Raleigh, NC 27650 (919) 737-3331</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Proper Use of Maleic Hydrazide to Improve Market Demand of Flue-Cured Tobacco in North Carolina.

**TEXT/DESCRIPTOR**

<p><b>Program Description</b></p>	<p>A program was initiated to reduce maleic hydrazide (MH) residues on cured leaf to increase the market demand, particularly with important foreign buyers. The goal of the program is to reduce MH residues from 127 ppm detected last year to 80 ppm for the 1981 crop.</p>
<p><b>Emphasis</b> <b>Goals</b> <b>Scale</b></p>	<p>Producers of MH-containing products were acquainted with leaf buyer concerns about MH residues. State and Federal regulatory agencies and policy makers were acquainted with this concern and a need for label revisions on MH products to restrict use and to require a waiting period between MH application and harvest. Manufacturers of MH products voluntarily asked EPA for the needed label changes which were granted.</p>
<p><b>Innovations</b> <b>Linkage</b> <b>Clientele</b></p>	<p>The first step in an extension developed six-step program to reduce MH residues was to bring about a reduction in use of excess nitrogen which promotes excess sucker growth and the need for use of excess MH to control the sucker growth. Also, excess nitrogen delays maturity and reduces the curability and market demand for the cured leaf.</p>
<p><b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b></p>	<p>Growers made a dramatic reduction in applied nitrogen and there has been a significant improvement in leaf quality as reflected by auction demand for the cured leaf. Market prices for the 1981 crop are expected to average \$1.70 per pound, up sharply from the average auction price of \$1.41 per pound in 1980. Prices paid this season are significantly higher than the 1981 support price of \$1.59.</p>
<p><b>What were the accomplishments</b></p>	<p>The gross returns being received from tobacco will be a tremendous boost to the standard of living and financial status of tobacco farmers and related agribusiness. The increase in gross returns of the 1981 flue-cured crop in North Carolina is expected to be 30 million dollars although total production is down 6% because of a quota reduction.</p>
<p><b>What were the impacts</b> <b>Who benefited</b> <b>What were benefits</b></p>	<p>MH residues are expected to decrease for the 1981 crop; however, it will be several months before analytical results are available</p>
<p><b>How impacts were measured</b></p>	<p>W. K. Collins, Crop Science Extension Specialist (Tobacco) N.C. State University P.O. Box 5155 Raleigh, NC 27650-5155 (919) 737-3331</p>
<p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	



ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

ENERGY CONSERVATION AND THE SUBSTITUTION OF  
WOOD FOR PETROLEUM FUEL IN TOBACCO CURING IN NORTH CAROLINA

**TEXT/DESCRIPTOR**

<p><b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b></p> <p><b>Innovations</b> <b>Linkage</b> <b>Cientele</b></p> <p><b>Resources Involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b> <b>Cientele yet to be served</b></p>	<p>Fuel prices are a major concern in the production of flue cured tobacco, North Carolina's chief cash crop. Ten years ago curing fuel expenses were about \$45 per acre. Today, curing fuel costs are about \$300 per acre. With North Carolina's vast tobacco acreage, this amounts to roughly 100 million dollars annually. Energy efficient curing demonstrations show a potential for reducing this fuel use by nearly one half.</p> <p>Farm-scale energy efficient curing tests conducted by a full-time extension specialist (with supplemental, \$40,000, funding from the N. C. Energy Division) on 62 farms have demonstrated the potential fuel savings. Extension publications, newspaper, radio and TV programs, and farmer meetings have carried these energy saving techniques throughout North Carolina. The information has been well received and utilized by tobacco farmers resulting in an approximate 25 percent reduction in fuel use. Energy audits, heat loss calculations and farmer reports have verified the benefits of this program.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>Rupert W. Watkins, Extension Specialist Department of Biological &amp; Agricultural Engineering North Carolina State University P. O. Box 5906 Raleigh, NC 27650 919/737-2675</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Loose Leaf Marketing of Burley Tobacco in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>The North Carolina Extension Service has cooperated with other states in the burley belt for three years in a limited loose leaf marketing experiment of burley tobacco packaged in bales. The primary objective is to reduce hand labor without reduction in quality.</p> <p>Burley production requires over 300 man-hours labor per acre. Conventional market preparation requires from one-fourth to one-third of this total.</p> <p>Results of the marketing experiment can be summarized as follows:</p> <ol style="list-style-type: none"> <li>1. Loose leaf required 30-50% less time for market preparation or a savings of about four man-days per acre.</li> <li>2. Loose leaf handling did not lower quality.</li> <li>3. Overall sale price was similar for loose leaf and conventional hand tied (less than 1 cent per pound difference).</li> <li>4. Bales were easier to handle and haul.</li> <li>5. Orderly marketing was possible with bales.</li> </ol> <p>About 7.5% or 660 acres of the 1980 North Carolina burley crop was sold as loose leaf packaged in bales. This represents a saving of around 2400 man-days over conventional market preparation. With baling becoming optional in 1981, the whole crop could be handled as loose leaf with a potential saving in labor of 36,000 man-days for the state.</p> <p>The Extension Service has given wide publicity to the loose leaf marketing experiment. All counties and most burley producing communities in the state have had participants in the loose leaf experiment. Most growers have been able to see demonstrations and get "hands on" experience in baling. Practically 100% of the participants wish to continue baling.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Robert L. Davis          Crop Sci. Ext. Spec.          Crop Sci. Extension, NCSU          516 Test Farm Road          Waynesville, NC 28786      704-452-5608</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Tobacco Disease Control in North Carolina

TEXT/DESCRIPTOR

<p>Program Description          Emphasis          Goals          Scale</p>	<p>In 1980 the flue-cured tobacco producer of North Carolina lost \$72.5 million due to diseases. The more serious diseases were black shank, Granville wilt, nematodes and blue mold. Thus, an on-farm test program was continued to demonstrate the principles of disease control and to obtain information on what should be recommended to the flue-cured tobacco producer.</p>
<p>Innovations          Linkage          Clientele          Resources involved          Funds          Staff time          Other cooperators          Special funding</p>	<p>Tests on black shank were conducted in Robeson, Sampson, Jones, Bertie, Warren and Surry Counties. Tests on Granville wilt were conducted in Lenoir, Jones, Johnston, Wake, Nash and Granville Counties. Tests on nematode control were conducted in Jones, Johnston, Duplin, Hertford, Lee and Edgecombe Counties. The blue mold tests were located in Columbus, Sampson, Lenoir, Edgecombe, and Rockingham Counties.</p>
<p>What were the accomplishments</p>	<p>In order that agri-business personnel and producers could view those tests, as well as some on-farm tests being conducted on corn, peanuts, soybeans, and some vegetables, a two and one-half day tour was conducted in late July. The tour was attended by approximately 300 people and the people traveled approximately 700 miles.</p>
<p>What were the impacts          Who benefitted          What were benefits          How impacts were measured</p>	<p>Because of the publicity obtained from the tour, the tobacco producers of North Carolina have a greater awareness of tobacco diseases and how to control them. It is hoped that through such awareness, the losses due to tobacco diseases will be greatly reduced.</p>
<p>What are implications for future program          Clientele yet to be served</p>	
<p>Contact person name and title          organization          address          city, state, zip code          telephone</p>	<p>Harry E. Duncan, Specialist-in-Charge          Extension Plant Pathology          N. C. State University          P. O. Box 5397 Raleigh, NC 27650          919-737-2711</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Reduction in Losses Due to Nematodes on Field Corn in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b>    <b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b>    <b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b>    <b>What were the accomplishments</b>    <b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b>    <b>How impacts were measured</b>    <b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>A program of nematode control on field corn was continued in North Carolina in 1980-81. Results of the Nematode Advisory Section of the N. C. Department of Agriculture (NCDA) indicate that one-third of the corn acreage is infested with a nematode population large enough to justify treatment. Thus, on-farm tests were conducted to demonstrate nematode control and to obtain data to support our chemical control recommendations and to support the thresholds used by the Nematode Advisory Laboratory.</p> <p>In addition to the on-farm tests, and in cooperation with the NCDA and agri-business, a series of 15 meetings were held to encourage the corn producers to sample their fields to see whether or not the nematode population justified treatment. The meetings were well attended and an increase in the number of soil samples submitted for a nematode assay was obvious.</p> <p>A slide-tape set was prepared on how to sample for nematodes and it was used in a series of pesticide dealer meetings in one county to help support the overall program. Twelve such meetings were held in the county.</p> <p>The results of the 12 on-farm tests and experiments indicate that where nematodes were a problem, but properly controlled, the corn producer could expect a yield increase of approximately 20 bushels of corn per acre. These figures have been made available to the corn producers of North Carolina through publications, newspaper and magazine articles and radio and TV programs. Emphasis is placed on this phase of the program during the winter months so the producers can plan an economical nematode control program. The program has led to a reduction in the losses suffered by the grain producer due to nematodes.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Harry Duncan          Specialist-in-Charge, Extension Plant Pathology          N. C. State University          P. O. Box 5397          Raleigh, NC 27650 919-737-2711</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Cause and Reduction of Aflatoxins in Field Corn in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>A program on the cause and control of aflatoxins in field corn was undertaken because of the serious outbreak of this mycotoxin in 1977 and 1980. The program was started because of the lack of understanding of the corn producer about how aflatoxins developed and how they could be managed.</p> <p>The first step in the program (1977) was to cooperate with the N. C. Department of Agriculture to conduct surveys to determine the seriousness of the problem. These surveys showed that in 1977, 15% of the corn was contaminated with over 100 parts per billion aflatoxin B<sub>1</sub>. However, in 1978, 1979 and 1980, the respective percentages were 1%, 4% and 18%.</p> <p>A field program was initiated to see when infection occurred, how it occurred, and what effect various cultural practices had on aflatoxin development. After it was clearly evident that infection occurred through the silk and that irrigation, proper fertilization, early planting, early harvest and proper storage would hold aflatoxins to a minimum, several publications, a slide set and public press articles were prepared on this subject. Several grower meetings involving the grain producer and animal producer were held throughout the state. These meetings were well attended and most grain producers are now aware of the aflatoxin problem, no longer fear the problem because of it being such a large unknown, and now know how to cope with the problem.</p> <p>Studies are now being conducted to see whether or not fungicides will control the problem. If aflatoxins were eliminated, the savings would be tremendous since North Carolina produces 1.7 to 1.8 million acres of corn each year.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Harry E. Duncan, Specialist-in-Charge          Extension Plant Pathology          N. C. State University          P. O. Box 5397          Raleigh, NC 27650      919-737-2711</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Herbicide Application Field Day in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b></p> <p><b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Recently, research and extension personnel have emphasized integrated pest management (IPM). IPM is a systematic approach to suppression of pests using the latest available technology in an energy-efficient, economical, environmentally sound, and most effective program. These IPM programs utilize pesticides, including herbicides, fungicides, nematocides and insecticides, where necessary. In fact, the success of integrated pest management programs is usually highly dependent upon accurate, uniform, precise application of minimal amount of pesticides.</p> <p>During the last few years the extension staff at N. C. State University has developed an extensive herbicide application field day. The application field day began as a fluorescent dye (black light) incorporation demonstration only but has gradually expanded to include all aspects of proper herbicide selection, use and application. The demonstration is used for in-service training for agents and training for dealers and growers.</p> <p>This year we emphasized the use of fluorescent dyes as traces for soil-applied and foliarly-applied herbicides. The techniques, procedures and results as shown in "Pesticide Incorporation: Distribution of Dye By Tillage Implements" were demonstrated. Fluorescent dye (and ultraviolet light) was used to examine the foliar-application patterns of various nozzles, including the new control droplet applicators (CDA, spinning disc).</p> <p>The 1981 Herbicide Application Field Day, which is a part of the Crop Science Extension On-Farm Weed Management Tour, was conducted on thirty acres of land in eastern North Carolina.</p> <p>This type of field training is a very educational experience for agents, agribusiness personnel, and growers. The application field day will be continued and expanded</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Dr. L. Thompson, Jr., and Dr. W. M. Lewis,          Crop Science Extension Specialists (Weed Control)          North Carolina State University          3123 Ligon Street          Raleigh, N.C. 27607 (919) 737-2866</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

North Carolina Extension Small Grains Program

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	<p>A program to help growers increase small grain acreage, yields per acre and profits per acre was implemented. Emphasis was placed on using the best management practices available.</p>
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	<p>In addition to normal extension educational methods such as mass media (television, radio, newspapers, farm journals, etc.), production meetings, on-farm tests, field days and other publications, a wheat yield contest was conducted to help achieve the objectives stated above.</p>
<b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	<p>Funds were obtained from the normal operating budget for all work except the yield contest. The contest was supported by and in cooperation with the N.C. Crop Improvement Assoc., FCX Inc., Cargill Inc., Statesville Flour Mills and the Plant Food Assoc. of N.C. Staff time given to the overall program was 70%. The program also received support from the county agents.</p>
<b>What were the accomplishments</b>	<p>Accomplishments: 1) a record setting production of 14.2 million bushels of wheat; a 35% increase over 1980 and a 140% increase over 1978. 2) 405,000 acres harvested; a 35% increase over 1980 and 125% increase over 1978. 3) Many growers averaged 55-75 bu. per acre and several growers in the yield contest averaged 75-100 bu. per acre. This year's crop was valued at approximately \$50 million, \$10 million more than in 1980.</p>
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>  <b>How impacts were measured</b>	<p>The impacts and benefits were an overall increased interest in small grains (particularly wheat), double cropping and the attainment of better than average yields for most growers which lead to more profits. Growers, agents and agribusiness personnel benefited from the production and knowledge obtained from the growing season. The impacts were measured by determining the bushels produced per acre.</p>
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	<p>The implications are that yes, it can be done. High yields can be obtained with the use of the best management practices available and favorable cooperation from the weather. With energy, conservation problems, etc., small grains are becoming more important in all cropping systems. Other growers (small and commercial) not yet convinced must still be reached.</p>
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	<p>Ronald E. Jarrett          Crop Science Extension Specialist (Small Grains)          4210 Williams Hall, NCSU          Raleigh, NC 27607          (919) 737-3331</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Incorporation of High Protein Oats into Swine-Feeding Operations  
North Carolina State University Agricultural Extension Service

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Development of an oat variety (Brooks) high in protein by the N. C. Agricultural Experiment Station resulted in a cooperative effort between Area Crop Science and Swine Husbandry Extension Programs to determine if Brooks oats could be utilized as an economical source of energy and/or protein in swine rations. The use of oats in swine rations appears especially attractive in Northeastern North Carolina where swine numbers are extremely high and double-cropping of small grains with soybeans or sorghum is popular.</p> <p>A quantity of Brooks oats were donated by seed producers and utilized in on-farm feeding trials where swine rations containing Brooks oats and Salem oats were compared with a conventional corn and soybean meal ration. Pigs receiving Salem oats exhibited an improved daily gain while pigs receiving Brooks oats exhibited a better feed efficiency than those animals provided with the corn-soybean meal ration. It was, therefore, concluded that 400 pounds of oats may be substituted for corn in a grower ration without penalizing either daily gain or feed efficiency.</p> <p>In another experiment, 5 pounds of Brooks oats was effectively utilized by pregnant sows in place of three pounds of corn and one pound of soybean meal. It was determined that the substitution of oats for corn and soybean meal was possible because of the high crude protein (14% to 16.5%) and high lysine content (.67%) of Brooks oats. The lysine content of other oat varieties is generally around .44%.</p> <p>On the basis of these findings, a rapidly increasing number of swine producers are double-cropping oats and using them in pig and pregnant sow rations, thereby increasing the profitability both of their swine and grain crop operations.</p>		
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<table border="0"> <tr> <td> <p>John R. Anderson, Jr. Crop Science Ext. Specialist P. O. Box 322 Edenton, N. C. 27932</p> </td> <td> <p>Jack W. Parker Ext. Area Swine Spec. P. O. Box 352 Edenton, N. C. 27932</p> </td> </tr> </table>	<p>John R. Anderson, Jr. Crop Science Ext. Specialist P. O. Box 322 Edenton, N. C. 27932</p>	<p>Jack W. Parker Ext. Area Swine Spec. P. O. Box 352 Edenton, N. C. 27932</p>
<p>John R. Anderson, Jr. Crop Science Ext. Specialist P. O. Box 322 Edenton, N. C. 27932</p>	<p>Jack W. Parker Ext. Area Swine Spec. P. O. Box 352 Edenton, N. C. 27932</p>		



ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Tillage Concepts for Crop Production in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b> Emphasis Goals Scale</p> <p><b>Innovations</b> Linkage Clientele</p>	<p>Certain tillage practices offer distinct advantages in specific soil and crop situations. Selecting tillage practices to match these advantages to the situation might be called strategic tillage use. Potential benefits include increased water use efficiency, increased yields, soil erosion protection and more efficient use of tractor power, fuel and capital. A change in tillage procedure usually requires increased management attention, and may also involve changes in machinery costs and herbicide use.</p>
<p><b>Resources involved</b> Funds Staff time Other cooperators Special funding</p>	<p>This program is intended to help farmers understand the applicability of deep tillage (in-row subsoiling), no-tillage and various forms of conventional tillage in the differing soils of North Carolina. It is a long-term program involving on-farm plots which demonstrate and evaluate these practices to county agents, crop producers and agribusiness representatives.</p>
<p><b>What were the accomplishments</b></p>	<p>Resources involved include about 80% of one specialist position, 75% of a technician position and some temporary labor. Additional funding (\$3,000) has been provided by a grant from the Corn Growers Asso. of North Carolina, Inc.</p>
<p><b>What were the impacts</b> Who benefitted What were benefits</p>	<p>Accomplishments - Results and concepts were presented in 14 county meetings, two regional meetings and numerous personal visits and discussions with agents, farmers and professional associates. Specific tillage questions from producers indicate awareness created. Economic analysis indicates no-tillage conserved fuel (about 3 gal/acre) but added costs of herbicides and interest make the practice nearly equal or more costly than conventional tillage. In some sandy soils deep tillage offers increased yields valued at 25 to 60 dollars/acre with equal or less cost and conserved fuel (3.9 gal/acre) compared to conventional tillage.</p>
<p><b>How impacts were measured</b></p>	<p>Usefulness of results indicate need to develop various publications for more complete communication of results to county agents and crop producers. Some added testing of concepts in varied situations is needed.</p>
<p><b>What are implications for future program</b> Clientele yet to be served</p>	<p>Usefulness of results indicate need to develop various publications for more complete communication of results to county agents and crop producers. Some added testing of concepts in varied situations is needed.</p>
<p><b>Contact person name and title organization address city, state, zip code telephone</b></p>	<p>George C. Naderman Extension Soils Specialist N. C. State University Raleigh, N. C. 27650 919-737-3285</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Organic Soil Management in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>Large acreages of high organic soils are used for corn and soybean production in eastern North Carolina. The acreage of such land has doubled in some counties since 1964, and since 1974 over 100,000 new acres have been developed. Soils high in organic matter need special management for successful crop production. Since before 1964 there has been an extension education program for producers on such land. Emphasis has been on proper lime use, drainage, micronutrient application by soil test, and nitrogen management for corn. Total crop failure can result without proper management. Clientele are owner/operators, lessors, and land investors.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>Goals are to increase user awareness of the special management needs to reduce crop loss and increase net farm income.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>One half MY of specialist time was used. About \$4,000 was expended other than salary monies.</p>
<p><b>What were the accomplishments</b></p>	<p>Twenty four educational meetings and four farm tours were conducted with agent cooperators with over 900 participants. Two of the meetings were for young farmers only and six were in areas with new land development with farmers who had not had training in organic soil management previously. Four meetings were with the Blackland Farm Managers Association, a special interest advisory group of growers who farm high organic soils. Four Blackland Extension Newsletters were sent to agents in counties with organic soils, and a technical bulletin was published in 1981.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p>	<p>The technical bulletin and one newsletter were designed to aid investors develop land resources wisely. Eleven replicated on farm tests were conducted with agent cooperators on liming, nitrogen efficiency, micronutrients, and no-till. Some of these were funded by grants from the North Carolina Corn Growers Association.</p>
<p><b>How impacts were measured</b></p>	<p>Continued land development is creating new clientele because more growers are farming high organic soils either as owners or as tenants. Much land is corporately owned but leased to family farmers. More effort is being directed toward this group.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Continued land development is creating new clientele because more growers are farming high organic soils either as owners or as tenants. Much land is corporately owned but leased to family farmers. More effort is being directed toward this group.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>J. Paul Lilly, Extension Soils Specialist          Tidewater Research Station          Route 2, Box 141          Plymouth, North Carolina 27962      919-793-4118</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Soybean Disease Control Program in North Carolina

TEXT/DESCRIPTOR

<p>Program Description          Emphasis          Goals          Scale          Innovations          Linkage          Clientele          Resources involved          Funds          Staff time          Other cooperators          Special funding          What were the accomplishments          What were the impacts          Who benefitted          What were benefits          How impacts were measured          What are implications for future program          Clientele yet to be served</p>	<p>The 1980 educational program for county agents and growers was similar to 1979 and directed at two primary disease areas--the soybean cyst nematode and late-season foliage diseases. Soybean cyst nematode caused 4% of the 13.8% total loss, whereas only 0.5% was attributed to pod and stem blight, 1.0% to brown leaf spot, and only trace amounts to the remaining foliar late-season diseases. Emphasis was placed on the soybean cyst nematode because ineffective population management tactics are being used or effective ones such as resistant varieties are being over-used causing race shifts. The agent training focused on the biology and population dynamics of the nematode; grower training was directed toward good management tactics that would minimize loss from this pest.</p> <p>On-farm tests and demonstrations were conducted in five locations to demonstrate the various principles of nematode control that were presented to agents and growers through agent training sessions and grower meetings.</p> <p>Grower and agent training sessions and popular press articles were used as a mechanism to alert growers that foliar applied fungicides are not economically feasible in North Carolina. These approaches were also used to show that the advertisement promoting 4-5 bu./acre increases with foliar applied fungicides was not applicable to North Carolina. This practice has declined from 15% of the acreage sprayed in 1977 to about 5% or 6% in 1980.</p> <p>Four publications were prepared for county agents and growers in 1980: <u>Soybean Diseases in North Carolina</u> (AG-218 and Supplement to AG-218), <u>Plant Parasitic Nematodes on Soybeans in North Carolina</u> (AG-225), "Nematode Information Guide" (mimeo, Plant Pathology, NCSU), and <u>Soybean Diseases Caused by Plant-Parasitic Nematodes</u> (Plant Pathology Information Note 209).</p>
<p>Contact person name and title          organization          address          city, state, zip code          telephone</p>	<p>D. P. Schmitt          Extension Plant Pathology Specialist          N. C. State University          P. O. Box 5397          Raleigh, NC 27650 919-737-2611</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

North Carolina's Liming Pays on Soybeans

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>A statewide campaign was launched in fall 1980 to increase the acreage soil tested, identify the fields which required limestone applications for profitable crop production, and to decrease the percentage of soybean fields which were too acid for profitable soybean production. The emphasis was on the first-year economic return by soybeans to lime application.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>The campaign was developed by a steering committee representing limestone suppliers, haulers and vendors, commodity groups, fertility researchers, Extension agents and specialists, N.C. Department of Agriculture (NCDA), media and growers. The two-step program of soil</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>test and lime when needed was focused on growers, with county Extension agents and local lime vendors the major conduits of the campaign. In addition to bumper stickers, posters for agribusiness outlets and a slide script for agents, a new semi-technical bulletin answering frequent lime questions and concerns was developed. Several growers with outstanding soybean yield experiences were utilized in another bulletin and in TV video tapes to localize the information at a practical level.</p>
<p><b>What were the accomplishments</b></p>	<p>The NCDA soil testing lab tested 28,428 more soil samples in 1980-81 than in 1979-80, an increase of 16%. The limestone sales reported to the NCDA through the first three quarters of 1980-81 were 168,232 tons higher than for all of 1979-1980, already an increase of 15%.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p>	<p>Growers are the primary beneficiaries of the increased limestone usage, and will increase net soybean profits by an estimated \$1,000,000. Since limestone effects last two to four years, most other crops are also sensitive to soil pH, and soybean response to lime, in on-farm tests and demonstrations as well as other growers' own fields is visibly dramatic, it is expected soybean producers will continue to adequately lime a higher percentage of their soybean fields. Since the increase in soybean acreage adequately limed in 1980 represents less than 10% of the estimated soybean acreage that can profitably be limed, there is opportunity for continued success for the campaign, especially among the growers who are slower to change their management practices.</p>
<p><b>How impacts were measured</b></p>	
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Dr. E. James Dunphy, Crop Science Extension Specialist (Soybeans)          North Carolina State University          P.O. Box 5155          Raleigh, NC 27650          919/737-3141</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Insect Scouting Campaign Helps Farmers Reduce Soybean Losses in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources Involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>North Carolina farmers annually lose approximately \$20 million to soybean insects, particularly corn earworm. Much of this loss is unavoidable but much results from unneeded or mistimed insecticide application or general ignorance. An educational program was conducted to promote general awareness and to educate agents and farmers of current soybean insect management technology.</p> <p>In 1980 and 1981 numerous mass media sources (newsletters, radio, T.V., newspapers, "Teletip" etc.) were used to notify agents and growers of impending insect invasions; this included special newsletters done in cooperation with the North Carolina Soybean Producers Association and mailed to 13,000 farmers. Additionally, a total of 14, one half day, scouting schools were presented.</p> <p>Field demonstration of scouting techniques and insect identification were presented at each scouting school. In conjunction, each participant received a "sampling device" (provided by pesticide companies) color plate insect identification booklets (partially funded by N. C. Soybean Producers Assoc.) and soybean insect management publications (N.C.A.E.S.). Most activities were conducted in late July and early August.</p> <p>Farmers, pesticide applicators, and private crop consultants were the primary benefactors of these activities; although society and the environment as a whole benefited from a more expert use of pesticides in agriculture. Attitude and skill changes resulted in growers or consultants closely scouting the soybean crop and due to improved "field based" information, more timely and effective management decisions were made. The final results indicated that insecticide application was improved (when, how, and what was used), fewer uninfested acres were treated, and much yield loss was prevented. Measurement was by subjective means.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>John W. Van Duyn, Extension Entomologist          Tidewater Research Station          Route 2, Box 141          Plymouth, North Carolina 27962</p> <p style="text-align: right;">919-793-4118</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

North Carolina Multicrop IPM Program Significantly Affects Farm Income

TEXT/DESCRIPTOR

<p>Program Description          Emphasis          Goals          Scale</p> <p>Innovations          Linkage          Clientele</p>	<p>A lack of physical information and/or management skills commonly leads to lower profit and greater environmental disruption. Most farm management units can benefit by an intensive field information gathering system and associated analysis mechanisms. IPM is thus characterized. An intensive, multicrop IPM program was initiated in three counties to demonstrate advantages and provide services.</p>
<p>Resources involved          Funds          Staff time          Other cooperators          Special funding</p>	<p>A farmer cooperative was organized for the project; management was joint between a farmers board of directors and extension. Initially, only farms utilizing a "computerized farm records program" were included in the project for economic analysis purposes; an outside check group was obtained. Later, all farmers wishing to participate were included. Broad spectrum pest management and related services were rendered.</p>
<p>What were the accomplishments</p>	<p>Funding was received from the Coastal Plain Resources Development Commission, NCAES, and grower contributions for the start-up and evaluation period; grower funds are sustaining the project. NCSU Dept. of Economics "Computerized Farm Records Program" was used for evaluation.</p>
<p>What were the impacts          Who benefited          What were benefits</p>	<p>Participating farmers were the direct beneficiaries of this IPM program although the project served as a general demonstration of improved farm practices. Economic analysis showed clear IPM benefits in reduced costs and added yield in corn, peanuts, and soybeans; the respective dollar amounts were \$51.49/A, \$45.85/A, and \$48.42/A over the cost of the program. These figures were obtained by a comprehensive enterprise budget system and comparison of IPM vs non-IPM farmer groups.</p>
<p>How impacts were measured</p>	<p>Implications are: (1) improved IPM practices result in significant profit increases, (2) farmers can afford to support their own programs, (3) farmers can organize and operate their own programs, (4) the general N. C. farm economy may be improved by approximately \$189,048,100 yearly by implementation of IPM services on corn, peanuts, soybeans, and (5) the promotion of IPM services is a worthwhile goal for the NCAES.</p>
<p>What are implications for future program          Clientele yet to be served</p>	<p>Implications are: (1) improved IPM practices result in significant profit increases, (2) farmers can afford to support their own programs, (3) farmers can organize and operate their own programs, (4) the general N. C. farm economy may be improved by approximately \$189,048,100 yearly by implementation of IPM services on corn, peanuts, soybeans, and (5) the promotion of IPM services is a worthwhile goal for the NCAES.</p>
<p>Contact person name and title          organization          address          city, state, zip code          telephone</p>	<p>John W. Van Duyn, Extension Entomologist          Tidewater Research Station          Route 2, Box 141 919-793-4118          Plymouth, North Carolina 27962</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Efficient protection of flue-cured tobacco from insects through the use of integrated pest management practices in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>The adoption of integrated pest management practices was promoted statewide to help tobacco producers protect the yield and quality of their crop at the lowest cost. Reduction of costs, both short-term (labor, chemicals) and long-term (environmental and health hazards), was the goal. The program stressed education in chemical and nonchemical control strategies and the use of field monitoring and thresholds for making remedial control decisions. Educational tools included an annual extension booklet on tobacco and annual "Tobacco Information" commercial television programs. In addition, direct contact was made with producers and their advisors through county meetings and on-farm demonstrations. Agents received update training in formal group sessions and individually. Formal IPM programs involving tobacco demonstrated IPM strategies. The majority of these efforts were carried out in cooperation with specialists from several disciplines and/or county agents. An agricultural technician and temporary field assistants also provided support.</p> <p>In 1980-81 Tobacco Information TV programs were available to virtually all tobacco producers (ca. 40,000) and 20,000 Tobacco Information booklets were distributed. Over 1,200 producers were reached directly through meetings. On-farm demonstrations were conducted in 8 counties. Sixty-three agents received IPM training in update sessions. IPM programs involved ca. 300 tobacco producers and over 10,000 acres in 17 counties. Comparison of program and nonprogram producers in one area has shown a net benefit of \$115 to \$150 per acre (including management of pests other than insects). As a result of formal IPM programs and general education, the use of foliar insecticides has declined ca. 50% since the early 1970's.</p> <p>Many producers use at least some IPM practices to manage insect pests. Only about 3% of N. C. acreage, however, is managed under formal IPM programs. Thus the potential exists for major expansion.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b></p>	<p>P. Sterling Southern, Extension Entomologist  Agricultural Extension Service  N. C. State University, P. O. Box 5215  Raleigh, NC 27650  (919) 727-2703</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Improved Farm Profit and Agchemical Usage by Integrated Pest Management in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>Integrated Pest Management (IPM) programs have been initiated to improve the cost efficiency of crop production and to reduce the hazard of inappropriate agricultural use. This program stresses the need for farm systems management, including both pest management and crop (livestock) management. IPM program efforts are aimed at all production areas statewide with active programs currently present in 28 counties.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>A Dial-a-Weed management guide for corn has been added to the peanut and soybean guides for use by Ag. dealers across the state. Bulletins and guides for use by farmers have been developed to help growers and other clientele improve their management practices. A television series was broadcast prior to the cropping season which discussed IPM practices and benefits in 5 major North Carolina crops.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>Private consultants were brought together for the first training program aimed at their needs in North Carolina. Five regional IPM scout training programs were held for both extension and private sector scouts. In-field, crop and livestock IPM programs were generated by Extension agents in 28 counties. Twenty-two grower training workshops in IPM were conducted.</p>
<p><b>What were the accomplishments</b></p>	<p>County programs increased from 19 to 28 in 1981. The number of birds in the poultry effort rose from .5 million to 1.5 million and livestock IPM agents have begun a direct training program of Integrator servicemen. Participant growers have significantly reduced N applications in tobacco and increased lime applications in several crops. The pilot program in Cercospora leafspot management in 5 counties has reduced sprays over 50% in 1981 over traditional calendar based spray programs. Two year evaluations of corn and soybean IPM in one 3-county program showed a \$48 and \$52 increase in net profit by IPM participants vs. non-participants.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p>	<p>IPM programs will continue to grow and deliver improved management technology to growers and private consultants. Widespread interest in vegetable processing plants will likely cause a major vegetable IPM effort within the next 2 years.</p>
<p><b>How impacts were measured</b></p>	<p>Larry E. Gholson          Extension Specialist IPM Coordinator          North Carolina State University          PO Box 5155 Raleigh, NC 27650-5155 919-737-3331</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	
<p><b>Contact person name and title</b>  <b>organization address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	



ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

PESTICIDE RECERTIFICATION IN NORTH CAROLINA

TEXT/DESCRIPTOR

<p>Program Description Emphasis Goals Scale</p>	<p>During the past seven years extension has trained over 4500 commercial pesticide applicators and public operators applying pesticides and over 2000 dealers selling restricted use pesticides. These special audiences have made use of extension's technical assistance and it has greatly benefited agriculture in North Carolina. Currently 4739 persons hold commercial licenses in North Carolina.</p>
<p>Innovations Linkage Clientele</p>	<p>Effective January 1, 1981, the state entered into a five year recertification program. It requires licensed ground commercial pesticide applicators and public operators, depending on their specialties, to obtain 3-10 hours of continuing education training or be retested before a license will be issued for 1986. Aerial applicators must obtain 4 hours of training per two year period or be retested in order to be licensed the third year.</p>
<p>Resources Involved Funds Staff time Other cooperators Special funding</p>	<p>Extension has developed and begun implementing a training program for each of the twelve (12) pesticide specialty areas. EPA contributed \$40,757 in PAT (Pesticide Applicator Training) funds for the fiscal year 1981. State and other funds approximately three times this amount are involved. One hundred (100) county pesticide coordinators and approximately forty (40) specialists will devote 1-10 days to recertification efforts during a twelve month period.</p>
<p>What were the accomplishments</p>	<p>During the first seven month period (Jan.-July, 1981), 590 persons participated in recertification training. The main impact was in updating applicators on new regulations concerning the safe and proper use of pesticides. Applicators also obtain training in the latest pest management, application and pest control practices.</p>
<p>What were the impacts Who benefitted What were benefits</p>	<p>Over 6000 persons will receive continuing education courses during the next five years. Training will be updated on a yearly basis to meet current safe and proper use requirements.</p>
<p>How impacts were measured</p>	<p>The North Carolina Pesticide Board recently approved recertification training for restricted use pesticide dealers. They will be required to obtain 5 hours of training per five year period of pass appropriate recertification tests.</p>
<p>What are implications for future program Clientele yet to be served</p>	<p>John H. Wilson, Jr. Pesticide Education Specialist North Carolina Agricultural Extension Service Department of Horticultural Science Raleigh, North Carolina 27607 (919) 737-3113</p>
<p>Contact person name and title organization address city, state, zip code telephone</p>	<p>John H. Wilson, Jr. Pesticide Education Specialist North Carolina Agricultural Extension Service Department of Horticultural Science Raleigh, North Carolina 27607 (919) 737-3113</p>

ACCOMPLISHMENT REPORT

BRIEF TITLE

Pesticide Incorporation - North Carolina

	<p>Improper soil incorporation of pesticides has been implicated in injury to crops, energy inefficiency and reduced efficaciousness. This project developed a visual presentation showing the effectiveness of various tillage implements and components for the task of incorporation.</p> <p>The florescent dye and black-light demonstrations were shown in the field to North Carolina applicators, dealers, and farmers during the development of the bulletin.</p> <p>This has made equipment dealers, county agents, pesticide industry, and farmers aware of the fact that not all equipment is equal for incorporation and has given them a reference source to study when making plans to purchase new equipment.</p> <p>The program will impact on the agricultural community by optimizing pesticide use rates and applications.</p>
	<p>Walter A. Skroch, Ext. Specialist, Horticultural Science, NCSU, Raleigh 919-737-3167</p> <p>*Lafayette Thompson, Ext. Specialist, Crop, NCSU, Raleigh</p> <p>Eustace O. Beasley, Ext. Specialist, Biological &amp; Agricultural Engineering, NCSU, Raleigh 919-737-2675</p> <p>*919-737-2866</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

A Systems Approach to the Management of Cercospora Leaf Spot of Peanuts in North Carolina

## TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p>	<p>A program was begun in 1981 on peanuts to compare the control of leafspot obtained with a disease model as compared to that obtained with a routine spray program. Two biocontrol agents are also compared to the chemicals. The model is based upon temperature and relative humidity and sprays are only applied when the temperatures and humidity are high enough for infection to occur.</p> <p>The systems approach to the management of <u>Cercospora</u> leaf spot of peanuts is being conducted in Hertford, Bertie and Northampton Counties. To date, it appears that the disease control obtained with the model program is equal to that obtained with the routine spraying program and that several fungicidal sprays have been saved.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b>  <b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	
<p><b>Contact person name and title</b>  <b>organization address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Jack E. Bailey          Extension Plant Pathology Specialist          N. C. State University          P. O. Box 5397          Raleigh, NC 27650</p> <p style="text-align: right;">919-737-2711</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Efficient Use of Peanut Seed to Reduce Production Costs in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>A program to encourage the efficient use of peanut seed to reduce production costs was initiated because of spiraling seed costs and shortages as a result of the 1980 droughts. The program stressed the need to delay seeding rates and moisture and temperature conditions were favorable for rapid germination and emergence.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>The thrust of the program involved grower meetings where methods for efficient use of peanut seed were discussed. The information presented was developed over the previous three years in on-farm tests with cooperating growers. The on-farm tests on seeding rates have demonstrated that most growers could reduce seeding costs by \$20-30 per acre without affecting yield. The results were well received by the peanut farmers. A mass media blitz was begun in February to inform all peanut growers of the short seed supply as a result of the 1980 drought. The short seed supply necessitated efficient seed use if the entire crop acreage was to be planted.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>Additional seeding rate on-farm tests were planned by the county extension agents for 1981. All seed related agencies cooperated in providing needed information to the growers. The NCDA Seed Testing Laboratory provided periodic updates on seed quality. The Crop Improvement Association publicized information on the supply of certified peanut seed and encouraged wise use of limited seed supplies. Several seed companies cooperated with extension agents and local radio stations in providing weather monitoring and reporting so that growers were aware of the best time for planting peanuts for maximum emergence.</p>
<p><b>What were the accomplishments</b></p>	<p>This educational effort was effective in helping growers cope with higher costs and short seed supplies. Only a few growers reported stand failures. The majority of the peanut farmers obtained adequate stands for maximum peanut yields. The long range benefit of this program will be the more efficient use of peanut seed at an annual savings in excess of 3 million dollars.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p>	<p>This educational effort was effective in helping growers cope with higher costs and short seed supplies. Only a few growers reported stand failures. The majority of the peanut farmers obtained adequate stands for maximum peanut yields. The long range benefit of this program will be the more efficient use of peanut seed at an annual savings in excess of 3 million dollars.</p>
<p><b>How impacts were measured</b></p>	<p>Gene A. Sullivan          Crop Science Extension Specialist - Peanuts          PO Box 5155          Raleigh, NC 27650-5155          (919)737-3331</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Gene A. Sullivan          Crop Science Extension Specialist - Peanuts          PO Box 5155          Raleigh, NC 27650-5155          (919)737-3331</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Cotton insect management in North Carolina; an integrated approach

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>The implementation of a statewide, integrated cotton insect management program, emphasizing blacklight and pheromone trapping systems, intensive scouting, utilization of beneficial insects, direct extension agent visits and the adoption of an interdisciplinary approach to cotton production is this project's primary goal. The system of one blacklight trap per 3,500 cotton acres makes this network by far the most concentrated in the Cotton Belt. Over 3,000 boll weevil traps (coop. effort with USDA) provides producers a tool for early-season management of the boll weevil. The use of displays of freeze-dried larvae by agents in grower meetings was this project's innovation. Demonstrations in 1981 concentrated on 1) an early-season approach to boll weevil management and beneficial insect retention, 2) <u>Heliothis</u> control via use of selective insecticides and 3) an interdisciplinary approach to early-season insect management and seedling diseases. Six regional cotton scouting schools were conducted throughout N. C.; each session had both classroom and field components. Timely newsletters were sent to each cotton producer during the season.</p> <p>Increased producer acceptance of a more efficient insect management system has been underscored by the dramatic reduction in pesticide use during the past 5 years while concurrently sustaining low damage and resulting yield loss due to insects. Insecticide applications have dropped from 8 to 14 in 1974-79 to 0 to 10 in 1981. Additionally, cotton producers are incorporating many short-season management options now available, thus saving additional capital. Future emphasis will be to increase grower acceptance of the recommended cotton insect management program now on line via greater agent involvement, additional demonstrations, trapping systems expansions and fine tuning of scouting procedures.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b></p>	<p>Jack S. Bachelier, Extension Entomologist          N. C. Agricultural Extension Service          N. C. State University, P. O. Box 5215          Raleigh, NC 27650          (919) 737-2831</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

An integrated approach to soybean insect management in North Carolina's Piedmont

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Of the nearly 400,000 acres of soybeans grown in N. C.'s Piedmont, producer income lost to the corn earworm and other soybean insect pests is potentially the difference between profit and loss on many farms. The program goal is the complete adoption by growers of an efficient insect management system which both minimizes unnecessary control costs, reduces economic loss. The technology for this system, based upon varietal selection, planting date, row-width, soil type, scouting and use of action thresholds is available. Therefore, increased emphasis will be placed upon implementation via all available educational means.</p> <p>A series of five regional soybean insect scouting schools were held (with Dr. J. Van Dуйn) for agents, dealers, producers and scouts designed to focus attention on the corn earworm problem and to promote efficient management of this pest as well as other insects. Agent and producer requests for assistance were met; most consultations dealt with threshold levels, pesticide selection and application, timing, volume and pest species determination. The high technical level of agent and producer questions attests to an increasing acceptance of the production and management systems now being recommended.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b></p>	<p>Jack S. Bachelier, Extension Entomologist          N. C. Agricultural Extension Service          N. C. State University, P. O. Box 5215          Raleigh, NC 27650          (919) 737-2831</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

SWEET POTATO SEED IMPROVEMENT - NORTH CAROLINA

## TEXT/DESCRIPTOR

Program Description	Sweet potatoes are one of North Carolina's most profitable horticultural crops. We have become the nation's leading producer of sweet potatoes because of our quality, but farmers needed to be made aware that quality doesn't just happen. This special audience needed to be reminded they can only maintain their sweet potato quality by starting with good seed, because sweet potatoes are vegetatively propagated and mutate readily. They should establish their own seed program in order to eliminate flesh and skin mutations, diseases such as Streptomyces soil rot (pox) and scurf and off shapes.
Emphasis	
Goals	
Scale	
Innovations	
Linkage	
Clientele	
Resources involved	A statewide, multi-media campaign was considered the best approach to draw farmers' attention to the problem and provide them with realistic solutions. The "Yam Alert" campaign was built around direct mailings to individual farmers. The first of these personalized mailings included a descriptive pamphlet communicating the importance of attacking this problem at the farm level. All mailings are on "Yam Alert" stationery. State, county and community growers' meetings publicized this campaign. An animated multi-projector, multi-screen, narrated slide presentation was featured. A single projector, single screen version is available on loan for county agents' use. The slide shows entertain, but at the same time, impress on farmers they must get back to basics. It reinforces the message of the pamphlet and direct mailings. A three-panel table top display briefly presents "Yam Alert" and serves as an exhibit to also reinforce the "back to basics" message. Several local, on-farm demonstrations have been conducted the past two years to provide visible evidence that seed improvement starts on the farm and improves profits. Sweet potatoes grown from Certified or selected seed are compared with those produced from "grade-outs" or other questionable sources.
Funds	
Staff time	
Other cooperators	
Special funding	
What were the accomplishments	
What were the impacts	
Who benefitted	
What were benefits	
How impacts were measured	
What are implications for future program	Further reinforcement of "Yam Alert" has been provided by radio, TV and press coverage. Special funding has been provided by seed producers, shippers, and processors. Attitudes are changing and grower awareness of seed quality and good management have been demonstrated by better quality being delivered to shippers and processors. Color mutations and incidence of diseases are declining.
Clientele yet to be served	
Contact person name and title	L. George Wilson Extension Horticultural Specialist (Vegetables)
organization	North Carolina Agricultural Extension Service
address	North Carolina State University
city, state, zip code	Raleigh, NC 27607
telephone	919/ 737-3284

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Potato Pest Alert on Irish Potatoes in North Carolina

TEXT/DESCRIPTOR

Program Description	
<p>Emphasis          Goals          Scale</p>	<p>The Potato Pest Alert program (an integrated pest management program) for Irish potatoes was continued in 1980-81. The program was active in Currituck, Pamlico, Beaufort, Tyrrell, Pasquotank and Camden Counties. The program in Pamlico County (first year of operation) was financed by the growers association who paid the scout, travel expenses, and purchased all necessary equipment for the program.</p>
<p>Innovations          Linkage          Clientele</p>	
<p>Resources involved          Funds          Staff time          Other cooperators          Special funding</p>	<p>The Potato Pest Alert program has been well received by the growers and has saved them much money during the past several years due to reduced pesticide applications. For example, late blight was not present in North Carolina in 1980. Thus, the growers who were involved in this program did not have to spend any money on fungicides to control late blight. It is not unusual for growers to apply a fungicide on a weekly basis to control late blight, which could result in 10-15 applications of a fungicide that is not necessary.</p>
<p>What were the accomplishments</p>	
<p>What were the impacts</p>	
<p>Who benefitted          What were benefits</p>	
<p>How impacts were measured</p>	
<p>What are implications for future program          Clientele yet to be served</p>	
<p>Contact person name and title          organization          address          city, state, zip code          telephone</p>	<p>Charles W. Averre          Extension Plant Pathology Specialist          N.C. State University          P.O. Box 5397          Raleigh, NC 27650                      919-737-2711</p>



ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Increasing the Productivity and the Profitability of North Carolina's  
 Beekeeping Industry

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>Beekeeping is a minor but important industry in North Carolina's agricultural economy. This industry contributes over \$6 million directly (sales of honey and beeswax) and over \$35 million indirectly (improved quantity and quality of pollinated food production) to the state's economy. The special audience for this year's Extension program was the hobby beekeeping population which is the largest segment of the industry and also the segment most in need of assistance.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>Efforts were made to further organize the hobby beekeepers into county associations and a comprehensive statewide association which would serve as the focal points for directing services and information to the beekeepers. The number of N.C. counties with beekeeping associations has now reached an all-time high of 58 counties as compared to 6 in 1975 and membership in the N.C. State Beekeepers Association is now over 1,700 members, the largest state beekeeping organization in the U.S. The increase in the number and membership levels in these associations was accomplished primarily through a continuing series of educational meetings and publications.</p>
<p><b>What were the accomplishments</b></p>	
<p><b>What were the impacts</b></p>	
<p><b>Who benefitted</b>  <b>What were benefits</b></p>	
<p><b>How impacts were measured</b></p>	<p>One important impact of the educational program by the Extension Service involves minimizing costs to the beekeeping industry through the distribution of methods to reduce "sales and use taxes" paid by the beekeepers. State law permits crop and livestock and other agricultural producers to pay a 1% vs. a 4% sales and use tax on equipment that will be used to produce agriculture income. Discussions with the N.C. Dept. of Agriculture ascertained that beekeepers were eligible for this reduction and this finding was disseminated throughout the state by use of the Extension Service's newsletter and educational meetings. Additional collaboration also resulted in this sales tax reduction being applied to beekeepers who purchased sugar from grocery outlets to feed their bees. Actual cost minimizations have not been yet calculated but projected savings are over \$50,000 for the beekeeping industry which equals a 1% increase in gross income.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b></p>	<p>Dr. John T. Ambrose          Department of Entomology          N.C. State University          1403 Varsity Drive          Raleigh, North Carolina 27606</p> <p style="text-align: right;">919-737-3140</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Plant Disease and Insect Clinic in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>In 1980 the Plant Disease and Insect Clinic received 4,832 disease specimens and 2,460 insect specimens. This total of 7,292 is the most specimens ever received in one year. This increase occurred in a very hot, dry year. Many of the samples involved root diseases, particularly woody ornamental and Christmas trees. These types of diseases are diagnosed by laboratory assays and, therefore, greatly increase the workload on technicians and student help. There was also a marked increase in the number of tobacco specimens in 1980. The blue mold disease was diagnosed on more tobacco samples than any other disease. Over two-thirds of the blue mold samples were the systemic form. With most crops, over one half of the specimens have a physiological, abiotic, cultural, or chemical injury problem alone or in addition to an insect or disease problem. There is an increasing need to diagnose plant problems rather than just diseases and insects. Several Extension Specialists in other departments are assisting us in this effort. Thirteen new diseases or host-pathogen combinations were found in the Clinic in 1980 for the first time in North Carolina.</p> <p>Number of clinic samples received in 1980 from various crop categories:</p> <table border="0"> <tr> <td>Field crops</td> <td>1,018</td> </tr> <tr> <td>Small grains</td> <td>99</td> </tr> <tr> <td>Vegetables</td> <td>869</td> </tr> <tr> <td>Fruits</td> <td>459</td> </tr> <tr> <td>Ornamentals</td> <td>1,164</td> </tr> <tr> <td>Turf</td> <td>171</td> </tr> <tr> <td>Trees</td> <td>543</td> </tr> </table>	Field crops	1,018	Small grains	99	Vegetables	869	Fruits	459	Ornamentals	1,164	Turf	171	Trees	543
Field crops	1,018														
Small grains	99														
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<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>R. K. Jones          Extension Plant Pathology Specialist          N. C. State University          P. O. Box 5397          Raleigh, NC 27650                      919-737-2711</p>														

## ACCOMPLISHMENT REPORT

**BRIEF TITLE**

Ground Management Systems for Staked Tomatoes - North Carolina

Average production of trellis or staked tomatoes exceeds 20 tons in western North Carolina with gross returns ranging from \$3,000 to \$10,000 dollars per acre. Growers are using weed and disease management systems ranging from solid treatment of methyl bromide plus chloropicrin under the plastic plus cultivation at costs exceeding \$1,000/acre to cultivation and hand-hoeing. In a cooperative effort with personnel from Entomology, Plant Pathology, Economics and Horticulture at North Carolina State University; working with TVA, Ag Chemical industry, county agents and a cooperative grower, a comparison of eight management systems was made to demonstrate to the tomato industry the economic feasibility of each system. A summer tour was conducted for some 200 people and a discussion of the results was presented to the industries' annual meeting.

The tomato producers benefited by seeing the tomatoes in the field under various cultural systems and could compare yields, costs, and benefits of the systems prior to use in their own operations.

Impact is measured by increased marketable tomatoes and net returns to the growers and thus the economy of the area.

919-737-3167	Walter A. Skroch, Ext. Horticultural Specialist, NCSU, Raleigh, N.C.
704-684-3562	Thomas R. Konsler, Prof., Horticultural Science, Mt. Hort. Crop Res. Station, Rt. 2, Box 240, Fletcher, N.C.
704-684-7197	Paul B. Shoemaker, Ext. Plant Pathology, Mt. Hort. Crop Res. Station, Rt. 2, Box 240, Fletcher, N.C.
919-737-2703	Kenneth A. Sorensen, Ext. Entomology, NCSU, Raleigh, N.C.
919-737-2605	Edmund A. Estes, Asst. Prof. Economics & Business, NCSU, Raleigh, N.C.

## ACCOMPLISHMENT REPORT

## BRIEF TITLE

Trellised Tomatoes and Other Crops in Western North Carolina

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The objectives are to develop, test and implement disease control recommendations for vegetables in western North Carolina. Assist county agents in programming and implementing disease management practices on the farm. Serve agents as Plant Pathology resource person and assist in diagnosing plant disease problems.

Field demonstrations--Involved in total of 18 separate field demonstrations, including four on soil fumigation in Jackson, Buncombe, Cherokee and Lincoln Counties, five IPM demonstrations involving Henderson, Transylvania, Haywood and Buncombe Counties and nine Tomato Pest Alert demonstrations. The effectiveness of soil fumigation for Verticillium wilt and nematode control and reduced pesticide usage through IPM was demonstrated.

Agent training--Organized two tomato workshops for agents for the purpose of reviewing tomato research and demonstration results and making future plans. Participated in an IPM review for agents.

Area of state programming for the public--Presented talk at the NCSU Agricultural Chemicals School entitled "Factors Influencing Timing of Fungicide Applications on Tomatoes." Assisted in the N. C. Trellised Tomato Growers Association's planning of their annual meeting; arranged for exhibitors and industry participation and served on the program committee; organized and manned a booth for displaying NCSU's Extension and Research activities with tomatoes. Organized and led the Tomato Production, Research and Demonstration Tour which was attended by about 200 persons, including county agents, growers, industry representatives and University personnel.

Production meetings--Assisted agents in three county tomato production meetings, spoke on tomato disease and insect control, fumigation and disease control. Presented course on home garden diseases and insects and one on vegetable production. Participated in cabbage production meeting.

Newsletters--Thirteen weekly Tomato Pest Alert newsletters were sent to agents and participating growers. The newsletter included an update on the pest situation and recommendations for control. Fourteen different fields in five counties were scouted weekly and served as the basis of this report. Agents have indicated they find this source of information useful for their personal contacts with growers, newspaper articles and radio programs.

---

P. B. Shoemaker  
Extension Plant Pathology Specialist  
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Mountain Horticultural Crops Research Station  
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## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Initiation of Commercial Broccoli Production in Western North Carolina

## TEXT/DESCRIPTOR

<p>Program Description Emphasis Goals Scale</p> <p>Innovations Linkage Clientele</p> <p>Resources involved Funds Staff time Other cooperators Special funding</p> <p>What were the accomplishments</p> <p>What were the impacts. Who benefitted What were benefits</p> <p>How impacts were measured</p> <p>What are implications for future program Clientele yet to be served</p>	<p>The per capita consumption of fresh broccoli in the US has been increasing more rapidly in recent years than any other vegetable. Commercial production has been restricted primarily to California. The relatively cool, moist climate typical of the mountain region of western North Carolina is ideally suited to the production of high quality broccoli. The development of a commercial industry in North Carolina would reduce fuel consumption and other production costs in supplying eastern markets. It also could provide an estimated \$4,000 gross return per acre to farmers of the region.</p> <p>Major emphasis is being given to creating interest among farmers, particularly limited resource farmers, in commercial production of broccoli. A production guide, based on research experiments and study trips to other production areas by county and state extension personnel, has been developed. On-farm demonstration plantings have been conducted within exploratory commercial plantings to compare varieties, plant populations, and fertility requirements. Assistance was given in procuring ice-making equipment in one county-ice being required for the proper packaging for shipment. The demonstration plantings were a joint effort of county and state extension personnel cooperating with individual farm families. Fertilizers and certain other resources were provided through the TVA test demonstration program.</p> <p>As a result of the total broccoli program, commercial plantings were made in at least 8 WNC counties in 1981 for an estimated total of 20-25 acres. Marketing ranged from on-the-farm sales to supplying chain stores in standard, iced cartons.</p> <p>Not all 1981 plantings were successful; however, interest in broccoli production in the western counties is high.</p>
<p>Contact person name and title organization address city, state, zip code telephone</p>	<p>T. R. Konsler Ext. Horticultural Specialist N. C. Agricultural Extension Service, NCSU Rt. 2, Box 249 Fletcher, NC 28732 704/684-3562</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Blueberry Irrigation for Improved Production in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b> Emphasis Goals Scale</p>	<p>North Carolina is a major producer of blueberries, ranking behind Michigan and New Jersey. However, the North Carolina yield of about 2,400 pounds per acre is only about half of the Michigan yield and 2/3 of the New Jersey yields. A program to identify the causes of low yield was initiated about 12 years ago. Reducing drought stress with irrigation was selected as the factor to evaluate in combination with disease resistant cultivars.</p>
<p><b>Innovations</b> Linkage Clientele</p>	<p>Bush responses to irrigation have been shown to growers during 2 field days and the results have been discussed at 3 grower meetings.</p>
<p><b>Resources Involved</b> Funds Staff time Other cooperators Special funding</p>	<p>Four demonstration plots of 7 recommended cultivars with irrigation were established in 1975. Yield records have been maintained since 1978. Yields have averaged 10,900, 16,500, 13,500 and 23,200 pounds per acre in 1978, 1979, 1980 and 1981 respectively. These yields range from 4 to 10 times the state average. The 1981 blueberry budget, from the Dept. of Economics and Business, predicted a net revenue to land, overhead and management of \$370.02 per acre with a production of 3,000 pounds per acre and \$1,790.02 with a production of 6,000 pounds per acre. Additional plantings were made in 1980 to demonstrate the potential of irrigation to increase chilling accumulation and delay bloom.</p>
<p><b>What were the accomplishments</b></p>	<p>More efficient water use based on application method and timing for maximum response will also be demonstrated. Blueberry growers, marketing organizations and the consumer will benefit from the increased production with reduced annual fluctuations in production resulting from irrigation use. The net returns to the grower for providing irrigation should exceed \$1,500 per acre.</p>
<p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p>	<p>Impacts are measured in terms of the number of growers providing irrigation and the number of acres irrigated. At least five new growers began providing irrigation in 1981 on approximately 200 acres. Several of these growers reported yields above 10,000 pounds per acre. Many additional growers have realized the benefits of irrigation and will require technical assistance.</p>
<p><b>How impacts were measured</b></p>	<p>At least five new growers began providing irrigation in 1981 on approximately 200 acres. Several of these growers reported yields above 10,000 pounds per acre. Many additional growers have realized the benefits of irrigation and will require technical assistance.</p>
<p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>At least five new growers began providing irrigation in 1981 on approximately 200 acres. Several of these growers reported yields above 10,000 pounds per acre. Many additional growers have realized the benefits of irrigation and will require technical assistance.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>Charles M. Mainland Extension Horticultural Specialist N.C. Agricultural Extension Service Hort. Crops Res. Sta., Route 2, Box 610 Castle Hayne, N.C. 28429 919-675-2314</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

ASPARAGUS--A NEW CROP FOR NORTH CAROLINA

## TEXT/DESCRIPTOR

<p>Program Description Emphasis Goals Scale</p>	<p>North Carolina farmers are continually looking for new profitable crops but marketing is often a problem. Farmers are able to keep help if they can employ workers longer. These facts coupled with the need of local processors to operate their plants during the spring and thus reduce overhead; resulted in an opportunity for both groups.</p>
<p>Innovations Linkage Clientele</p>	<p>This opportunity was foreseen in 1975 and a plot was established to determine weed control practices and yield potentials. Results of these trials were successful so the processor began contracting asparagus. N.C. Agricultural Extension Service developed a color leaflet on asparagus production and profit potentials. This leaflet coupled with others on cultural practices provided an arsenal of information on the new crop. Other tests were soon initiated. This information combined with meetings, tours, and one-on-one contact encouraged farmers to make plantings in 1980.</p>
<p>Resources involved Funds Staff time Other cooperators Special funding</p>	<p>This project brought together the full complement of the Land Grant University; Agents and Specialist developed and passed on information to potential growers; Researchers conducted trials; teachers added emphasis to the crop in their classes. Growers and industry supported this work and challenged the professionals by seeking improved knowledge.</p>
<p>What were the accomplishments</p>	<p>Farmers have planted over 400 acres to asparagus. The crop can be grown without irrigation on very sandy soil that are marginal for other crops. Farmers now have a profitable use for this land. The asparagus acreage is expanding. Growers will make their first harvest in 1982. The projected annual net return per year is \$400/A for machine harvesting and \$600/A for hand harvesting. The processor has a crop that helps reduce overhead. Plus 2 unexpected industries are developing, i.e. asparagus crown production for other states and interest in fresh market asparagus production.</p>
<p>What were the impacts Who benefitted What were benefits How impacts were measured</p>	<p>Work is in progress to improve practices, and varieties expanding acreage and teach growers to use recommended practices.</p>
<p>What are implications for future program Clientele yet to be served</p>	
<p>Contact person name and title organization address city, state, zip code telephone</p>	<p>Douglas C. Sanders Extension Horticultural Specialist 230 Kilgore Hall N. C. State University      919-737-3284 Raleigh, N. C. 27650</p>

### Apple Pruning Result Demonstration - North Carolina

The pruning of apple trees in North Carolina has in no way kept up with the increased production of less than 1 million bushels in the late 1950's to a County Agent's estimate of 10,900,000 in 1980.

Plots in 6 grower's orchards were set up for a long term demonstration.

The Horticulturists have advocated better pruning for stronger trees to hold heavy crops and open enough for thorough spraying for thinning, insect, and disease control.

Hand pruners and a portable Dayton compressor and two eight foot pruners were used.

Henderson Orchard	80 trees	15 yr old several varieties	22.9 total min/tree
T & J Orchard	84 trees	12 yr old several varieties	17.9 total min/tree
Stepp	36 -	8 yr old Red Del.	11.3 total min/tree
		36 - 8 yr old Golden Del.	15.0 total min/tree
Staten Orchard	41 -	12 yr old Starkrimson and Red & Golden Del.	13.17 total min/tree
		1000 - 5 yr old Red & Golden Del.	4.020 total min/tree

The grower and his workers plus the County Extension Agents and two teenage girls hired through Job Service can now add this to their abilities.

Keeping the time on all those working and dividing this into the number of trees pruned gave an average very similar to what a grower could expect from general help.

Pruning is the first major problem. If a grower can be convinced that one dollar spent for pruning could increase his pack-out even 10% (in some cases, 50%), he would still profit from the expenditure.

Melvin H. Kolbe, Extension Horticultural Specialist  
(Tree Fruits), N. C. State Univ., Raleigh 27650  
919-737-3167



## Accomplishment Report

## Apple Agent Training - North Carolina

Apple Agent Training - A 5 day training session for Agricultural Extension Agents included most of the agents for the 28 counties producing apples.

The North Carolina apple industry has grown rapidly from less than 1 million bushels of production in the early 1950's to a County Agent's estimate of 10,900,000 bushels in 1980. This rapid growth has been guided under a three-point program of 1) more yield per tree and acre; 2) higher quality fruit; and 3) higher profit.

Major emphasis was provided by a 5-day training session for Agricultural Extension Agents in the major apple producing counties. Horticulture, Entomology, Plant Pathology, Zoology, Soil Science, Agricultural Engineering and Business and Economics Departments at N.C. State University provided the training.

These agents were trained so that they could interpret and better evaluate the material and services provided by the subject matter specialists.

The apple producers, the apple packers, and the consumers all benefitted from the better informed educators.

Advancements in yield, quality, and profit are not easy to pinpoint. The pressure for apples of good size and color and free from insects and diseases, harvested at the peak of maturity, packed in acceptable containers and stored under refrigeration are very acceptable and in most cases result in a profit for the producer.

The job is a never ending operation. As new technology, new producers, and new agents emerge, further training is a must.

Melvin H. Kolbe, Extension Horticultural Specialist  
(Tree Fruits) N.C. State Univ., Raleigh 27650  
919-737-3167

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Apple growth regulator and orchard management improvement program-North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>North Carolina is a major apple producer for fresh market, and is the first major producer to begin harvest of the nations crop. The greatest cullage factors are fruit size and on red varieties, color. This program is directed at commercial apple growers and stresses proper pruning, thinning and growth regulator use.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>Pruning and thinning on-farm demonstrations were established throughout western North Carolina and have been well attended by commercial growers. Apple Ext. Agent training classes were held which stressed proper</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>young tree training, limiting tree size and the necessity of monitoring proper light penetration with annual pruning in producing trees. Grower meetings and field tours were held to show the improved yield and increased pack-out obtained with proper young tree training and good light penetration. The need for standardized application rate of fruit thinners was emphasized by use of the "Tree Row Value" technique to match thinner solution volume to size and density of trees as well as proper use and timing of color and quality enhancing growth regulators.</p>
<p><b>What were the accomplishments</b></p>	<p>Increased use of thinners increased harvested fruit size; increased pruning and proper growth regulator use as well as proper thinning to reduce fruit cluster increased fruit color development, both of which contributed to improved yield of packable fruit and greater return for the apple grower and a more consistent and attractive product for the consumer.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p>	<p>Impacts were measured by comparison of fruit size and color, as well as yield. All of which are prime contributors to ultimate graded pack-out yield and grower returns.</p>
<p><b>How impacts were measured</b></p>	<p>Some areas of N. C. apple production show less marketable pack-out than others. Specifically, Henderson Co. which producers one-half of the state's apples needs to have demonstrated, in a commercial orchard setting, how good tree training and proper fruit thinning can be beneficial, if long established growers who are reluctant to accept these improvements are to be convinced.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Some areas of N. C. apple production show less marketable pack-out than others. Specifically, Henderson Co. which producers one-half of the state's apples needs to have demonstrated, in a commercial orchard setting, how good tree training and proper fruit thinning can be beneficial, if long established growers who are reluctant to accept these improvements are to be convinced.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>C. R. Unrath, Associate Professor          Ext. Tree Fruit Physiologist          N. C. Agricultural Extension Service          MHCRS, Rt. 2, Box 249          Fletcher, NC 28732          704/684-3562</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Diseases of Tree Fruits in North Carolina

TEXT/DESCRIPTOR

<p>Program Description Emphasis Goals Scale</p> <p>Innovations Linkage Clientele</p> <p>Resources involved Funds Staff time Other cooperators Special funding</p> <p>What were the accomplishments</p> <p>What were the impacts</p> <p>Who benefitted What were benefits</p> <p>How impacts were measured</p> <p>What are implications for future program Clientele yet to be served</p>	<p>The primary objectives of the Extension tree fruit disease program are:</p> <ol style="list-style-type: none"><li>1. Serve as an information resource person.</li><li>2. Identification of disease problems.</li><li>3. Design, test and implement disease controls.</li><li>4. Implementation of integrated apple management service.</li></ol> <p>In 1980 a Tree Fruit Disease Newsletter was initiated to provide a communications link with county agents. The objectives of the newsletter are to provide information relative to seasonal disease development, disease control suggestions and other information relative to disease control on fruit trees. The newsletter provides information for the commercial grower as well as the homeowner.</p> <p>Two fungicide demonstration plots for control of brown rot were conducted: one in Cleveland and one in Montgomery County.</p> <p>Because of the detection of stem pitting infected trees in Cleveland County in 1979, a survey was done in 1980 to determine the extent of this viral disease. The survey indicated that the problem was limited to a few orchards in Lincoln and Cleveland Counties.</p> <p>During 1980 Extension specialists involved with apples were requested to develop an IPM program for apples in North Carolina. Since October I have served as chairman of this committee. This has involved the presentation of the program at growers' meetings and the development of a technical manual outlining implementation procedures.</p>
<p>Contact person name and title organization address city, state, zip code telephone</p>	<p>D. F. Ritchie Extension Plant Pathology Specialist N. C. State University P. O. Box 5397 Raleigh, NC 27650                      919-737-2721</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Insect control on selected fruits and vegetables in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>Insect losses on these high-value-per-acre crops, and more significantly the cost of their control, exceed \$10 million annually. In this diverse and constantly changing audience and pest complex there exists a critical need for the timely delivery of information on insect monitoring and when to apply control measures. Spiraling production costs, the unnecessary use of pesticides and energy, environmental awareness and changing grower attitudes also dictate the need for the demonstration and eventual acceptance of new crop protection technology.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>County plant clinics, a diagnostic program originally in 14 counties, have now expanded to 30 counties. This growth along with agents' interest has resulted in an improved professional service solving plant pest problems and the establishment of weekly plant clinics in many urban counties and support to pest management programs in some 30 counties.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>The use of blacklight insect traps, cabbage looper traps and trap crops for pickleworm continues to provide horticultural agents with relevant and reliable information on insect occurrence and relative population levels. The information from traps and field observations is released using newsletters, a special survey report and Extension's Teletip.</p>
<p><b>What were the accomplishments</b></p>	<p>Some 30 on-farm tests with industry support involving 12 crops and over 50 insecticide formulations and rates have been conducted to demonstrate insect control using different methods of application and timing. Two state special local need and one emergency registraton were obtained. This field program also functions as training sites for agents, growers, home gardeners and IPM students. Slides, movies, insect and damage specimens and information on insecticide performance have been obtained and are being packaged for future use in publications, workshops, meetings and one-on-one in-service training programs.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p>	<p>Some 30 on-farm tests with industry support involving 12 crops and over 50 insecticide formulations and rates have been conducted to demonstrate insect control using different methods of application and timing. Two state special local need and one emergency registraton were obtained. This field program also functions as training sites for agents, growers, home gardeners and IPM students. Slides, movies, insect and damage specimens and information on insecticide performance have been obtained and are being packaged for future use in publications, workshops, meetings and one-on-one in-service training programs.</p>
<p><b>How impacts were measured</b></p>	<p>Some 30 on-farm tests with industry support involving 12 crops and over 50 insecticide formulations and rates have been conducted to demonstrate insect control using different methods of application and timing. Two state special local need and one emergency registraton were obtained. This field program also functions as training sites for agents, growers, home gardeners and IPM students. Slides, movies, insect and damage specimens and information on insecticide performance have been obtained and are being packaged for future use in publications, workshops, meetings and one-on-one in-service training programs.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Some 30 on-farm tests with industry support involving 12 crops and over 50 insecticide formulations and rates have been conducted to demonstrate insect control using different methods of application and timing. Two state special local need and one emergency registraton were obtained. This field program also functions as training sites for agents, growers, home gardeners and IPM students. Slides, movies, insect and damage specimens and information on insecticide performance have been obtained and are being packaged for future use in publications, workshops, meetings and one-on-one in-service training programs.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b></p>	<p>Kenneth A. Sorensen, Extension Entomologist          N. C. Agricultural Extension Service          N. C. State University, P. O. Box 5215          Raleigh, NC 27650 919-737-2703</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Integrated pest management on fruit and vegetable crops in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>The first vegetable IPM cooperative was formed in 1979 and has successfully managed pests on over 1,500 acres of potatoes. Grower savings in this program exceed \$50 per acre. Successes on existing acreage will lead to an expected increase in contract acreage and expansion to a second crop of soybeans. Tomato growers in western N. C. have reduced insecticide sprays some 75% with a savings of \$80 per acre. When projected to entire tomato acreage, a potential savings of \$80,000 could be realized. A new IPM program, Apple Management Advisory Service, was established in two counties, and records show that several participants have not used a single miticide for the first time in 20 years and have saved 3 or 4 insecticide sprays. A 50% increase in county requests for IPM programs on fruits and vegetables documents the interest and need for additional emphasis in the training and implementation of this systematic approach to pest control.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Kenneth A. Sorensen, Extension Entomologist          N. C. Agricultural Extension Service          N. C. State University, P. O. Box 5215          Raleigh, NC 27650          (919)737-2703</p>

## ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

MEETING THE NEEDS OF THE BEDDING PLANT GROWER IN NORTH CAROLINA

## TEXT/DESCRIPTOR

Program Description	<p>North Carolina is a large producer of floral crops of which bedding plants constitute a substantial part. Most bedding plant growers initially possess limited production, marketing and management skills. These limitations make it difficult for small bedding plant growers to compete with more efficient floral producers. Bedding plant trials and a field day are held each summer to disseminate information on crop culture, energy conservation and marketing. Short courses and area, multi-county meetings are used as a method to provide supplemental information to bedding plant producers. These meetings have also served as a way to identify new clientele. Assistance is offered individual growers develop a production and marketing plan.</p>
Emphasis	<p>Program involves research and extension personnel and facilities at the Department of Horticulture and several experiment stations. Industry provides needed supplies, plant material and equipment. There is cooperative efforts among trade associations, industry brokers, U.S.D.A., and other universities. More efficient use of greenhouse space, production of better quality plants, reduction in energy and labor costs is being realized. The wholesale income has increased 21½% during the past two years. Recipients of benefits include the bedding plant producer, who has become more knowledgeable and proficient, and the general public who has more reasonable priced, good-quality plants to enliven their life.</p>
Goals	<p>Impacts are measured in terms of increase in percentage of income obtained from the sales of floral crops.</p>
Scale	<p>As technology increases in the area of plant production, this material must be disseminated to both the existing and new bedding plant grower.</p>
Innovations	
Linkage	
Clientele	
Resources Involved	
Funds	
Staff time	
Other cooperators	
Special funding	
What were the accomplishments	
What were the impacts	
Who benefitted	
What were benefits	
How impacts were measured	
What are implications for future program	
Clientele yet to be served	
Contact person	Joseph W. Love
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ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Ornamental horticulture plant insect pest suppression in North Carolina during 1980-81

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Special audiences in agriculture were trained in ornamental horticulture plant insect pest suppression in North Carolina during fiscal year 1980-81 including vole damage to landscape ornamentals. This special audience included landscape maintenance contractors and nurserymen. A bulletin, <u>Insect and Related Pests of Shrubs</u>, was published to provide insect, mite and animal damage control information to county agents, nurserymen, educators and other horticulturists (1,000 copies have sold in 9 months). A related bulletin, <u>Insect and Related Pests of Flowers and Foliage Plants</u> sold out this year and is scheduled to be reprinted.</p> <p>Another method of training horticulturists and county agents involved demonstrations of insect control. A cottony maple leaf scale test demonstrated proper pesticide choice and timing to complement the life history of <u>Hyperaspis</u> lady beetles. By demonstrating the need of waiting until the cottony maple leaf scale ovisacs hatched and the lady beetles dispersed, money was saved by homeowners (about \$2.50 per tree) and control was enhanced.</p> <p>A second demonstration on Japanese weevil control on azaleas proved acephate to be a safe, effective insecticide which could be legally used as a preventive spray for azalea lace bug control. This result saved homeowners with infected plants \$1.95 to \$15.00 per plant replacement costs.</p> <p>Third and fourth demonstrations involved Japanese wax scales (little economic impact) and <u>Liriomyza trifolii</u> leafminer control on commercially grown <u>Chrysanthemums</u> which demonstrated permethrin to be an effective insecticide for control. This result saved affected commercial chrysanthemum growers up to \$3.50 per 6-inch pot and up to \$0.50 on the dozen for cut mums. One grower admitted he would have gone bankrupt without the information on control he received from the demonstration results at his greenhouses.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>James R. Baker, Extension Entomologist          N. C. Agricultural Extension Service          N. C. State University, P. O. Box 5215          Raleigh, NC 27650          (919)737-3140</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

NORTH CAROLINA NURSERY CROPS WORKSHOPS

TEXT/DESCRIPTOR

<p>Program Description          Emphasis          Goals          Scale</p>	<p>The nursery industry in North Carolina has grown significantly during the past ten years. Currently there are 1,993 nurseries in the state producing 3,948 acres of certified nursery stock annually. Actual production acreage exceeds 8,000 acres. Estimated 1980 income was in excess of 28 million dollars.</p>
<p>Innovations          Linkage          Clientele</p>	<p>In order to keep the industry progressive and competitive with out-of-state producers both agricultural extension agents and nurserymen must be continuously trained in the most advanced and innovative production techniques. Regular one-day workshops are conducted on pertinent and highly specialized subject matter. Each is conducted at several locations across the state in order that as many agents and nurserymen as possible can take advantage of the training sessions and increase their knowledge of production techniques. During the past year workshops on Media, Nutrition, Vegetative Plant Propagation and Dogwood Culture have been conducted. These were attended by over 500 nurserymen and 30 county extension agents.</p>
<p>Resources involved          Funds          Staff time          Other cooperators          Special funding</p>	<p>Program participants for the workshops consist primarily of extension specialists with cooperation from other faculty in the ornamentals program. Guest speakers from other universities are utilized where appropriate. Funding is supplied by the North Carolina Agricultural Extension Service, with some industry support.</p>
<p>What were the accomplishments</p>	<p>Improved production practices which include a decrease in cropping time, increase in plant quality and decrease in dependence upon out-of-state suppliers have been evident. Impact on the industry is readily measured by annual increase in income to nurserymen in North Carolina. Revenue for fiscal 1980 represented a 27% increase over 1979 income. The diversity of the nursery industry and the uniqueness of each operation prompts requests for technical assistance on an individual basis. These requests often exceed program capacity. Therefore, a production manual is being developed to alleviate some of this pressure and to allow for increased transfer of technology to nurserymen.</p>
<p>What were the impacts          Who benefited          What were benefits</p>	<p>What are implications for future program          Clientele yet to be served</p>
<p>Contact person name and title          organization          address          city, state, zip code          telephone</p>	<p>V. P. Bonaminio          Extension Horticultural Specialist-Nursery Crops          Department of Horticultural Science          North Carolina State University          Raleigh, NC 27607          (919) 737-3322</p>



ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

NORTH CAROLINA LANDSCAPE MAINTENANCE WORKSHOPS

TEXT/DESCRIPTOR

Program Description	<p>The North Carolina landscape industry is comprised of landscape architects, contractors, and nurserymen. A relatively new aspect of this industry is landscape maintenance. To help professionalize the industry, Landscape Maintenance Training Workshops were begun in 1979. These training sessions provide technical information on improved horticultural practices, pest identification and control, irrigation and use of natural resources to people who maintain grounds on a residential, commercial, industrial and recreational level. Extension Specialists from the departments of Horticulture, Entomology, Pathology, Agronomy, Forestry and Engineering participated. A total of 12 training sessions in 12 different locations have been given since 1979, with an attendance of over 1500. By attending these workshops the participants' job skills and knowledge of grounds management are improved thus improving their income capabilities. Several mass media processes have been developed for use on these workshops. The slide sets: <u>Residential Landscaping</u>, <u>Landscape Maintenance</u>, <u>Pruning Shrubs</u>, <u>Use of Ground Covers</u>, and <u>Use of Small Ornamental Trees</u> are in the Extension Visual Aids Library, being used by county agents and local landscape groups to give county workshops. In 2 years these slide sets have been checked out a total of 257 times. With the amount of enthusiasm expressed and the need continually increasing for updated technical information, the landscape maintenance workshops have become an annual series of meetings.</p>
Emphasis	
Goals	
Scale	
Innovations	
Linkage	
Clientele	
Resources involved	
Funds	
Staff time	
Other cooperators	
Special funding	
What were the accomplishments	
What were the impacts	
Who benefitted	
What were benefits	
How impacts were measured	
What are implications for future program	
Clientele yet to be served	
Contact person	<p>M. A. Powell, Jr.          Extension Horticultural Specialist-Landscaping          N. C. State University          Raleigh, NC 27607          919/737-3322</p>
name and title	
organization	
address	
city, state, zip code telephone	

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Improved Turfgrass Management & Use in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>An intensified effort was begun in late 1980 to make turfgrass managers more aware of proper selection of a turfgrass for a particular use and for a particular climatic region, of proper cultural practices related to use and seasonal plant requirements, and of the importance of a total management system for turfgrass production.</p> <p>This program was jointly developed by the Ornamentals and Turf Coordinating Committee, the Turfgrass Council of N.C., the program committees of five regional turfgrass associations, the agricultural extension agents with turf responsibility, and extension and research specialists in crop science, plant pathology and entomology. Turf publications, educational meetings, workshops, radio programs, TV programs, personal contacts were primary means of disseminating information.</p> <p>Intensified communication resulted in greater attendance and participation at the Annual Turfgrass Conference (up 15%), regional turfgrass association meetings (up 10%), homeowner and/or turf manager production meetings (up 8%), regional turf and landscape workshops (up 12%).</p> <p>Increased educational emphasis has resulted in improved stands and higher condition and quality of turfgrasses in North Carolina, as well as the potential for increased longevity of stands. Greater demands for turfgrasses for recreational, beautification and work purposes are resulting in more emphasis on proper turfgrass management.</p> <p>The cooperative endeavors have resulted in improved recognition and use of a total package approach-cultural management plus all forms of pest management-by agents, turf managers and service personnel. Further educational work is needed.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Dr. C. T. Blake, Crop Science Extension Specialist (Turf)          North Carolina State University          P.O. Box 5155          Raleigh, NC 2765-          (919/737-3141)</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Diseases of Turfgrasses in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b>          Emphasis          Goals          Scale            Innovations          Linkage          Clientele    <b>Resources involved</b>          Funds          Staff time          Other cooperators          Special funding    <b>What were the accomplishments</b>    <b>What were the impacts</b>          Who benefitted          What were benefits            How impacts were measured    <b>What are implications for future program</b>          Clientele yet to be served</p>	<p>Diseases are major problems on most turfgrasses in home lawns, golf courses, roadsides, parks and other turf areas throughout North Carolina. The annual losses from diseases on turf that include replacement value, cost of pesticides, additional labor and equipment, are estimated at \$30 million per year in North Carolina.</p> <p>The objectives of the Plant Pathology Extension Program on Turfgrasses are to identify the diseases, suggest or develop appropriate control methods, and provide information to turf managers on diseases. These objectives were accomplished by identifying diseases on samples submitted to the Plant Disease Clinic (175) and by examining problem areas with county agents and turf managers (approximately 100). Information about turf diseases was given at turf related meetings, workshops, in publications, and by personal contact. Management of all types of turfgrasses has been emphasized to reduce disease problems. Less disease and the use of less fungicide has resulted in many cases.</p> <p>Fungicides were evaluated for the control of spring dead spot on bermudagrass fairways at Wilson and on golf greens at Whiteville and Minnesott Beach. Benomyl at 4 or 8 oz. per 1000 sq. ft. in October or November gave good control of this disease the following spring. Nematicides were evaluated for the control of sting nematodes on bermudagrass and centipedegrass at Fayetteville, Rockingham and Hamlet. Nema-cur gave the best control of the nematodes and best turf quality. Experiments using fungicides, nematicides, and fertilizers to indicate possible causes of centipede decline were established at Fayetteville.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>L. T. Lucas          Extension Plant Pathology Specialist          P. O. Box 5397          N. C. State University          Raleigh, NC 27650      919-737-2751</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Soil Surveyor Training - North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources Involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>As part of Extension's role in the Cooperative Soil Survey Program in North Carolina, training is being provided for soil scientists involved in soil survey. This training was initiated in 1978 in response to increased personnel in our accelerated survey program. Intensive two-week sessions have covered all major aspects of soil survey. The level of training has varied from a basic approach for new personnel to a level designed as preparation for soil survey party leader responsibilities. Training involved both classroom and field exercises. The trainees included personnel from the Soil Conservation Service, the N. C. Department of Natural Resources, and the Forest Service as well as county employees.</p> <p>The program has involved 2 specialists as well as other faculty of the Soil Science Department and senior personnel of the Soil Conservation Service. Funding was shared by several agencies in the Cooperative Soil Survey Program.</p> <p>This training has involved 60 participants from all parts of the state. During this past year the advanced level of training involved 15 soil scientists including two from out of the state. In-service training of this type affords an opportunity to develop uniformity in the county soil survey program across the state. This effort promotes quality control in our surveys that will benefit all the users of this soil resource inventory.</p> <p>Training of this type will be provided in the future as new personnel are added to the program and as present soil scientists advance to levels requiring more intensive technical and leadership education.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>H. J. Kleiss, Extension Soil Specialist          Soil Science Department, N. C. State University          P. O. Box 5907          Raleigh, N. C. 27650 919-737-3285</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

North Carolina Agricultural Extension Weather Program

## TEXT/DESCRIPTOR

<p>Program Description Emphasis Goals Scale</p> <p>Innovations Linkage Clientele</p> <p>Resources involved Funds Staff time Other cooperators Special funding</p> <p>What were the accomplishments</p> <p>What were the impacts Who benefitted What were benefits</p> <p>How impacts were measured</p> <p>What are implications for future program Clientele yet to be served</p>	<p>North Carolina's varied topography and climate, combined with a diverse agricultural base, make it an important location for studying the sensitivity of crops and livestock to different weather regimes. A new program in Agricultural Meteorology at NCSU is helping North Carolina farmers to better manage their farm operations through timely agricultural weather advisories. Advisory topics include soil temperatures, soil moisture, haying and harvesting conditions, spraying, and livestock heat/cold stress, to name just a few. The advisories are disseminated via the NOAA Weather Wire to most North Carolina radio and TV stations, as well as over the NOAA Weather Radio Network.</p> <p>Input to the program includes a volunteer (Touch-Tone) weather observing network, with one cooperator in each of North Carolina's 100 counties. Added during FY 1981 was a network of 10 soil temperature sensors, located at selected Touch-Tone reporting points.</p> <p>The result has been an increased awareness among those in agribusiness of the importance that weather plays on farm production, and how specific agricultural weather information can help a farmer plan his activities for the next week, or even two. Soil temperature reports this spring allowed growers to plant early in many locations, as warm, dry weather in March and April boosted readings above the critical values for germination much sooner than normal. Recommendations throughout the spring and summer on how to deal with drought and resultant low water tables proved beneficial to growers, suggesting they take steps to save soil moisture and use impounded water wisely.</p> <p>The specific, measured impact of this new advisory system on farm operations in the state has yet to be completed, but surveys of media and farming community use of ag. weather products are being formulated and will begin before FY 1982.</p>
<p>Contact person name and title organization address city, state, zip code telephone</p>	<p>Gregory L. Johnson or Katharine B. Perry Ext. Specialist-Ag. Meteorology 123 Kilgore Hall Department of Horticulture NCSU Raleigh, NC 27607 919-737-3537</p>

2. LIVESTOCK PRODUCTION

Livestock producers in North Carolina were under severe financial stress during 1981. Fifty-five dairymen went out of business in one year. Most of the economic pressures on swine production that began in 1979 continued through 1981. Beef cattle producers seem to have come through the depressed end of the price cycle in good shape in one respect--brood cow numbers increased 1% during the year.

The Dairy Extension program has concentrated on financial management and production practices for owners of enlarged herds.

The long-range goal of the Animal Husbandry Extension program has been to assist county livestock agents and producers in developing sound and profitable enterprises that take full advantage of the potential that exists in North Carolina--major emphasis this year has been on breeding, nutrition, health, management and marketing.

The Swine Extension program concentrated in 1981 on animal health, the Swine Development Center, and the performance testing program.

In the Extension Poultry program, energy concerns, waste management, disease control and feed quality have received emphasis.

<p>The Dairy Extension program has concentrated on financial management and production practices for owners of enlarged herds.</p> <p>The long-range goal of the Animal Husbandry Extension program has been to assist county livestock agents and producers in developing sound and profitable enterprises that take full advantage of the potential that exists in North Carolina--major emphasis this year has been on breeding, nutrition, health, management and marketing.</p> <p>The Swine Extension program concentrated in 1981 on animal health, the Swine Development Center, and the performance testing program.</p> <p>In the Extension Poultry program, energy concerns, waste management, disease control and feed quality have received emphasis.</p>	<p>How reports were prepared</p> <p>What are the major factors for future program</p> <p>What are the major factors for future program</p> <p>What are the major factors for future program</p>
<p>North Carolina State University          Department of Animal Husbandry          Swine Development Center          Raleigh, N.C. 27607</p>	<p>Local contact          name and title          organization          address          city, state, zip code          telephone</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Development of on line computer access for DHIA herds by the DRPC at North Carolina State University.

## TEXT/DESCRIPTOR

<p><b>Program Description</b> Emphasis Goals Scale</p> <p><b>Innovations</b> Linkage Clientele</p> <p><b>Resources involved</b> Funds Staff time Other cooperators Special funding</p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b> Who benefitted What were benefits</p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b> Clientele yet to be served</p>	<p>DART (Direct Access to Records by Telephone) is a program of on-line access to DHI records. Dairymen served by DRPC @ Raleigh, North Carolina can use on-farm computer terminals or minicomputers to update status of individual cows and retrieve management reports for day to day cow management and evaluation. DART herd managers can design management reports to their individual specifications.</p> <p>During the period August 1, 1980 through July 1, 1981, a field test of DART was conducted in 20 co-operator herds in the Southeast. Funds were provided by DRPC @ Raleigh. Dr. Dan Webb of the Extension Dairy staff at the University of Florida assisted with the field test while on sabbatical at N.C. State University. Personal visits were made to each herd on a quarterly basis. These herds made constructive suggestions for improving the program. This on-line approach allowed users: (1) Rapid response to reproductive management needs (2) Development of their own reports on "problem cow" groups (3) Development of cow grouping systems tailored to their personal management system.</p> <p>As a result of the field test, DART is being offered as an option. New features (feed formulation, on farm payroll, herd health, etc.) will be added as programming time permits. It is anticipated that this option will be selected by many of the large herds. We also anticipate enrollment of more large herds onto the DHIA program as a result of this option.</p> <p>On-line capabilities at DRPC have also opened the development of on-line applications for (1) Tele-processing laboratory results (2) On-line accessing to cow and herd records and summaries by State Extension Dairymen and State DHIA Management Personnel.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>Kenneth R. Butcher Extension Dairy Husbandry Specialist Dairy Records Processing Center P. O. Box 5065, N.C. State University Raleigh, N.C. 27650</p> <p style="text-align: right;">919-737-2632</p>

## ACCOMPLISHMENT REPORT

## Dairy Extension Program in Eastern North Carolina

Dairy farming in eastern North Carolina involves a relatively small number of people, but continues to be an important segment of agriculture. The area approach to Dairy Extension programs initiated in 1979 continues to prove to be an effective means of accomplishing educational objectives in an area where dairy farms are widely dispersed.

During the past year, special emphasis was given to milking management and mastitis control. The ultimate goal is to improve milk quality and production per cow through improved practices. There is a persistent problem among Eastern Carolina herds of high somatic cell counts in milk. Many producers have perceived somatic cell counts as a regulatory device and not as a useful indicator of management practices in the milking parlor.

Two area seminars were conducted in which emphasis was placed on milking management and mastitis control. Total attendance exceeded 60 people with representatives from about 35% of the dairy farms in the area. Local Health Department officials were also in attendance at both locations. A limited number of follow-up visits to specific problem herds have been made.

The primary impact of these efforts has been to establish a more positive attitude toward the importance of milk quality and the effect of milking practices and mastitis control on production and profitability. A small number of herds involved in the program have made substantial gains in production during 1981. This increase in production cannot be attributed to any one management procedure or program, but reflects changing practices in breeding, feeding and management. The following data from herds on DHI test reflect recent progress.

<u>Year</u>	<u>No. Herds</u>	<u>Cow Years</u>	<u>Lb. Milk</u>	<u>Lb. Fat</u>
1979	35	4837.6	13,571	482
1980	37	5084.2	14,180	513

The average production per cow increase in 1981 is expected to equal the 609 lb. milk and 31 lb. fat increase in 1980. Such an increase will contribute \$450,000 to the 1981 gross income of these 37 herds. Herds not on DHI test will also benefit from increased production but to a smaller degree.

Fred N. Knott  
 Extension Dairy Husbandry Specialist  
 104 Polk Hall  
 N. C. State University  
 Raleigh, NC 27607

919-737-2771



## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

NORTH CAROLINA 4-H DAIRY YOUTH PROGRAM

## TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>The 4-H program for youth interested in dairy husbandry has been limited because of a lack of appropriate literature and training aids. An effort has been initiated to provide Extension Agents, volunteer 4-H leaders and 4-H youth with material which will aid in effective teaching of dairy husbandry principles to youth.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p>	<p>During the past year, materials were completed for a publication entitled <u>4-H Dairy Production Project Manual and Exercises</u>. The publication includes information on nutrition, reproduction, milking procedures, records and dry cow management. Five suggested exercises are provided to guide the 4-H member through observations and analysis of events as they take place in the herd. Information provided in the manual can provide the basis for a variety of educational sessions conducted by adult 4-H leaders.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p>	<p>This material will help meet the expressed need of Extension 4-H Agents and volunteer 4-H leaders for information designed specifically for use with North Carolina youth. More than 1200 youthshave expressed an interest in dairy production.</p>
<p><b>How impacts were measured</b></p>	<p>Availability of such material will equip approximately 50 volunteer 4-H leaders with information and material to assist interested youth in learning more about dairy husbandry. This material will help maintain a corps of leaders to teach subject matter to 4-H members. Additional audio-visual aids will be provided to compliment the written materials.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Fred N. Knott, Extension Dairy Husbandry Specialist  104 Polk Hall  North Carolina State University  Raleigh, NC 27650 Telephone: (919) 737-2771</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Dairy Housing Program in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>With the trend to larger herd size, increased interest in dairy farming, emphasis has been placed during the year on the drive-through free-stall milking parlor system of handling cows. The goal is to provide an economical construction and improve labor efficiency on North Carolina dairy farms.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>Many meetings, field days and farm visits were made during the year relative to the drive-through free-stall milking parlor system of handling cows. With agents and dairymen working with the extension biological engineering specialist, new dairy layout plans were developed and distributed for agents and dairymen to use.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>Approximately 55 days were devoted to this program.</p>
<p><b>What were the accomplishments</b></p>	<p>From the results of these meetings, field days and farm visits, approximately 150 dairymen made adjustments or constructed new more efficient facilities.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p>	<p>In many cases, dairymen have stated that they have reduced their labor by one man by adopting the drive-through free-stall housing system which means a saving of \$12,000 to \$16,000 per year.</p>
<p><b>How impacts were measured</b></p>	<p>With the increased interest in the dairy business and the fact that some of these proposed dairy operations have little chance of generating the cash flow, emphasis will be placed in 1982 on a series of debt management seminars for county agents, dairymen and lender organizations. The seminars will be organized and conducted with the Extension economists.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Guy S. Parsons, In Charge          Extension Dairy Husbandry          Department of Animal Science          North Carolina State University          Raleigh, NC (919) 737-2771</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Handling Dairy Waste in North Carolina

## TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources Involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>Confined handling of dairy cattle and more rigid waste control regulations have created problems with manure handling and disposal on dairy farms. Emphasis was placed this year on workable waste handling and pollution abatement systems on producer farms in various areas of the state which can be demonstrated to surrounding producers.</p> <p>Several commodity meetings have been conducted at the county and state levels to explain environmental regulations pertaining to dairy farms. Many farm visits were made during the year with the Extension Biological Engineering Specialist relative to dairy waste management alternatives.</p> <p>Approximately 40 days were devoted to this program.</p>
<p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p>	<p>From the results of the commodity meetings and farm visits, approximately 165 dairymen have voluntarily built or improved waste handling and storage facilities and have constructed retention ponds or lagoons for collecting wastewater and feedlot runoff rather than discharging to a stream.</p> <p>Dairymen are becoming more receptive to implementing the waste handling techniques such as manure scrape ramps, solid storage areas, earthen liquid manure storage pits and settling basins which they feel make their production and labor use more efficient. Also, pollution is minimized and water quality improved.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>One of the newer techniques which seems to be gaining in popularity among North Carolina dairymen consists of an earthen basin for storing up a six-months accumulation of liquid manure. An earthen storage pit saves a 100-cow dairy farmer approximately \$20,000 in construction costs when compared to alternative liquid manure systems.</p> <p>Emphasis will be placed on a low cost solids settling basin which separates the manure solids from lot runoff for small producers. The liquid drainage from these settling basins are routed through a vegetative filter such as a grassed waterway.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Guy S. Parsons, In Charge          Extension Dairy Husbandry          Department of Animal Science          North Carolina State University          Raleigh, North Carolina 27650 (919) 737-2771</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Dairy Herd Replacement Program in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b></p>	<p>The culling rate in North Carolina Dairy Herd Improvement herds is approximately 30 percent per year along with high calf death losses which creates problems in producing enough "home grown" replacements to meet our needs. Emphasis was placed this year on health programs for replacements including control of internal parasites, housing, nutrition and management of young dairy heifers.</p>
<p><b>Innovations</b> <b>Linkage</b> <b>Clientele</b></p>	<p>Primary emphasis was placed upon the written word through inserts for agents handbook and new articles for dairymen and others. These were accomplished by working with our former Extension Veterinarian.</p>
<p><b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b></p>	<p>Approximately 20 days was devoted to this program.</p>
<p><b>What were the accomplishments</b></p>	<p>From agent reports and requests for building plans, dairymen are building more new dairy calf housing facilities and are utilizing the services of the veterinarian in their program.</p>
<p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p>	<p>Dairymen are becoming more aware of and receptive to implementing a herd replacement program such as building hutches and a vaccination program. These and other improved practices reduce death losses and increase the number of herd replacements available each year.</p>
<p><b>How impacts were measured</b></p>	<p>Calf hutches for housing young dairy replacements are gaining in popularity among North Carolina dairymen. Calves grown in this type of housing grown faster and suffer less from diseases. The hutch is less expensive to construct than the conventional pen type facility.</p>
<p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>The use of hutches for housing will reduce the initial capital needs in getting a new dairyman established. Practicing a strict vaccination program reduces losses of replacements hence dollars.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>I. D. Porterfield, Professor of Animal Science Department of Animal Science North Carolina State University 220 Polk Hall Raleigh, North Carolina 27650 (919) 737-2763</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Effects of Treating Dairy Cows at Calving With an Anthelmintic in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>For years "conventional wisdom" has indicated that high levels of nutrition would mask any effects of internal parasite infestation in lactating dairy cows. A field trial with seven North Carolina dairymen is being conducted to study the effects of administration at drying off and at calving of an Anthelmintic on milk production. This is the first study initiated in the southern part of the United States.</p> <p>The seven cooperating dairymen agreed to administer as directed the compound and permit access to their DHI production records which were used in evaluating treatment effects. They were furnished the compound without cost.</p> <p>Approximately 100 days were devoted to this trial. The former Extension Veterinarian is the co-leader of this field study. About \$500 was provided for this through the North Carolina Dairy Foundation.</p> <p>Data has been obtained on about 1000 treated cows. A progress report was presented at the 1981 Annual Dairymen's Conference. Thus far data indicates that treatment at calving is cost effective.</p> <p>Dairymen, based upon the results of this study and others, are treating their cows at calving time. As indicated, the treatment is cost effective. On the average, treated cows produced 250-260 pounds more milk than untreated cows or for a \$10 investment per cow resulted in about a \$30 return.</p> <p>Records were kept by each dairyman indicating cows treated, date and amount of compound. These were then collated with production and other data recorded on the DHIA reports following treatment.</p> <p>Treating cows at calving for internal parasites is effective. Data obtained from the seven cooperating dairymen is being shared with all dairymen through meetings and publications. In addition, dairymen can realize an increase in their net profit by treating cows at calving.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>state, zip code</b>  <b>telephone</b></p>	<p>I. D. Porterfield, Professor of Animal Science          Department of Animal Science          North Carolina State University          220 Polk Hall          Raleigh, North Carolina 27650 (919) 737-2763</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Title: Dairy Herd Improvement Progress In North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>The Dairy Herd Improvement program is a long term project requiring considerable administrative time and effort. All dairy herds need herd management records to provide the information needed for making feeding, breeding, and other management decisions. Few dairy-men not enrolled on one of the DHI record plans maintain adequate herd management records on their own.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>During 1980 a new herd management summary was developed. This summary will be an option and substantial interest has been indicated, but its effectiveness will not be known until next year. A new county lactation summary was developed in 1980 also at the request of county agents. This county summary will help county agents work more effectively with their clients.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>North Carolina has the highest DHI milk production average per cow and the second highest percentage of herds enrolled on DHI of all the states in the south-east. Production per cow, gross income per cow, and the number of herds enrolled on DHI all increased during 1980.</p>
<p><b>What were the accomplishments</b></p>	<p>North Carolina has the highest DHI milk production average per cow and the second highest percentage of herds enrolled on DHI of all the states in the south-east. Production per cow, gross income per cow, and the number of herds enrolled on DHI all increased during 1980.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p>	<p>The economic importance of the dairy industry in North Carolina is increasing. The economic importance of the dairy industry is increasing. The economic importance of the dairy industry is increasing.</p>
<p><b>How impacts were measured</b></p>	<p>The economic importance of the dairy industry in North Carolina is increasing. The economic importance of the dairy industry is increasing. The economic importance of the dairy industry is increasing.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>There is a continuing need to teach more dairymen the benefits of herd management records. Many dairymen already on one or another of the DHI record programs do not understand how to utilize them fully.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Frank D. Sargent          Extension Dairy Husbandry Specialist          Animal Science Department, N.C.S.U.          Raleigh, NC 27650          919-737-2771</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Mastitis Control Program in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Mastitis continues to be one of the most expensive herd management problems, costing the average North Carolina dairyman approximately \$200 per cow annually. The DHI Somatic Cell Count option has been one of our best tools to help dairymen recognize the significance of mastitis in their herds and adopt effective, proven mastitis control procedures.</p> <p>During the past several years a major educational effort has been made to encourage dairymen to take advantage of this program. Currently, approximately 400 herds (38,000 cows) are tested each month (approximately 60% of the DHI herds).</p> <p>As with any management program, it is difficult to determine the dollar value to participating dairymen. If research estimates of losses in milk production associated with various cell counts are applied to data from these herds, it would appear that the reduction in cell counts that occurred (a reduction from 24% to 20% of the cows with counts in excess of 400,000/ml between June '80 and June '81) resulted in an increase in net income of \$100,000. Data from these herds has been summarized and used to demonstrate the economic importance of mastitis control and the value of various recommended management practices to dairymen that are not on the cell count program.</p> <p>Information gained from these herds has been used extensively in the dairy extension newsletter and at county, area and state meetings held during the year. Approximately 100 days were devoted to the total mastitis control program.</p> <p>Although data from these herds has been used to "sell" mastitis control to non-participating dairymen for several years, it is now of maximum value and will be used extensively during 1982.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Don P. Wesen, Extension Dairy Husbandry Specialist          104 Polk Hall          North Carolina State University, Animal Science Dept.          Raleigh, NC 27650          (919) 737-2771</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

North Carolina Program for Avoiding Antibiotic Residues in Milk

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>  <b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	<p>The importance of keeping milk and meat free from antibiotics and other adulterants has, for several years, been emphasized in our educational program. The implementation of the 1978 Pasteurized Milk Ordinance on July 1, 1980 (requiring more stringent testing of milk with more sensitive testing procedures than previously used) necessitated an enhanced educational effort during FY 81.</p>
<b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>  <b>What were the accomplishments</b>	<p>Extension's efforts were coordinated with the efforts of others (dairy plant fieldmen, sanitarians, veterinarians, etc.) that advise dairymen on producing quality milk. This effort included providing educational material to the above groups as well as directly to producers. In addition, "The Proper Use and Selection of Antibiotic Preparations" was emphasized at county, area and state meetings held during the year. Approximately 20 days were devoted to this program.</p>
 <b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>  <b>How impacts were measured</b>	<p>Even though some milk was discarded prior to processing because of antibiotic residues, it is felt that the volume of milk would have been larger had there not been an educational program.</p> <p>In the short term, this program benefits the producer, and the processor. In the long term, it benefits the consumer by providing dairy products free from antibiotic residues.</p>
 <b>What are implications for future program</b> <b>Clientele yet to be served</b>	<p>Although we feel these efforts have been at least partially successful, a continued educational effort will be necessary in 1982. Particular emphasis will be placed on the correct use of antibiotic field test kits.</p>
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	<p>Don P. Wesen, Extension Dairy Husbandry Specialist  104 Polk Hall  North Carolina State University, Animal Science Dept.  Raleigh, NC 27650  (919) 737-2771</p>



ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Dairy Cattle Feed Formulation by Computer for North Carolina Dairymen

**TEXT/DESCRIPTOR**

<b>Program Description</b>	During FY 81 a statewide agricultural program offered by the North Carolina Extension Service emphasized least-cost ration balancing by computer for all North Carolina dairymen. The program goal is to provide an economical and educational program which helps the farmer make maximum use of homegrown feeds, minimize feed costs, increase milk production and maximize profit. Greater economic development is the major goal. The program is linked to the North Carolina Farm Feed Testing Service and the North Carolina Dairy Herd Improvement Association.
<b>Emphasis</b>	
<b>Goals</b>	
<b>Scale</b>	
<b>Innovations</b>	
<b>Linkage</b>	
<b>Clientele</b>	
<b>Resources Involved</b>	
<b>Funds</b>	A special grant of \$1,500 was used in a pilot project to promote the program. Rations were balanced free for approximately 70 dairymen. In addition, free ration balancing and feed testing were provided for a limited number of dairymen in three counties as a demonstration project. Approximately 40 staff days were devoted to this program.
<b>Staff time</b>	
<b>Other cooperators</b>	
<b>Special funding</b>	
<b>What were the accomplishments</b>	The program started in October, 1979. Since that time about 382 rations have been formulated with 239 formulated during FY 81. Several dairymen received multiple formulations; therefore, with 1,300 dairymen in the state, many clientele are yet to be served.
<b>What were the impacts</b>	The impact of the demonstration project will be summarized this year. Planned is a study to evaluate the awareness and attitude of dairymen toward the program. DHIA records of users will be evaluated to determine effects on production.
<b>Who benefitted</b>	
<b>What were benefits</b>	For FY 82 a grant of \$10,000 will enable the purchase of computer terminals and additional programming in order to institute remote operation in the field. Easier access and faster reporting time should increase utilization by clientele.
<b>How impacts were measured</b>	Results from similar programs in other states indicate a benefit in profit of approximately \$50 per 100-cow dairy which regularly and closely follows ration recommendations.
<b>What are implications for future program</b>	
<b>Clientele yet to be served</b>	
<b>Contact person name and title</b>	Lon W. Whitlow, Assistant Professor Department of Animal Science
<b>organization address</b>	North Carolina State University
<b>city, state, zip code</b>	105-B Polk Hall Raleigh, North Carolina 27650
<b>telephone</b>	737-2771

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Use of Feed Analysis by North Carolina Dairymen

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Cientele</b></p>	<p>During FY 81 a state wide agricultural program emphasized the use of feed analysis for evaluation of feed quality. Feed analysis results should provide a tool so that farmers can improve feed quality through management practices and, in addition, better utilize feeds for efficient animal production. The program is intended to further economic development. Greater use of the program is a goal.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>The feed analysis program is aimed at all farmers, especially dairymen and livestock producers. Feed analysis is linked with computer programs for feed formulation in order to provide dietary guidelines.</p>
<p><b>What were the accomplishments</b></p>	<p>The North Carolina Extension Service cooperates with the North Carolina Department of Agriculture. Extension published informational brochures concerning the program and including sample collection.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p>	<p>Cooperating in Extension are dairy husbandry, beef husbandry, swine husbandry and crop science.</p> <p>Approximately 40 days are expended in this program by dairy husbandry.</p>
<p><b>How impacts were measured</b></p>	<p>During the first year of operation over 3,000 feeds will be analyzed (1,869 up to July 1, 1981 which includes 9 months). This is an increase in sample numbers of over 300% from last year and an increase of 500% over the past five year average.</p> <p>It appears that more farmers are aware of the feed analysis program and are taking advantage of feed analysis services to assist in decision making.</p>
<p><b>What are implications for future program</b>  <b>Cientele yet to be served</b></p>	<p>It appears that in future years the program will continue to expand with more farmers taking advantage of the program and greater use by each farmer.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Lon W. Whitlow, Assistant Professor          Department of Animal Science          North Carolina State University          105-B Polk Hall          Raleigh, North Carolina 27650          737-2771</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Gain Testing of Bulls in Central Testing Stations in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>There are three central testing stations in operation in North Carolina. The oldest has been operated for 12 years, another for 8 years and the third for only 1 year. The program is designed to evaluate post-weaning performance of bulls managed under standardized environmental conditions and to provide a market for completely performance tested bulls for both producers and buyers.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>About 30 percent of an animal husbandry specialist's time is involved in supervising management, weighing of bulls, processing records and conducting sales. Producers testing bulls in these stations pay for other costs.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>Educational materials and presentations on methods of using central testing as a supplement to on-farm testing were provided. A total of 220 bulls were entered in central tests. Of these, 154 met the requirements for sale and were sold to producers in 57 counties. A few bulls were sold to producers in Virginia, South Carolina and Georgia; however, 60 percent were sold to producers located within a 60 mile radius of the sale. Forty-five producers had a total of 431 bulls enrolled in on-farm tests.</p>
<p><b>What were the accomplishments</b></p>	<p>If through these tests we are able to sell superior bulls that will sire calves that will gain .25 lb./day more weight, then the producer with 40 cows using one of these bulls for five years should produce 11,475 pounds more beef and increase his income by about \$8,000 at current prices.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p>	<p>Most of the bulls sold from central tests were sold to commercial producers. Prices ranged from \$550 to \$5,500. The average price of 60 bulls at Rocky Mount was \$1,101. At Salisbury, 60 bulls sold for an average of \$1,464; and the 34 bulls at Waynesville sold for an average of \$1,568. Within the state, there is a need for approximately 5,000 bulls per year. Clearly, the number of performance tested bulls available should continue to increase.</p>
<p><b>How impacts were measured</b></p>	<p>Most of the bulls sold from central tests were sold to commercial producers. Prices ranged from \$550 to \$5,500. The average price of 60 bulls at Rocky Mount was \$1,101. At Salisbury, 60 bulls sold for an average of \$1,464; and the 34 bulls at Waynesville sold for an average of \$1,568. Within the state, there is a need for approximately 5,000 bulls per year. Clearly, the number of performance tested bulls available should continue to increase.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Roger L. McCraw          Extension Animal Husbandry Specialist          N. C. State University          109 Polk Hall          Raleigh, NC 27607          919/737-2761</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

North Carolina On-Farm Performance Testing

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>On-farm performance testing provides records which permit the farmer to select genetically superior replacements. The records also permit evaluation of cows and herd sires allowing the farmer to cull those with inferior performance. In addition, reports useful in managing the herd are provided.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>Approximately 60 percent of an animal husbandry specialist's time is involved in supervising the operation of the program on a state-wide basis. County livestock agents assist producers in weighing calves and using the records. The program is operated through the North Carolina Cattlemen's Association, and producers enrolled bear all costs except those incurred by personnel mentioned earlier.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>Records were run for 12,199 cows. Calves were weighed in 250 herds in 69 counties. This represented an increase of 19 herds and two counties over last year. The average herd size was 49 cows.</p>
<p><b>What were the accomplishments</b></p>	<p>The average calf crop percentage for the year was about 91 percent compared to 74 percent the first year the program operated. For the herds enrolled this year, this improvement alone would indicate an increase of about 995,000 pounds of beef marketed with a value of \$688,000. In addition, weights of calves weaned have consistently increased. Average weaning weight for calves on the program in 1980 was 49 pounds heavier than in 1975 which would represent an increase of 540,000 pounds of beef marketed in five years.</p>
<p><b>What were the impacts</b></p>	<p>Currently, only about 3 percent of the beef cows in the state are enrolled on the performance testing program.</p>
<p><b>Who benefitted</b>  <b>What were benefits</b></p>	<p>Clientele yet to be served</p>
<p><b>How impacts were measured</b></p>	<p>Contact person name and title</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Organization</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Roger L. McCraw          Extension Animal Husbandry Specialist          N. C. State University          109 Polk Hall          Raleigh, NC 27607          919/737-2761</p>

## ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Establishment of a Bull Test Station in Western North Carolina to Encourage More Area Beef Producers to Purchase and Use Tested Bulls

**TEXT/DESCRIPTOR**

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	<p>The bull used has more impact on genetic quality of calves produced than any other factor. The quality of cattle has been declining in western North Carolina, and a bull test station was established in that area to promote the use of performance tested bulls.</p>												
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b>													
<b>Resources Involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	<p>A bull test station was constructed at the Mountain Research Station for about \$58,000 obtained from a state appropriation. A portion of two animal husbandry specialist's time is involved in management, weighing bulls, processing records and conducting sales. Other than this, the bull test station is self-supporting.</p>												
<b>What were the accomplishments</b>	<p>The first year, 48 bulls were tested with 36 of them qualifying to sell. Eighty percent of the bulls sold were purchased by producers in the western North Carolina area.</p>												
<b>What were the impacts</b>	<p>Getting 27 performance tested bulls into an area that previously had been purchasing five to ten performance tested bulls per year will certainly have an influence on improvement of the quality of cattle in this area. These beef producers now have a better bull than they had previously, and the bull test station has had a tremendous influence on other area beef producers beginning to try and improve the quality of their cattle.</p>												
<b>Who benefitted</b> <b>What were benefits</b>	<p>The impact of this bull test station was measured by how many persons visited the station (300), how many bulls were bought by people in the area (27) and the change in attitude of producers regarding quality of cattle.</p>												
<b>How impacts were measured</b>	<p>As the years progress, more producers will purchase quality bulls; and more producers will become interested in improving the quality of their cattle, with many enrolling in the NCBICIP.</p>												
<b>What are implications for future program</b> <b>Clientele yet to be served</b>													
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	<table border="0"> <tr> <td>Beecher C. Allison</td> <td>Roger L. McCraw</td> </tr> <tr> <td>Ext. Ani. Husb. Spec.</td> <td>Ext. Ani. Husb. Spec.</td> </tr> <tr> <td>N. C. State Univ.</td> <td>N. C. State Univ.</td> </tr> <tr> <td>516 Test Farm Rd.</td> <td>109 Polk Hall</td> </tr> <tr> <td>Waynesville, NC 28786</td> <td>Raleigh, NC 27607</td> </tr> <tr> <td>704/456-7520</td> <td>919/737-2761</td> </tr> </table>	Beecher C. Allison	Roger L. McCraw	Ext. Ani. Husb. Spec.	Ext. Ani. Husb. Spec.	N. C. State Univ.	N. C. State Univ.	516 Test Farm Rd.	109 Polk Hall	Waynesville, NC 28786	Raleigh, NC 27607	704/456-7520	919/737-2761
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ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

North Carolina Beef Cattle Reproductive Management Program

**TEXT/DESCRIPTOR**

<b>Program Description</b>	This program has been initiated because improvements in reproductive efficiency provide producers with the
<b>Emphasis</b>	opportunity to improve production efficiency and offset
<b>Goals</b>	escalating cowherd maintenance costs. The program
<b>Scale</b>	emphasizes the economic importance and advantages of
<b>Innovations</b>	reproductive management -- controlled breeding periods
<b>Linkage</b>	versus year-round breeding -- as the framework for a
<b>Clientele</b>	cowman's overall management program. These four factors
<b>Resources involved</b>	are emphasized: 1) yearling heifers are nutritionally
<b>Funds</b>	developed for breeding beginning 21 days prior to and
<b>Staff time</b>	for no longer than 21 days into the breeding period for
<b>Other cooperators</b>	the cowherd, 2) the breeding period for the cowherd is
<b>Special funding</b>	reduced to 50 to 60 days and synchronized with forage
<b>What were the accomplishments</b>	and labor resources, 3) pregnancy diagnosis is used for
<b>What were the impacts</b>	culling open and late bred females, and 4) bulls are
<b>Who benefitted</b>	evaluated to optimize their breeding potential.
<b>What were benefits</b>	The backbone of this educational effort will be the dem-
<b>How impacts were measured</b>	onstration herd activity. Presently ten producers have
<b>What are implications for future program</b>	made commitments to county livestock agents to begin a
<b>Clientele yet to be served</b>	three to five year program, depending upon present herd
<b>Contact person name and title</b>	reproductive status. The goal is to have at least one
<b>organization address</b>	demonstration herd in each county by 1985.
<b>city, state, zip code</b>	To evaluate herd nutritional and reproductive manage-
<b>telephone</b>	ment, a program called Calving Sequence Analysis is
	being incorporated into our present Beef Cattle Improve-
	ment Program. This involves determining the percentage
	of calves born by 21-day periods and the respective
	average weaning weights for these periods.
	Program awareness is being created through agent train-
	ing, meetings and newsletter articles. Benchmark Calv-
	ing Sequence Analysis data for the present demonstration
	herds ranges from a low of only 15 percent of the cow-
	herd calving the first 21 days of the calving period to
	a high of 53 percent -- herd goals are 70 percent calv-
	ing the first 21 days. It is estimated that the typical
	North Carolina beef producer adopting this program could
	obtain an additional \$50 per cow unit. This increased
	efficiency, when projected to North Carolina's 400,000
	plus beef cows, could mean an additional 16 million
	dollars.
	Franklin L. Schwartz
	Extension Animal Husbandry Specialist
	North Carolina State University
	109 Polk Hall
	Raleigh, NC 27607
	919/737-2761

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Educational Programs for the Economical Use of Estrus Synchronization and Artificial Insemination in North Carolina Beef Cattle

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>The availability of the synchronization product Lutalyse in late 1979 finally allows progressive producers to better utilize superior progeny proven bulls and crossbreeding through artificial insemination (AI). The educational needs are great. Producers have to understand and use a sound economical synchronization program if this is to be a profit-increasing technology. Education is being provided to help producers select "eligible" females based on parity, days postpartum, body condition and age and weight for heifers and to select one of the many different synchronization programs available to fit their herd situation.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b>  <b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>Livestock agents are being trained and encouraged to develop a team approach with local veterinarians and AI technicians in the education of their respective producers. Three articles on economical use were prepared; and numerous state, area and county meetings were held. Because the number of "eligible" females in most herds is low, producers are encouraged to limit their synchronization program to ten days and to also establish a reproductive management program within their herd. Our objective is to monitor the eligibility, cyclicity, percent synchronized pregnancies and cost per synchronized pregnancy in as many cooperator herds as possible over the next five years.</p>
<p><b>What were the accomplishments</b>   <b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b>   <b>How impacts were measured</b></p>	<p>Lutalyse product has been received gratis from the Upjohn Company for field trial and demonstration activity. Five cooperators have provided over 850 females for synchronization and AI. Synchronized pregnancy rates have ranged from a low of 20 percent with young females to 48 percent for lactating mature cows using two-injection programs. Producers are realizing that if they are going to keep the cost of a synchronized pregnancy in the \$40 to \$45 range, they are going to have to use mature cows in fairly good body condition and with at least 50 days postpartum.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Franklin L. Schwartz          Extension Animal Husbandry Specialist          North Carolina State University          109 Polk Hall          Raleigh, NC 27607          919/737-2761</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Use of Growth Stimulant Implants to Increase Beef Production and Efficiency  
in North Carolina

**TEXT/DESCRIPTOR**

<b>Program Description</b> Emphasis Goals Scale  Innovations Linkage Clientele	Every management practice that increases production and profit must be utilized by beef cattle producers if they are to survive. Very few beef producers were implanting their calves with growth stimulants; therefore, a project was initiated to increase the use of this production practice.
<b>Resources involved</b> Funds Staff time Other cooperators Special funding	Approximately 100 on-farm demonstrations were conducted in North Carolina demonstrating the use of growth implants. The implants were donated so the only cost was for the time of specialist and agents.
<b>What were the accomplishments</b>	These demonstrations showed that a 12 to 15 percent increase in weight gain could be expected from the use of an implant costing less than one dollar. In dollar value, this is about a 15 to 1 return on investment.
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>	As a result of these demonstrations, approximately one third of the eligible beef cattle in North Carolina are now being implanted with growth stimulants.
<b>How impacts were measured</b>	The impact of these demonstrations were measured by the increased use of growth implants.
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	Growth implants are being so widely accepted that in many cases it is giving county agents a chance to work with producers they had been unable to work with previously.
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	Beecher C. Allison Extension Animal Husbandry Specialist N. C. State University 516 Test Farm Road Waynesville, NC 28786 704/456-7520



ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Management Practice Demonstrations for Increased Acceptance of  
 Production Practices in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Many beef cattle producers fail to perform management practices because they are unsure of their capability to perform the particular practice. A series of management practice demonstrations were conducted to give producers in attendance a chance to see the management practice (such as implanting) performed and then have a chance to perform it themselves under the supervision of the county agent or livestock specialist.</p> <p>The demonstrations were conducted using producer-owned cattle, and much of the materials used were donated by commercial companies. This left the major cost to be the time of the personnel involved.</p> <p>Many beef producers, who had previously not been performing one or more management practices because they were unsure of the procedure, learned how at these demonstrations and are now performing them on their own cattle routinely, therefore increasing their beef cattle income.</p> <p>The results were measured by participation in the demonstrations and increased use of various production practices.</p> <p>This has been so successful it will probably be repeated so other producers can be taught proper procedures for various production practices.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Beecher C. Allison          Extension Animal Husbandry Specialist          N. C. State University          516 Test Farm Rd.          Waynesville, NC 28786          704/456-7520</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Management Practice Demonstrations for Increased Acceptance of  
 Production Practices in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Many beef cattle producers fail to perform management practices because they are unsure of their capability to perform the particular practice. A series of management practice demonstrations were conducted to give producers in attendance a chance to see the management practice (such as implanting) performed and then have a chance to perform it themselves under the supervision of the county agent or livestock specialist.</p> <p>The demonstrations were conducted using producer-owned cattle, and much of the materials used were donated by commercial companies. This left the major cost to be the time of the personnel involved.</p> <p>Many beef producers, who had previously not been performing one or more management practices because they were unsure of the procedure, learned how at these demonstrations and are now performing them on their own cattle routinely, therefore increasing their beef cattle income.</p> <p>The results were measured by participation in the demonstrations and increased use of various production practices.</p> <p>This has been so successful it will probably be repeated so other producers can be taught proper procedures for various production practices.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Beecher C. Allison          Extension Animal Husbandry Specialist          N. C. State University          516 Test Farm Rd.          Waynesville, NC 28786          704/456-7520</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Ectrin Ear Tags for Fly Control in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>Fly control and especially face fly control is a major problem for beef producers in North Carolina. Three on-farm demonstrations were initiated to evaluate the effectiveness of Ectrin ear tags as a means of fly control on beef cattle. All summer fly control through ear tagging is appealing to producers, and until now no insecticide has been very effective against face flies.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>This work was done in cooperation with TVA as they provided the funds to purchase the Ectrin ear tags. Three beef producers, three county agents and one area livestock specialist were involved in these on-farm demonstrations.</p>
<p><b>What were the accomplishments</b></p>	<p>Ectrin ear tags were found to be almost 100 percent effective against horn flies and 75 percent effective against face flies on beef cattle.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p>	<p>When other beef producers began to see the effectiveness of the Ectrin ear tags, they also began to use them as a means of fly control.</p>
<p><b>How impacts were measured</b></p>	<p>The effectiveness of the program was measured by how many producers accepted and used this means of fly control.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>This ear tag is the most effective means of controlling face flies; but since only about 5 percent of the beef producers accepted this program this year, there is future potential for many more producers to use this management practice.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Beecher C. Allison          Extension Animal Husbandry Specialist          N. C. State University          516 Test Farm Rd.          Waynesville, NC 28786          704/456-7520</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

The Use of Dehydrated Poultry Waste as a Protein Supplement for Beef Cattle in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>A project to evaluate the nutritional value and cost savings of using dehydrated poultry waste (DPW) as a protein supplement for beef cattle was initiated because a facility had been built in western North Carolina to dry caged layer manure to sell as a livestock feed.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>A result demonstration to evaluate the cost/benefit factor comparing DPW to SBOM as a protein supplement for stocker calves was conducted. Two beef producers cooperated in this project by feeding DPW to their beef animals to help generate more information as to palatability and weight gain response. This work involved the time of an area livestock specialist to conduct the project.</p>
<p><b>Resources Involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>DPW (30% CP) produced weight gains equal to that of SBOM (44%) when used as a protein supplement with each group receiving the same amount of crude protein. The advantage of DPW was that it cost less to produce this weight gain as the DPW (30%CP) only cost \$90/ton.</p>
<p><b>What were the accomplishments</b></p>	<p>The information generated from this project was released for distribution by county agents. County tour groups visited the project, and a field day was conducted. Beef producers began to use DPW as a protein supplement because of the cost savings involved.</p>
<p><b>What were the impacts</b></p>	<p>The impact was measured by the interest in the program and the number of people that started using and plan to use DPW next winter as a protein supplement.</p>
<p><b>Who benefitted</b></p>	<p></p>
<p><b>What were benefits</b></p>	<p>Now that the weight gain and cost savings information has been generated, many more producers will begin using DPW as a protein supplement, thus saving money and also using a waste product that was previously a problem for poultry producers.</p>
<p><b>How impacts were measured</b></p>	<p></p>
<p><b>What are implications for future program</b></p>	<p></p>
<p><b>Clientele yet to be served</b></p>	<p></p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Beecher C. Allison          Extension Animal Husbandry Specialist          N. C. State University          516 Test Farm Rd.          Waynesville, NC 28786          704/456-7520</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Marketing Feeder Cattle in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources Involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>North Carolina has a program of special feeder cattle sales which is designed for small farmers to pool their feeder cattle. These cattle are packaged by sex, weight, breed and grade in order for them to be attractive to the feeder/buyers.</p> <p>This program is carried out with the cooperation of the North Carolina Extension Service, the North Carolina Cattlemen's Association and the North Carolina Department of Agriculture. The success of this program has been with the county agents informing the producers of the requirements and advantages of this type of sale.</p> <p>Studies to date show there is approximately an \$8/cwt. advantage for steer calves and a \$6/cwt. advantage for heifer calves marketed through these special sales compared to marketing through regular channels. A farmer marketing 30 calves per year will show a net income earned of \$945 above the marketing through normal channels. This program covers feeder calves, yearling cattle and spring stocker cattle. For the 52,000 head sold through the special sales, this represented a 1.6 million dollar increase in income to the beef producers marketing their feeders through the special sales.</p> <p>This represents only approximately 20 percent of the feeders produced in North Carolina. However, these sales have a direct effect on the price received for the other cattle marketed in the state. The sales have a price-setting effect on the local auctions as well as setting the price on feeders sold directly off the farm.</p>		
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <p>Hayes Gregory            Ext. Ani. Husb. Spec.            N. C. State Univ.            Wilkes Co. Office Bldg.            Wilkesboro, NC 28697            919/667-5111</p> </td> <td style="width: 50%; border: none;"> <p>J. W. Patterson            Ext. Ani. Husb. Spec.            N. C. State Univ.            116 Polk Hall            Raleigh, NC 27607            919/737-2761</p> </td> </tr> </table>	<p>Hayes Gregory            Ext. Ani. Husb. Spec.            N. C. State Univ.            Wilkes Co. Office Bldg.            Wilkesboro, NC 28697            919/667-5111</p>	<p>J. W. Patterson            Ext. Ani. Husb. Spec.            N. C. State Univ.            116 Polk Hall            Raleigh, NC 27607            919/737-2761</p>
<p>Hayes Gregory            Ext. Ani. Husb. Spec.            N. C. State Univ.            Wilkes Co. Office Bldg.            Wilkesboro, NC 28697            919/667-5111</p>	<p>J. W. Patterson            Ext. Ani. Husb. Spec.            N. C. State Univ.            116 Polk Hall            Raleigh, NC 27607            919/737-2761</p>		

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Marketing Yearling Cattle in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>The grazing of yearling cattle is one of the main areas of livestock production in western North Carolina. Data from past sales show that there is a large price drop on cattle over 800 pounds. These cattle are grazed on cool season grasses, and there is more forage production in the early portion of the growing season than during the hotter months of July and August. A program is being initiated to provide sales for these heavier cattle in June before they reach a weight that will cause a decrease in price. This will also provide pasture management that will more fully utilize the forage available.</p> <p>Demonstrations are being conducted in these counties by the county agents with technical assistance from specialists to compare gains of these yearling cattle in the early months of the grazing season with the late months of the growing season. This data, along with the price of the cattle in June, will determine what program will net the income to the farmer.</p> <p>Demonstrational research was conducted at the Waynesville station using 120 steers and a split market program, 64 in June and 56 in September. Income above expenses was improved by 36 percent.</p> <p>Many producers grazing feeders and cow-calf producers could carry extra feeders during the lush spring grazing period and increase their income.</p>		
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<table border="0"> <tr> <td>Hayes Gregory Ext. Ani. Husb. Spec. N. C. State Univ. Wilkes Co. Office Bldg. Wilkesboro, NC 28697 919/667-5111</td> <td>Beecher C. Allison Ext. Ani. Husb. Spec. N. C. State Univ. 516 Test Farm Rd. Waynesville, NC 28786 704/456-7520</td> </tr> </table>	Hayes Gregory Ext. Ani. Husb. Spec. N. C. State Univ. Wilkes Co. Office Bldg. Wilkesboro, NC 28697 919/667-5111	Beecher C. Allison Ext. Ani. Husb. Spec. N. C. State Univ. 516 Test Farm Rd. Waynesville, NC 28786 704/456-7520
Hayes Gregory Ext. Ani. Husb. Spec. N. C. State Univ. Wilkes Co. Office Bldg. Wilkesboro, NC 28697 919/667-5111	Beecher C. Allison Ext. Ani. Husb. Spec. N. C. State Univ. 516 Test Farm Rd. Waynesville, NC 28786 704/456-7520		

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Increasing Farm Efficiency and Income through Diversification  
 in Eastern North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>Increasing farm efficiency and income through diversification is the object of the beef cattle extension program in eastern North Carolina. The program seeks to make year-round utilization of the productivity of the resources and labor and, at the same time, help control wind erosion on our loose soil types.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>Bulletins on the various enterprises of a beef cattle operation were made available at meetings held in eastern North Carolina. On-farm demonstrations and agent training sessions have also helped to involve the county agents with the program.</p>
<p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p>	<p>Specific projects include a parasite control demonstration which is of particular importance in eastern North Carolina's climate. Much time and effort are being spent with the 4-H and youth of the area since they will be the people who will most need the diversified enterprise to support another family on the same amount of acreage. A large effort is being made to secure a research facility for feeding cattle in this area.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Results of the on-farm demonstrations show that deworming feeder calves going on feed can add as much as .25 pounds per day to their gain. This savings could amount to \$15 per steer on feed. The number of 4-H'ers showing beef cattle in local shows increased 10 percent over the previous year.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Richard E. Lichtenwalner          Extension Animal Husbandry Specialist          N. C. State University          P. O. Box 322          Edenton, NC 27932          919/482-8086</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

A Total Program Approach to Produce Feeder Calves in North Carolina

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	<p>The primary beef program in North Carolina is the production of feeder calves. With the increased inflation rates and no increase in price of feeder calves, a program was initiated to cut animal production costs and hopefully increase production per cow unit.</p>
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	<p>The total approach of breeding, feeding, reproduction and management was initiated in a demonstration herd in Alexander County. This program involved the county agent, producer and specialist.</p>
<b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	<p>In 1977, the calving period was about six months, starting in November and ending in May. Performance tested bulls were purchased to use during the 1977 breeding season. Improved pasture management was initiated with fertilization and pasture rotation. The breeding season was gradually reduced to 65 days with open and slow breeding cows being culled from the herd. Calves were implanted with growth stimulants. Heifers sired by the performance tested bulls are being used as replacements to the herd.</p>
<b>What were the accomplishments</b>	<p>Estimated feed requirements and weights and prices received at state-sponsored feeder cattle sales were compared with previous years. The results of this program have shown an 8 percent increase in calves weaned, a 30-pound increase in weaned weight of calves and a reduction of \$20 per year in feed costs per cow. These practices in this herd have shown an increase in net income earned of \$50 per cow per year.</p>
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>  <b>How impacts were measured</b>	<p>From the knowledge gained from this demonstration, small beef farmers could increase their income over \$20,000,000 in North Carolina if these production practices were adopted.</p>
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	<p>From the knowledge gained from this demonstration, small beef farmers could increase their income over \$20,000,000 in North Carolina if these production practices were adopted.</p>
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	<p>Hayes Gregory        Extension Animal Husbandry Specialist        N. C. State University        Wilkes County Office Building        Wilkesboro, NC 28697        919/667-5111</p>



ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Beef Production and Management -- Training for New Livestock Agents  
 in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>Success of the beef extension program depends on agents being knowledgeable regarding current production practices and their economic impact. Because of rapid agent turnover and the limited farm background of many agents, it is especially critical that new agents receive prompt training. The goal of new agent training is to provide the agent with basic techniques related to nutrition, breeding, reproduction and management of beef cattle. In addition the agent is made aware of the success of information and other resources available. A classroom setting was used, and speakers were urged to make maximum use of visual aids. Each presentation was presented in written form for later use by the agents.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>Two days were devoted to the training, and all specialists in the beef section participated on the program.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>Seventeen agents were involved in the training. Based on an evaluation by agents at the end of the session, the agents were exposed to new and useful techniques which should promote the economic efficiency of beef production. In addition, their awareness of resources available for extension programs was increased.</p>
<p><b>What were the accomplishments</b></p>	<p>Through prompt new agent training, agents should become aware of the needs of beef cattlemen, and they should be more capable of responding to those needs themselves or with the help of a specialist.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p>	<p></p>
<p><b>How impacts were measured</b></p>	<p></p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p></p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Roger G. Crickenberger          Extension Animal Husbandry Specialist          N. C. State University          119 Polk Hall          Raleigh, NC 27607          919/737-2761</p>

POWER FY 81  
Section V-8.6  
Revised 1/81

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Beef Cattle -- Forage All-Practice Demonstration in Wayne County,  
North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>A small beef production unit was used to demonstrate to producers and agents the impact of maximizing forage production to maintain a beef herd. About 20 acres were provided to maintain a herd of 20 to 25 cows. The goal was to provide sufficient forage to carry the cows and their calves through the year.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>Linkage</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>Two forage crop specialists and a beef specialist were involved. A special \$2,500 grant from the Agricultural Extension Service was provided at the start of the project. The fencing materials were provided in part by Snell Fencing Company and Ag-Mark, Inc., and the demonstration was conducted on the James Hood Farm at Grantham.</p>
<p><b>What were the accomplishments</b></p>	<p>Adequate forage was produced to carry the cows and calves through the year, and acceptable rebreeding performance was achieved without feeding grain. Forage production was improved through pasture renovation, use of annual forages and rotating pastures. The farmer-cooperator benefitted directly, and numerous farmers and tour groups have viewed the demonstration.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b>    <b>How impacts were measured</b></p>	
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Plans are to conduct the project for several years to develop an economic analysis of the system and to provide additional cattlemen the opportunity to view the production techniques that are used.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Roger G. Crickenberger  Extension Animal Husbandry Specialist  N. C. State University  119 Polk Hall  Raleigh, NC 27607  919/737-2761</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Use of Food Processing Byproducts as Feeds for Beef Cattle on North Carolina Farms

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources Involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Efforts have been expended to provide beef producers with practical feeding systems that will allow use of food processing byproducts as a feedstuff. Many types of byproducts are available in the state, and producers who have access to them may decrease feed costs and increase profits if workable feeding systems are developed. Two feeding demonstrations were conducted to evaluate the usefulness of a wet potato byproduct as a feed for finishing cattle.</p> <p>A beef specialist and a livestock agent were involved in the project. Assistance was provided by Frito-Lay, Inc.; and the demonstrations were conducted on the Archie Mathis and Gurney Mathis Farms in Wilkes County.</p> <p>Workable feeding systems were developed whereby cattle readily went on feed with diets containing the byproduct and gains were comparable to those observed when diets were supplemented with corn at similar energy levels. The farmer-cooperators benefitted directly through reduced feed costs. The county agent benefitted by becoming acquainted with practical feeding systems using byproducts. Also, several tour groups, including out-of-state groups, have viewed the demonstrations.</p> <p>These demonstrations have shown farmers that byproducts can be used as feeds. As more of these materials become available, additional producers and agents should be interested in the cost-reduction benefits of byproduct feeding.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Roger G. Crickenberger          Extension Animal Husbandry Specialist          N. C. State University          119 Polk Hall          Raleigh, NC 27607          919/737-2761</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Sheep Production in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b></p>	<p>The sheep population in North Carolina has been declining for several years due to fencing and predators. With the more efficient fences available at present to control predators, the sheep population has started to increase.</p>		
<p><b>Innovations</b> <b>Linkage</b> <b>Clientele</b></p>			
<p><b>Resources Involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b></p>	<p>Research has shown a higher return per acre of grassland when cattle and sheep are grazed together, and several small farmers are adding sheep flocks to increase and diversify their income. At present, there is a program conducted by the North Carolina Extension Service and the North Carolina Department of Agriculture for the cooperative marketing of wool and lambs.</p>		
<p><b>What were the accomplishments</b></p>			
<p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p>	<p>There is a potential to increase net income by as much as \$1,000 per year for small farmers by the addition of a small flock of sheep to their existing enterprises.</p>		
<p><b>How impacts were measured</b></p>			
<p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>This program will be promoted more with the increased interest in sheep. There is a definite opportunity for many small producers.</p>		
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<table border="0"> <tr> <td>Hayes Gregory Ext. Ani. Husb. Spec. N. C. State Univ. Wilkes Co. Office Bldg. Wilkesboro, NC 28697 919/667-5111</td> <td>J. W. Patterson Ext. Ani. Husb. Spec. N. C. State Univ. 116 Polk Hall Raleigh, NC 27607 919/737-2761</td> </tr> </table>	Hayes Gregory Ext. Ani. Husb. Spec. N. C. State Univ. Wilkes Co. Office Bldg. Wilkesboro, NC 28697 919/667-5111	J. W. Patterson Ext. Ani. Husb. Spec. N. C. State Univ. 116 Polk Hall Raleigh, NC 27607 919/737-2761
Hayes Gregory Ext. Ani. Husb. Spec. N. C. State Univ. Wilkes Co. Office Bldg. Wilkesboro, NC 28697 919/667-5111	J. W. Patterson Ext. Ani. Husb. Spec. N. C. State Univ. 116 Polk Hall Raleigh, NC 27607 919/737-2761		

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

North Carolina 4-H Horse-Related Activities

TEXT/DESCRIPTOR

<p><b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b></p> <p><b>Innovations</b> <b>Linkage</b> <b>Clientele</b></p>	<p>4-H horse-related activities included horse bowl contests, horsemanship camps, judging contests, district and state shows, public speaking contests, demonstrations, camping and packing trips, horse management workshops, trail rides, handicap riding schools, essay contests, clinics and retreats.</p>		
<p><b>Resources Involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b></p>	<p>County agents, leaders and club members received assistance at training sessions, workshops and clinics held over the state.</p>		
<p><b>What were the accomplishments</b></p>	<p>Horse projects in the state totaled 5,295 in 1980. This included the following: 2,143 horse and pony project, 63 horse public speaking, 225 horse judging, 83 horse demonstration, 855 county horse shows, 465 district horse shows, 224 state horse show, 313 horse bowl, 657 trail rides, 210 horsemanship camps, and 57 mare and foal projects.</p>		
<p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p>	<p>The 5,295 youth involved learned the responsibility and discipline required in horse care. Project books were completed with above average attendance at clinics, demonstrations, contests and activities. Youth educated by this program have a basic knowledge of horse science which will aid them in future experiences. Public speaking, leadership, sportsmanship and self-confidence were enhanced.</p>		
<p><b>How impacts were measured</b></p>	<p>The 5,295 youth involved learned the responsibility and discipline required in horse care. Project books were completed with above average attendance at clinics, demonstrations, contests and activities. Youth educated by this program have a basic knowledge of horse science which will aid them in future experiences. Public speaking, leadership, sportsmanship and self-confidence were enhanced.</p>		
<p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>This is the fastest growing 4-H program in the state. Yet, there is a tremendous potential for expansion, especially in certain districts. The majority of youth involvement was located near metropolitan areas. Predominately rural districts had substantially lower participation, which is attributed to socio-economical factors. Increased participation will be emphasized.</p>		
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<table border="0"> <tr> <td>Bob Mowrey Ext. Ani. Husb. Spec. N. C. State Univ. 118 Polk Hall Raleigh, NC 27607 919/737-2761</td> <td>John Cornwell Asst. Prof., Animal Science N. C. State Univ. 211 Polk Hall Raleigh, NC 27607 919/737-2763</td> </tr> </table>	Bob Mowrey Ext. Ani. Husb. Spec. N. C. State Univ. 118 Polk Hall Raleigh, NC 27607 919/737-2761	John Cornwell Asst. Prof., Animal Science N. C. State Univ. 211 Polk Hall Raleigh, NC 27607 919/737-2763
Bob Mowrey Ext. Ani. Husb. Spec. N. C. State Univ. 118 Polk Hall Raleigh, NC 27607 919/737-2761	John Cornwell Asst. Prof., Animal Science N. C. State Univ. 211 Polk Hall Raleigh, NC 27607 919/737-2763		

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

North Carolina 4-H Sheep Activities

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>This project activity involved feeding, breeding, management, showmanship, marketing and shearing sheep. A breeding ewe addition at one show proved quite successful. 4-H youth fed and cared for ewe lambs consigned by breeders. Income was shared by youth and consignors. Market lamb and ewe shows will continue to receive emphasis.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>County agents, 4-H club members, parents and leaders received assistance with shearing schools, production, management and showmanship demonstrations. Response by financial supporters was excellent.</p>
<p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b></p> <p><b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p>	<p>A total of 142 lambs were entered in five junior shows. Three new shows were added. Four sheep shearing schools were conducted for juniors and adults.</p> <p>Awareness of the desirability of sheep projects, especially for rural non-farm and some urban youths, was demonstrated. Job skills improved, and income was supplemented among sheep shearers who can assist small flock owners with shearing.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Interest in sheep is increasing rapidly among youth and adults in North Carolina. Two junior shows with predominately non-farm youth demonstrated the feasibility of this meat animal project. This trend is to continue in the future.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>J. K. Butler, Jr.          Extension Animal Husbandry Specialist          N. C. State University          119 Polk Hall          Raleigh, NC 27607          919/737-2761</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

North Carolina 4-H Beef-Related Activities

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>4-H beef-related activities included production projects involving feeding, breeding, management and marketing and showmanship of beef cattle. Demonstration activities involved production, beef selection and beef cookery. The beef heifer project and beef cookery demonstrations will receive special emphasis in the future.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>County agents, leaders and club members received assistance at training sessions at the county and district level. Financial support from the business community was solicited, and the response was excellent.</p>
<p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p>	<p>A total of 497 steer, 178 beef breeding, 124 grazing projects, 157 steer performance records and 52 beef char-grill demonstrations were included in 1,008 activities in 75 counties. Twenty market steer shows and sales were held with 453 market steers being exhibited with the following grades: 335 graded choice, 99 good and 19 standard. Exhibitors received \$456,092 for the 478,760 pounds of market steers sold.</p>
<p><b>How impacts were measured</b></p>	<p>The youth involved learned the responsibility and discipline required in beef production.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Expansion is most likely to occur in the beef heifer and demonstration areas.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>J. K. Butler, Jr.          Extension Animal Husbandry Specialist          N. C. State University          119 Polk Hall          Raleigh, NC 27607          919/737-2761</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

North Carolina 4-H Swine-Related Activities

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>  <b>Innovations</b> <b>Linkage</b> <b>Clientele</b>  <b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	<p>Project activity involved feeding, breeding, management, showmanship and marketing of swine. Demonstrations involved production, pork selection and cookery. The market pig performance record and pork cookery will receive special emphasis in the future. The addition of performance records has increased market pig activity. It identifies project pigs and makes it practical to incorporate project pigs in a modern swine unit.</p> <p>County agents, leaders, parents and 4-H club members were assisted with demonstrations on production practices, showmanship and marketing. Literature and visuals were produced and provided for all swine-related activities. Sponsor financial support was excellent.</p>
<b>What were the accomplishments</b>  <b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>  <b>How impacts were measured</b>	<p>Activities this year totaled 994, with the following breakdown: 622 market pig, 60 brood sow projects, 264 pork production records and 48 pork cookery demonstrations. A total of 1,410 market pigs with a total weight of 304,820 pounds sold for \$219,447 in 17 shows.</p> <p>Youth, parents, leaders and county agents working in long- and short-term projects helped young people acquire experience in pork production.</p>
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	<p>Swine-related activities are expected to continue the expansion which began in 1977. Some non-farm youth involvement will be encouraged.</p>
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	<p>J. K. Butler, Jr.        Extension Animal Husbandry Specialist        N. C. State University        119 Polk Hall        Raleigh, NC 27607        919/737-2761</p>



## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

North Carolina 4-H Animal Science Related Activities

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	These activities include livestock judging and other activities not covered under species reported. Major emphasis in this area is livestock judging. This activity has increased and is expected to continue this trend in the future.
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	
<b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	4-H club members, county agents and leaders have received assistance at the county and district levels. Literature and visuals have been updated and distributed. Commodity associations have underwritten costs involved.
<b>What were the accomplishments</b>	A total of 692 youth were involved in livestock judging. Teams were entered in six district contests, one state contest, four regional contests and the national contest. Two judging clinics were sponsored by the North Carolina Hampshire and Yorkshire Breeders.
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>	
<b>How impacts were measured</b>	Youth, county agents and leaders received training in livestock judging and evaluation.
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	In the past six years, a consistent increase in interest has developed; and it is expected to continue. Present programs will expand, and additional counties will become involved.
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	J. K. Butler, Jr. Extension Animal Husbandry Specialist N. C. State University 119 Polk Hall Raleigh, NC 27607 919/737-2761

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

North Carolina Regional Swine Conferences

TEXT/DESCRIPTOR

<p><b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b></p> <p><b>Innovations</b> <b>Linkage</b> <b>Clientele</b></p> <p><b>Resources Involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>A series of meetings were planned and held in eleven different locations to cover current management and production problems. Emphasis was placed on family sized operations and operators that might or might not attend the Annual State Pork Producers Conference.</p> <p>Programs were planned in conjunction with agents and representative producers to the various areas. Local sponsors were obtained so that the program could include up to eight presentations and be extended over a meal period.</p> <p>Current problems and subjects were addressed by invited speakers obtained either locally or from the university or other in-State cooperating agencies. The result was some very meaningful programs with proceedings available to participants.</p> <p>Hopefully producers would glean useful information that could be incorporated in their operations. The conferences involved 1600 participants, but these people visited other people in attendance and hopefully discussed highlights with people back home. Livestock agents in attendance could use much of the information in their own county or community meetings or individual visits.</p> <p>These meetings help to underscore areas for further emphasis in individual county plans of work. Ultimately the impact will affect the significance of swine production in the particular areas.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>Kenneth Esbenshade, Extension Specialist North Carolina State University Extension Swine Husbandry P. O. Box 5127 Raleigh, NC 27650 919-737-2566</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

North Carolina Survey of Swine Feed for Aflatoxin

## TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>A survey of aflatoxin in feed and corn destined for swine served to document both incidence and levels. Questions existed as to aflatoxin levels versus time in storage and levels of management affecting aflatoxin levels.</p> <p>Between September 1, 1980 and August 31, 1981 samples were collected from 157 farms in 31 counties in eastern North Carolina. A total of 963 samples included 725 feed samples and 238 corn samples taken periodically throughout the year from the same participating farms.</p> <p>The North Carolina Pork Producers Association funded the project at \$3700. The agents in the participating counties took the samples and Extension Swine Technicians transported the samples. The North Carolina Department of Agriculture Laboratory ran 238 corn samples while a research lab at North Carolina State ran 725 feed samples.</p> <p>There is strong indication that the number of positive samples in a survey is as important an indicator as the amount of toxin found in an individual sample. In the first part of the survey, 90.8% of the corn samples and 50% of feed samples had detectable aflatoxin while later in the Spring, 93.3% of the feed samples tested positive for aflatoxin. It is suspected that storage problems are tremendous and account for about 50% of the aflatoxin problem. This should emphasize to producers that they should properly dry and properly maintain corn in storage and further to have corn checked before buying and buy clean corn.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>James R. Jones, Specialist In-Charge          North Carolina State University          Extension Swine Husbandry          P. O. Box 5127          Raleigh, NC 27650          919-737-2566</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Types of Mills and Swine Feed Analysis in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b> Emphasis Goals Scale</p> <p><b>Innovations</b> Linkage Clientele</p> <p><b>Resources Involved</b> Funds Staff time Other cooperators Special funding</p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b> Who benefitted What were benefits</p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b> Clientele yet to be served</p>	<p>Feed analyses were determined from feed samples prepared either in a proportion mill, a portable mill or a batch mixer to determine equipment capability. From four different situations, 44 feed samples were taken to determine if equipment limitations might be evident as shown in analyses. Some producers had questioned the product consistency and even the capability of proportion mills as to uniformity of product.</p> <p>The means for protein, calcium, phosphorus and sodium were acceptable but the ranges in values for the various locations across all types of equipment were unexpectedly great, except maybe for protein in the case of the portable mill. The ranges for calcium and phosphorus were noticeably large in all situations.</p> <p>This simple field study will help agents and producers alike to understand that the analysis is a summation influenced by equipment, use of equipment, knowledge of ingredients and sampling in addition to the various laboratory procedures. Hopefully they will understand that feed is mixed according to a formula, and if the right ingredient proportions don't go into a mixture, the desired formulation will not come about and hopefully an analysis is a check of management procedures.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>James R. Jones, Specialist In-Charge North Carolina State University Extension Swine Husbandry P. O. Box 5127 Raleigh, NC 27650 919-737-2566</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

ENERGY USE AND CONSERVATION IN NORTH CAROLINA  
POULTRY AND SWINE OPERATIONS

TEXT/DESCRIPTOR

<p><b>Program Description</b> Emphasis Goals Scale</p>	<p>Major emphasis is placed on adequate insulation, higher brooding densities, ventilation control, proper selection and maintenance of equipment and alternate energy sources. Informational pieces were developed and distributed at regional swine conferences, a poultry housing seminar, several national meetings and to producers at county meetings.</p>
<p><b>Innovations</b> Linkage Clientele</p>	<p>Three on-farm studies of partial house brooding for broilers have been in process for several years in cooperation with a poultry integrator. Energy use on swine farms is being monitored to establish a data base. Total energy use at the Swine Development Center, a demonstration of intensive commercial swine production, has been in progress for several years with results published annually in the Production and Financial Summary.</p>
<p><b>Resources involved</b> Funds Staff time Other cooperators Special funding</p>	<p>Results with partial room brooding in well constructed houses, adequately insulated have resulted in LP gas savings of 24% to 59% with the average around 30 to 35%. This translates into a potential savings of 2.3 cents to 8.5 cents per bird housed. North Carolina produces about 350,000,000 broilers annually with a fuel use of 45.3 gallons per 1000 birds or a total of 15,855,000 gallons. A savings of 30% represents a potential energy reduction of 4,756,500 gallons in the broiler industry alone. It is estimated that other poultry have an annual fuel usage of approximately 9,900,000 gallons with a potential savings of 2,970,000 gallons.</p>
<p><b>What were the accomplishments</b></p>	<p>Findings to establish average swine production energy use are approximately 11 kwh of electricity and 0.65 gallons of LP gas per pig weaned in the farrowing house and 11 kwh of electricity and 2 gallons of LP gas per pig weaned in the nursery. Of the total variable costs, electricity represents 1.85%, LP gas 2.46%, feed 86.9% and other 8.79%. Thus it is now possible to make comparisons of energy usage and their relative costs in working with producers on ways and means of minimizing energy use on swine farms.</p>
<p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p>	<p>The farm structures specialists conducts this project.</p>
<p><b>How impacts were measured</b></p>	<p>L. Bynum Driggers, Extension Specialist Biological and Agricultural Engineering North Carolina State University P. O. Box 5906 Raleigh, NC 27650 (919/737-2675)</p>
<p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Feasibility Analysis of Potential Use of Farm Credit in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b>          Emphasis          Goals          Scale</p> <p><b>Innovations</b>          Linkage          Clientele</p> <p><b>Resources involved</b>          Funds          Staff time          Other cooperators          Special funding</p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>          Who benefitted          What were benefits</p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>          Clientele yet to be served</p>	<p>Although all phases of poultry production have produced volumes in excess of those marketable at or above production costs this year, there has been some demand for expansion or replacement poultry house construction and some remodeling to improve the efficiency of specific company operations. Poultry and Economics specialists have prepared and distributed enterprise budgets showing expected cash flow under a range of contract terms, capital outlay for typical production units, and the effect of interest rate for farm credit on anticipated debt amortization and labor income from the enterprise. These have been used by present and potential producers, integrators and farm credit sources in feasibility analyses of proposed capital expenditure for poultry facilities.</p> <p>At interest rates that have prevailed this year, relatively few capital expenditures on poultry enterprises have been feasible. Individual consultation has been provided in some cases, especially those where flexible interest on prior loans had necessitated renegotiation of amortization schedules.</p> <p>Enterprise budget preparation and distribution is not a new activity nor is it an activity with a readily assignable dollar value. The emphasis on the influence of interest rates in the current revision and its use in feasibility assessment by producers, integrators and farm credit agencies have made it a significant component of the Extension program.</p>
<p><b>Contact person name and title</b>  <b>organization address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Grady Martin          Extension Poultry Specialist          202 Scott Hall          N. C. State University          Raleigh, NC 27607 919-737-2621</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Evaluation and Revitalization of Extension Newsletter in North Carolina

TEXT/DESCRIPTOR

<p>Program Description          Emphasis          Goals          Scale</p> <p>Innovations          Linkage          Clientele</p> <p>Resources involved          Funds          Staff time          Other cooperators          Special funding</p> <p>What were the accomplishments</p> <p>What were the impacts          Who benefitted          What were benefits</p> <p>How impacts were measured</p> <p>What are implications for future program          Clientele yet to be served</p>	<p><u>Poultry Pointers</u>, a newsletter for North Carolina egg producers, had experienced a 38% drop in mailing list when mailings were centralized and another 68% drop when the list was purged by return card. The return rate of an evaluation questionnaire sent to industry persons, specialists and county agents was high, especially from industry. The response indicated that the target audience was not being reached due to the ineffectiveness of purging a mailing list with a return card and inadequate emphasis on regularly identifying interested clientele. It also indicated a strong interest in continuing the newsletter with emphasis on in-depth information on specific topics and reports on applied research.</p> <p>Editorial pressure on newsletter content has emphasized in-depth coverage of topics of current interest. With less than one-half of the counties cooperating, the mailing list has exceeded pre-purge numbers and now stands at 900 poultrymen. Clientele identification and editorial ilk will continue toward maintaining <u>Poultry Pointers</u> as a vital tool in Extension education.</p>
<p>Contact person name and title          organization          address          city, state, zip code          telephone</p>	<p>Tom Carter          Extension Poultry Specialist.          208 Scott Hall          N. C. State University          Raleigh, NC 27607</p> <p>919-737-2621</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Fly Control and Waste Management in Layer Facilities in North Carolina

TEXT/DESCRIPTOR

<p>Program Description          Emphasis          Goals          Scale</p> <p>Innovations          Linkage          Clientele</p> <p>Resources involved          Funds          Staff time          Other cooperators          Special funding</p> <p>What were the accomplishments</p> <p>What were the impacts          Who benefitted          What were benefits</p> <p>How impacts were measured</p> <p>What are implications for future program          Clientele yet to be served</p>	<p>Layer and pullet production facilities which store and/or landspread manure have been the object of nuisance complaints and occasional lawsuits by occupants of nearby residential developments when inadequate waste management has been practiced. Extension specialists have assisted county Extension and Health Department personnel in assessing the magnitude of the problem and developing adequate waste and fly management programs on a case-by-case basis.</p> <p>The Entomology and Poultry Science Departments cooperated in obtaining funding for research and conducting field trials on manure management systems that nurture fly predators enough to maintain fly control with limited use of insecticides. These departments cooperated in providing intensive agent training and in preparing a newsletter to egg and pullet producers detailing manure management, fly predator protection, and selective insecticide use for each type of housing.</p> <p>Success of the program has been evident in reduced frequency of requests for specialist assistance, reduced frequency of justifiable complaints, and recognition that justifiable complaints stem from failure to follow the waste and fly management program rather than from failure of the program. Producers have benefited by lower cost of fly and odor control and by improved handling qualities of manure during land spreading. Their neighbors have benefited from reduced fly and odor nuisance near their residence.</p>
<p>Contact person name and title          organization          address          city, state, zip code          telephone</p>	<p>Tom Carter          Extension Poultry Specialist          208 Scott Hall          N. C. State University          Raleigh, NC 27607</p> <p>919-737-2621</p>



## ACCOMPLISHMENT REPORT

Immunization and Management for Disease Control in North Carolina

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Poultry companies have qualified fieldmen to supervise their disease immunization and prevention program. However, they require the services of the Extension Veterinarian in planning vaccination, preventive medication and management practices which constitute their program in assessing the effectiveness of the program and in prescribing corrective action when disease outbreaks penetrate the program. Eighty-four field visits were used in performing this service during the year.

Extensive disease problems that were alleviated during the year include:

1. A severe respiratory outbreak in a five-county concentrated broiler production area that was producing condemnations as high as 15%, accelerating medication costs, and reducing broiler weights. An in-depth investigation in cooperation with the N. C. Department of Agriculture diagnostic laboratory identified Newcastle disease as the cause. The county Extension agents cooperated in obtaining representation of the seven companies involved at a meeting where a change in the timing and method of administration of the vaccine was prescribed. The problem was reduced.
2. During the last two years infectious bursal disease (Gumboro) has been controlled in North Carolina by: a. studying the effects of the disease on the immune system, b. developing a serological monitoring system to determine the immune status, and c. setting up a vaccination program to insure high-titer immunity in breeders.
3. Colibacillosis, a major disease in turkeys, had become so well established that its response to medication was diminished. A prevention program was developed and presented to the industry at the 1980 "Turkey Day." Management and environmental sanitation of individual turkey companies was evaluated and improvements recommended during subsequent visits. The companies that have adopted this program have been able to discontinue costly preventive medication.

Other accomplishments during the year are evaluation of two drugs as additives to broiler feeds and disease control talks to two international, one national, four regional, six state and two area audiences.

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## ACCOMPLISHMENT REPORT

Feed Quality Control and Cost Reduction in North Carolina

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With ingredient cost accounting for up to 90% of manufactured feed cost and with an estimated 40 to 70% of the variability in finished feed quality attributable to variability of ingredient quality, ingredient inconsistency has been a focal point of feed quality control efforts. By summarizing quarterly and publishing ingredient analyses provided by cooperators and by emphasizing ingredient quality in newsletters, meetings and conferences, the industry has been led to purchase less variable ingredients with higher average values for key nutrients. Best estimates indicate that the N. C. poultry feed industry saved \$1.28 million due to this program in 1980. Quality control laboratories have been established in-house by several companies. Counsel, technical guidance and trouble-shooting assistance in establishing these labs have been provided by Extension. These labs are estimated to have saved about \$100,000 in 1980 in North Carolina.

Other effort has been concentrated on determining the prevalence and effect of sub-clinical levels of aflatoxin in broiler feeds. An average of 23.8% of the feeds examined had measurable levels of aflatoxin with a mean of 8.9 ppb. Compared to flocks on aflatoxin-free feeds, the flocks consuming feeds with the highest levels of aflatoxin were 2% lighter, had 1% poorer feed conversion, had 3.3% lower livability, and 24.5% higher condemnations and netted 9.6% lower grower payment. Correlation of aflatoxin levels with some environmental factors may provide an avenue for toxin reduction in feeds.

Broiler plane of nutrition quarterly reports to industry have been based on bird weight rather than bird age this year. Feeding to size rather than age is a general practice in the industry. Differences in feed cost per pound of broiler attributable to plane of nutrition ranged from 0.3 to 0.9 cents during the year.

Turkey research has shown that four feeds for toms and three feeds for hens are adequate. General practice has been to feed six to ten feeds. One firm increased from 22 to 42 tons per run, a saving of 58 working days per year of mill down time for formula changes. A national organization went entirely to three feeds for hens in 1980 and estimated an annual saving of \$600,000.

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ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Involvement of County Extension Personnel in Program in North Carolina

TEXT/DESCRIPTOR

<p>Program Description Emphasis Goals Scale</p> <p>Innovations Linkage Clientele</p> <p>Resources involved Funds Staff time Other cooperators Special funding</p> <p>What were the accomplishments</p> <p>What were the impacts Who benefitted What were benefits</p> <p>How impacts were measured</p> <p>What are implications for future program Clientele yet to be served</p>	<p>Efforts to increase involvement of county Extension agents in poultry programs advanced this activity. Examples of extensive involvement include:</p> <ol style="list-style-type: none"> <li>1. Attendance of county agents at the Egg Industry Conference and the Broiler Breeder Conference for in-service training.</li> <li>2. Participation in establishing or revitalizing the Wilkes Area Poultry Association, Shelby Area Poultry Association (seven counties), Tri-County Turkey Grower Association, Union-Anson Avian Health Council, and Chatham Area Servicemen's Association, all of which have had excellent educational programs and good attendance.</li> <li>3. Single county accomplishments include organization of 35 turkey producers and 15 chicken producers into the Anson County Poultry Association, sponsorship of educational programs in Wayne and Orange counties, and sponsorship of a broiler and breeder heat stress management conference in Iredell County which drew exhibits and attendance from a multi-state area which exceeded attendance at most state-wide conferences.</li> </ol>
<p>Contact person name and title organization address city, state, zip code telephone</p>	<p>Tom Carter Extension Poultry Specialist, 208 Scott Hall N. C. State University Raleigh, NC 27607</p> <p style="text-align: right;">919-737-2621</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Broiler Breeders in North Carolina

TEXT/DESCRIPTOR

<p>Program Description</p> <p>Emphasis Goals Scale</p> <p>Innovations Linkage Clientele</p> <p>Resources involved Funds Staff time Other cooperators Special funding</p> <p>What were the accomplishments</p> <p>What were the impacts Who benefitted What were benefits</p> <p>How impacts were measured</p> <p>What are implications for future program Clientele yet to be served</p>	<p>Two primary problems of broiler breeders have received most attention--heat stress and inefficient maturity and performance of spring-hatched flocks. Management to minimize heat stress was featured both at the Broiler Breeder Conference in October and at a special conference held in Iredell County in early summer. Leaders in industry response have gone as far as installation of evaporative cooling pads for breeder houses.</p> <p>Industry cooperation in setting up trial flocks of spring-hatched breeder pullets for light control programs has been excellent. Several houses were equipped with black-out curtains to shorten the day to the eight or nine hottest hours and use curtain ventilation during that time. Step up of light on these flocks has stimulated production somewhat less rapidly than expected but results appear to be excellent. Step down lighting in open houses has been less effective but appears to have improved flock uniformity and rate of increase in production. Full assessment of results is not available yet.</p>
<p>Contact person name and title organization address city, state, zip code telephone</p>	<p>Grady Martin Extension Poultry Specialist 202 Scott Hall N. C. State University Raleigh, NC 27607</p> <p>919-737-2621</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

ENERGY CONSERVATION AND ALTERNATIVE FUELS IN  
 AGRICULTURE FOR NORTH CAROLINA

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>The North Carolina Agricultural Extension Service received a three-year grant from the U. S. Department of Energy and locally administered through the North Carolina Energy Extension Service for Energy Extension work in agriculture. The program's purpose has been to provide an extensive educational program on more efficient farming practices and the practical use of alternate fuels. Specific areas of interest have included curing and crop drying, and swine and poultry production.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>The primary tool used in this effort has been the on-farm energy audit. The audit enables specific on-farm problems to be addressed and overall farm energy usage evaluated by trained extension personnel. The mini-computer has been extensively used in this data collection and energy savings determination. On-farm energy efficient demonstrations and county meetings have been key components in this work.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>Thirty-six tobacco energy audits have been performed with an additional 44 planned before January 1, 1982. Audits have been performed on 186 bulk tobacco barns in ten counties. Audit estimates show a potential savings of 75,000 gallons of LP gas or a savings of \$56,000 to the farmers audited thus far. Energy audits on all bulk barns in the state could initiate conservation practices that could save North Carolina farmers an estimated equivalent of 30 million gallons of oil worth 36 million dollars. Audits are being developed for a planned 50 swine farms and 20 poultry farms before January. Curing tobacco with wood, solar grain drying, solar collectors for swine houses, proper bulk barn insulation techniques, and alcohol production are a few of the demonstrations used this year. A total of 2000 tobacco farmers, 2000 swine farmers, 500 poultry farmers and 500 agricultural affiliated persons have been contacted by this program this year.</p>
<p><b>What were the accomplishments</b></p>	<p>The work of one Extension Specialist and two technicians has been supported by grant funds of about \$100,000 annually.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b>  <b>How impacts were measured</b></p>	<p>The work of one Extension Specialist and two technicians has been supported by grant funds of about \$100,000 annually.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Larry F. Graham, Extension Specialist      Biological and Agricultural Engineering      North Carolina State University      P. O. Box 5906      Raleigh, NC 27650      919/737-2675</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Larry F. Graham, Extension Specialist      Biological and Agricultural Engineering      North Carolina State University      P. O. Box 5906      Raleigh, NC 27650      919/737-2675</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

POULTRY HOUSING IN NORTH CAROLINA

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>Structural failures due to snow, ice, wind and/or improper construction result in considerable economic losses to the industry almost every year. These failures occur because with low economic returns too much emphasis is placed on initial housing costs and not enough emphasis on adequate structural integrity.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>An extensive appraisal of failure causes has been made in cooperation with poultry producers, poultry integrators, and county extension personnel. A number of meetings with builders, producers, integrators, contractors and representatives of lending institutions have been held to point out the causes of construction failure, possible renovations and good construction practices. Building plans have also been made available which include design techniques and construction practices to withstand the forces anticipated.</p>
<p><b>Resources Involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>A detailed report on structural design of poultry houses was prepared for the cover story in the November 1980 issue of Poultry Digest. This article has been reprinted and sent to extension offices, poultry producers and integrated firms and others upon request.</p>
<p><b>What were the accomplishments</b></p>	<p>In one county alone in 1980, the estimated losses from collapsed poultry houses were 10 million dollars. This problem is not unique to North Carolina, though. A headline in the January 23, 1978, issue of Poultry Times read, "\$18 Million Ice Storm Hits Arkansas Poultry Facilities."</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p>	<p>Some lending institutions are now requiring producers to follow plans developed through Extension or by professional engineers in order to minimize the potential for structural failures. Also, many houses that survived the last snow storm have been improved by installing additional supports and braces that increase the load carrying capacity.</p>
<p><b>How impacts were measured</b></p>	<p>The farm structures specialist conducts this project.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>L. Bynum Driggers, Extension Specialist          Biological and Agricultural Engineering          North Carolina State University          P. O. Box 5906          Raleigh, NC 27650          919/737-2675</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

 OPTIMIZING THE SUPPLEMENTAL USE OF LIVESTOCK  
 WASTE AS FERTILIZER IN NORTH CAROLINA

## TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Manure fertilizer nutrients in North Carolina have the potential to replace 100,000 tons of nitrogen, 30,000 tons of phosphorus, and 50,000 tons of potassium worth roughly 75 million dollars as inorganic fertilizer. However, these values cannot be realized unless the manure is properly handled and applied to cropland.</p> <p>A new plan was developed and introduced into the Plan Service for construction of earthen storage pits for a six-month accumulation of liquid manure. When compared to alternative liquid manure systems, this plan would save a 100-cow dairy about \$20,000 in construction costs. Approximately 30-40 dairies have constructed these pits during the past year.</p> <p>Due to the variability of waste nutrient concentrations, producers are encouraged to analyze waste prior to land application. During the first year of the state testing service about 70 analyses were made and an additional 125 producers received Extension based analyses. A minicomputer program was also prepared to assist swine farmers in equipment selection, waste management system costs, and the inclusion of manure into a complete agronomic and cropping program.</p> <p>Two on-farm tests were conducted demonstrating crop responses to swine waste. On one farm the application of 9000 gal/acre resulted in a corn yield of 77 bushels per acre compared to 67 bushels/acre with commercial fertilizer. The other farm test yielded 97 bushels of corn/acre from fields receiving 8000 gal/acre compared to 85 bushels/acre with commercial fertilizers.</p> <p>The full-time Extension Specialist conducted this work with supplemental funding from the N. C. Agricultural Foundation to support a full-time technician and in the amount of \$4000 for the last year.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>James C. Barker, Extension Specialist          Biological and Agricultural Engineering          North Carolina State University          P. O. Box 5906          Raleigh, NC 27650          919/737-2675</p>

3. BUSINESS MANAGEMENT AND ECONOMICS

The changing economic and political setting, along with expiration of the current farm bill, have caused farmers and others to seek to improve their management skills. Some of the major Extension thrusts designed to meet this need are computerized decision aids, economic outlook conferences, young farmer programs, board of director training and leasing alternatives.

Because of pressure upon recent tobacco legislation (among others), policy education has received increased emphasis. Farmland use-value taxation and analysis of tobacco rent are topics much in demand.

Through a CETA grant, the N. C. Agricultural Extension Service was enabled to provide a comprehensive reference manual of labor regulations for migrants working in the state.

<p>Extension economists developed problem-solving routines which were programmed for microcomputers.</p> <p>Computerized problems included (a) economics of tobacco irrigation, (b) tobacco leasing decisions and (c) preliminary work on a farm record-keeping program.</p> <p>Programs were used in agent-training meetings after discussions of background survey data.</p> <p>Future use may allow farmers to visit county Extension offices and solve problems on microcomputers using data related to their individual farm circumstances.</p>	<p>Resources involved</p> <p>Funds</p> <p>Staff time</p> <p>Other cooperators</p> <p>Special funding</p> <p>What were the accomplishments</p> <p>What were the impacts</p> <p>Who benefited</p> <p>How impacts were measured</p> <p>What are implications for future program</p> <p>Criteria yet to be served</p>
<p>James F. Pugh and Robert C. Wells Extension Economists N. C. State University Raleigh, NC 27607 919-377-3084 or 319-377-3101</p>	<p>Contact person name and title organization address city, state, zip code telephone</p>



## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Computerized Economic Decision-Aids in North Carolina

## TEXT/DESCRIPTOR

<b>Program Description</b> Emphasis Goals Scale	With some farmer businessmen acquiring home computers and a pilot program with 2 microcomputers in County Extension offices, efforts began in developing programs to aid in economic decisions.
<b>Innovations</b> Linkage Clientele	Demonstration programs were developed to show capabilities of the microcomputer and to incorporate typical economic decisions.
<b>Resources involved</b> Funds Staff time Other cooperators Special funding	Extension economists developed problem-solving routines which were programmed for microcomputers.
<b>What were the accomplishments</b>	Computerized problems included (a) economics of tobacco irrigation, (b) tobacco leasing decisions and (c) preliminary work on a farm record-keeping program.
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>	Programs were used in agent-training meetings after discussions of background survey data.
<b>How impacts were measured</b>	
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	Future uses may allow farmers to visit county Extension offices and solve problems on microcomputers using data tailored to their individual farm circumstances.
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	Charles R. Pugh and Robert C. Wells Extension Economists N. C. State University Raleigh, NC 27650, 919-737-3884 or 919-737-3107

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Economic Outlook Conference in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b> Emphasis Goals Scale</p> <p><b>Innovations</b> Linkage Clientele</p> <p><b>Resources involved</b> Funds Staff time Other cooperators Special funding</p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b> Who benefitted What were benefits</p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b> Clientele yet to be served</p>	<p>An early look at prospects for 1981 was taken at a state-wide Outlook Conference held in Raleigh, NC on October 1, 1980. The changing economic &amp; political setting, along with the expiration of the current farm bill, were prime topics of the conference.</p> <p>The program was developed by the NC Agricultural Extension Service &amp; faculty of the Dept. of Economics &amp; Business at NC State University; &amp; conducted at the McKimmon Continuing Education Center. A registration fee was charged to cover conference expenses.</p> <p>About 120 business and agricultural leaders &amp; educators participated in the conference. The program featured analyses of the current economy and elective sessions that examined particular economic sectors in detail.</p> <p>Favorable reaction resulted in planning a second such conference, to be held October 7, 1981.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>Charles R. Pugh Extension Economist N. C. State University Raleigh, NC 27650 919-737-3884</p>

## ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Tar Heel Economist: A Monthly Economics Publication for North Carolinians

**TEXT/DESCRIPTOR**

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	<p>The Tar Heel Economist is a monthly publication of Extension Economics and is designed to convey information on items of current economic interest to citizens. The goal is to improve the economic understanding of all readers, regardless of their expertise in the area of economics. Issues include agricultural and non-agricultural topics.</p>
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	<p>Approximately 7000 copies of each issue are distributed throughout North Carolina. The audience is representative of the entire state and is not confined to selected interest groups. The issues receive widespread distribution at the county level and thus fit into educational programs at that level.</p>
<b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	<p>The issues are coordinated by Extension economists but authorship contributions come from faculty in other departments and from non-Extension personnel as well. Cooperation from other departments is good because the publications are useful to the authors in their own educational programs as well as fulfilling the other objectives of Extension Economics.</p>
<b>What were the accomplishments</b>	<p>The Tar Heel Economist addresses issues that are complex. Because great effort is made to write each issue using terminology that is understandable to persons with a diversity of backgrounds, economic understanding is gained by readers without prior economic training. Information presented benefits the reader and society in many ways, ranging from improving the profitability of their own productive operation to more thoroughly understanding inflation, the operation of the economy and related topics.</p>
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>	<p>Economic concepts permeate the decision-making of individuals on an every-day basis. As new topics are addressed when they become of current interest and relevance, and as the issues receive more widespread distribution, economic understanding improves and better decision-making results.</p>
<b>How impacts were measured</b>	<p>Economic concepts permeate the decision-making of individuals on an every-day basis. As new topics are addressed when they become of current interest and relevance, and as the issues receive more widespread distribution, economic understanding improves and better decision-making results.</p>
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	<p>Leon E. Danielson, Editor        Tar Heel Economist        Extension Economics and Business        North Carolina Agricultural Extension Service        Raleigh, NC 27650        (919) 737-2256</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

North Carolina's Young Farmers Programs

TEXT/DESCRIPTOR

<p><b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b></p>	<p>A statewide program to improve the economic literacy and business management skills of young farmers with particular emphasis on farm management and agricultural marketing.</p>
<p><b>Innovations</b> <b>Linkage</b> <b>Clientele</b></p>	<p>A three-week Short Course in Modern Farming and team teaching for Executive Farmers Seminars using examples tailored to local conditions.</p>
<p><b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b></p>	<p>The N. C. Bankers Assoc. provided scholarship support for young farmers attending Short Course. All departments (18) in School of Agriculture and Life Sciences participate (80 instructors).</p> <p>Total participation in program 275 persons in 1981-82.</p>
<p><b>What were the accomplishments</b></p>	<p>Young farmers improved management and marketing practices. Farm plans were developed, tax management improved and leasing and business organization plans established. Improvement in net incomes reported.</p>
<p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p>	<p>Surveys of past participants and farm visits. Observation of farm business records. Reports from lenders financing young farmers.</p>
<p><b>How impacts were measured</b></p>	
<p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>Expansion of program planned. Incorporation of minicomputer(s) as a decision aid for young producers.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>R. C. Wells, Extension Economics and Business, North Carolina Agricultural Extension Service Raleigh, N. C. 27650 (919) 737-3107</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

North Carolina State University Center for Economic Education

TEXT/DESCRIPTOR

<p><b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b></p>	<p>A program of workshops and institutes presenting North Carolina kindergarten through twelfth grade teachers with the skills and knowledge to incorporate economic education in their classrooms.</p>
<p><b>Innovations</b> <b>Linkage</b> <b>Clientele</b></p>	<p>Materials developed at the State and national level allow workshop participants to include basic economic concepts, skills, and activities in their classroom activities.</p>
<p><b>Resources Involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b></p>	<p>The Center is affiliated with the North Carolina Council on Economic Education. The Council provides workshop materials and, where applicable, funding for teacher workshop participation.</p>
<p><b>What were the accomplishments</b></p>	<p>The 13 workshops presented by the Center reached 331 teachers throughout North Carolina. These teachers have a potential of reaching more than 8000 students.</p>
<p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p>	<p>A survey of workshop participants will be concluded in December 1981. Use of workshop materials in the classroom will be measured.</p>
<p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>In addition to increasing teacher workshops, the Center will expand its audience to include Extension 4-H Agents, volunteer leaders, ministers--rural and urban, and students in the NCSU teacher education program.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>Robert H. Usry, Extension Specialist N. C. Agricultural Extension Service P. O. Box 5576, NCSU Raleigh, NC 27607 (919) 737-2472</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Economics for North Carolina Youths

TEXT/DESCRIPTOR

<p>Program Description          Emphasis          Goals          Scale</p>	<p>Economics education efforts consist of the 4-H Economics in Action program (special interest format) and the American Business System 4-H Demonstration program.</p>
<p>Innovations          Linkage          Clientele</p>	<p>Extension Economics Specialists and Extension 4-H Agents assisted volunteer business and community leaders with the planning, implementation, and evaluation of 13 4-H Economics in Action programs which reached 580 high school students.</p>
<p>Resources involved          Funds          Staff time          Other cooperators          Special funding</p>	<p>Through interaction with 145 volunteer business persons representing 120 private businesses, the young people learned about the realities of their economic environment.</p>
<p>What were the accomplishments</p>	<p>The American Business System 4-H demonstration program reached 50 young people. This Extension 4-H youth program has allowed the participants to increase their economic understanding of the business world and to develop their public speaking skills. In 1980, the Cooperative Council of North Carolina contributed approximately \$2,000 to support the American Business System 4-H demonstration program.</p>
<p>What were the impacts          Who benefitted          What were benefits</p>	<p></p>
<p>How impacts were measured</p>	<p>In efforts to measure the impact of the 4-H Economics in Action program, pre- and post-tests were presented on an experimental basis. Improved scores (informal) indicate that students improved their understanding of selected concepts.</p>
<p>What are implications for future program          Clientele yet to be served</p>	<p>Place emphasis on developing 4-H EIA programs in "high youth concentration" urban population areas. Utilize the volunteer District Contact Persons in disseminating information about and promoting participation in the ABS 4-H demonstration program.</p>
<p>Contact person name and title          organization          address          city, state, zip code          telephone</p>	<p>Robert H. Usry, Extension Specialist          N. C. Agricultural Extension Service          P. O. Box 5576, NCSU          Raleigh, NC 27650          (919) 737-2472</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Cooperative Educational Activities, North Carolina

## TEXT/DESCRIPTOR

<p>Program Description Emphasis Goals Scale</p>	<p>A statewide field program which involves cooperative boards, managers and members/potential members in an educational program concerning cooperative principles and methods of operation.</p>
<p>Innovations Linkage Clientele</p>	<p>Programs are conducted with the cooperation and involvement of the Cooperative Council of North Carolina and its membership in both the planning and execution of meetings.</p>
<p>Resources involved Funds Staff time Other cooperators Special funding</p>	<p>An annual Institute for Cooperative Directors and Managers is presented at four locations across the state and an annual Young Couples Conference is held at a central location. Numerous other individual office conferences are held with cooperative managers, members, and directors during the year. Specialists and agents participate in educational and committee meetings sponsored by the Cooperative Council during the year. Specialist is a member of the Board of the Cooperative Council.</p>
<p>What were the accomplishments</p>	<p>Two hundred managers and directors attend the annual Institute for Cooperative and twenty five couples have been sponsored to the Young Couples Conference annually. Several major cooperatives are consistently utilizing information obtained in these conference and personnel trained in these conferences to improve their membership programs. The University has established itself as the major statewide contact for information and assistance concerning cooperative formation, operation and development.</p>
<p>What were the impacts Who benefitted What were benefits</p>	<p>The 103 cooperatives in North Carolina serve over 600,000 members. Providing an educational program for this clientele group effectively serves the rural people of North Carolina. Improvements in member understanding of cooperatives, especially for electric and telephone cooperatives, is an important goal of current educational programs.</p>
<p>How impacts were measured</p>	
<p>What are implications for future program Clientele yet to be served</p>	
<p>Contact person name and title organization address city, state, zip code telephone</p>	<p>Robert D. Dahle, Extension Economist-Business Management, North Carolina Agricultural Extension Service, Raleigh, N. C. 27650-5576  (919) 737-2885</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Board of Director Training, North Carolina

## TEXT/DESCRIPTOR

<p>Program Description Emphasis Goals Scale</p>	<p>A statewide field program in teaching North Carolinians about the role and function of the Board of Directors and its relationship to management.</p>
<p>Innovations Linkage Clientele</p>	<p>A slide set and publication were developed by specialist to permit extension agents to conduct training with or without the assistance of the specialist.</p>
<p>Resources involved Funds Staff time Other cooperators Special funding</p>	<p>Seminars have been presented by specialists and agents during the year in several locations.</p>
<p>What were the accomplishments</p>	<p>Members of boards have been very impressed with the information and have indicated that it has improved the operation of their organization and the relationship between the board and management and among board members.</p>
<p>What were the impacts Who benefitted What were benefits</p>	<p>520,000. Two hundred training materials mailed.</p>
<p>How impacts were measured</p>	<p>Budget guidelines will be needed for planning future years.</p>
<p>What are implications for future program Clientele yet to be served</p>	<p>Continued emphasis will be placed on board training with an expanded group of agents. Agents will receive formal training in the training materials at the annual extension conference in 1982.</p>
<p>Contact person name and title organization address city, state, zip code telephone</p>	<p>Robert D. Dahle, Extension Economist-Business Management, North Carolina Agricultural Extension Service, Raleigh, N. C. 27650-5576  (919) 737-2885</p>



ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

North Carolina Farm Enterprise Budget Guidelines

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Cientele</b></p> <p><b>Resources Involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Cientele yet to be served</b></p>	<p>An ongoing statewide program to provide farmers and farm lenders with current costs of production and return estimates for North Carolina farm enterprises for use in farm planning and financing.</p> <p>County agents and lenders are furnished with file copies of updated enterprise budgets.</p> <p>Seventy-four 1981 enterprise budget guidelines based upon recommended production practices were developed by production and farm management specialists and distributed in the fall of 1980. A survey of farm custom rates was conducted in January 1981 and file summaries distributed to agents and lenders.</p> <p>The budget information and promotion of recommended production practices increases the net farm incomes of farm operators and the availability of credit for making profitable innovations and changes in farming. Potential annual net income increases per farm range from \$100 to \$20,000. Two hundred forty lenders are on the budget guidelines mailing list.</p> <p>Budget guidelines will be needed by agents, lenders and farmers for planning farm operations in 1982 and subsequent years.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>D. F. Neuman, Extension Economist          North Carolina Agricultural Extension Service          Raleigh, NC 27650          919-737-2472</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Costs of Producing Certain North Carolina Farm Products

TEXT/DESCRIPTOR

<p>Program Description Emphasis Goals Scale</p>	<p>Cost of production studies conducted for milk and tobacco. The milk study was conducted for the N. C. Milk Commission to provide data for farm milk price determination. Data for 73 N.C. dairy farms was analyzed. Tobacco cost analyses were developed to provide some bench marks of typical on-farm costs. Tobacco is North Carolina's most valuable farm enterprise and dairying ranks fifth.</p>
<p>Innovations Linkage Clientele</p>	
<p>Resources involved Funds Staff time Other cooperators Special funding</p>	<p>The milk study was funded by an \$8,300 grant from the N. C. Milk Commission to cover the costs of a part-time data collector, computer time and publication. Extension specialists time was provided in addition. Clerical assistance for the tobacco study was provided, in part, by a grant from the N.C. Tobacco Foundation. Extension specialists time was provided.</p>
<p>What were the accomplishments</p>	
<p>What were the impacts Who benefitted What were benefits</p>	<p>The milk cost of production study assisted the N.C. Milk Commission in setting the farm price of milk. Thus, the established milk prices better reflect economic conditions, improving economic conditions, improving economic efficiency in N.C. milk markets to the benefit of consumers, producers and processors. The tobacco study showed some of the divergence in costs among farms related to yield and size differences.</p>
<p>How impacts were measured</p>	
<p>What are implications for future program Clientele yet to be served</p>	<p>These costs of production studies will be continued on an annual basis because of the continuous change in economic conditions.</p>
<p>Contact person name and title organization address city, state, zip code telephone</p>	<p>G. A. Benson and C. R. Pugh Department of Economics and Business, NCSU, P. O. Box 5576, Raleigh, N. C. 27650 (919) 737-3881 (G. A. Benson) or 737-3884 (C. R. Pugh)</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

North Carolina Milk Commission Pricing Formula

TEXT/DESCRIPTOR

<p>Program Description          Emphasis          Goals          Scale</p>	<p>Comprehensive revision of the economic formula used by the N.C. Milk Commission to set the farm price of fluid grade (Grade A) milk in North Carolina. The farm value of N.C. milk was estimated to be \$204 million in 1980.</p>
<p>Innovations          Linkage          Clientele</p>	<p>Revisions were developed in cooperation with a Milk Commission committee and in consultation with the dairy industry. Testimony was presented in public hearings.</p>
<p>Resources involved          Funds          Staff time          Other cooperators          Special funding</p>	<p>Resources involved were specialist time, Milk Commissioners time and that of selected industry personnel.</p>
<p>What were the accomplishments</p>	<p>The economic formula was revised to better reflect the effects of changes in economic conditions in the farm price of milk. Thus, the established milk prices better reflect economic conditions, improving the economic efficiency in N.C. milk markets to the benefit of consumers, producers and processors.</p>
<p>What were the impacts          Who benefitted          What were benefits          How impacts were measured</p>	<p>Continued monitoring of the performance of the formula with revisions as needed. The N.C. dairy industry needs additional education in dairy regulation.</p>
<p>What are implications for future program          Clientele yet to be served</p>	<p>Continued monitoring of the performance of the formula with revisions as needed. The N.C. dairy industry needs additional education in dairy regulation.</p>
<p>Contact person name and title          organization          address          city, state, zip code          telephone</p>	<p>G. A. Benson, Extension Economist,          Department of Economics and Business,          NCSU, P. O. Box 5576,          Raleigh, N. C. 27650          (919) 737-3881</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Tobacco Policy Education in North Carolina

TEXT/DESCRIPTOR

<p>Program Description          Emphasis          Goals          Scale</p>	<p>A continuing flow of educational material has been provided to tobacco industry leaders &amp; the general public as an aid to understanding the provisions of the tobacco program. With various legislative alternatives that are subject to periodic discussions such a background aids in understanding the likely consequences.</p>
<p>Innovations          Linkage          Clientele</p>	
<p>Resources involved          Funds          Staff time          Other cooperators          Special funding</p>	
<p>What were the accomplishments</p>	<p>Many of the policy educational efforts including news releases and training programs for county agents and farmers drew upon material in the series of leaflets entitled "Tobacco Marketing Policy Alternatives," published by a regional task force.</p>
<p>What were the impacts          Who benefitted          What were benefits</p>	
<p>How impacts were measured</p>	
<p>What are implications for future program          Clientele yet to be served</p>	
<p>Contact person name and title          organization          address          city, state, zip code          telephone</p>	<p>Charles R. Pugh          Extension Economist          N. C. State University          Raleigh, NC 27650          919-737-3884</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Analysis of Tobacco Rent in North Carolina

## TEXT/DESCRIPTOR

<p><b>Program Description</b> Emphasis Goals Scale</p>	<p>Much attention has been directed at the increased rental of flue-cured tobacco quota &amp; the rising nominal rent paid. Yet the rent varies by area and role of general inflation pose problems of interpretation.</p>
<p><b>Innovations</b> Linkage Clientele</p>	
<p><b>Resources Involved</b> Funds Staff time Other cooperators Special funding</p>	<p>An applied study compared the level &amp; distribution of rents in 1977-80 with a study from the late 1960's.</p>
<p><b>What were the accomplishments</b></p>	<p>The increase in level of tobacco rents was primarily related to inflation; i.e. rent as a percent of tobacco price had not changed significantly.</p>
<p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>  <b>How impacts were measured</b></p>	<p>Estimates of prevailing rent by Extension agents in each NC county were used in the analysis. The results were published as Economics Special Report 66 at NC State University under the title, "County Lease Rates for Flue-Cured Tobacco Revisited."</p>
<p><b>What are implications for future program</b> Clientele yet to be served</p>	<p>This conclusion may temper policy discussions which have tended to accent trends in nominal rent, rather than real rent.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>Charles R. Pugh Extension Economist N. C. State University Raleigh, NC 27650  919-737-3884</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

North Carolina Tomato Ground Management Study

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>An economic feasibility study of alternative weed management systems in trellis tomatoes was conducted in two counties in 1980 and 1981. Benefits and costs associated with plastic mulch, straw mulch, clean cultivation, a non-cultivated herbicide control program, and fumigation utilizing cultivation on staked tomatoes were estimated. Specialists from Horticulture, Economics, Entomology, and Plant Pathology cooperated jointly on this project.</p> <p>Preliminary results suggest that trellis tomato producers in western N.C. could increase net returns by growing tomatoes without cultivation, fumigating the soil before transplanting, and by utilizing plastic mulch. Added returns exceed added costs which increases net profit. These results are counter-intuitive to many growers since the inexpensive, frequently-practiced ground management techniques are not as cost effective as the more expensive alternatives. Figures suggest that net profits could improve by as much as \$900 per acre if proper ground management practices were adopted by trellised tomato growers.</p>
<p><b>Contact person name and title</b>  <b>organization address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Edmund A. Estes, Asst. Professor          Extension Economics and Business          Agricultural Extension Service          North Carolina State University          Raleigh, NC 27650          (919) 737-2605</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Business Management and Marketing Decisionmaking for North Carolina Ornamental Producers

TEXT/DESCRIPTOR

<p>Program Description          Emphasis          Goals          Scale</p>	<p>A statewide program in teaching business management and marketing principles to North Carolina ornamental producers and to evaluate the future needs of the state's ornamental industry.</p>
<p>Innovations          Linkage          Clientele</p>	<p>A simplified recordkeeping system was developed specifically for ornamental producers. Educational material covering various accounting topics and problems that are associated with ornamental crops were also prepared.</p>
<p>Resources Involved          Funds          Staff time          Other cooperators          Special funding</p>	<p>Specialists visited various nurseries and retail outlets and conducted office conferences with individuals during the year.</p>
<p>What were the accomplishments</p>	<p>Educational needs were identified and seminars have been organized for county agents, ornamental producers and commodity groups for 1982. These will be on-going educational efforts.</p>
<p>What were the impacts          Who benefitted          What were benefits          How impacts were measured</p>	<p></p>
<p>What are implications for future program          Clientele yet to be served</p>	<p>Extension personnel will be increasingly involved in assisting ornamental producers with business management education and business activities associated with the movement of ornamental products through marketing channels.</p>
<p>Contact person name and title          organization          address          city, state, zip code          telephone</p>	<p>C.D. Safley, Extension Economist, Fruits and Ornamentals - Marketing and Management, North Carolina Agricultural Extension Service, Raleigh, N.C. 27650          919-737-2605</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Creep Grazing for North Carolina Cow-Calf Farms

**TEXT/DESCRIPTOR**

<p><b>Program Description</b> Emphasis Goals Scale</p> <p><b>Innovations</b> Linkage Clientele</p> <p><b>Resources involved</b> Funds Staff time Other cooperators Special funding</p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>Determine cost and returns to various alternative cow-calf grazing methods, including creep grazing.</p> <p>Publish results and present findings at beef producer meetings in North Carolina</p> <p>Creep grazing calves at an intensive stocking rate can increase net returns per acre by \$5.00 to \$20.00 over conventional grazing systems.</p> <p>Producers will be encouraged to implement creep grazing alternatives to increase net returns per acre and to conserve scarce land.</p>
<p><b>Contact person name and title</b> <b>organization address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>J.E. Standaert, Extension Economics and Business, North Carolina Agricultural Extension Service, Raleigh, N.C. 27650 (919) 737-2258.</p>



ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Information Systems for North Carolina Farmers

**TEXT/DESCRIPTOR**

<b>Program Description</b> Emphasis Goals Scale	Principles of business record keeping, analysis and taxation are taught to selected North Carolina farmers.
<b>Innovations</b> Linkage Clientele	Monthly processed financial statements and annual business reports and tax schedules are provided 440 enrolled farmer cooperators.
<b>Resources involved</b> Funds Staff time Other cooperators Special funding	Farmers are assisted by specialists and agents in maintaining this comprehensive records program.
<b>What were the accomplishments</b>	Increased access to management information was provided these farm operators. Tax savings and lower tax preparation fees accrued to some of this group. Improved communication with lenders was another benefit derived by some of the producers.
<b>What were the impacts</b> <b>Who benefited</b> <b>What were benefits</b>	
<b>How impacts were measured</b>	
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	Farmers recordkeeping skills and business decisions will be improved. Analysis summaries will aid other producers in management. Clientele will continue to increase.
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	S. R. Sutter, Extension Farm Business Specialist North Carolina Agricultural Extension Service P. O. Box 5576, Raleigh, NC 27650-5576 (919) 737-2885

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Migrant Labor Regulations in North Carolina

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	An analysis of federal and North Carolina migrant labor regulations to improve compliance by farmers and living and working conditions for migrant and seasonal farm workers.
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	An Advisory Task Force consisting of regulatory agency, migrant advocacy and farmer representatives established to provide project direction. Close working relations established with regulatory agencies to evaluate regulations.
<b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	Funds provided by CETA and full time specialist hired to conduct one-year study. U. S. Dept. of Labor, OSHA, N. C. Dept. of Labor, N. C. Dept. of Human Resources, N. C. Farm Workers Legal Services, N. C. Migrant and Seasonal Farm Workers were cooperating agencies.
<b>What were the accomplishments</b>	Completion of a comprehensive reference manual for farmers and agency staffs, bilingual written and typed material for migrants. Training for farmers, extension agents and agency staff.
<b>What were the impacts</b> <b>Who benefited</b> <b>What were benefits</b>	A better understanding of regulations by regulatory agencies, farmers and extension agencies.
<b>How impacts were measured</b>	
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	Additional educational programs for farmers. Cooperation from regulatory agencies in education promised. Updating of regulations planned, continuing dialogue with regulatory agencies and migrant advocacy groups.
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	R. C. Wells, Extension Economics and Business, North Carolina Agricultural Extension Service Raleigh, N. C. (919) 737-3107

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Income Tax Management for North Carolina Families

**TEXT/DESCRIPTOR**

<p><b>Program Description</b> Emphasis Goals Scale</p> <p><b>Innovations</b> Linkage Clientele</p> <p><b>Resources involved</b> Funds Staff time Other cooperators Special funding</p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>A continuing education program in North Carolina to increase awareness among tax practitioners, farmers, small businesses, commercial fishermen, the elderly, and young families about federal and state income tax laws and income tax management.</p> <p>Publications and lesson plans were developed by extension specialists to assist county agents, tax practitioners and other specialists to conduct seminars on income tax laws and tax management. Cooperating agencies were the Internal Revenue Service, North Carolina Dept. of Revenue and the North Carolina Society of Accountants.</p> <p>Ten regional seminars were conducted by the North Carolina Extension Service for tax practitioners. Over forty local income tax seminars were held for farmers, small businesses, commercial fishermen, the elderly, and young families.</p> <p>Nine hundred and ninety tax practitioners received continuing education on federal and state income tax laws and regulations. These tax practitioners reported filing 243,000 federal and state forms in 1980. Approximately 1,000 North Carolina farmers, small businesses, and families participated in local tax seminars. Savings to tax payer in reduced tax liability and, therefore, increased after tax income is estimated to be several million dollars annually.</p> <p>Local tax practitioners and county agents will be increasingly involved in assisting extension specialists with continuing education programs on income tax management.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>W. D. Eickhoff, Extension Economics and Business North Carolina Agricultural Extension Service Raleigh, NC 27650 919-737-2472</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Farmland Use-Value Taxation in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b> Emphasis Goals Scale</p>	<p>A statewide program to inform local tax officials and owners of agricultural land in North Carolina about the Agricultural Land Tax Act of 1973 and its application.</p>
<p><b>Innovations</b> Linkage Clientele</p>	<p>A survey of 1980 participation under the Act was made and copies of the report distributed to tax supervisors, agents, tax appraisers and landowners. Brochures and other materials were provided to agents for conducting their own programs in revalued counties.</p>
<p><b>Resources involved</b> Funds Staff time Other cooperators Special funding</p>	
<p><b>What were the accomplishments</b></p>	<p>Seminars were presented by specialists to officials in three counties initiating revaluation during the year. Agents in several counties with revaluations effective in the year conducted informational programs for landowners. The number of land tracts taxed on use-value increased by 40 percent in 1980. According to the survey, nearly 26,000 tracts of agricultural land in North Carolina was taxed on use value in 1980 with an average tax reduction or deference of \$180 per tract for the owners.</p>
<p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p>	
<p><b>How impacts were measured</b></p>	
<p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>Land owners and officials of the counties yet to be revaluated since the Act was amended in 1975.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>D. F. Neuman, Extension Economist North Carolina Agricultural Extension Service Raleigh, NC 27650 919-737-2472</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Estate Planning for North Carolina Families

TEXT/DESCRIPTOR

<p>Program Description          Emphasis          Goals          Scale</p>	<p>A statewide field program for teaching North Carolinians about estate planning.</p>
<p>Innovations          Linkage          Clientele          Resources Involved          Funds          Staff time          Other cooperators          Special funding</p>	<p>A slide-tape set and lesson plans were developed by specialists to allow extension agents to conduct estate planning seminars with or without the assistance of local resource people.</p>
<p>What were the accomplishments          What were the impacts          Who benefitted          What were benefits          How impacts were measured</p>	<p>Eighty-four agents were trained. Many agents now conduct their own estate planning seminars. In addition, seminars were presented by specialists and office conferences held with individuals and families during the year.          Field observations indicate many individuals and families have prepared wills and revised their overall estate plans. Potential tax savings per estate range from \$1,000 to \$70,000.</p>
<p>What are implications for future program          Clientele yet to be served</p>	<p>Local estate planning professionals will be increasingly involved in assisting extension with estate planning education.</p>
<p>Contact person name and title          organization          address          city, state, zip code          telephone</p>	<p>Nathan M. Garren, Extension Specialist, Agricultural Law          North Carolina Agricultural Extension Service          Raleigh, N.C. 27650 919-737-2472</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Business Organizations and Leasing Alternatives for North Carolina Farmers

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	An educational packet containing materials on business organizations and leasing alternatives was developed by specialists. An in-service training program was conducted at four locations within the state.
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	County extension agents and farm families
<b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	
<b>What were the accomplishments</b>	Fifty-six agents were trained to assist farm families in business planning. In addition, seminars were presented by specialists and office conferences held with individuals and families during the year.
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>	Field observations indicate that many farm families have an increased awareness of the need for proper business planning in order to accomplish their goal of "saving the family farm."
<b>How impacts were measured</b>	
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	Local resource people will be increasingly utilized in carrying out educational programs in business planning. New emphasis will be in the area of small agri-businesses other than farming.
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	Nathan M. Garren, Extension Specialist, Agricultural Law North Carolina Agricultural Extension Service Raleigh, N.C. 27650 919-737-2472

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

North Carolina Farmland Market

TEXT/DESCRIPTOR

<p>Program Description          Emphasis          Goals          Scale</p>	<p>The focus of the farmland market program during the reporting period was to collect data and publish information related to the use of rural land, the nature of nonfarm demands for farmland and ownership characteristics of farmland owners and farmland buyers.</p>
<p>Innovations          Linkage          Clientele          Resources involved          Funds          Staff time          Other cooperators          Special funding</p>	<p>Publications and news releases were made available throughout the state for use in local programs related to land use planning and land development. Materials were widely disseminated and were used, for example, by newspapers and radio stations, and by organizations conducting educational programs in land-use.</p> <p>Data were collected on farmland sales in cases where land was converted to nonfarm use and in cases where land continued to be used for farm purposes. Land ownership data were summarized from tapes containing results of USDA surveys.</p>
<p>What were the accomplishments          What were the impacts          Who benefitted          What were benefits          How impacts were measured</p>	<p>Results of the studies have been used in a wide variety of ways including county educational programs and as input into planning programs at the county level. There is a better understanding of the land market, who owns farmland in North Carolina and the nature of the demand for farmland.</p>
<p>What are implications for future program          Clientele yet to be served</p>	<p>Further results of these studies are being summarized. Thus, the program is building and will receive increased visibility as time passes. It is expected that information still to be disseminated will directly be usable in planning and related programs at the local level throughout the state.</p>
<p>Contact person name and title          organization          address          city, state, zip code          telephone</p>	<p>Leon E. Danielson, Extension Economist          Extension Economics and Business          North Carolina Agricultural Extension Service          Raleigh, NC 27650          (919) 737-2256</p>

4. AGRICULTURAL MARKETING AND FARM SUPPLIES

The two departments primarily responsible for generating information relative to marketing are Economics and Business and Food Science, although other departments collaborate. The highly volatile input and product prices of 1981 have placed increased demands for information upon these departments.

The major thrusts have been food safety, plant efficiency, energy conservation, improved testing procedures and improved management of corporate and cooperative marketing firms.

<p>...the fact that they can have some influence on prices and helps them develop the skills that are needed in analyzing various marketing alternatives.</p>	<p>Scale</p>
<p>...and their wives, agricultural leaders and county extension agents. Four to eight-hour workshops have been used to cover the subject matter. These have proved effective and have been well received by the clientele.</p>	<p>Innovations Linkage Clientele</p>
<p>...workshops were organized by two marketing specialists in a team teaching effort. One workshop which was held at a small college in the western part of the state attracted over 100 participants. Cooperation in arranging and sponsoring the workshop included the marketing department of the college and the county extension agent.</p>	<p>Resources involved Funds Staff time Other cooperators Special funding</p>
<p>...for such long emphasis by farmers has been on the production of agricultural products with very little attention given to marketing. Helping them to develop marketing skills through the use of problem sets involving time, data and space decisions can create an awareness of the importance of marketing in their overall management plan. Such has been the case with farmers attending these seminars. Agents have reported that farmers who attended these meetings are doing a better job in analyzing market conditions and other factors in making their marketing decisions.</p>	<p>What were the accomplishments?</p>
<p>...look information and evaluating their marketing alternatives.</p>	<p>What were the major parts who benefited who benefited what were benefits</p>
<p>...many extension agents and other professionals will be assigned to help producers become better skilled in analyzing marketing problems and evaluating opportunities.</p>	<p>How benefits were measured</p>
<p>...T. Herbert Nichols, Jr., Extension Director and Business Development Specialist, North Carolina Agricultural Experiment Station, Raleigh, NC 27650. Phone: (919) 757-4351.</p>	<p>What are implications for future programs? Clientele yet to be served</p>
<p>...</p>	<p>Contact person name and title organization address city, state, zip code telephone</p>



## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Producer Marketing in North Carolina

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	An in-depth producer marketing program was initiated to help N.C. farmers to better understand the close relationship that exists between production and marketing functions and how their decisions regarding when, where and what form they market their products determine how profitable their operations will be. The program stresses the fact that they can have some influence on price and helps them develop the skills that are needed in analyzing various marketing alternatives.
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	Lesson plans, visuals and problem sets were developed for use in workshops and seminars held for producers and their wives, agricultural lenders and county extension agents. Four to eight-hour workshops have been used to cover the subject matter. These have proved effective and have been well received by the clientele.
<b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	Seminars and workshops were presented by two marketing specialists in a team teaching effort. One workshop which was held at a small college in the western part of the state attracted over 100 participants. Cooperators in arranging and sponsoring the workshop included business department of the college and the county extension chairman.
<b>What were the accomplishments</b>  <b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>  <b>How impacts were measured</b>	For much too long emphasis by farmers has been on the production of agricultural products with very little attention given to marketing. Helping them to develop marketing skills through the use of problem sets involving time, form and space decisions can create an awareness of the importance of marketing in their overall management plan. Such has been the case with farmers attending these seminars. Agents have reported that farmers who attended these meetings are doing a much better job in analyzing futures markets and other outlook information and evaluating their marketing alternatives.
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	County extension agents and other professionals will be trained to help producers become better skilled in analyzing marketing problems and evaluating opportunities.
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	T. Everett Nichols, Jr., Extension Economics and Business North Carolina Agricultural Extension Service P. O. Box 5576 Raleigh, NC 27650 Phone: (919) 737-3951

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Direct Farmer-to-Consumer Marketing in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b> Emphasis Goals Scale</p>	<p>A statewide field program was developed to assist growers and agents in determining the economic potential of direct marketing in their area. Program content includes: (1) characteristics concerning local supply and local demand for horticultural crops; (2) information on retailing and merchandising produce; (3) sources of funds for facilities; and (4) identification of added benefits and added costs of direct marketing. Local meetings with growers were conducted on ten occasions last year which resulted in additional marketing alternatives for many limited resource producers.</p>
<p><b>Innovations</b> <b>Linkage</b> <b>Clientele</b> <b>Resources Involved</b> Funds Staff time Other cooperators Special funding</p>	<p>The intent of this program is not to encourage or discourage direct marketing, but rather to identify one or more appropriate forms of direct farmer-to-consumer marketing that can satisfy local needs. Beneficiaries of this program are limited resource farmers who do not have sufficient volume or quality to access conventional marketing systems, but who can grow limited amounts of quality produce.</p>
<p><b>What were the accomplishments</b></p>	
<p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p>	
<p><b>How impacts were measured</b></p>	
<p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>Edmund A. Estes, Charles Safley, Asst. Professors Extension Economics and Business Agricultural Extension Service North Carolina State University Raleigh, NC 27650 (919) 737-2605</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Plant Feasibility Studies in North Carolina

**TEXT/DESCRIPTOR**

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	A program to determine the economic feasibility of potential investments in agricultural and food processing facilities in the state. Comparative advantage, resource requirements, market location, investment requirements, operating costs, expected revenues, cash flow, and rates of return are emphasized.
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	An applied research approach, focusing on specific requests from commodity groups, farm organizations, firm operators and potential investors, is used to develop appropriate educational materials for assessing the feasibility of specific situations.
<b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	Specialists obtain appropriate data from primary and secondary sources, develop analytical framework, conduct economic analysis, summarize results and present results to clientele groups.
<b>What were the accomplishments</b>	Feasibility studies were conducted on topics including investing in a poultry rendering facility, location of a grain terminal, on-farm grain storage, farmers markets, hog slaughtering facilities and gasohol production.
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>	These studies provide information to decision makers for their use in guiding resource use, reducing risk and improving the functioning and efficiency of agricultural marketing systems.
<b>How impacts were measured</b>	Guides to program impacts are obtained from the way in which decision makers use the results obtained from individual feasibility studies and from changes over time in the number, structure and competitive performance of firms operating in the state.
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	Knowledge gained from these studies will be beneficial in conducting feasibility analyses on other commodities as well as in updating the specific commodities analyzed when future requests are received.
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	R. C. Brooks, Extension Economics and Business North Carolina Agricultural Extension Service Raleigh, NC 27650 Phone: (919) 737-2256

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Economic Considerations in Cutting-Up Poultry in Processing Plants in N.C.

**TEXT/DESCRIPTOR**

<p><b>Program Description</b> Emphasis Goals Scale</p>	<p>The objective of this activity was to determine the economics of cutting-up poultry in processing plants in order to upgrade product and as a marketing service of regular Grade A products.</p>
<p><b>Innovations</b> Linkage Clientele</p>	<p>Data from plant observations were used to establish typical cutting line arrangements, labor requirements, production rates and product loss from cutting operations to determine the economic considerations for establishing cut-up operations.</p>
<p><b>Resources involved</b> Funds Staff time Other cooperators Special funding</p>	<p>Market prices for whole birds and cut-up parts were analyzed to determine expected price differences for whole bird and cut-up parts to further aid decision makers in evaluating cutting operations.</p>
<p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p> <p><b>How impacts were measured</b></p>	<p>Data obtained from plant observations indicate that production rates for cutting operations generally range from 380 to 420 pounds per man hour. With labor costs in processing plants of \$4 per hour, the cost of labor to cut-up poultry would be about 1 cent per pound, less than half the cost for cutting in retail stores and central warehouses in major consuming centers. These findings suggest that there will be an increasing shift of cut-up operations back to processing plants. This will provide increased employment opportunities within broiler producing states and provide consumers with cut-up poultry at lower costs.</p>
<p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>Independent poultry operators will be provided with the findings from this activity and this will enable them to better evaluate the future of cutting operations for their plants.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>R. C. Brooks, Extension Economics and Business North Carolina Agricultural Extension Service Raleigh, NC 27650 Phone: (919) 737-2256</p>

## ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Labor Management in Poultry Processing Plants, North Carolina

**TEXT/DESCRIPTOR**

<b>Program Description</b> Emphasis Goals Scale	Labor management in agribusiness firms is an area of concern by labor and management. Management needs to know the important concerns of labor and labor needs to feel that management wants to know and will respond to their concerns.
<b>Innovations</b> Linkage Clientele	The poultry economist developed a survey instrument designed for labor to convey their concerns to management. The survey form is designed to permit the measuring of employee responses and to evaluate relative responses over time within a plant and between plants at a given moment in time.
<b>Resources involved</b> Funds Staff time Other cooperators Special funding	The survey form was provided to all poultry processors in the state and approximately 50 out-of-state firms. Firms were able to reproduce copies for their individual operations.
<b>What were the accomplishments</b>	Five processors are known to have used the survey during the past year and the results covering approximately 1,000 employees were made available to the extension poultry economist for use in evaluating the usefulness of the survey in further work.
<b>What were the impacts</b> Who benefitted What were benefits	Participating firms were able to obtain greater insights into employee concerns and were able to determine the strengths and weaknesses in their labor management program which could lead to improved operating efficiency and greater employee satisfaction.
<b>How impacts were measured</b>	Managers will be able to measure changes in production rates, labor turnover and employee absenteeism.
<b>What are implications for future program</b> Clientele yet to be served	Knowledge gained from the use of the survey form will provide a background for developing other educational programs in labor management for agribusiness firms.
<b>Contact person</b> name and title organization address city, state, zip code telephone	R. C. Brooks, Extension Economics and Business North Carolina Agricultural Extension Service Raleigh, NC 27650 Phone: (919) 737-2256

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Grain Elevator Bankruptcies in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>An educational program concerned with issues about bankruptcies of grain elevators in N.C. and other Southeastern states was initiated because of the losses of over \$5.5 million which some farmers had sustained and the widespread fear of additional losses among other farmers. The objectives of the program were to determine the root causes of elevator insolvencies, how they could be avoided and the need for additional legislation to protect farmers against losses.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>A publication identifying the major causal factors involved in elevator bankruptcies and outlining the options for avoiding future bankruptcies was developed based on research conducted at N. C. State University Illinois Legislative Council, USDA and from other land grant universities. Four fact sheets, concerning legal and economic information on grain merchandising, contracts and how to analyze them and recommendations to farmers on ways to detect and avoid risky grain buyers were prepared for distribution to county agents, farmers, agricultural lenders and grain dealers.</p>
<p><b>Resources Involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>Two regional seminars attended by county ext. agents, producers, bankers, PCA &amp; FHA supervisors, grain dealers, legislators, farm organization leaders and regulatory personnel from the state departments of agriculture were held in N.C. and S.C. These seminars were planned and sponsored by the N.C. &amp; S.C. Ag Ext. Serv., the Carolinas Va. Grain &amp; Feed Assoc. and the N.C. &amp; S.C. Dept. of Ag.</p>
<p><b>What were the accomplishments</b></p>	<p>Over 250 people attended the two seminars. The large attendance and the lively discussion during the question and answer period indicated the high level of interest in the program. Agents and others have expressed an interest in conducting similar programs for producers in their county. As a result of this meeting, some of the farm leaders who favored the enactment of an indemnity fund, legislation is now looking at other options which would provide equal protection to farmers at less cost.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b>  <b>How impacts were measured</b></p>	<p>Additional meetings with farmers, farm leaders, legislators &amp; grain buyers will be held in the winter and spring to provide info. and guidance on elevator bankruptcy issues.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>T. Everett Nichols, Jr., Economics and Business          North Carolina Agricultural Extension Service          P. O. Box 5576          Raleigh, NC 27650          Phone: (919) 737-3951</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Consumer Economics Education for North Carolina Households Via the Mass Media.

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	This program utilizes the mass media (radio and T.V.) to educate large numbers of North Carolina households on economic topics of current concern and interest.
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	The program is carried via a weekly radio program and participation in a weekly T.V. program. The extension specialist in consumer economics is responsible for program content and is assisted in technical matters by extension radio and T.V. editors.
<b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	The radio program, titled "The Economic Perspective" is carried by 70 stations statewide. In 1981 the program won a Media Award for Economic Understanding sponsored by Dartmouth College and Champion Industries. The T.V. program is carried on public television in North Carolina.
<b>What were the accomplishments</b>	The radio program, titled "The Economic Perspective" is carried by 70 stations statewide. In 1981 the program won a Media Award for Economic Understanding sponsored by Dartmouth College and Champion Industries. The T.V. program is carried on public television in North Carolina.
<b>What were the impacts</b>	The general public benefits from being exposed to the economic considerations of current questions and interest. The topics span from national and state policy to individual decisions.
<b>Who benefitted</b>	Efforts are being made to increase the number of radio stations carrying the program.
<b>What were benefits</b>	The general public benefits from being exposed to the economic considerations of current questions and interest. The topics span from national and state policy to individual decisions.
<b>How impacts were measured</b>	Efforts are being made to increase the number of radio stations carrying the program.
<b>What are implications for future program</b>	The general public benefits from being exposed to the economic considerations of current questions and interest. The topics span from national and state policy to individual decisions.
<b>Clientele yet to be served</b>	Efforts are being made to increase the number of radio stations carrying the program.
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	M.L. Walden, Extension Economist - Consumer Economics, North Carolina Agricultural Extension Service, Raleigh, N.C. 27650 (919) 737-2258.

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Alternatives to the Passbook Savings Account for North Carolina Households.

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	This program is designed to assist North Carolina households to cope with inflation by providing information and decision aides on safe, low denomination alternative financial investments to the passbook savings account.
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	Two major publications, one on money market funds and one on all-savers certificates were printed and distributed to county extension offices, the mass media, and to individuals. Radio and television programs and county meetings were also conducted by the extension specialist in consumer economics as part of the program.
<b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	(This information is covered in the previous section.)
<b>What were the accomplishments</b>	Every county has been exposed to the information. Approximately 3,000 copies of the money market fund publication were distributed between October 1980 and September 1981.
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>	By taking advantage of a money market fund investment, which are safe, low denomination investments that preserve the liquidity of passbook savings accounts, an individual could have doubled or tripled his investment rate of return in 1981.
<b>How impacts were measured</b>	(This information is covered in the previous section.)
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	(This information is covered in the previous section.)
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	M.L. Walden, Extension Economist - Consumer Economics, North Carolina Agricultural Extension Service, Raleigh, N.C. 27650 (919) 737-2258.



ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Improving Yields and Maintaining Quality of Poultry Foods - Eggs and Meat -  
 in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>Educational workshop programs were planned, developed and presented to certain poultry food processing plant personnel. The goal was to increase the yield of quality shell eggs and enhance the shelf life of poultry meat foods. North Carolina's poultry industry was the target. The program was presented to groups of 15 to 50 employees. Prepared materials were given to each participant.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>Available materials, supplies and personnel from allied industry, poultry food processors and academia assisted with each program effort. Facilities were provided by each participating firm or industry group. Specialized needs were provided by university participants.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>Food product characteristics were discussed. If these are permitted to deteriorate, product yields and quality is impaired. Each area where the product moved contained opportunities for impact. People, mechanical, chemical, temperature, microbiological, etc. impacts were discussed from the standpoint of causes, preventive measures and alternative technology. Corrections and refinement in process procedures resulted in the conservation of food and reduced costs. Of all eggs received by shell egg processors, 85 to 90% are distributed as Grade A. A one percent increase in this yield amounts to a one day production from North Carolina's 6½ - 7 million "table egg" hens. Similarly, as the number of microorganisms associated with the spoilage of ice-packed poultry are further reduced by improved processing and handling procedures, refrigerated shelf life can be extended by as much as 3 to 4 days. This translates to an annual savings of approximately 2 million pounds of ready-to-cook poultry in North Carolina.</p>
<p><b>What were the accomplishments</b></p>	<p>Reaction from audiences indicates that workshop sessions be continued. Additionally, information on different areas of technology should be developed and data updated.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b>  <b>How impacts were measured</b></p>	<p>Reaction from audiences indicates that workshop sessions be continued. Additionally, information on different areas of technology should be developed and data updated.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Reaction from audiences indicates that workshop sessions be continued. Additionally, information on different areas of technology should be developed and data updated.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Fred R. Tarver, Jr. - Poultry Food Products Specialist          Food Science Extension          129 Schaub Hall-NCSU          Raleigh, N.C. 27650          (919) 737-2956</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Quality and Wholesome Poultry Food and Environmental Concerns in North Carolina

## TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Previous investigations and resulting conclusions from a shelf life study on ice-packed whole ready-to-cook broiler chickens, and covers for live haul poultry trucks ( broiler chicken), were prepared for scientific presentation and scientific papers.</p> <p>The shelf life of ice-packed chicken was assessed by microbiological counts through 14 days of refrigerated storage. Additionally, information was available according to seasons over the five consecutive quarter study. The second activity was a field study of considerable duration to restrict free feathers to live-haul trucks while enroute from the farm to processing plant.</p> <p>Abstracts of these efforts were prepared and submitted to the Poultry Science Association. They were accepted for presentation at the 1981 Annual Meeting, August 3-7, 1981, at the University of British Columbia, Vancouver, British Columbia. The international audience heard how iced-packed poultry produced in North Carolina had a shelf life of 10-12 days in refrigerated storage at 2°C. ± 1.5°C. They were also advised on the use of a spun nylon fiber material as a cover over a tractor trailer load of live broiler chickens, and its effectiveness in restricting free feathers without harming live poultry.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Fred R. Tarver, Jr.- Poultry Food Products Specialist          Food Science Extension          129 Schaub Hall, NCSU          Raleigh, N.C. 27650          (919) 737-2956</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Improved Efficiency and Sanitation in Food Plants and Food Handling Establishments  
in North Carolina

## TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefited</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>A program to improve food plant efficiency and product quality and to extend shelf life of food products was executed. The program emphasized current technology in product handling, sanitation and prevention of food-borne illnesses. With the increased demand for technology and the necessity for more efficient use of faculty, Food Science Extension has increased its offerings for on-campus training of food industry personnel. Special attention has been directed to regulations and standards to keep industry aware of current developments.</p> <p>Shortcourses, conferences, and workshops have been conducted to fulfill the food industry's needs. Offerings have included; Food Protection Shortcourse, Milk Shortcourse, Dairy Sales Shortcourse, Sanitarian and Fieldmen Conference, Meat Plant Sanitation Workshop, Community Canning Workshop, and three Food Handling and Preparation Workshops. Food Science Extension and research personnel participated in various programs to bring current expertise and technology to the food industry. A bi-weekly "hot-line" to appraise the food industry of current changes in regulations and standards has been initiated. All food commodities are serviced.</p> <p>Proper sanitation in food handling and preparation was provided to 125 food-handling personnel. Over 400 food industry personnel were trained. Industrial food processing firms benefited from these training programs. Comparable training supplied by consulting firms would cost the industry approximately \$200,000.</p> <p>The situation is presently being assessed to determine where Food Science Extension can be of greater service to the food industry.</p>
<p><b>Contact person name and title</b>  <b>organization address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Max E. Gregory - Extension Specialist          Food Science Extension          129 Schaub Hall, NCSU          Raleigh, N.C. 27650          (919) 737-2956</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Improved Food Quality through Food Sanitation and Safety Practices in North Carolina.

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>A program on sanitation in food handling, processing and distribution was carried out. The program emphasized proper handling of perishable foods and the prevention of food-borne illness, as well as awareness of current standards and regulations.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>Education programs consisting of slide sets, flip cards, printed materials, and newsletters were developed. Fifteen workshops were held for vendors and other food handlers. The Food Protection Workshop was held in cooperation with Division of Sanitarians. A Food Sanitation Workshop was held in cooperation with Food &amp; Drug Protection Division, N.C.D.A. Numerous conferences and training sessions were held with vendors at the request of N.C.D.A.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>Proper food handling techniques were demonstrated to over 400 food handlers. Results show 20% less returns on sandwiches and salads, a savings of over \$75,000. per year. Salad processors extended shelf-life on 15% of their products, realizing increased profits of over \$120,000. Three spoilage problems with sandwiches and barbeque sauce were researched and resolved, preventing the loss of \$75,000 in products. Two vendors with embargoed products were allowed to continue production as the problem was investigated, thereby preventing the loss of up to 60 days sales with a value up to \$250,000. Educational programs were held for 36 vendors, caterers, and restauranters in a county experiencing a food-borne illness outbreak involving over 300 cases at a cost of over \$500,000.</p>
<p><b>What were the accomplishments</b></p>	<p>Two food-borne outbreaks are still under investigation and will require education of food handlers. Excess food losses still occur due to temperature, poor sanitation and improper handling procedures.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p>	<p>Two vendors with embargoed products were allowed to continue production as the problem was investigated, thereby preventing the loss of up to 60 days sales with a value up to \$250,000. Educational programs were held for 36 vendors, caterers, and restauranters in a county experiencing a food-borne illness outbreak involving over 300 cases at a cost of over \$500,000.</p>
<p><b>How impacts were measured</b></p>	<p>Two vendors with embargoed products were allowed to continue production as the problem was investigated, thereby preventing the loss of up to 60 days sales with a value up to \$250,000. Educational programs were held for 36 vendors, caterers, and restauranters in a county experiencing a food-borne illness outbreak involving over 300 cases at a cost of over \$500,000.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Two food-borne outbreaks are still under investigation and will require education of food handlers. Excess food losses still occur due to temperature, poor sanitation and improper handling procedures.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Dr. Marshall K. Hill-Food Sanitation &amp; Safety Specialist          Extension Food Science          129 Schaub Hall, NCSU          Raleigh, N.C. 27650          (919) 737-2956</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Improvement of Fruit & Vegetable Grower-Processor Relationships in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>During the past few years, the fruit and vegetable processing industry has undergone major changes; such as the establishment of new facilities and the purchase of older facilities by established out-of-state processors. This has resulted in larger operations requiring more raw materials. The program is oriented to minimize the differences between growers and processors.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>Another objective is to maximize the opportunities to capture a greater share of the consumer dollar.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>The information disseminated is primarily presented at commodity, county and other similar meetings. Processing qualities of breeding lines and new cultivars are evaluated in cooperation with the research faculty and the horticultural specialists.</p>
<p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p>	<p>This has been an on-going program for almost two decades. The former antagonism demonstrated between growers and processors has diminished as the industry has grown and matured. Grower-processor relationships are good at the present time. Very few lawsuits were filed during the past few years as a result of contract violations. The growers and processors are working cooperatively and most seem to be relatively satisfied with their portion of the food dollar.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>The program will continue for the foreseeable future. Such programs require constant surveillance to prevent small differences from becoming major confrontations between growers and processors. After almost twenty years of dedication by many individuals and organizations to reach the current level of cooperation, the program will be extended to cover new growers, new processors and new crops.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Norman C. Miller, Jr. Specialist in Charge          Fruit and Vegetable Specialist          Extension Food Science          129 Schaub Hall, NCSU          Raleigh, N.C. 27650 (919) 737-2956</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Increasing Fruit and Vegetable Processor Awareness of New Regulations,  
Consumer Trends, etc. in North Carolina

## TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Regulations are being promulgated so rapidly that it is difficult to keep appraised of them. Perhaps consumer groups are intent on breaking up big business to increase competition. However, the proliferation of regulations to which only big business can comply, negates this goal. North Carolina has many small processors; some employing as few as three full time employees. This program is an effort to keep all processors aware of existing and proposed regulations. Included in this program is the voluntary regulation of community canneries.</p> <p>Three short courses on Food Manufacturing Processes were given during the year; two for commercial processors and one for community canneries. Over 75 people were certified as having satisfactorily completed the commercial course and 28 for the community canneries program. Part of the developmental funds for the original course came from a grant from the North Carolina Agricultural Foundation's "Nickels for Know-How" Program. A new bi-weekly newsletter to all food processors is being instituted to make industry more aware of developmental trends and impending regulations. This should reduce response time for the industry to critical situations.</p> <p>This program involves almost all of the Food Science Extension Staff. This phase of the program will increase in activity and importance as time and resources permit. This program demonstrates a viable option to mandatory regulations since progressive educational programs may accomplish more than a minimal regulatory effort.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Norman C. Miller, Jr. Specialist in Charge  Fruit and Vegetable Specialist  Extension Food Science  129 Schaub Hall, NCSU  Raleigh, N.C. 27650</p>

(919) 737-2956

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Increase Food Production and Improve Energy Conservation in Country Ham Processing in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>A program was developed to investigate a more efficient system for producers of North Carolina Country Hams and to increase plant capacity without plant expansion. The program stresses a lower usage of sodium chloride through improved curing and alternative processing techniques. The market for North Carolina Country Hams is changing from the production of a "bone-in" product to further-processed items to meet the needs of the "Fast Food" industry. The objective is a 25% increase in production with current energy usage and plant space.</p> <p>Equipment has been acquired to develop new processing techniques required for the new system. Initially, the tests are being conducted in the Meats Pilot Plant. The raw materials are being supplied by country ham processors. Demonstrations, short courses, and in-plant assistance will be given to implement the successful system.</p> <p>The program is being carried out with the cooperation of Food Science research personnel. Equipment is either loaned by equipment manufacturing companies or donated by a meat processor.</p> <p>Preliminary results indicate that the cure mix usage can be reduced 25 to 35% and processing time decreased 30 to 40%. The decreased cure mix will allow a lower and more uniform amount of sodium chloride. A reduction in processing time will decrease refrigeration energy usage and increase finished product volume without a plant expansion.</p> <p>The successful implementation of the system would require a capital investment of \$80,000 for a 4000 hams/week operation. It may be possible to increase production to 5000 hams/week with a capital investment of \$100,000 instead of \$2.5 million as estimated by a N.C. processor who is presently considering a plant expansion.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Dwain H. Pilkington, - Meat Specialist          Food Science Extension          129 Schaub Hall- NCSU          Raleigh, N.C. 27650          (919) 737-2956</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Energy Conservation in Food Plants in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b></p>	<p>A program to conserve energy in food processing plants was continued during the past year because of the continuing increase in the cost of energy and the threat of scarcity of available energy supplies. The program has stressed both low cost process changes and simple conservation techniques. Also, sophisticated and expensive energy recovery systems were employed.</p>
<p><b>Innovations</b> <b>Linkage</b> <b>Clientele</b></p>	<p>The program was directed at the management of dairy processing plants. Bulletins were distributed at meetings of dairy processors and were mailed to selected clients. Information was presented during plant visits and meetings. The data were based on national surveys and energy conservation demonstration grants. In addition, ideas were shared from the success of other dairy plants in the state. In-plant demonstrations were encouraged and the results have been well-received by other plants.</p>
<p><b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b></p>	
<p><b>What were the accomplishments</b></p>	<p>Three heat recovery systems have been installed to heat hot water for clean-up. In one plant, all the energy required to heat 30,000 gallons per day is being recovered from the refrigeration systems. Additional savings have accrued from reduction in fan and pump usage. The system, though costing about \$ 250,000 will have about an 18-month payback period. If all N.C. plants had similar savings, the energy cost reduction, at 1981 costs, would approach \$2.5 million per year.</p>
<p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p>	<p>Two plants have installed turbulators in their broilers. In one of these dairy plants, a 30% energy savings was attained through a reduction in the stack temperatures, ( approx. 100°F.).</p>
<p><b>How impacts were measured</b></p>	<p>The results of these demonstrations and other cost savings methods could reduce the energy requirement in food processing by more than 20 percent.</p>
<p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>Roy E. Carawan - Food Engineering Specialist Food Science Extension 129 Schaub Hall, NCSU Raleigh, N.C. 27650 (919) 737-2956</p>



ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Food Processing Plant Water Use and Waste Reductions in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefited</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>A program on efficient use of water and minimizing loss of product to reduce waste was continued in food processing plants. The need to help protect the environment and the increasing costs of water and waste treatment makes such a program essential. The program includes management assistance and employee education. It stresses reduced water use and waste control. Emphasis is placed on the fact that water is a raw material that costs money and wastes are often products that are intentionally or inadvertently lost during processing.</p> <p>Bulletins and booklets have been developed based on EPA, USDA, SEA-Extension work and research at this institution. The primary clientele during the last year were dairy processing plants.</p> <p>Several on-going demonstrations were continued. In one plant, water use was decreased by more than 50%; with about a 75% reduction in waste load during the same period. Several other plants have shown similar significant reductions over the last several years. When projected for all N.C. dairy processing plants, total water use reductions may exceed 10 million gallons per year. Reductions in operating costs for individual dairy plants as a result of this program will exceed \$100,000 annually.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Roy E. Carawan - Food Engineering Specialist  Food Science Extension  129 Schaub Hall, NCSU  Raleigh, N.C. 27650  (919) 737-2956</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Improvement of Chemical Testing Procedures for Food and Service Laboratories in North Carolina.

## TEXT/DESCRIPTOR

<p>Program Description Emphasis Goals Scale</p> <p>Innovations Linkage Clientele</p>	<p>A program of assistance and guidance to food processing plants and a service laboratory (Dairy Herd Improvement Association) was initiated. This program was designed to improve the accuracy of testing for fat and total solids in dairy products by food processors which would allow them to maintain contract specifications and prevent plant losses due to improper monitoring of ingredients. Milk fat is one of the most expensive ingredients in dairy products. Proper fat testing by the service laboratory is determined by proper machine calibration which is accomplished by a volumetric (Babcock) procedure.</p>
<p>Resources involved Funds Staff time Other cooperators Special funding</p>	<p>Demonstrations and training programs were conducted to develop proper procedures for fat and total solids testing. Standard procedures were modified to obtain reliable and consistent results. These results were compared with AOAC procedures performed within the laboratory. Equipment manufacturers were contacted, problems discussed and their recommendations used to develop modified procedures.</p>
<p>What were the accomplishments</p> <p>What were the impacts Who benefitted What were benefits</p>	<p>The one processing company maintained their contract with a restaurant chain and decreased their plant losses by improved testing and monitoring procedures. The contract was valued at approximately \$30,000 and the decrease in plant losses at approximately \$10,000. The DHIA laboratory currently has approximately 700 herds and more than 70,000 animals being tested within the state of North Carolina. Farmers use information gained from this service for feeding based on production, herd culling and selection of breeding stock. In addition the laboratory is currently testing approximately 18,000 animals from the state of Florida.</p>
<p>How impacts were measured</p> <p>What are implications for future program Clientele yet to be served</p>	<p>A program involving a larger number of dairy processing plants in proper testing techniques and keeping industry aware of current developments in this area is being investigated. A continued cooperative effort with the Dairy Herd Improvement Association is planned. As milk production costs increase, this service will allow dairy producers to become more efficient and increase their profit margin.</p>
<p>Contact person name and title organization address city, state, zip code telephone</p>	<p>Lynn G. Turner Extension 4-H Specialist Food Science Extension NCSU Raleigh, N. C. 27650 (919)727-2968</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

The "Torrymeter" freshness tester keeps fishermen honest in N. C.

TEXT/DESCRIPTOR

<p><b>Program Description</b></p>	
<p><b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>An electronic freshness tester, the Torrymeter, has been tested by the Seafood Lab. Previous publications have reported early results. This meter can be used on any species, and can give a general idea of the freshness of a fish or the age of a fish on ice. The meter is standardized for a given species, and then used to judge quality accurately. It can be used for quality control in buying fish by processors, wholesalers, retailers, and restaurant owners.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>Bacteriological criteria of freshness may take 2-3 days. Usual chemical tests may take from a few minutes to hours to perform. The electronic freshness tester gives precise readings in seconds and gives a quality index immediately. It helps assure proper care and handling aboard ship, at the dock, at all levels of trade where fresh fish are handled. The portability of the instrument lends itself to field or lab use.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>The application of the Torrymeter is being accepted by the commercial seafood industry as a valuable tool. The extent of application permits its use in recreational fisheries, fishing tournaments, etc where over-zealous participants might enter previously frozen specimens. The Torrymeter easily detect the fraud.</p>
<p><b>What were the accomplishments</b></p>	<p>Reduction in losses and improved quality in commercial and recreational fisheries are being achieved using the Torrymeter freshness tester.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p>	
<p><b>How impacts were measured</b></p>	
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Frank B. Thomas        Extension Seafood Specialist        Dept. of Food Science, NCSU        Raleigh, N. C. 27650        (919) 737-2956</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Further Processing of North Carolina Seafoods

TEXT/DESCRIPTOR

<p>Program Description Emphasis Goals Scale</p> <p>Innovations Linkage Clientele</p> <p>Resources involved Funds Staff time Other cooperators Special funding</p> <p>What were the accomplishments</p> <p>What were the impacts Who benefitted What were benefits</p> <p>How impacts were measured</p> <p>What are implications for future program Clientele yet to be served</p>	<p>Traditionally North Carolina seafoods have been marketed fresh. The fresh market has offered the advantage of a quick return on cash invested and a minimum of handling. It has, however, also meant that many N. C. fishery products were being processed in other states. This generated revenue that should have been realized by N. C. processors and workers. Alternatives to the fresh market were needed for the N. C. seafood industry.</p> <p>The Seafood Lab began investigating the feasibility of smoking local seafoods. This was an area that was void of smoking technology. Smoked fish would be a finished product that could be sold refrigerated or frozen. Research was aimed toward species in North Carolina waters that would make desirable smoked products, proper brining and/or salting procedures, and time temperature relations in the smoke house.</p> <p>Sea Grant "Mini Grant" funds were used for this work, which is continuing. Information has been published in Seafood Lab bulletins and in Sea Grant publications. There have been public demonstrations and some T. V. coverage. There has also been much one-on-one consultation with processors or potential processors.</p> <p>The interest that has been generated by the information the lab has produced is enormous. This is evident by the large number of requests that are received weekly at the lab. The lab has assisted one processor in setting up a smoked fish processing plant. There are four other processors that are presently being consulted on smoked fish processing.</p> <p>As the Seafood Lab continues to produce more information on smoking North Carolina seafoods, more and more people will become interested in this method of preservation. It is anticipated that in a few years there will be several smoked fish processors in N. C.</p>
<p>Contact person name and title organization address city, state, zip code telephone</p>	<p>Sam D. Thomas, Seafood Extension Specialist N. C. State University Seafood Lab P. O. Box 1137 Morehead City, NC 28557 (919) 726-7341</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Efficient Use of Space in Seafood Processing Plants in North Carolina

TEXT/DESCRIPTOR

Program Description	
Emphasis Goals Scale	The need for good planning and proper product flow in North Carolina seafood processing plants was realized by the N.C.S.U. Seafood Laboratory. The laboratory initiated a program to work with individual processors on a one-to-one basis when they were interested in new plants or expansion of old plants. The plan was to develop plans that would be cost efficient and offer streamlined production layouts.
Innovations Linkage Clientele	
Resources involved Funds Staff time Other cooperators Special funding	Manuals on planning a seafood plant, handling seafoods, and processing seafoods were developed by the laboratory. These manuals were based on knowledge of the industry and an understanding of the regulations that affect the N. C. seafood packer. Sanitation and quality control were also emphasized.
What were the accomplishments	When working on plans the laboratory cooperates with N. C. Shellfish Sanitation Division, Food and Drug, Environmental Management, and local health and building inspectors. Involvement of these agencies during planning enables potential problems to be addressed before they become real issues.
What were the impacts	
Who benefitted	
What were benefits	
How impacts were measured	In 1981, plans developed by the Seafood Laboratory accounted for more than 50,000 square feet of processing and freezer capacity. This represents close to one million dollars invested and new payrolls of \$500,000 annually. Utilization of this program by the industry has also helped to improve the quality of N. C. seafoods.
What are implications for future program Clientele yet to be served	
Contact person name and title organization address city, state, zip code telephone	Sam D. Thomas Seafood Specialist Food Science Extension N. C. State University Raleigh, NC 27650 (919 737-2956

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Rural Transportation Planning in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>Planning procedures were developed to help state and local planners allocate resources to rural freight and passenger transport.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>Optimization models are avoided; procedures recognize the uncertainty of the future and the individuality of shippers and passengers.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>\$0          0.5 man-years, 0.5 graduate student          N. C. A &amp; T University          \$70,000, USDA-Extension</p>
<p><b>What were the accomplishments</b></p>	<p>Seven publications representing planning manuals</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p>	<p>Awareness of N. C. State Rail Planning agency to forming objectives and evaluations          State agencies and community leaders          More efficient resource allocation and better communication between state planners and decision-makers</p>
<p><b>How impacts were measured</b></p>	
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Plan three regional workshops to train Extension specialists and FHWA personnel in planning procedures</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Marc A. Johnson, Extension Economist          Extension Economics and Business          NCSU          P. O. Box 5576          Raleigh, NC 27650          (919) 737-2256</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Feed Grain Transportation for North Carolina Poultry Feeders

**TEXT/DESCRIPTOR**

<p><b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b></p>	<p>Designed a means for poultry feeders to assess rail rate and rail service trade-offs when negotiating rail contracts for feed grain delivery. A case study was done for a principal feeding region, plus distribution of the case to a wider audience.</p>
<p><b>Innovations</b> <b>Linkage</b> <b>Clientele</b></p>	<p>A worksheet designed with current grain merchandising practices is used; poultry feeders determine their own bargaining positions; no "answers" are provided.</p>
<p><b>Resources Involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b></p>	<p>\$2,000 for publication 2 man-months Other Extension Economists, Dept. Poultry Science \$0</p>
<p><b>What were the accomplishments</b></p>	<p>Four poultry feeders involved in the case study were trained, representing 14 million bushels of corn usage. Publications will be distributed to other poultry feeders in the Southeast.</p>
<p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b> <b>How impacts were measured</b></p>	<p>Awareness of feed mill operators of another transport alternative and how to evaluate it. Poultry feeders, farmer feeders and poultry consumers Up to \$1.25 million annually in feed transport savings for the 4-firm study. Dollar savings potential</p>
<p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>Next steps are to introduce other feeders to the technique, expand to nonpoultry feeders, check effects on comparative advantage of North Carolina poultry production and evaluate the feasibility of a grain terminal industry in North Carolina.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>Marc A. Johnson, Extension Economist Extension Economics and Business NCSU P. O. Box 5576 Raleigh, NC 27650 (919) 737-2256</p>

5. NATURAL RESOURCES AND ENVIRONMENT

Departments generating much of the information useful to county staffs in making better decisions relative to Natural Resources and Environment are Zoology, Biological & Agricultural Engineering and Forest Resources. The emphases this year in this program component include county forestry committees, "Wood Can Last for Centuries," wood energy, forest insects, increases in Fraser fir planting stock, and various soil erosion and water quality thrusts.

One of the most impressive result demonstrations ever conducted in North Carolina is located on the Choplin Farm in Wake County. As a result of implementation of all Best Management Practices and other proven practices, this highly erodable farm has recently yet to have measurable soil runoff.

The new program to prevent the spread of Hydrilla in North Carolina could save the state millions of dollars in eradication support within the next decade.

<p>The cooperative nature of the program requires a commitment of staff time from all agencies involved. Quarterly meetings of the committee are held to assess progress, set priorities, and evaluate the effectiveness of the program. To date several committees have undertaken forestry demonstrations, tours, workshops, and social events. The long term benefits will be an improved awareness of the forestry role of each agency, better technical support and service available to landowners, and increased management on small private woodlots.</p>	<p>What were the im- portant results? Who benefited? What were the im- portant results? How impacts were measured? What are the indicators for future progress (Indicators yet to be developed)</p>
<p>Rickey A. Hamilton Extension Forest Resources Specialist P. O. Box 2482, WCU Wilmington, NC 28402 910/337-3380</p>	<p>Contact person Name and title Organization Address City, State, Zip code Telephone</p>



## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

North Carolina Interagency Forestry Committees

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	<p>Fifty of North Carolina's 100 counties are developing cooperative interagency forestry committees comprised of the Extension Service, State Forest Service, SCS, ASCS, Wildlife Commission, and invited non-agency members at the discretion of the county group. The county interagency effort was initiated at the request of the heads of all natural resources related agencies in the state and carries the full support of the Governor. Goals for county interagency committees include the formation of county forestry associations; establishment of forestry demonstrations; improved landowner assistance programs; improved market opportunities; and forestry workshops for professionals and landowners. Each committee is to assess the small woodlot forestry needs of its county and establish program priorities.</p>
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b> <b>Resources Involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	<p>The cooperative nature of the program requires a commitment of staff time from all agencies involved. Quarterly meetings of the committee are held to assess progress, set priorities, and evaluate the effectiveness of the program. To date several committees have undertaken forestry demonstrations, tours, workshops, associations, and market feasibility studies. The long term benefits will be an improved awareness of the forestry role of each agency, better technical material, and service available to landowners, and increased management on small private woodlots.</p>
<b>What were the accomplishments</b>  <b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>  <b>How impacts were measured</b>	
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	<p>Rickey A. Hamilton          Extension Forest Resources Specialist          P. O. Box 5488, NCSU          Raleigh, NC 27650          919/737-3386</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

North Carolina "Wood Can Last for Centuries" Program

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>Homeowners in North Carolina spend at least 50 million dollars a year repairing damage caused by wood rot, termites, and other wood destroying insects. The technology to prevent these losses is available and relatively inexpensive. The "Wood Can Last for Centuries" program was developed to make the general public more aware of wood protection methods.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>Flyers, public service announcements, and a monthly package of radio and newspaper ideas were sent to designated program coordinators in each county. Slide/tape/script programs and displays were also developed. Agents from 81 of the 101 counties in the state attended a one-day training program to outline the program and its objectives.</p>
<p><b>What were the accomplishments</b></p>	<p>The program was coordinated by specialists in the Departments of Extension Forest Resources, Entomology, and Housing and House Furnishings. Several flyers and slide/tape/script programs were provided by the U. S. Forest Service.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p>	<p>Responses from 41 counties showed that most of the counties used newspaper and/or radio ideas, 52 meetings were held attracting 1386 people, and 34 counties used the displays at fairs, shopping centers, banks, and county offices. A total of 72,000 publications were distributed throughout the state at various meetings, exhibits, and in response to newspaper articles and radio programs. Agents noted a decrease in the number of requests for home visits as a result of the awareness program. Several homeowners showed information from the program with builders, pest control operators, printers, and home repair specialists.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Efforts are underway to estimate cost savings from the program. Twenty-five counties plan to include the program in their activities in FY 1982.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Michael P. Levi, In Charge          Extension Forest Resources          NCSU, P. O. Box 5488          Raleigh, NC 27650          919/737-3386</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

THE NORTH CAROLINA WOOD ENERGY ASSISTANCE TEAM

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>The southern region of the United States has an abundant wood resource. Depending on the specific location, wood is available in various forms and quantities to economically displace conventional fuels for energy.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>Forest product industries have successfully burned wood fuel for many years and have demonstrated that direct wood combustion is a tried and proven technology. However, non-forest product industries have been slow in adopting this technology. Site-specific technical assistance promoting the use of wood fuel appears to be the most effective means of producing change.</p>
<p><b>Resources Involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>The southern Solar Energy Center contracted NCSU to form a wood assistance team (WAT) and provide this site-specific technical assistance. The WAT was composed of representatives from three NC organizations. They included the Industrial Extension Service, the Agricultural Extension Service and the N.C. Department of Natural Resources and Community Development.</p>
<p><b>What were the accomplishments</b></p>	<p>The WAT developed a methodology which identified non-forest product facilities that had a high potential of converting to wood fuel. From a list of 7,000 firms, the WAT selected four firms for in-depth case studies. Presentations were made to the decision makers of these firms on the merits of using wood as a fuel. All firms are now deciding which type of fuel they will use.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b>  <b>How impacts were measured</b></p>	<p>Although no firms have made a decision as of yet, their consideration of wood is a success. Management at several firms indicated they would not have considered using wood without the WAT's help. This project may help these industries save money for fuel and provide new markets for wood. In addition, a methodology of screening potential candidates has been developed which can be used in future projects.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p></p>
<p><b>Contact person name and title</b>  <b>organization address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Larry G. Jahn          Extension Forest Resources Specialist (Marketing)          N. C. Agricultural Extension Service          NCSU, P. O. Box 5488          Raleigh, NC 27650 919/737-3386</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

 Introduced Pine Sawfly Educational Program  
 Benefits Forest Resources of North Carolina

## TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources Involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>A regional educational program about the identification, life cycle, and control of the introduced pine sawfly was initiated when this insect became established in and threatened the white pine timber and Christmas tree natural resources of western North Carolina. The objectives of this program were to promote both a general awareness about this new pest and prompt crop protection before economic losses occurred, without creating an atmosphere of unnecessary overreaction. Using a Pest Alert provided by the U. S. Forest Service; the North Carolina Agricultural Extension Service prepared information packets for all County Agents, County Rangers, Nursery Inspectors, Christmas tree growers, nurserymen, and recreation area operators in the potentially affected 36 county area. With the assistance of Agricultural Information, news release materials were supplied to County Agents and media to inform forest landowners and shade tree owners in the affected area. Introduced pine sawfly information was also presented at public meetings, commodity meetings, and field tours.</p> <p>Over 3,300 growers received information directly; more than 1,000 growers, forest landowners, and interested citizens attended meetings, and a substantial but unknown number of citizens were informed via both local and regional mass media. The cooperators were N. C. Division of Forest Resources, N. C. Department of Agriculture and U. S. Forest Service.</p> <p>The Agricultural Extension Service's educational program and the U. S. Forest Service's cooperative parasite rearing-release program produced one of the most successful technology transfer/integrated forest pest management efforts ever attempted in the United States. As a result, no known economic losses occurred to marketable white pine nursery stock or Christmas trees, no quarantine was imposed against western North Carolina greenery, no forest landowners were pressured into selling "threatened timber", and the awareness created among the general sector was one of understanding rather than alarm.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>James R. McGraw          Extension Forest Resources Specialist (For, Protection)          Box 5488, North Carolina State University          Raleigh, NC 27650          737-3386</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Increasing Fraser Fir Christmas Tree Field Planting Stock in North Carolina

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	<p>A program of increasing the production of Fraser Fir Christmas tree planting stock was initiated in 1976. At the time, a severe shortage of field planting stock (3-2 transplants) was the limiting factor in meeting the industry's expansion needs. The State Forest Service Nursery and private out of state nurseries provided less than one million plants during that time frame. Less than 25 growers had any experience in Fraser Fir nursery practices; all nurserymen were concerned about the long history of crop failures. A program was developed to enable growers to produce their own transplant stock from seedlings. Existing technology was shared by extension, State Forestry Service, and industry nurserymen. A demonstration program with crop producers was initiated and supported by TVA, Tyne II demonstration funding, initially in an eight county area.</p>
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	<p>Extension and North Carolina Forest Service personnel cooperated at the state and county level to test and evaluate on-site practices of site selection, disease control, nutrition levels, fumigation techniques, irrigation criteria, insect control, shading needs, planting and grading criteria with the objective of minimizing mortality and optimizing plant quality. The results were communicated through tours, meetings, grower testimonies, supported by a continuous development of improved "How To" information from extension and research workers.</p>
<b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	<p>In a five-year time frame, the number of growers willing to develop transplant bed production of two-year in the bed Fraser Fir has grown from less than 25 to over 700. Number of seedlings lined up annually within the state has grown from 3/4 to 6.5 million. The state nursery can produce six times as many plants annually because it does not have to produce transplants. Private nurserymen within the state are producing seedlings as a result of the improved attitude of growers, economics of production, and continued strong demand. Growers are experiencing better survival rates, and are better able to match plant availability and quality with personal production schedules and practices.</p>
<b>What were the accomplishments</b>	<p>What were the impacts Who benefitted What were benefits</p>
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>	<p>How impacts were measured</p>
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	<p>What are implications for future program Clientele yet to be served</p>
<b>Contact person name and title</b> <b>organization address</b> <b>city, state, zip code</b> <b>telephone</b>	<p>William T. Huxster, Jr. Extension Forest Resources Specialist (Christmas Trees and Marketing) P. O. Box 5488, NCSU Campus Raleigh, NC 27650 919/737-3386</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

North Carolina Sediment Control Education Program

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>The NCSU Department of Soil Science Extension group is cooperating with the N. C. Sediment Control Commission and other agencies in conducting a Sediment Control Education Program. Special projects have been underway for the past six years to present programs statewide to train Sediment Control Officers, professional engineers, design people, county agents, local government officials, contractors, as well as the general public. The contractors and other clientele are learning to design and implement sediment control programs to reduce erosion, improve water quality and meet the requirements of the law.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>The program involves two specialists and County Agents, SCS District Conservationists in every county in N. C. State SCS personnel and Land Quality Section, NRCD personnel were involved in the major educational efforts. The Sediment Commission provided funds for meeting arrangements and visual materials, etc. that were distributed.</p>
<p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p>	<p>The training process has involved more than 20 major educational efforts with one of the major thrust involving more than 90 county agents and 90 SCS personnel in four meetings that were trained to carry the program to the general contractors of the state. In turn more than 1500 contractors were provided a 4-6 hour training session on sediment control. Currently the Education Committee is in the process of preparing public service types of announcements on sediment control to be aired on T.V. during the winter and spring.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>This educational program is reducing erosion from non-agricultural sources, improving water quality and better informing the public as to the requirement of the Sediment Control Act.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Joseph A. Phillips          Extension Soils Specialist          P. O. Box 5907          Raleigh, N. C. 27650          919-737-3285</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

NORTH CAROLINA AGRICULTURAL NONPOINT SOURCE POLLUTION

**TEXT/DESCRIPTOR**

<p><b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b></p> <p><b>Innovations</b> <b>Linkage</b> <b>Clientele</b></p> <p><b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>A program evaluating the effects of agricultural Best Management Practices (BMP's) on surface water quality is entering its fourth year with emphasis on minimizing sediment, nutrient and animal waste transport to surface waters. Eleven watersheds totaling over 36,000 acres are being monitored in three areas of the state. Technical assistance for voluntary compliance is available from the local SCS and Extension offices; financial incentive by special ASCS cost-sharing monies. Program publicity and education are provided through field days, producer meetings, training sessions and farmer contacts. In five of the demonstration watersheds, yearly interviews of each farmer provide data on farm management practices. All 11 demonstration-evaluation watersheds have continuous, automated water quality monitoring.</p> <p>Personnel involved are an Extension Specialist, a research assistant and technician; funding is provided by EPA and state agencies for a total annual budget of near \$54,000. Cooperating agencies include the N.C. Division of Environmental Management, USGS, several county Rural Development Panels and cooperative agricultural agencies.</p> <p>Although quantitative measures of water quality changes are not yet available, impacts of this program can be measured by the increased use of BMP's. In the Chowan River watersheds, over half of the 12,000 acres have SCS conservation plans, and practices are installed on one-quarter of this acreage with ASCS cost-sharing of \$22,000. With local Extension assistance soil sampling increased from 72% to 100%. Additionally, 90 animal producers' wastes were analyzed for nutrient content to enable appropriate fertilizer application. A cooperating dairyman is receiving almost total funding from TVA and ASCS on his innovative, low-cost (\$1700) waste treatment system that will be monitored over the next two years.</p> <p>Relationships between water quality changes and implementation of BMP's will be documented. Results will help determine the most cost-effective future program.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>Beverly A. Young, Extension Specialist Biological and Agricultural Engineering North Carolina State University, P. O. Box 5906 Raleigh, NC 27650 919/737-2675</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

 THE NORTH CAROLINA NATIONAL EVALUATION OF  
 AGRICULTURAL NONPOINT SOURCE CONTROL PROJECTS

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>  <b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	<p>A joint USDA-EPA evaluation of agricultural water quality projects nationwide was initiated to determine the success of current programs in reducing agricultural pollution. Nonpoint inputs from agriculture comprise a substantial portion of total loads in many watersheds throughout the country. The implementation of Best Management Practices (BMP's) through concentrated cost-sharing, technical assistance and educational efforts is the selected control mechanism.</p>
<b>Resources Involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	<p>The Model Implementation Program (MIP) and Rural Clean Water Program (RCWP) are the major USDA efforts aimed at water quality. Extension workers at North Carolina State University, in concert with other USDA personnel, will evaluate the 7 MIP projects, 21 RCWP projects and other relevant programs for success in improving water quality.</p>
<b>What were the accomplishments</b>	<p>Agricultural activities in project watersheds are representative of farming nationwide. Water quality problems include excessive sedimentation, toxic effects from pesticides, eutrophication of lakes and water supplies, excessive salinity levels and contamination of groundwater. Conclusions on the efficiency of BMP's to control nonpoint inputs will be drawn on regional or commodity bases where possible.</p>
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>	<p>Outputs to date include a Conceptual Framework for assessing projects, Guidelines for monitoring water quality, and State-of-the-Art reviews of BMP's for Animal Waste, Sediment and Commercial Fertilizer.</p>
<b>How impacts were measured</b>	<p>Seventy million dollars have been appropriated to the RWCP and many millions more spent on related programs. In addition, vast sums will be spent by the nation's farmers to install BMP's. Results from this evaluation will determine the cost effectiveness of these efforts and provide recommendations for future directions.</p>
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	<p>This work supported by a three-year EPA-SEA Extension Cooperative Agreement with annual funding of about \$170,000 involves four Extension Specialists, a technician, an SCS detail and secretary.</p>
<b>Contact person name and title</b> <b>organization address</b> <b>city, state, zip code</b> <b>telephone</b>	<p>Fred A. Koehler, Extension Specialist          Biological and Agricultural Engineering          1300 St. Mary's Street, Suite 205          Raleigh, NC 27605          919/737-3723</p>



ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

NORTH CAROLINA 208 AGRICULTURAL PROGRAM

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Cientele</b></p>	<p>The North Carolina 208 Agricultural Program (Educational Component) is creating greater awareness and understanding about agricultural nonpoint source (NPS) pollution and solutions for its control. The goal of the statewide effort is to increase the voluntary implementation of Best Management Practices (BMP's) by individual farmers in order to minimize NPS pollution inputs into receiving waters and thereby improve water quality.</p>
<p><b>Resources Involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>EPA funding through the state at about \$30,000 annually supports a full-time Extension Specialist who serves as the educational coordinator for the statewide program. Within the planning framework, the specialist provides educational materials and conducts educational activities on the cooperative agricultural 208 program. The Soil Conservation Service, Soil and Water Conservation Districts, County Extension Agents and State Agricultural agencies all contribute to this multi-agency cooperative effort.</p>
<p><b>What were the accomplishments</b></p>	<p>During August 1981 a field day was held at a 208 demonstration farm with 70 local producers, county and state government personnel in attendance. Agricultural BMP's including terraces, minimum tillage, and contour farming to reduce erosion, wise fertilizer use, proper handling of livestock wastes and efficient irrigation of crops were seen. As a result of these soil and water conservation practices, which improve water quality, this demonstration farmer has won the county corn growing championship for the last three years. His profits are now more on about 100 well managed acres than previously on about 300-400 acres, including rented land. Storm runoff from the demonstration farm is presently being collected to measure BMP effectiveness in reducing pollution inputs.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p>	<p>Two brochures on the 208 agricultural program and agricultural BMP's along with an informative slide program are being produced. The distribution of this information will enable county agents and producers in all counties across North Carolina to become more knowledgeable of the 208 program assistance which is available.</p>
<p><b>How impacts were measured</b></p>	<p>Two brochures on the 208 agricultural program and agricultural BMP's along with an informative slide program are being produced. The distribution of this information will enable county agents and producers in all counties across North Carolina to become more knowledgeable of the 208 program assistance which is available.</p>
<p><b>What are implications for future program</b>  <b>Cientele yet to be served</b></p>	<p>Two brochures on the 208 agricultural program and agricultural BMP's along with an informative slide program are being produced. The distribution of this information will enable county agents and producers in all counties across North Carolina to become more knowledgeable of the 208 program assistance which is available.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>James Blake Atkins, Extension Specialist          Biological and Agricultural Engineering          North Carolina State University          P. O. Box 5906          Raleigh, NC 27650          919/737-2675</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Animal Damage Control Section in the N. C. Agricultural Chemicals Manual

TEXT/DESCRIPTOR

<p>Program Description          Emphasis          Goals          Scale</p>	<p>The Animal Damage Control section of the N. C. Agricultural Chemicals Manual was expanded to include a description of 33 potential animal pests. Specific control suggestions are explained for 16 animals. The rodenticides section includes information on the more common active ingredients of currently registered control products. The manual is used by county agents, pest control operators, chemical dealers and the public. The information is presented in a concise tabular format with a legal appendix for the Animal Damage Control section.</p>
<p>Innovations          Linkage          Clientele</p>	<p>The initial expansion of the animal control section required a great deal of time; however, subsequent revisions will be simple and will require only a few days.</p>
<p>Resources involved          Funds          Staff time          Other cooperators          Special funding</p>	<p>An informal survey of county agents indicates this section meets most of their needs. Again, this type of publication saves agents and specialist time by putting the information in a form that is readily available.</p>
<p>What were the accomplishments</p>	<p>As new problems occur and recommendations change, the manual is revised. This is done yearly.</p>
<p>What were the impacts</p>	<p></p>
<p>Who benefitted</p>	<p></p>
<p>What were benefits</p>	<p></p>
<p>How impacts were measured</p>	<p></p>
<p>What are implications for future program          Clientele yet to be served</p>	<p></p>
<p>Contact person          name and title          organization          address          city, state, zip code          telephone</p>	<p>Gary J. San Julian          N. C. State University          Dept. of Zoology          P. O. Box 5577          Raleigh, NC 27650          (919) 737-2741</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Aquacultural Development in North Carolina

TEXT/DESCRIPTOR

<p>Program Description Emphasis Goals Scale</p> <p>Innovations Linkage Clientele</p> <p>Resources involved Funds Staff time Other cooperators Special funding</p> <p>What were the accomplishments</p> <p>What were the impacts Who benefitted What were benefits</p> <p>How impacts were measured</p> <p>What are implications for future program Clientele yet to be served</p>	<p>Technological advances and the economic climate have improved the potential for profitable commercial aquaculture nation wide. As a result there is a growing interest in aquaculture in North Carolina. The N. C. Agricultural Extension Service is responding by making more information available to the general public and by monitoring the progress of fledgling aquacultural enterprises to insure that our information is up to date and pertinent.</p> <p>Staff time and travel are the major resources involved in this program. The printing of educational leaflets and preparation of Tele-Tip-Tapes represent small investments which save specialist time and travel expenses in the long run.</p> <p>The potential for aquaculture in North Carolina is covered in all pond management seminars and in the pond management section of our Short Course in Modern Farming. Information is more widely available to the general public through several tapes in our Teletip program which cover topics from general pond management to the potential for catfish and bull frog culture in North Carolina. Extension is currently guiding and monitoring the progress of one crayfish culture and one catfish culture enterprise which started operation in the last year. The success (or failure) of these new aquaculturists will put us in a better position to advise others in this area.</p> <p>In the future we will continue to expand our Teletip offerings in the area of aquaculture and prepare more leaflets to explain the potential for farming various aquatic species in North Carolina. There needs to be a concerted effort to assess the present status of this industry in North Carolina.</p>
<p>Contact person name and title organization address city, state, zip code telephone</p>	<p>David J. DeMont Extension Fisheries Specialist Department of Zoology, Box 5577 N. C. State University Raleigh, N. C. 27650 (919) 737-2741</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Development of Cooperative Wildlife Extension Program in North Carolina

TEXT/DESCRIPTOR

<p>Program Description Emphasis Goals Scale</p> <p>Innovations Linkage Clientele</p> <p>Resources involved Funds Staff time Other cooperators Special funding</p> <p>What were the accomplishments</p> <p>What were the impacts Who benefited What were benefits</p> <p>How impacts were measured</p> <p>What are implications for future program Clientele yet to be served</p>	<p>In response to the obvious need for better management of wildlife and wildlife habitat by private landowners, and recognizing that a cooperative effort by various agencies and organizations was needed in order to most effectively address this problem, cooperative agreements were made in 1979 with both the state and federal wildlife agencies to provide the basis for a cooperative wildlife extension program. The primary goal of this program is to assist landowners with management of wildlife habitat and hunting and fishing and to involve conservation organizations in programs working with landowners and other citizens on wildlife management and related activities. Other elements in the program are animal damage control, conservation education, endangered species management, farm fish pond management, and hunter education. The program is statewide in scope. Its clientele are private farm and forest landowners and other citizens who are interested in wildlife, hunting, or fishing. The program will bring together the resources of state, federal, and private conservation organizations in a coordinated effort which will not add appreciably to any agency's costs.</p> <p>Resources involved are the time and efforts of the wildlife extension faculty at North Carolina State University and of cooperating agencies and organizations. No special fund is involved.</p> <p>Accomplishments on this program during the fiscal year of 1981 were the development of the plan outline and preliminary discussions of the program with some of the cooperating agencies, (United States Fish and Wildlife Service, North Carolina Wildlife Resources Commission, North Carolina Wildlife Federation).</p> <p>The program has not yet had measurable impacts or benefits. It has the potential of improving wildlife habitat on thousands of private landholdings, and of educating many citizens about wildlife and its proper management.</p>
<p>Contact person name and title organization address city, state, zip code telephone</p>	<p>Robert B. Hazel Extension Forest Resources Specialist (Wildlife) School of Forest Resources North Carolina State University Post Office Box 5488 Raleigh, North Carolina 27650 Phone (919) 737-3386</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Endangered Wildlife Species in North Carolina

## TEXT/DESCRIPTOR

Program Description	
Emphasis	
Goals	
Scale	In reponse to continuing requests for information on threatened and endangered species of wildlife, 10,000 additional copies of the publication "Endangered and Threatened Wildlife of Kentucky, North Carolina, South Carolina, and Tennessee" were printed by North Carolina Agricultural Extension with the assistance of the United States Fish and Wildlife Service. Five thousand of these books were allocated to North Carolina. From this supply, additional copies were distributed to county agents' offices, and plans were made for placing copies in school and public libraries.
Innovations	
Linkage	
Clientele	
Resources involved	
Funds	Funds expended were \$15,750, provided by the United States Fish and Wildlife Service. North Carolina Agricultural Extension Service devoted staff time to editing, printing, and distribution of the publications.
Staff time	
Other cooperators	
Special funding	
What were the accomplishments	
What were the impacts	
Who benefitted	
What were benefits	
How impacts were measured	
What are implications for future program	
Clientele yet to be served	
Contact person name and title	Robert B. Hazel
organization	Extension Forest Resources Specialist (Wildlife)
address	School of Forest Resources
city, state, zip code	North Carolina State University
telephone	Post Office Box 5488
	Raleigh, North Carolina 27650 Phone (919) 737-3386

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Improving Management of North Carolina Farm Ponds

TEXT/DESCRIPTOR

<p>Program Description          Emphasis          Goals          Scale</p> <p>Innovations          Linkage          Clientele</p>	<p>This program was initiated in 1978 to enable the North Carolina Agricultural Extension Service to respond effectively to a wide range of pond management problems. The aim of the program is to reduce pond problems (aquatic weeds, Filamentous algae blooms, fish population imbalances, fish kills, etc.) by educating county agents and the public in the area of Pond Management Techniques.</p>
<p>Resources involved          Funds          Staff time          Other cooperators          Special funding</p>	<p>Basic aquatic biology and pond management techniques were presented in pond management seminars in counties requesting this service. Biologists from the Extension Service, USDA-SCS and North Carolina Wildlife Resources Commission cooperated to present fifteen seminars (five in FY 1981). This same three-agency approach was used to teach pond management techniques as part of the curriculum in N. C. State University's Short Course in Modern Farming. Four Teletips were prepared which contain answers to the most frequently asked questions relating to pond management, and timely suggestions for pond management techniques have been inserted in our Wildlife Newsletter.</p>
<p>What were the accomplishments</p> <p>What were the impacts          Who benefitted          What were benefits</p> <p>How impacts were measured</p>	<p>The impacts of this program will be measured in terms of the reduced demand for assistance with farm pond problems. At the specialist level this is being done by the use of a telephone log which has been in use for the past three years.</p>
<p>What are implications for future program          Clientele yet to be served</p>	<p>Future changes in the program will involve a gradual withdrawal of the specialist from the pond seminars accompanied by an increased effort in the area of agent training. As the agents become more knowledgeable in pond management, they will be able to take over pond seminars at the county level with educational aids supplied by the specialist and the whole information transfer system will become more efficient.</p>
<p>Contact person name and title          organization          address          city, state, zip code          telephone</p>	<p>David J. DeMont          Extension Fisheries Specialist          Department of Zoology, Box 5577          N. C. State University          Raleigh, N. C. 27650          (919) 737-2741</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

PREVENTING THE SPREAD OF HYDRILLA IN NORTH CAROLINA

TEXT/DESCRIPTOR

<p>Program Description          Emphasis          Goals          Scale</p>	<p>In the fall of 1980 the noxious aquatic weed, Hydrilla, was discovered in central North Carolina. Control of this weed costs the states of Florida and California several millions of dollars annually in addition to lost recreation opportunities. A public education campaign was begun to help prevent the spread of Hydrilla in our state. The Tennessee Valley Authority, the N. C. Department of Agriculture, the U. S. Soil Conservation Service, and the N. C. Agricultural Extension Service are all involved in this effort.</p>
<p>Innovations          Linkage          Clientele</p>	<p>Principal costs of the project are staff time in the cooperating agencies. NCAES is bearing the additional expense of printing and distributing a revamped TVA pamphlet which explains the danger Hydrilla poses and illustrates the characters which distinguish it from other aquatic plants.</p>
<p>Resources involved          Funds          Staff time          Other cooperators          Special funding</p>	<p>Information on Hydrilla and the potential problem in North Carolina has been presented to field people in the various cooperating agencies through training sessions, pamphlets, meetings, and the showing of a TVA film on the subject. The public is being informed through newspaper and newsletter articles, pond management seminars, individual contacts, and presentations to sportsmen's organizations. The N. C. Department of Agriculture is conducting a limited survey to determine if Hydrilla has spread beyond the site of its original discovery. The impact of this program will be measured in five to ten years by how much money North Carolina will be spending on Hydrilla control.</p>
<p>What were the accomplishments</p>	<p>The educational efforts mentioned above aided by the publication of our version of the TVA Hydrilla pamphlet should continue as long as there are pockets of Hydrilla infestation in the state. Future changes in the magnitude of the program will depend on the results of NCDA's survey.</p>
<p>What were the impacts          Who benefitted          What were benefits</p>	<p>The educational efforts mentioned above aided by the publication of our version of the TVA Hydrilla pamphlet should continue as long as there are pockets of Hydrilla infestation in the state. Future changes in the magnitude of the program will depend on the results of NCDA's survey.</p>
<p>How impacts were measured</p>	<p>The educational efforts mentioned above aided by the publication of our version of the TVA Hydrilla pamphlet should continue as long as there are pockets of Hydrilla infestation in the state. Future changes in the magnitude of the program will depend on the results of NCDA's survey.</p>
<p>Contact person name and title          organization          address          city, state, zip code          telephone</p>	<p>David J. DeMont          Extension Fisheries Specialist          Dept. of Zoology, Box 5577          N. C. State University          Raleigh, NC 27650          (919) 737-2741</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Private Non-Industrial (Small Woodlot) Forest Management in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>Approximately two-thirds of the forest lands in North Carolina are privately owned, mostly in small ownerships of several hundred acres or less. Most of these lands are not actively managed for timber or wildlife. If future demands for hunting and other wildlife pursuits are to be met, these lands must be made more productive. To address this problem, the School of Forest Resources established a small woodlot research and development program which includes wildlife and other facets of multiple use management.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>The goal of the program is to develop management methods and techniques which may be used by small woodlot owners along with incentives for active management. This involves incorporation of wildlife management practices into forest management activities, assisting landowners with information about incentives for managing wildlife, and advice and assistance with the management of hunting, fishing and other wildlife-related recreational activities. The program is statewide in scope.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>Activities consisted mainly of planning for demonstration areas and the formation of local county committees to aid in promoting the program and for preparing training and other materials for county agents to use in this program.</p>
<p><b>What were the accomplishments</b></p>	<p>Resources involved consisted of staff time of the wildlife specialist in the Extension Forest Resources Department.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p>	<p>Development of the program has not progressed to the point where there is measurable impact on the actions of small woodlot owners. Future implications are that thousands of small private woodland owners, cooperating with sportsmen, will actively manage their woodlands for wildlife, thereby improving wildlife populations and harvest.</p>
<p><b>How impacts were measured</b></p>	<p>Clientele yet to be served</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Robert B. Hazel          Extension Forest Resources Specialist (Wildlife)          School of Forest Resources          North Carolina State University          Post Office Box 5488          Raleigh, NC 27650          919-737-3386</p>



ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Use of the Teletip System in North Carolina for Providing Wildlife Information to Farm and Forest Landowners.

TEXT/DESCRIPTOR

<p>Program Description Emphasis Goals Scale</p> <p>Innovations Linkage Clientele</p> <p>Resources involved Funds Staff time Other cooperators Special funding</p> <p>What were the accomplishments</p> <p>What were the impacts Who benefitted What were benefits</p> <p>How impacts were measured</p> <p>What are implications for future program Clientele yet to be served</p>	<p>The teletip system allows toll-free calls to be made to a central switchboard which in turn plays the tape requested by the caller. This year we have added 14 new informational tapes to the system. The tapes are designed to answer the more commonly asked questions about wildlife. This allows agents to refer their clientele to the system and saves time. To date, the total system has handled more than 500,000 requests.</p> <p>During the first year of operation (1979) with only 7 wildlife tapes on the system, more than 7,000 calls were logged requesting information on bats, moles, rats, snakes, squirrels, and woodpeckers.</p> <p>Specialist time involved is minimal. Each tape requires about 2 pages of copy. This is sent to Agricultural Communications, and they edit and record the material. The index is updated regularly, and copies are available at all county extension offices.</p> <p>The system frees specialists and agents from answering similar questions over and over again. This saves tremendous amounts of time and allows the callers to hear the message as many times as they wish.</p> <p>Each year a sample of the requests are counted, and a figure is projected for the total number of requests that year. An estimate of calls is made for each group of tapes.</p> <p>Current tapes can be updated at any time; however, new tapes can only be added when the index is reprinted. The program continues to grow every year in the number of requests and the number of tapes offered.</p>
<p>Contact person name and title organization address city, state, zip code telephone</p>	<p>Gary J. San Julian N. C. State University Dept. of Zoology P. O. Box 5577 Raleigh, NC 27650 (919) 737-2741</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Use of Public Television in North Carolina to Enhance Wildlife Values.

## TEXT/DESCRIPTOR

<p>Program Description Emphasis Goals Scale</p> <p>Innovations Linkage Clientele</p>	<p>Six television features were produced to help the public appreciate wildlife and make them aware of wildlife habitat needs. Each segment was 3 to 5 minutes long and was included on the weekly extension program, Almanac. The program airs twice a week at 7:30 on Thursday and 6:30 on Sunday. At these times the audience is composed of both youth and adults.</p>
<p>Resources involved Funds Staff time Other cooperators Special funding</p>	<p>Each program required about 3 hours to tape and involved the camera crew and the specialist. A local veterinarian, staff of the N. C. Wildlife Resources Commission and staff of the NCSU Zoology Department were also involved in the various programs.</p>
<p>What were the accomplishments</p> <p>What were the impacts</p> <p>Who benefitted</p> <p>What were benefits</p> <p>How impacts were measured</p>	<p>One program presented methods of improving backyard habitats for birds and the procedures for obtaining help for injured wildlife. Other programs described current research programs on snakes and alligators. All the programs were designed to help the audience gain a better knowledge and appreciation of North Carolina wildlife.</p> <p>The impact of Almanac is monitored by the public television network through the use of a viewer survey. According to the TV ratings conducted by the Neilson Company, the Almanac program is the most popular locally produced program at the UNC Center for Public Television. The May ratings for the Raleigh-Durham area indicated that the show reached more than 10,000 homes. Individual segments can only be monitored if the audience writes in for literature offered on the program. The programs on bird feeders generated 75 request for literature.</p>
<p>What are implications for future program</p> <p>Clientele yet to be served</p>	<p>This type of program has unlimited possibilities for improving the public's knowledge of wildlife. Since it is aired at a prime time, the audience is large and programs on endangered species, animal damage management and the enhancement of wildlife habitat can be presented to a wide audience.</p>
<p>Contact person name and title organization address city, state, zip code telephone</p>	<p>Gary J. San Julian N. C. State University Dept. of Zoology P. O. Box 5577 Raleigh, NC 27650 (919) 737-2741</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Youth (4-H) Activities in North Carolina

TEXT/DESCRIPTOR

<p>Program Description          Emphasis          Goals          Scale</p>	<p>The 4-H Program includes wildlife projects as a major area of emphasis. The goal of these project activities is to educate 4-H youth about wildlife and actively involve them in wildlife conservation activities. The program is statewide, and the clientele group includes thousands of school-age youth.</p>
<p>Innovations          Linkage          Clientele</p>	<p>A major activity in the 4-H wildlife program area this year was the preparation of fourteen new wildlife activity guides, part of a series of fifty such publications sponsored by the Southern Regional 4-H Literature Committee. The guides are printed and distributed by the National 4-H Council. Resources involved in this activity were the time of extension wildlife specialists in Zoology and Forestry, as well as one staff person each in the Sea Grant and 4-H offices. Three outside volunteers also assisted with writing and art work on several of the publications. Funds expended on this activity were \$300 by the Zoology Department and \$581 by the Extension Forest Resources Department. Final drafts of the guides were submitted to National 4-H Council, and three have already been printed.</p>
<p>Resources involved          Funds          Staff time          Other cooperators          Special funding</p>	<p>Another staff activity was participation in 4-H wildlife project demonstration judging.</p>
<p>What were the accomplishments</p>	<p>The wildlife activity guide series was widely used by 4-H youth in North Carolina this year, as well as by many other states in their programs. When the entire series has been published and distributed, these publications will have an impact on wildlife conservation education through thousands of 4-H participants.</p>
<p>What were the impacts</p>	<p></p>
<p>Who benefitted</p>	<p></p>
<p>What were benefits</p>	<p></p>
<p>How impacts were measured</p>	<p></p>
<p>What are implications for future program          Clientele yet to be served</p>	<p></p>
<p>Contact person          name and title          organization          address          city, state, zip code          telephone</p>	<p>Robert B. Hazel          Extension Forest Resources Specialist (Wildlife)          School of Forest Resources          North Carolina State University          Post Office Box 5488          Raleigh, North Carolina 27650 Phone (919) 737-3386</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Timber Taxation in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>A statewide field program in North Carolina on federal and state taxation of timber and Christmas trees.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	<p>Resource material was developed by extension specialists to enable county agents to conduct local seminars in timber taxation.</p>
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>Seminars on timber taxation were conducted by specialists for county agents and forestry specialists. In addition, numerous programs were conducted at the county level for private landowners and tax practitioners.</p>
<p><b>What were the accomplishments</b></p>	<p>Thirty-five agents were trained and many agents now conduct their own programs on timber taxation. In addition, about 300 private landowners participated in county meetings held throughout North Carolina. These continuing education programs increased taxpayer awareness of the tax savings available by properly planning timber sales. Savings in taxes is estimated to be several million dollars annually.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b>    <b>How impacts were measured</b></p>	<p></p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Continuing education programs on planning timber sales and timber tax management will be expanded to additional counties of North Carolina.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>W. D. Eickhoff, Extension Economics and Business          North Carolina Agricultural Extension Service          Raleigh, NC 27650 919-737-2472</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Agricultural Drainage in Coastal North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p>	<p>Land in coastal North Carolina often requires drainage to grow agricultural crops or to improve yields. The drainage project may not be economic, however, and further there may be unmeasured environmental costs associated with removal of excess water. This project attempts to estimate the economic incentive to drain poorly drained soils in the coastal region as a function of soil type, alternative agricultural prices, interest rates and other relevant variables. Conclusions can then be drawn regarding (1) the amount of land that is potentially drainable in the future (from an economic standpoint), and (2) the opportunity cost of foregoing drainage because of environmental regulations.</p>
<p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p>	
<p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p>	<p>This is an applied research project at this point in time. Major improvements are anticipated from methods being developed to utilize data becoming available from Soil Conservation Service soil surveys. Results obtained will be useful to farmers for evaluating profitability of draining their land and to policy-makers for evaluating environmental and agricultural cost-benefit trade-offs.</p>
<p><b>What were the accomplishments</b></p>	<p>Research is being conducted jointly by soil scientists and economists. Federal agencies involved in issues related to drainage and soil productivity are cooperating with the study team.</p>
<p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b>    <b>How impacts were measured</b></p>	<p>Work is underway. Procedures for conducting the study have been developed and collection of data is underway.</p>
<p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Landowners and policy-makers will be able to make more informed decisions regarding the benefits of draining poorly drained soils. Implications regarding potential cropland availability in coastal North Carolina will be drawn.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Leon E. Danielson, Extension Economist          Extension Economics and Business          North Carolina Agricultural Extension Service          Raleigh, NC 27650          (919) 737-2256</p>



## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

FARM MACHINERY PERFORMANCE EFFICIENCY IN NORTH CAROLINA

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	<p>Bulletins have been prepared detailing procedures for selecting and matching tractors and farm machinery for optimum performance and efficiency, and for analyzing total equipment costs. A minicomputer program has been developed and demonstrated for cost analysis. Pesticide application and soil incorporation equipment demonstrations have been conducted using fluorescent dye tracer material to show efficacy of various techniques. A full color booklet and a slide set on incorporation methods and equipment have been prepared. A shielded applicator for contact herbicides in Christmas trees and other crops has been developed and plans disseminated. A fumigant injector-applicator for grape root borer control has been developed and demonstrated. A brochure showing proper techniques for directed application of herbicides in row crops has been prepared and published.</p>
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	<p>Approximately 1000 farmers have attended demonstrations on pesticide application and incorporation. Two hundred plans for shielded herbicide applicators have been distributed. Computer-assisted equipment selection and cost analysis techniques have been demonstrated to 50 farmers.</p>
<b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	<p>Use of shielded and directed-spray devices could save soybean, cotton, Christmas tree, grape and tree fruit growers in North Carolina 10 million dollars a year in reduced herbicide costs, in addition to reducing crop injury. Proper application and incorporation of pre-plant herbicides could boost crop yields through better weed control by an equal amount. An average of one gallon of fuel per acre per year could be saved by increasing the efficiency of tractor operation with little or no change in cultural practices. This would save over 5 million gallons of fuel/year in N.C. Economic benefits of reduced soil and water loss from conservation tillage practices are more difficult to quantify, but are substantial.</p>
<b>What were the accomplishments</b>	<p>This work is conducted by a full-time Extension Specialist and a half-time technician.</p>
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>	<p>E. O. Beasley, Extension Specialist          Biological and Agricultural Engineering          North Carolina State University          P. O. Box 5906          Raleigh, NC 27650          919/737-2675</p>
<b>How impacts were measured</b>	
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

IRRIGATION DEVELOPMENT IN NORTH CAROLINA

TEXT/DESCRIPTOR

<p><b>Program Description</b> Emphasis Goals Scale</p> <p><b>Innovations</b> Linkage Clientele</p> <p><b>Resources involved</b> Funds Staff time Other cooperators Special funding</p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b> Who benefitted What were benefits</p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b> Clientele yet to be served</p>	<p>The irrigation program in North Carolina is designed to help growers select and use irrigation systems that will be efficient from the standpoint of crop production, energy required, water consumed and labor required, yet will not become quickly obsolete. This is a multi-faceted program designed to include dealer and distributor training, upgrading of agricultural extension agents, working with individual farmers in selection and design of systems, promotion of irrigation and irrigation techniques and interaction with cooperating specialists on demonstrations.</p> <p>During the past year, visits were made to 60 counties, individual assistance was provided to more than 170 growers and presentations on irrigation were made at 39 meetings with a total attendance of more than 2700 people. An extensive irrigation survey was completed which indicated irrigated acreage of agricultural crops is growing at the rate of about 7% per year with the largest acreage increase occurring on corn and peanuts. It is estimated that in the past year, North Carolina invested \$10 million in irrigation systems which produced more than \$1.5 million net income. The total irrigated acreage in the State is approximately 175,000 acres with an annual net income in excess of \$20,000,000. Growers are using better methods of irrigation scheduling and that coupled with improved management will increase net income obtained with irrigation. During the past year the use of mechanical move systems as compared to hand move systems reduced the labor required to irrigate by at least 75,000 man hours.</p> <p>This work is conducted by one full-time Extension Specialist, contacts from cooperating departments, and a 1/2 time technician.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>Ronald E. Sneed, Extension Specialist Biological and Agricultural Engineering North Carolina State University P. O. Box 5906 Raleigh, NC 27650 919/737-2675</p>



## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

GRAIN AND PEANUT DRYING AND STORAGE EVALUATIONS IN NORTH CAROLINA

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	<p>Aflatoxin is a major problem in corn in North Carolina. It can occur in the field and/or in storage. A bulletin was published on "Decontamination of Aflatoxin Corn with Ammonia." This bulletin has been distributed to the corn producing counties in North Carolina.</p>
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	<p>Two demonstrations were conducted for farmers using the method described in the bulletin to detoxify aflatoxin; approximately 100 people attended.</p>
<b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	<p>Aflatoxin is a possible problem during drying and storage of corn. An on-farm study was begun to study the effect of corn drying methods and storage conditions on 11 farms in five counties.</p>
<b>What were the accomplishments</b>	<p>Fuel cost is a major concern of peanut farmers. All the peanuts grown in North Carolina must be cured or dried using forced air with supplemental heat. The air is supplied with electric energy driven fans and the heat is supplied from propane (LPG).</p>
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>	<p>A study in cooperation with the Agricultural Research Service is underway to investigate methods of conserving energy in peanut curing.</p>
<b>How impacts were measured</b>	<p>An article was published on energy conservation operational methods of the peanut curing (drying) equipment.</p>
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	<p>This study, conducted by a full-time Extension Specialist was supplemented by a \$5,000 grant from the North Carolina Corn Growers Association.</p>
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	<p>John W. Glover, Extension Specialist          Biological and Agricultural Engineering          North Carolina State University, P. O. Box 5906          Raleigh, NC 27650          919/737-2675</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

ENERGY, ALCOHOL AND VEGETABLE OIL EVALUATIONS IN NORTH CAROLINA

**TEXT/DESCRIPTOR**

<p><b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b></p> <p><b>Innovations</b> <b>Linkage</b> <b>Clientele</b></p> <p><b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b> <b>Who benefited</b> <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>A study of the on-farm production of alcohol fuels was completed. Alcohol fuels can be produced on the farm with a proof of 160-180 which is high enough for burning in a modified spark ignition engine; however, the cost of production is too high to compete with gasoline. To mix fuel alcohol and gasoline for gasohol, the alcohol must be anhydrous or 199-200 proof. This is beyond the capability of an on-farm alcohol production system.</p> <p>The cost of producing 180 proof fuel alcohol on the farm varies between \$2 and \$5 per gallon depending on the size of the plant. This high production cost coupled with the additional quantity required to perform the same farm job makes the production of fuel alcohol on the farm uneconomical. In addition to the cost, a major waste disposal problem is created with alcohol products from grain.</p> <p>The North Carolina study of fuel alcohol was concluded with a three-day regional workshop in cooperation with USDA on alcohol and vegetable oil as an alternate fuel.</p> <p>A study was done on the use of vegetable oils as a fuel for comparison to ignition engines (diesel). The study consisted of a literature review, a review of research projects now in progress in the United States, South Africa, and Australia. An economic analysis was also performed in cooperation with the Research Triangle Institute.</p> <p>Conclusions of the study were: 1) Vegetable oils are uneconomical at this time, 2) There are many engine problems resulting from the use of vegetable oils, and 3) Diesel engines will probably require design changes for satisfactory operation on vegetable oils.</p> <p>Extension Administration provided a special allocation of \$9250 to support work of a full-time Extension Specialist on this project.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>John W. Glover, Extension Specialist Biological and Agricultural Engineering North Carolina State University, P. O. Box 5906 Raleigh, NC 27650 919/737-2675</p>

ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

SWINE HOUSING IN NORTH CAROLINA

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>A swine housing program with emphasis on environmental control has been a major effort of the N.C. Agricultural Extension Service. The program emphasized quality construction, ventilation, heating and waste management practices coupled with other management recommendations to maintain a high level of productivity. Building plans are constantly being updated and made available to producers, agri-business firms and others serving this industry. Major attention is given to energy use and conservation.</p> <p>A demonstration farm, The Swine Development Center, is operated specifically to demonstrate an intensive commercial swine operation following all the management recommendations of the N.C. Agricultural Extension Service. The Swine Development Center, one of the most enviable educational demonstrations in the United States, provides impetus to the Extension program because a total management system complete with production and financial records is available for all interested parties. This unit is a cooperative effort of the N.C. Agricultural Extension Service, the N.C. Agricultural Research Service, and the Division of Research Stations of the N.C. Department of Agriculture.</p> <p>Production output at the Center averages 18.5 to 19.5 pigs weaned per sow per year compared with the state and national average of 12 to 14. Feed conversion for all animals including the breeding herd is 3.8 to 3.9 pounds of feed per pound of pork sold but for the market hogs only, feed conversion is 3.5 to 3.6 for hogs marketed at 219 to 224 pounds. The average conversion rate for the state is approximately 4 to 4.2 pounds of feed per pound of pork. A savings of 0.5 pounds of feed per pound of pork would result in a feed savings of 85,000 tons for North Carolina producers. Our studies show this to be possible along with other improvements.</p> <p>The Farm Structures Specialist conducts this project.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>L. Bynum Driggers, Extension Specialist          Biological and Agricultural Engineering          North Carolina State University, P. O. Box 5906          Raleigh, NC 27650          919/737-2675</p>

Form 7-81  
Section V-B-8  
Revised 1/81

7. SAFETY

An extensive farm and farm home safety survey was conducted in 1978. The results of the survey were reported to the National Safety Council. Extension personnel have incorporated the results into ongoing Extension programs.

The Extension Safety Specialist is no longer in our employ, and the future of the safety program component is uncertain.

<p>Program materials in agricultural and domestic safety and bicycle safety were reviewed and revised. A North Carolina Safety Handbook to provide a readily available index of material and information for County Extension Offices on a variety of agricultural and domestic safety topics was produced.</p> <p>Analyses of the North Carolina Agricultural Safety Survey of 1978 was completed and results reported to Extension personnel and the National Safety Council. Recommendations to improve agricultural and domestic safety were emphasized.</p> <p>This work was conducted by the full-time Extension Specialist using special federal funds provided for the safety program.</p>	<p>Program Description</p> <p>Emphasis</p> <p>Goals</p> <p>Staff</p> <p>Innovations</p> <p>Linkage</p> <p>Climate</p> <p>Resources Involved</p> <p>Funds</p> <p>Staff Time</p> <p>Other Cooperators</p> <p>Special Funding</p> <p>What were the accomplishments</p> <p>What were the impacts</p> <p>Who benefited</p> <p>What were benefits</p> <p>How impacts were measured</p> <p>What are projections for future program</p> <p>Climate not to be solved</p>
<p>Extension Safety Specialist Biological and Agricultural Engineering North Carolina State University, P. O. Box 2800 Raleigh, NC 27650 919/27-2474</p>	<p>Contact person name and title organization address city, state, zip code telephone</p>

## ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

NORTH CAROLINA SAFETY PROGRAM

## TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources Involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Emphasis of the agricultural and domestic safety program was placed on agricultural machinery safety. Farm machinery accident extrication was stressed and materials dealing with accident response distributed statewide.</p> <p>Program materials in agricultural and domestic safety and bicycle safety were reviewed and revised. A North Carolina Safety Handbook to provide a readily available index of material and information for County Extension Offices on a variety of agricultural and domestic safety topics was produced.</p> <p>Analyses of the North Carolina Agricultural Safety Survey of 1978 was completed and results reported to Extension personnel and the National Safety Council. Recommendations to improve agricultural and domestic safety were emphasized.</p> <p>This work was conducted by the full-time Extension Specialist using special federal funds provided for the safety program.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Extension Safety Specialist  Biological and Agricultural Engineering  North Carolina State University, P. O. Box 5906  Raleigh, NC 27650  919/737-2675</p>

## HOME ECONOMICS

## 8. FOOD AND NUTRITION (EFNEP)

The following program objectives and goals were established for North Carolina's Extension Expanded Food and Nutrition Education Program for the past year:

1. To establish stronger linkages between EFNEP and the food assistance programs— WIC and Food Stamps.
2. To Increase enrollment of program homemakers who are also Food Stamp and/or WIC recipients.
3. To improve the dietary practices of at least 4922 new program families, and at least 6000 families already in the program; and, to increase gardening and food conservation efforts among EFNEP families.
4. To establish stronger linkages between EFNEP and other agencies and organizations having related objectives with the target population.
5. To encourage all counties to establish functional EFNEP County Advisory Committees.
6. For all EFNEP area and supervising agents to receive training in these areas and, in turn, train the program aides: The Progression Model for Homemakers Participants; Techniques and Principles of Teaching; The New Reporting System; Principles of Supervision and Management.
7. For all program aides to receive training in the Progression Model for adult participants.
8. To increase the aides' caseload of program families by at least 5 homemakers through greater use of small group neighborhood meetings, and through greater use of volunteers.
9. To improve the recruitment strategies aides use in enrolling new families.
10. For all staff and program aides better understand the guidelines and objectives of EFNEP, particularly appropriate subject-matters and targeted audience.

Accomplishments:

North Carolina's Extension Expanded Food and Nutrition Education Program reached 14,407 low-income families during the past year. This represents around 70,000 individuals in the program families. Additionally, a total of 25,141 low-income youth participated in EFNEP 4-H youth typed educational

experiences. In analyzing the program's overall impacts, these accomplishments are noted:<sup>1</sup>

1. More than 7000 low-income EFNEP families made more efficient use of their food stamps, as a result of the instructional role of the 271 program aides.
2. More than 2512 EFNEP families on WIC were given lessons in meal planning, food preparation, child feeding, post natal nutrition, etc.
3. More than two-thirds (68 percent) of the program families are on food stamps and/or WIC. This is 14 percentage points greater than that of previous years. This reflects the close linkages that EFNEP personnel have established with these agencies during the years.
4. Improved dietary changes occurred in more than 13,000 program families. For example, after 18 months of program participation, the percentage of homemakers consuming the recommended daily food allowances included these: 62 percent, milk, 88 percent, meat; 62 percent, fruits/vegetables; and 66 percent, breads and cereals.
5. More than 9000 program families produced and conserved food at home during the year. Aides report that program families had the best gardens this year than any since the program started. While specific quantitative results and money value of these are not available for each of the 95 participating units, the following data on the "Green Garden Project" conducted among 195 families in 18 western counties is a very good gauge of the economic value derived from home gardening and food conservation:

#### ECONOMIC SUMMARY

Green Garden Demonstration, N.C. Valley Counties and Cherokee Reservation

(Source: Linda Spivey, Home Economics Area Agent, ENP, Annual Report, N.C. Agricultural Resource Development Program)

Total quarts of vegetables consumed	2,379 @ \$1.15 =	\$ 2,735.85
Total pounds of vegetables consumed	6,129 @ .50 =	3,064.50
Total bushels of vegetables consumed	2,028 @ 6.75 =	13,689.00
Total quarts of vegetables frozen	11,477 @ 1.35 =	15,493.95
Total quarts of vegetables canned	20,624 @ 1.75 =	25,780.00
Total pounds of vegetables dried	727 @ .50 =	363.50
Total bushels of vegetables stored	1,840 @ 5.00 =	9,200.00

TOTAL VALUE OF PROJECT:	\$70,326.80
TOTAL VALUE PER FAMILY:	\$ 358.81

<sup>1</sup>Sources: ES-Unit Reports; Aides Quarterly Narrative Reports; visits to program homemakers by state staff; testimonials from participating news articles; observations; reports from area and supervising home agents.

6. It is estimated more than 7500 program families saved on an average of \$10 - \$20 per month on their food expenditures. This resulted from lessons, demonstrations, and workshops given on meal planning, comparative food shopping, food labelling, food preparation, families financial management as it relates to food needs of family members, gardening, and/or food conservation.
7. More than 3000 program homemakers for the first time, made use of services and programs of local agencies, as a result of referrals made by program aides.
8. Some 2000 program homemakers serve on local Advisory Committees, served as volunteers, obtained employment, and/or continued their formal education.
9. The average caseload of program aides during the past year was 53 families per aide. This average represents an increase of more than 5 families per aide over the previous year. Aides report that recruitment of families in the program is not as difficult as in previous years because of economics. The dominant theme is that homemakers want help on stretching their food dollars.
10. The program continues to reach the hard-core families. Ninety-one (91) percent of all program families reported annual family incomes less than \$7500 which is around \$1000 below the official poverty definition.
11. Program aides participated in EFNEP On-Campus Days at the University during the year. Conducted over a period of 3 days, the program aides were given training by specialists and outside consultants in the following areas: How Adults Learn; Time Management; Coping with Stress; Effective Use of Visuals; and, Recycling Home Resources. The aides also heard motivational talks by top University officials, including the President of the University System, the Acting Chancellor of North Carolina State University, and several Deans, Directors, and Assistant Directors. This year's event marked the 5th time the aides have come to the University since the program was implemented in 1969.
12. Area agents and supervising agents in EFNEP received training in these areas: The Progression Model for Homemakers Participants; Techniques and Principles of Teaching; The New Reporting System; and, Principles of Supervision and Management. These agents, in turn, trained the program aides in each of these areas.
13. For the second time, a North Carolina aide received the Paraprofessional Award in the Southern Region sponsored by the National Association of Extension Home Economists.



## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

PEST CONTROL AMONG NORTH CAROLINA LIMITED-RESOURCE FAMILIES

## TEXT/DESCRIPTOR

<p><b>Program Description</b> Emphasis Goals Scale</p> <p><b>Innovations</b> Linkage Clientele</p>	<p>Pest control training for EFNEP program aides was performed to enable them to intelligently advise their families of limited resources on pest control alternatives. Some 244 aides worked with approximately 10,000 N. C. low-income families in areas related to nutrition. Since pests may consume or contaminate much of their food, pest control and nutrition are very closely inter-related when working with this audience.</p>
<p><b>Resources involved</b> Funds Staff time Other cooperators Special funding</p> <p><b>What were the accomplishments</b></p>	<p>Day-long pest control workshops and demonstrations were held in cooperation with EFNEP area agents to train program aides in pest control techniques. Printed resource material for aides and simplified materials for handout to families by aides were developed. Aides were taken to a pest-infested home and were taught how to recognize and combat typical household pest infestations.</p>
<p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p> <p><b>How impacts were measured</b></p>	<p>Four workshop-demonstrations were held in different areas of N. C. Most training was conducted by the extension entomologist; however, local county agent involvement was encouraged. Cooperation with local pesticide outlets and demonstration-house families was excellent.</p>
<p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>The 50 new aides participating in these workshops may spread the information among the approximately 2500 families they are working with. Interaction with family neighbors and friends may spread this information to many more limited-resource families not currently enrolled in EFNEP. Control of pests improves family morale, health, nutrition, and may significantly reduce the amount spent for food.</p> <p>Controlling pests is one important aspect of elevating limited-income families to a higher social status. It can be one of a series of steps to enable them to become prosperous, self-sufficient members of society.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b></p>	<p>R. C. Hillmann, Extension Entomologist Agricultural Extension Service P. O. Box 5215, N. C. State University Raleigh, NC 27650 (919) 737-2831</p>

## 9. FOOD AND NUTRITION (OTHER THAN EFNEP)

Changes occurred in foods and nutrition programming in 1980-81. There were more "lunch and learn" sessions for working homemakers and newsletters geared toward working homemakers increased. Additional agents were invited to write regular newspaper columns with bylines. Good use was made of both radio and television. Efforts to reach new audiences was evident.

The basic problem areas defined in 4-Sight, the current long range plan of work, remained valid. Thrusts within these areas changed, however, as inflation and energy became greater concerns to consumers. Activities frequently overlap several areas but the following are identified under the area receiving greatest emphasis.

### Preventive Nutrition

North Carolina has a high infant mortality rate due, in part, to a high incidence of teenage pregnancies. Foods agents in eighteen counties included classes on prenatal care and infant and child nutrition in their plans of work. In Montgomery County classes were planned with the in-service educator at the hospital. Nurses volunteered the information that those patients who had attended the classes got along better than those who did not.

Classes in Davidson County are co-sponsored by the hospital's Department of Obstetrics and Gynecology. During the year agents reached three hundred fifty individuals. In addition they distributed one thousand "Proud Parent Packets" to all new parents having babies in the county's hospitals. A random sample of eighty people was chosen for surveying. All parents liked receiving the packet in the hospital; 94% read all of the materials; 59% filed the packet for future reference; 76% felt both they and their babies benefited from the packet; 68% indicated they would be willing to pay for it.

Cooperative efforts between health departments and Extension have been carried out in several counties. In Columbus County, for example, the agent spoke on infant feeding to one hundred seventeen WIC mothers. As a result, she enrolled forty-five of them for Human Development's Baby Talk Series and twenty asked to be considered for EFNEP. This same agent also taught four classes (two hours each) on prenatal nutrition to EFNEP mothers.

Feeding young children and helping them learn about food was the subject of a series of lessons for thirty young mothers in Duplin County. In Macon County concern expressed by kindergarten and first grade teachers prompted the agent to develop a series of four newsletters to parents. Teachers kept records on the quality of the snacks before and after the newsletters were sent. A card was attached to the final newsletter for parents to fill out and return. Regretably, only 26% of the cards were returned. Of those returned about half had read every issue and felt parents benefited from such information. The sugar content of cereals, snack ideas and recipes were of most interest to parents. Teachers were pleased to note that the number of children eating good quality snacks improved from 50% to 74%. Half of those parents who returned cards had had no prior experience with the North Carolina Agricultural Extension Service.

Two weight control retreats--"Pounds Away at Caraway" were held this year. Approximately one hundred eighty women from two districts attended. Results were not in at the close of the program year, but interest was great enough that two county groups have had subsequent meetings. A follow-up meeting for participants from the North Central District is planned for January.

In addition thirty counties have had weight control classes and most participants have lost some weight. Both adult and youth were included. Agents report women excited about taking in their clothes and, as one agent expressed

it, "Those who didn't lose weight learned a lot about the dietary guidelines!" One industry provided the opportunity for the Lee County agent to work with its employees. Classes in weight control also provide for cooperative efforts with Y.W.C.A.'s, physical education teachers and others qualified to help with exercise programs.

The dietary guidelines were (and are) of interest to citizens of North Carolina. Agents have noted more families seeking information on how they can decrease their intake of sugar, salt, fat and calories. Sixty-eight counties have had programs relating to the dietary guidelines; nine others have worked on modified diet programs which had some relationship to them.

Iredell County used volunteers to man a mall exhibit on the dietary guidelines. Interested persons could sign up for additional materials and/or classes. Fifty people signed up for classes. A follow-up survey to participants attending a series of health and nutrition lessons in Cumberland County revealed that all had made some changes in their food preparation habits. All were using cooking methods to reduce calories; they were consuming more fruits and vegetables; and 75% were eating higher density snacks.

Food needs of the elderly have not been neglected. The Dare County agent reported that after three classes for senior citizens, they asked for more. In Henderson County the agent has taught both home health aides and managers of nutrition sites for senior citizens. Agents in all counties with nutrition sites provide lessons for the elderly people eating in them.

Extension programs in areas of preventive nutrition reached over thirty-five thousand adults this year. Agents presented one thousand ninety-seven programs and seventy-five leader training programs for adults. In addition, approximately nine thousand youth were reached.

### Food Buying

Inflation conscious consumers have been interested in food buying. Thirty-eight counties featured programs that varied from the selection of meats to the redemption of coupons and refunds. Young homemakers especially have been interested in help with wise food buying.

Point of purchase demonstrations in stores have brought Extension many new contacts. In some instances where demonstrations were on using rather slow moving fresh produce, public relations with store personnel were enhanced greatly.

Inflation seminars have been well attended. Robeson County, for example, reported over a hundred people attended theirs. A four county program by agents from Catawba, Alexander, Caldwell and Burke entitled "Making Sense at the Supermarket" was both well attended and well received. By popular request, a similar type program is planned for October 1981.

"Make Your Own Convenience Foods" was the theme of both a mall exhibit and a special interest meeting in Buncombe County. As a result of follow-up requests, some 1200 copies of recipes were distributed. Differences in the cost of making rather than buying coating mixes for baking, for example, were a surprise to many people.

"Ways to Stretch Your Food Dollar" was presented to 450 wage earners in Forsyth County. Requests for further information prompted a newsletter now going to a thousand individuals. Food buying and shopping tips are included in each issue.

Yadkin County Extension Homemakers were impressed by a lesson on the variety of dried peas and beans available as meat alternates. When asked to plan an exhibit for the annual Dixie Classics Fair, they suggested it be done on meat alternates and volunteered to prepare samples of these meat alternates for people to taste. Tofu as a meat alternate also has been used in some counties. The

agent in Guilford found that half of the women attending two classes on the use of tofu had prepared some dishes using it between class sessions.

Use of "Best Food Buys" on Extension's Teletip system increased from 6,090 calls in 1979-80 to 11,050 in 1980-81. Calls for "Recipe of the Week," featuring recipes conforming to the dietary guidelines increased from 5,471 to 10,047. The state office has continued to provide new products information and price trends to agents on a regular basis.

#### Food Preparation

Forty-four counties had active programs including classes for youth, men and senior citizens. Many basic skills were taught which proved fun to do as well as economical. One group in Jackson County, for example, figured the cost of their bread at thirty cents a loaf, considerably less than the 59¢-99¢ per loaf at the local grocery.

Lessons on packed lunches for all ages were taught by the agent in Guilford County. (Although these involved preparation, the dietary guidelines and food safety were stressed.) Follow-up showed that all participants had used one or more recommendations from the classes.

Mitchell, Madison, Yancy and Avery Counties combined for "Mountain Holiday Ideas." Programs on gifts from the kitchen, cooking in the wok, wild game cookery and all-in-one-pot meals were presented. At least two hundred sixty-five people attended.

County home economists participated with a state specialist in the television series "Almanac" where North Carolina foods were featured. Foods were prepared with the dietary guidelines in mind.

Agents in several counties have worked with parent groups on making nutritious but fun type snacks. The parents, in turn, visited school classrooms and taught lessons on making nutritious snacks. Other agents had some direct

contact with classrooms. On the other end of the age scale, Duplin County had over a hundred senior citizens show up for classes on "Cooking for One or Two."

The single most outstanding program in the area of food preparation was "Foods with Finesse." This was a cooking school for some 800 women in the Northwest District produced by six foods agents and a state specialist. All recipes prepared conformed to the dietary guidelines and multiple appliances were demonstrated. A concurrent multiple projector slide presentation enabled everyone to have "close-up" view of the techniques demonstrated. This has since been reworked for use by one agent with a single projector.

Twenty-thousand adults and four thousand five hundred youth participated in food preparation programs where they acquired new skills and learned about new foods and quick methods of preparation.

#### Food Equipment, Selection and Use

Thirty-six counties planned programs in this area. These were centered primarily around energy conservation and maximum utilization of appliances owned.

Programs on the use of microwaves were very popular. Columbus County had over 250 attend their sessions. Two were planned for working women during the noon hour and all possible spaces were taken. Twenty-seven young mothers in Washington County enjoyed series of five classes on the use of the microwave. Efforts in all these programs were geared primarily toward maximum use of the microwave.

"Nutrition on the Run" was presented to three hundred Forsyth County Extension homemakers. It featured human energy and time conservation. The convection oven, electric skillet, food processor and blender were demonstrated. Feedback from the program has been good.

Several counties had programs on the use of the food processors, but the big push on these appliances was last year. The same thing was true of blenders and woks.

Pressure saucepans had a revival during the year. Entire meals for one or two prepared in a pressure sauce pan became popular. Durham County had a program "Pressure Cooking is Pleasure Cooking." Out of the audience of thirty-five, at least six purchased pressure saucepans and are using them. One who hadn't used hers in twenty years because she was scared of it, retrieved it and is using it. This same type story could be told in numerous counties. In general, women seem to be interested in learning how to use their appliances more effectively.

#### Food Safety

The number of calls received from the public indicate food safety is an area of growing concern. Safe food handling techniques and information were incorporated into all foods programs where appropriate. Only nineteen counties, however, put programs on food safety in their plans of work.

Holiday food safety received more emphasis than any other program except safety in food conservation. Efforts were directed toward a wide range of audiences. The Perquimans County agent worked with one hundred forty junior high students on picnic safety. The Davidson County agent gave a store demonstration on food safety to a general audience of sixty people; Robeson County had area meetings for Extension Homemakers on food safety and sanitation.

All foods agents promoted food safety in the home preservation of foods, but other aspects of the program may not have been stressed due to a two year vacancy in the food safety specialist position.

#### Food Misinformation

A slide tape presentation on "Our Food Beliefs--Myths, Facts or Fallacies" was updated during the year. This problem area did not receive major attention



this year because intensive efforts were concentrated on it two and three years ago.

Newsletters, radio programs and individual counselling were the major methods used in trying to combat misinformation.

### Food Conservation

Food conservation is considered an on-going program in Extension. Forty-five counties planned special emphasis on food conservation in their plans of work. Programs varied from canning updates to the basics of canning and freezing. In Cumberland County, for example, fifty new canners learned the importance of pressure canning low acid foods and had "hands on" experience with pressure canners. (Overcoming fear of pressure canners is an ever present problem.)

Forsyth County assisted one thousand seven hundred seventy-five people on the telephone in June, July and August. In addition to mail out information, and radio programs, the agent gave three television programs showing step-by-step canning and freezing procedures. She also answered questions for five hundred people at two industrial plants during their lunch hours.

The agent in Jackson County also put a great deal of emphasis on quality canning. Several special interest meetings and eighteen radio programs on freezing, drying and canning paid dividends. There was an increase of over a hundred entries in canned products at their "Mountain Heritage Day" this year and the judges commented on the improvement in the quality of the products entered.

As a result of a seafood training workshop, several counties had programs on the conservation and use of seafood. "Selecting and Freezing Food from the Surf" was a new idea to 32 people in Dare County. In Hyde, "Fresh from the Pamlico" included information on food safety, preparation and storage. A

follow-up of participants indicated that 86% were better able to determine freshness of seafood; 43% were using the super-chill method; 14% were using the gel dip method; 21% were using new types of fish and shellfish; 71% had checked their freezers to determine the length of time any seafoods may have been stored.

Agents across the state reported the following:

Pressure canners tested	11,322
Quarts of fruits & vegetables canned	2,114,801
Quarts of fruits & vegetables frozen	2,731,251
Quarts of meat canned	66,511
Pounds of meat frozen	2,086,757

Based on an estimated value of \$1.35 per quart for fruits and vegetables and \$2.00 per pound for meat, the value of these conserved products was \$6,542,170 for fruits and vegetables and \$4,339,791 for meat.

#### EFNEP

The Expanded Food and Nutrition Education Program continued to bring help to North Carolina families. Two hundred sixty-one aides worked with approximately ten thousand families, eighty-two percent of whom had incomes of less than \$6,100. Aides and agents were trained in the use of the progression model and feel it will be of much help in the future.

Success stories continued in every county of the state. One of particular interest was that of a thirty year old homemaker with four children whose husband was in prison. She was so depressed she had to be hospitalized. The program aide visited her there on her own time. When she was released, the aide continued her educational visits. The homemaker learned to cook, can and freeze. She began some repair work on her apartment; she obtained her driver's license; she began working on her high school equivalency diploma. The woman's husband is an alcoholic, so she enrolled in Al-Anom. Eighteen months after the aide began working with her, she was a counselor for Al-Anom, a member of

the EFNEP Advisory Committee, an enthusiastic gardener and homemaker. She had obtained a job at the school cafeteria. She has plans to become a member of an Extension Homemaker Club and to be an EFNEP Volunteer.

#### 4-H and Youth

All foods agents in the state were given special training in 4-H foods project material and ways of working with 4-H Volunteers. Two new projects were developed this year entitled "Make Way for Milk" and "Food Conservation and Safety." It was gratifying to note that the number of foods demonstrations increased 17% over last year.

More effort was made to have smooth transition from EFNEP to 4-H. In Forsyth County, the 4-H staff, foods agent and program aides met jointly to discuss the transition. Ten areas were identified where work needed to be done and various staff members volunteered to work in those areas. Seven graduating EFNEP groups have become 4-H Clubs and three new EFNEP groups have been organized.

There were many summer youth programs for EFNEP youth. They varied in length and type, but one of special interest was a week long camping experience for one hundred youngsters from Orange and Durham Counties. Boys and girls had four nutrition classes each day in addition to other camp activities. Emphasis was placed on the importance of breakfast and on high density snacks. A follow up two months later with their parents indicated 70% had observed behavioral changes in the youngsters.

The importance of eating breakfast also was stressed by Madison County program aides. Schools report that more of the children are participating in school breakfast programs. Mothers have told aides they were delighted, that they were "glad it's not just us urging them to eat breakfast."

### Special Programs

Since it was the Year of the Handicapped, several counties had programs of special interest to them. These included a variety of topics. Individuals of all ages enjoyed learning to make snacks for themselves, for example, but individual assistance in the area of coping with food preparation was perhaps the most meaningful contribution to the handicapped.

There are one hundred thirty-five refugee families living in Forsyth County. The Extension agents and program aides joined forces with other agencies in providing some training in basic skills. Topics included such things as understanding American foods, shopping in the supermarket and food storage and safety.

### In Conclusion

The programs and activities of the foods agents are too numerous to cover in a single report. Extension programs have made an impact on the quality of life experienced by those families with whom they had contact. As evaluation and impact assessment become more a part of the program planning process, this impact will be even more evident.

## ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

North Carolina's Fresh from the Pamlico Seafood Safety and Preparation Workshop

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>The program for one of the Extension Homemaker Clubs' area meeting in Hyde County, N. C. was initiated to help the local people improve the quality of the seafood they caught and bought by better care after the catch and better freezing procedures. Preparation methods in addition to the traditional frying were emphasized.</p> <p>Research conducted at the NCSU Seafood Laboratory on super chilling fish and using an acid-gelatin dip for improving storage and freezing quality was used for the presentation. Also recipes evaluated by the nutrition leaders of Extension Homemakers Clubs in Beaufort County were used for the programs.</p> <p>The participants in the program reported the following results:</p> <p>86% reported being better able to determine the freshness of seafood  43% have used the super chill method  14% have used the gel dip method  21% have prepared new types of seafood or by new methods  71% have checked their freezers to determine length of storage of seafood.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Ann Edge, Associate  Home Economics Extension Agent  Agricultural Building, Courthouse Square  Swan Quarter, N. C. 27885  919/926-3201</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Food Conservation and Safety - North Carolina

## TEXT/DESCRIPTOR

<p><b>Program Description</b></p> <p><b>Emphasis</b> <b>Goals</b> <b>Scale</b></p> <p><b>Innovations</b> <b>Linkage</b> <b>Clientele</b></p> <p><b>Resources Involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>The National 4-H Council recently identified Food Conservation and Safety as the fifth nationally-sponsored Food and Nutrition program. However, no literature was available to support the program. Therefore, a 4-H project entitled "Food Conservation and Safety" and Leader Activity Guide was developed for use in North Carolina.</p> <p>The project has as its main emphases the safe storage and handling of foods that are brought into the home for short-time consumption and the safe preparation and transportation of foods for picnics, backpacking, camping and other outdoor recreation activities. The Leader Activity Guide contains five lessons and/or activities to be used by 4-H leaders. Each of the five lessons can stand by itself or may be used together as a series with a food safety project club.</p> <p>Concern about food safety as it relates to the handling, preparation and storage of food has increased in recent years. An examination of homemakers' knowledge, attitudes and practices was carried out in 1974 in 250 households. It revealed that 63% had at least one high risk practice in regard to the handling, preparation and storage of meat and poultry. Thirty-two percent had refrigerators above 45°F. There was little understanding of bacterial growth, cross contamination and other safety factors.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

You Ask About, North Carolina

## TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources Involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>A newspaper column was initiated to eliminate repetition of questions being called into the County Extension Office. A list of questions being asked is kept on a daily basis. The column is built around three questions each week, keeping in mind variety and seasonal interests.</p> <p>The column is designed as a teaching tool for "how to" questions on food preparation and food buying.</p> <p>Since the column began, the newspaper has been sold and the present owner-publisher has requested the continuation of this Wednesday food section feature.</p> <p>As a result of this column, the County Agricultural Extension program has received visibility it had not had before. The county residents and newspaper personnel look to Extension for reliable information. Because of this educational media, new audiences have requested programs and other clientele have reported they clipped the column for future reference and money has been saved on food purchases. One meat market manager reported increased sale of dark meat following an article on this topic.</p> <p>With inflation factors being a part of everyday life, and more people unable to attend programs, this teaching tool could be expanded to include more subject matter areas.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Mrs. Era K. Robinson  Home Economics Extension Agent  P. O. Box 270  Fayetteville, N. C. 28302  919/484-7156</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Pounds Away at Caraway - North Carolina

## TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources Involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Two retreats were held for intensive work on weight control. Emphasis was placed on individual caloric needs, behavior modification and exercise. Clients were shown that a 1200 calorie diet could be attractive and tasty.</p> <p>Participants paid registration fees to cover room, board and expenses for non-Extension speakers. Eight Extension Agents, a Program Leader and three foods specialists were involved.</p> <p>Six months reports are not yet in, but early indications show that many of the women were working toward the goals they set for themselves. Those who attended learned a lot about meal planning and preparation to reduce calories; most had a better understanding of some of their habits that helped lead to obesity.</p> <p>In at least two counties the participants have had follow up sessions with the county Home Economics Agents in order to learn more about weight control.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Marjorie Donnelly, Specialist in Foods &amp; Nutrition  N. C. Agricultural Extension Service  P. O. Box 5097  Raleigh, N. C. 27607  919/737-2770</p>



a. Inflation Seminars

"Living with Inflation" was the topic of several county programs, among the most successful of which was the multi-county activity sponsored by the Extension Homemakers of Burke, Caldwell, Catawba and Alexander counties. The all-day meeting was held at a central location and featured classes on: Making Sense at the Supermarket, Low Cost Decorating Ideas, and Well Dressed at Low Cost, taught by Extension Specialists and other Home Economists with appropriate expertise. One hundred eighty women attended the morning classes and the afternoon panel discussion on Investments. Alternatives for investing in real estate, money market funds, and other financial securities were discussed by appropriate specialists from the field. Numerous questions from the participants indicated their great interest in investing wisely in inflationary times. Reports from the local Extension Home Economists indicated that this was one of their most successful meetings all year.

Stanley County also had an "Inflation Day" aimed specifically toward senior citizens. Besides classes, this program featured exhibits of handmade and recycled products for the home. Following a dinner, additional people came in for an evening program on investing. Attendance at this meeting was estimated at 50 people.

During the year other counties promoted inflation-fighting ideas through the use of mass media, such as radio and television spots, newsletters to special audiences and newspaper articles. Extension slide sets and bulletins on understanding inflation causes and impact were available and used frequently by county personnel.

The inflationary economic environment has provided Extension an excellent opportunity to reach new audiences; reports from counties indicate that their activities are reaching some of the previously unreached clientele.

b. Money Management

The information provided has focused on procedures for alleviating common financial problems and the development of managerial skills for optimizing the financial resources available in order to enhance everyday living and build future security. Special audiences receiving these programs included: high school classes, elementary school classes, couples groups, Salvation Army groups, men and women's civic clubs, mill workers, wage earners enrolled in the bankruptcy court program, Social Service clients, displaced homemakers sponsored by the Employment Security Commission, church groups, and pre-release prisoners. Extension agents report that the audiences have responded very favorably and enthusiastically to the programs. They seemed eager to learn techniques for managing their money and easing their problems.

According to reports from Extension agents, the various money management programs offered and persons reached in North Carolina included:

Type Programs	Type Audiences			
	Extension Homemakers	Non-Extension Homemakers	Other Adults	Youth
Budgeting Skills	5385	5028	2479	3585
Credit Use	712	1541	699	128
Retirement Planning	1875	790	389	0

A home study course in money control was the most popular single program in money management. This is an on-going program which provided 1362 copies of the course for clients in 32 counties this year. One agent stated that a much greater number of requests for this course came from the urban areas than from the rural areas of her county.

A computer budgeting program has been used in public places (shopping malls, banks, Extension offices) in several counties on a short-term basis for interested clients. Personal counseling was available to those clients who desired it and literature was distributed to all participants. This has proved an excellent way for Extension to reach new audiences. About one-half of the participants who returned evaluation cards had not used Extension's services before. Responses were positive relative to the benefit and adequacy of information provided. This program could be used to a greater extent if a technician were available to take it to the counties instead of the specialist, or if several portable units were available for loan to counties for a program focus over a two or three month period.

c. Family Legal Affairs

Family members are becoming increasingly aware of legal matters and their effect on the family economic situation. In recent years Extension programs have been developed to help family members understand their legal rights, and how to plan for greater economic security in the future through an understanding of laws that affect them. Two programs of special interest are those on "Estate Planning" and "Homemakers and the Law."

Estate planning programs have been conducted for the past ten years throughout the state of North Carolina, mainly by specialists in Family Resource Mgt. and Economics and Business departments. County personnel have found that these programs drew large audiences and were especially good for reaching certain non-traditional audiences, such as more affluent urban adults. The increasing value of farm real property has caused rural families to become concerned about the costs of passing that property on to future generations intact.

In 1980, at least one agent from each county was provided training in estate planning and given the opportunity to become familiar with visual teaching aids

available for county use. Since that time the responsibility for teaching estate planning has shifted from the specialists staff to the counties, where the personnel are becoming more and more confident in their role of planning and executing the public programs. Some of the Home Economists have reported feeling much more competent in the subject matter and comfortable in explaining the visuals. They have held county special interest meetings, area meetings based around Extension Homemakers club organizations, "Lunch Bunch" groups and used much of the information for mass media. Supporting and assisting them have been local attorneys, bank trust officers, insurance representatives, and court officials.

This year fifteen counties have sent written reports on their meetings. Agent Joyce Hildreth in Rockingham County presented the program to a group of 128 individuals, 25 of whom returned evaluation cards later. Of these, 22 had discussed their estate plans with their spouses, 13 had reviewed and estimated the value of their estates and reviewed the terms of property ownership that might have implications for property transfer. Others reported improving their family records system and 7 had wills drawn for the first time.

One participant in Pitt County commented, "I'm delighted that my tax money is going for something like this that provides a direct benefit to me."

A statistical report for the state revealed that 8301 individuals had made or updated a will during this past year.

Changes in state and federal laws pertaining to tax laws and property transfer at death continue to keep specialists involved in updating written materials and visuals for use at the county level. The topic of estate planning should continue to be an important educational theme for the expanding adult audiences reached by Extension.

Homemakers and the Law as an Extension program has grown out of the interest of many women in current laws that affect women, and especially married women. North Carolina laws provide a dominant role for the husband in a marriage, with provisions that often put the wife at a disadvantage if the marriage should end through death or divorce. Some of the problems of formerly married women involve their economic situations, especially the fact they often have reduced income, limited support for dependent children, reduced access to the use of credit, lack of insurance protection and unexpectedly lower resources in the form of property, real or personal. A middle-aged homemaker suddenly "on her own" often has limited skills and opportunity for employment to support herself.

Programs for married women on this topic have emphasized the need for her to learn the details of joint property ownership with her husband and the implications for her in case of his death or their divorce. Other aspects include learning the laws pertaining to credit use and getting a personal credit rating, the importance of understanding the family insurance coverage and the effect of divorce laws on her personal income needs. She is encouraged to inventory her potential for independent living based on her personal resources and skills that could be developed.

The programs for county use have evolved over the past two years, growing from a request to specialists for information about the legal rights of farm women, especially in the matter of inheritance. A few county seminars on "Finances for Women" have indicated a great interest in this topic. County personnel have involved local resource people to teach women how they could become more competent in managing their own business affairs.

A home study course on "Homemakers and the Law" was developed in the fall of 1980, and pre-tested. A major feature of this course is the work pages on

which the woman estimates and evaluates her potential assets and income for independent living, if it should become necessary. She is alerted to potential problem areas and advised on steps to take to assure a more secure future for herself and children. Using the course individually in a home setting permits her to work through it with the assistance of her husband, to take the necessary amount of time to complete the course and to have access to family records that may be available.

A pre-test on the study course was conducted with a very favorable response. Women completing the course stated that they had learned much that would be helpful to them, and some felt that all young married women should have access to the information provided. The course has been revised to include 1981 changes in the laws and is being reproduced for a wider distribution in the current program year.

#### Summary of Financial Management Programs

According to agents' reports, the behavioral changes resulting from participants in these management programs were:

<u>Number of Families</u>	<u>Behavioral Changes</u>
16,419	. Making long-range and financial retirement plans
19,376	. Following a spending plan
12,735	. Keeping a record of spending
10,890	. Increasing savings or net worth
12,649	. Teaching children to use money
15,133	. Using credit wisely
8,301	. Making will or updating estate plan
1,698	. Completing home study course on "Homemakers and the Law"

## 2. Consumer Education

The combination of increasingly higher prices for consumer goods and services, and limited family income have caused many individuals to become more concerned about getting the most for their money in shopping. County agents used a variety of techniques in 1980-81 to get information to consumers. County reports indicate that 274 programs were held, reaching 8732 adults. Leaders were trained to present some programs; 1095 people attended those sessions. Consumer information is a frequent topic for mass media; agents reported 516 activities imparting information for consumer decision-making via radio, television, newsletters and news articles in the local press.

### a. Consumerism Activities

Twenty-one counties requested teaching aids on "Effective Consumerism," a series of programs on advertising, comparative shopping techniques, consumer rights and responsibilities, credit use, defenses against consumer fraud and getting consumer redress.

In several counties homemakers were encouraged to use coupons and refunds to stretch their buying dollars. Guilford County's "Coupons: Trash or Cash" program brought out 60 people who later formed a coupon club that meets monthly. The agent in Chatham County found this a good program for entree into a local "newcomers" group, 24 of whom indicated interest in a continuing relationship with Extension through newsletters.

The emphasis was on "Consumer Rights and Responsibilities" in Cumberland and Chatham County programs. The Chatham agent felt this was a good program for groups of all ages and presented it to senior citizens and youth groups, as well as Extension Homemakers. She used problem-solving exercises, sharing sessions and a filmstrip for some meetings, and a "Consumer Game" played on a board for the youth group.

Dare County agents emphasized "Advertising and Consumer Motivations" to help family members become alert to tactics used by advertisers to motivate consumers to buy. Through a pre-test on shopping habits, slides and discussion the participants were urged to develop better skills in comparative shopping.

An example of leader training was reported from Watauga County; the Home Economics Extension Agent trained 58 leaders on "Warranties and the Consumer." In this very small county a large percentage of households could be reached with this number of trained leaders.

b. Planning for Funeral Costs

"Looking Ahead to Funeral Costs" was presented to approximately 600 people in Burke County through leaders who were trained by their Extension agent. She provided some of the information to elderly citizens at noon feeding sites. Although this topic is not among the most popular, since the bulletin "Planning for Funeral Expenses" was printed in 1979, the original 5000 copies have been distributed. The bulletin was updated for current costs and re-printed during 1981.

c. Transportation Costs

Transportation costs continue to rise and to put pressure on family budgets. Pender County area meetings in April focused on the ways a family could save money on transportation. The Extension agent used transparencies to present some information on transportation alternatives, car costs, methods of keeping records on transportation expenditures, and how to save money through good management habits in using the car. Participants in the programs used a quiz to determine the driving habits they use so they could become aware of wasteful habits. Another learning extra was an exhibit of items to include in a trunk kit for emergencies on the road.

Summary of Consumer Behavioral Changes

The following behavioral changes were reported by agents throughout North Carolina for 1980 -81:

<u>Number of Individuals</u>	<u>Behavioral Changes</u>
64,785	. Improving shopping habits
21,710	. Adopting economical transportation practices
6,757	. Establishing or improving family insurance programs
2,883	. Making provisions for final services



d. National Consumer Education Week.

Observances were held in 69 counties across North Carolina, October 5-11, 1980.

In most counties, the total Extension staff was involved and the educational efforts dealt with a variety of topics pertinent to consumer interests and current problems.

Following is a report from participating counties:

<u>No. Counties Reporting</u>	<u>Report of People Reached</u>	<u>TYPES ACTIVITIES</u>	<u>MAJOR TOPICS</u>
44	25,210	Exhibits (County Fairs, Shopping Malls, Libraries, Banks, Co. Extension Offices, Stores, Medical Center)	Money Water Conservation Food Shopping Home Production Clothing Homemade Toys Milk Products Fruit & Veg. Storage Farm Animals Energy Conservation Crafts \$ Saving Practices Aflatoxin
38	2,162	Seminars & Special Classes or Clinics, Workshops (including Mini-Sessions)	Consumer Ed. for Older Adults Wood Burning Landscape Gardening Living with Inflation Crafts Making Lingerie Home Decorating Furniture Refinishing Japanese Beetles Rip-Offs Money Management Supermarket Survival Micro-wave Ovens Salt-free Cookery
69	54,280	News articles, Radio, TV and Newsletters	(Topics Similar to Above)
3	175	Open House - Co. Office	Foods, Clothing & Wood
6	960	Extension Homemakers Clubs	Clothing, Conservation and Home Production
1		Consumerama in September	Money, Landscaping, Foods, Plants, Energy Conservation, Crafts

Agents reported that these programs were well received by the participants and that many requests for literature came from people who did not attend the programs but heard about them from others. No follow-up evaluations were made.

## B. Developmental Work

The status of each program being developed is described below.

### 1. Teaching Children About Money, A Home Study Course

Materials for this course were completed, pre-tested, revised and presented for printing. Several counties used the mimeographed materials this summer with families that included 56 youth who participated. Evaluations were not completed, but comments from the parents stated the course helped the children in the following ways:

- a. Increased awareness relative to:
  - . Value of money and its use
  - . Cost of items
  - . Importance of recordkeeping
  - . Ways to earn money
- b. Encouraged planning for needs and wants before spending
- c. Encouraged saving for things wanted

This course will be distributed to agents for use across the state in January 1982

### 2. Insurance Mini-Lessons

A series of 6 mini-lessons on insurance were developed for volunteer leaders (in one county) to pre-test. The series consisted of an introductory lesson and a lesson on each type of insurance--life, home, auto, health, and funeral. The lessons aimed toward creating an awareness of insurances' impact on the family budget, and motivate program participants to review their coverage relative to needs and adequacy, and to make any needed changes in coverage owned. In the pre-test 16 programs were presented and the leaders reported that the program was well received and that their club members wanted to continue until they had completed the entire series of programs.

Evaluations revealed these results:

#### No. Persons

60

19

17

#### Behavior Changes

Reviewed insurance coverage

Up-dated coverage

Contacted insurance agents for coverage clarification

The State Extension Homemaker Committee on Family Resource Management Plan of Work has recommended this insurance series as a focus program for the 1981-82 program year.

3. Computer Program: "Planning for Adequate Retirement Finances"

This program has been developed and is ready for pre-testing. The program is designed for the 30 - 50 age group to help them project financial needs for retirement and evaluate the adequacy of their provisions toward retirement to date. This computer program is an outgrowth of the workshop materials which have been available for several years. Because this technique requires less time than the workshop, it is expected to be used more frequently by clients. It will be pre-tested and an accompanying manual developed, ready for use across the state by October 1982.

C. Training the Staff

This year Specialists have exerted greater effort toward training agents to implement effective educational programs in financial management and consumer education. The need for this training was based on: (1) current economic problems plaguing citizens of our state, (2) the limited number and types of educational programs being offered in the counties which dealt with major problems of people, and (3) the agents' responses about not feeling confident in providing the information and programs needed. To improve the agents' competence for providing more effective educational programs both group and individual training was provided.

A one-week class, "Today's Consumer and His/Her/Their Money" was offered to interested agents across the state in December 1980. Only 12 agents participated. The training focused on helping the agents understand economic and managerial problems experienced by their clientele; economic, financial management, and consumer knowledge and skills necessary for alleviating these problems; and techniques appropriate for implementing educational programs for various clientele needs.

Specialists held one-day individual training sessions on financial management and consumer education for 20 agents and two, one-day sessions for 8 agents.

D. Special Survey

The Tarheel Consumer, a monthly newsletter begun November 1974, is written by specialists (2 FRM and 1 Economics) for consumers and one copy is sent to Extension Home Economics Agents for use and distribution as they wish. The newsletters contain current economic, managerial, and consumer information relative to family living. One county reproduces the newsletter as The Columbus County Consumer and distributes it to Extension and non-Extension homemakers. An agent in this county surveyed a sampling of the newsletter recipients. Following are the responses received relative to the demographic characteristics of the readers and the value of the newsletter to them.

<u>Items</u>	<u>No. Responses</u> (Total = 43)
1. Ages	
20 - 30	4
31 - 40	3
41 - 50	2
51 - 60	10
over 60	18
2. Occupation/Employed	
Homemaker	24
Employed away from home	8
Retired	11
3. Education	
Elementary School	0
High School	17
College	20
4. Reading newsletter	
Sometimes	0
Most of time	11
Always	20
5. Used information	
None	0
Some	22
Very much	13

(Survey cont'd.) 6. Type information used most

Shopping	23
Will & Estate Planning	18
Economic trends	18
Inflation coping	17
Money management	16
Housing	16
Sales	12
Inventory	6

7. Shared information with others	
Yes	27
No	5
8. Wants the newsletter continued	
Yes	37
No	0

These data indicate that the newsletter is worthwhile to its readers. It also reveals the need to get the newsletter to more of the homemakers who are in the labor market.

Agents in the other counties of North Carolina report that this newsletter is one of the most valuable pieces of literature which they receive. They reproduce issues with pertinent information for special mailing lists and for distribution at special programs. They also use the information for: regular newsletters which they compile, news media spot announcements, and program information. Agents report they rely greatly on its regularity and its worthy content.

Because of the feedback from agents, the specialists feel that it is important to continue this communication instrument. We also plan to more strongly encourage agents to pretest its educational value for the employed homemaker and distribute it accordingly.

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Raleigh, North Carolina Consumer Information Mini-Center for Family Living

## TEXT/DESCRIPTOR

<p><b>Program Description</b> Emphasis Goals Scale</p> <p><b>Innovations</b> Linkage Clientele</p> <p><b>Resources Involved</b> Funds Staff time Other cooperators Special funding</p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b> Who benefitted What were benefits</p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b> Clientele yet to be served</p>	<p>The mini-center consisting of Extension literature, home economists and a computerized budgeting program was set-up in shopping malls, accessible to shoppers on Fridays and Saturdays for six weeks in Oct. 1980 and Jan. 1981. Goals for the project included: (1) reaching new audiences, (2) increasing awareness of scope of Extension's information, and (3) providing information on current problems related to inflation, purchasing, and budgeting.</p> <p>Extension specialists initiated, coordinated and directed the project. A grant from Agricultural Foundations provided wages for two home economists and a manager for the computer. Available Extension literature was distributed to clients.</p> <p>Several hundred people received literature on a variety of topics related to family living, gardening and lawn care. Approximately 125 persons analyzed their average monthly budgets using the computer, and many of these received financial counseling from the home economists.</p> <p>Mail-in evaluation cards were distributed to the participants. Approximately 50% of the respondents said they had not used Extension's services. Convenience was the thing most liked by the respondents. Ninety-nine percent of the participants in the computerized budget analysis indicated the information received was helpful and adequate.</p> <p>The information mini-center is an excellent technique for counties to use in reaching new audiences and getting information to people.</p>
<p><b>Contact person name and title</b> organization address city, state, zip code telephone</p>	<p>Thelma Hinson or Marjorie Donnelly, Extension Specialists, N. C. Agricultural Extension Service, Ricks Hall, N.C. State University, Raleigh, NC 27607 (919) 737-2770</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Estate Planning for North Carolina Families

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>  <b>Innovations</b> <b>Linkage</b> <b>Cientele</b>  <b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	<p>The educational program in estate planning is designed to make adults more knowledgeable about federal and state inheritance tax and distribution laws, so that they can plan for the most advantageous distribution of property to the next generation.</p> <p>Programs are taught in county meetings conducted by county Extension personnel, using visuals and local resource people for the technical information. Middle-aged to older adults are the prime audiences. Information is also imparted through mass media by agents.</p> <p>Local attorneys, bank trust officers, insurance representatives usually assist in programs.</p> <p>During 1980-81, a major portion of the teaching was done by agents, rather than state Specialists, since agents had received inservice training in early 1980.</p>
<b>What were the accomplishments</b>  <b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>  <b>How impacts were measured</b>	<p>Agents in 15 counties sent reports on their programs, expressing their satisfaction in being able to plan and conduct these programs as a result of their training. Specialists continue to provide written resource materials and visuals, updating them with legal changes.</p> <p>A statistical report from all counties indicated that 8301 individuals had reported making a will for the first time or updating their current estate plan.</p> <p>In a few counties, a recommended evaluation form was sent to program participants three months after they attended a meeting to receive information. This instrument asked about their behavioral changes since receiving knowledge about estate planning. The reports from these counties indicated that each person responding made at least one of the actions suggested by agents in their programs. In other counties, results were probably estimates based on numbers participating in programs.</p>
<b>What are implications for future program</b> <b>Cientele yet to be served</b>	<p>Changing laws will require that specialists keep available written materials and visuals up to date, and continue to upgrade the knowledge of county personnel. The increasing aged population will form an enlarged audience for this information, especially if inflation continues to increase the value of assets.</p>
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	<p>Justine Rozier, Specialist in Family Resource Mgt.        N. C. Agricultural Extension Service        F-2 Ricks Hall, North Carolina State University        Raleigh, N. C. 27607 (919) 737-2770</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

North Carolina Homemakers and the Law

## TEXT/DESCRIPTOR

<p><b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b></p>	<p>Homemakers and the Law is a program designed for married women, to help them inventory their present assets and determine how they would fare, economically, if they should lose their husbands either through death, divorce, or if the husband should become permanently disabled. The emphasis is on laws pertaining to property ownership and division, financial support, credit rights, insurance coverage and retirement benefits.</p>
<p><b>Innovations</b> <b>Linkage</b> <b>Clientele</b></p> <p><b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b></p>	<p>The information is presented either through visuals at a special interest meeting, or through the use of a home study course. The study course has been pre-tested and is ready for a final printing. Use of the home study permits the wife to work out her asset inventory with her husband's assistance and family records, at her own speed.</p>
<p><b>What were the accomplishments</b></p>	<p>Some county Home Economists have received training to use the materials and adapted some of the material for women's club programs. Women participating in the programs or using the study course have been enthusiastic in the need for this information. Women are getting credit in their own right, learning the implications of joint ownership of property and trying to develop their skills for employment if needed. An evaluation form was provided for each user of the study course. She was asked to respond to questions regarding the readability, time to complete and value of the home study course.</p>
<p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p> <p><b>How impacts were measured</b></p>	<p>Use of the home study course has indicated to county agents the interest of women in legal matters that affect their present and future economic status, and the effect on their children. A wider distribution of the home study course is now planned. A program for younger unmarried women may be appropriate in the future.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>Justine Rozier, Specialist in Family Resource Mgt. North Carolina Agricultural Extension Service F-2 Ricks Hall, North Carolina State University Raleigh, N. C. 27607 (919) 737-2770</p>



11. FAMILY LIFE, CHILD DEVELOPMENT AND HUMAN RELATIONS

The Human Development program continues to respond to needs identified by committees in each county, by studies made of state statistics, and by national groups such as the White House Conference on Families. With emphasis on human growth and relationships, our work is largely preventive. During 1981 the major program emphases ranged over the following:

I. Parent Education.

Prenatal classes, home study for first-time parents, educating parents of preschoolers, and parent education newsletters were the major efforts.

II. Child Care.

III. Non-Nuclear Families.

IV. Changing Roles.

V. Inflation and the Economy: Values and Emotions.

VI. Family Stress.

VII. Marriage.

VIII. Family Communication.

IX. Youth.

This area included preparation for parenthood, teenage development and careers, and teenage pregnancy.

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## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Prenatal Classes - North Carolina

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	Recognizing a teachable moment for parent education, agents offered 204 sessions for expectant parents which reached 3,465 people.
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	Such other groups as public health nurses, physicians, and hospital obstetrical supervisors were involved as were Extension Agents working in other subject matter areas.
<b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	In addition, 253 mass media activities were reported.
<b>What were the accomplishments</b>	Agents indicated that most participants had not previously been involved in Extension activities, and that 964 requests for additional information were received.
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>	
<b>How impacts were measured</b>	
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	It is expected that prenatal classes will continue and be offered in more counties of the state.
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	Frances J. Wagner, Ext. Human Development Specialist N. C. Agricultural Extension Service P.O. Box 5097, N. C. State University Raleigh, N. C. 27650 (919) 737-2770

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Home Study Course for First-Time Parents in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b></p> <p><b>Innovations</b> <b>Linkage</b> <b>Clientele</b></p> <p><b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>The coming of the first child is a teachable moment for parent education. Baby Talk, a series of 12 leaflets describing development and care was sent monthly during the baby's first year. Observation cards were returned quarterly by parents indicating the baby's developmental level.</p> <p>Since beginning in the fall of 1977, the program has been offered in 82 counties with 8 more planning to initiate it during the coming year. Almost 3,800 families were reached during the past year.</p> <p>Agents and their secretaries reported the home study course effective in reaching a new audience with little expenditure of funds or staff time.</p> <p>Parents reported the program taught them new information and skills and made their baby more enjoyable.</p> <p>Baby Talk will continue with additional emphasis on a second series, Let Me Introduce Myself, which extends through 30 months of age.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>Frances Wagner, Extension Human Development Specialist North Carolina Agricultural Extension Service P. O. Box 5097, N. C. State University Raleigh, N. C. 27650 (919) 737-2770</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Educating Parents of Preschool and School-Aged Children in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefited</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p> <p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Agents provided parent education in a variety of ways. In addition to prenatal classes and home study courses reported elsewhere, newsletters for parents of preschool and school-aged children were used to reach 9,689 families. In Pitt County, alone, 1,031 families with preschoolers and 115 families with school-aged children receive newsletters monthly.</p> <p>Agents reported 330 meetings covering a variety of topics for parents and others interested in the preschool years. Over 3,160 people learned new information or developed skills in such areas as toy making, puppet making, child safety, baby sitting, self-esteem, values, discipline, stress, family recreation and others.</p> <p>In addition, 2,491 mass media activities and 1,153 requests for additional information about preschoolers were reported.</p> <p>According to the agents, general parent education topics were covered in 296 meetings for 3,691 people. A total of 1,169 mass media activities involving general parent education topics were reported, and 833 requests for additional information were received.</p> <p>New program materials and other resources in parent education will be offered during the coming year.</p> <p>Frances J. Wagner, Extension Specialist, Human Development        North Carolina Agricultural Extension Service        P. O. Box 5097, N. C. State University        Raleigh, N. C. 27650        (919) 737-2770</p>
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## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Training Homebased Child Care Operators - North Carolina

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	<p>Through mutual agreement between the N. C. Agricultural Extension Service and the State Office of Child Day Care Licensing, a joint quarterly newsletter was developed and distributed to approximately 6,000 homebased child care operators who were not receiving formal training from any agency or organization. These efforts were an attempt to meet a need on a limited basis until the state agencies mandated to provide training were able to do so. The operators were also encouraged to use the Extension Teletip system as another source of training.</p>
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b> <b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	<p>As a result, some other homebased child care operators have now registered with the Office of Child Day Care Licensing and an updated list of operators is now being maintained.</p>
<b>What were the accomplishments</b>	<p>Agents also worked in other areas of child care, especially training babysitters. A total of 325 meetings reaching 2,039 people, 706 mass media activities, and 694 requests for more information were reported.</p>
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>	<p>Agents also worked in other areas of child care, especially training babysitters. A total of 325 meetings reaching 2,039 people, 706 mass media activities, and 694 requests for more information were reported.</p>
<b>How impacts were measured</b>	<p>Agents also worked in other areas of child care, especially training babysitters. A total of 325 meetings reaching 2,039 people, 706 mass media activities, and 694 requests for more information were reported.</p>
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	<p>Next steps include developing guidelines for recruiting new homebased child care operators.</p>
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	<p>Frances J. Wagner, Extension Human Development Specialist  N. C. Agricultural Extension Service  P. O. Box 5097, N. C. State University  Raleigh, N. C. 27650  (919) 737-2770</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Non-nuclear Families

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	<p>The rising divorce and remarriage rates and increased numbers of single parent households in North Carolina has created the need for the general public, professionals, and individual families to be more aware of the special problems, needs, and some solutions for non-nuclear families.</p>
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	<p>During the past several years agents have offered divorce awareness programs to Extension homemakers and other adult groups, using resource materials developed by human development specialists. Some counties have conducted support group sessions for children involved with divorce.</p>
<b>Resources Involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	<p>In 1980 a model conference was held for professionals concerned with stepfamilies, followed by eight regional conferences for professionals and other interested persons. Almost 500 people attended and others were made aware of stepfamilies through extensive newspaper coverage. A ten percent sample follow-up survey of those attending indicated the conferences:</p> <ul style="list-style-type: none"> <li>- were very helpful</li> <li>- created awareness of stepfamilies, their needs, and some solutions,</li> <li>- led them to take such actions as taking or teaching courses, improving counseling techniques, sharing knowledge and resources with others, organizing support groups, and</li> <li>- helped them to see further steps that need to be taken on behalf of stepfamilies.</li> </ul>
<b>What were the accomplishments</b>	<p>The next phase includes county seminars and support groups, with the help of Education Resource Packet developed by the Human Development Specialist.</p>
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b> <b>How impacts were measured</b>	<p>During the past year 40 counties reported 306 adult programs reaching 1,574 persons, 516 mass media activities and 199 requests for additional information regarding non-nuclear families.</p>
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	<p>Frances J. Wagner, Extension Human Development Specialist        N. C. Agricultural Extension Service        P. O. Box 5097, N. C. State University        Raleigh, N. C. 27650        (919) 737-2770</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Changing Roles - North Carolina

## TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>North Carolina Extension home economists continued to help adults become aware of changing roles and especially the implications for women. A total of 240 meetings reaching 4,248 adults and 244 meetings reaching 33,601 youth were reported.</p> <p>In addition, 150 mass media activities and 297 requests for more information on changing roles were noted.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Frances J. Wagner, Extension Human Development Specialist        N. C. Agricultural Extension Service        P. O. Box 5097, N. C. State University        Raleigh, N. C. 27650        (919) 737-2770</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Values: Energy and Inflation in North Carolina

## TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>This program was designed as part of a total Extension Home Economics Department emphasis on energy and inflation. The purpose of the program was to help participants to become aware of values and emotions related to energy and inflation. Participants were given the opportunity to consider alternatives for dealing with both values and emotions.</p> <p>Group meetings were special interest groups organized by agents and Human Development Committees or Extension Homemaker Club meetings.</p> <p>Awareness was created among the 3,653 participants.</p> <p>253 lay leaders were trained.</p> <p>412 mass media activities were conducted.</p> <p>483 requests for more information were received.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Leo F. Hawkins, Extension Human Development Specialist  Agricultural Extension Service, N. C. State University  Raleigh, N. C. 27650 (919) 737-2770</p>



ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Family Stress in North Carolina

TEXT/DESCRIPTOR

<p><b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b></p>	<p>This program on "Family Stress" was designed to help participants to 1) examine ways their families handle stress, 2) review the skills necessary to help a family recover from a stressful situation, and 3) develop skills for handling stress in families.</p>
<p><b>Innovations</b> <b>Linkage</b> <b>Clientele</b></p>	<p>The program materials were designed for lay leaders to use with organized clubs or with special interest groups. Clientele groups included homemaker club members, women's clubs, retired teachers, and high school students.</p>
<p><b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b></p>	<p>18 agents received one week of training. 413 lay leaders were trained to teach the lesson.</p>
<p><b>What were the accomplishments</b></p>	<p>5 area meetings were conducted with from 5 to 15 homemaker clubs participating in each meeting. 427 homemaker clubs had this subject for a program.</p>
<p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p>	<p>6,476 families were reached through participants.</p>
<p><b>How impacts were measured</b></p>	
<p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>Stress management seminars are being planned or considered for: 1) managers and supervisors in business and industry, and 2) stress among teenagers.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>Leo F. Hawkins, Extension Human Development Specialist Agricultural Extension Service, N. C. State University Raleigh, N. C. 27650 (919) 737-2770</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Marriage Education in North Carolina

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	<p>Extension Home Economics work in marriage education takes three forms: 1) Helping young people to prepare for marriage. Some of these programs begin with pre-teens as well as teenagers. 2) A newlywed packet for couples at the time of marriage. 3) Marriage enrichment events.</p>
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	<p>Innovative approaches include: 1) A six week (one per week) course in marriage for two high school classes. 2) A slumber party approach to teaching pre-teen girls. Parents participated in the first hour. 3) One-day Saturday marriage enrichment retreats. One such group met monthly for the program year.</p>
<b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	<p>Consultation, visual aids, and some literature was furnished. Special packets were prepared for newlyweds and for marriage enrichment. Agents gained cooperation and help from parents, the health department, the school system, churches, and the social services department.</p>
<b>What were the accomplishments</b>	<p>150 young people were helped to take a careful look at the major responsibilities of marriage.</p> <p>4,200 families were reached with newlywed packets.</p> <p>50 couples improved communication skills.</p>
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>	
<b>How impacts were measured</b>	
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	<p>As long as over 90 percent of our population get married at some time during life, and as long as North Carolina high schools do not have systematic family life education there will be a big clientele for marriage education among adults and young people.</p>
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	<p>Leo F. Hawkins, Extension Human Development Specialist        P. O. Box 5097, N. C. State University        Raleigh, N. C. 27650        (919) 737-2770</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Family Communication in North Carolina

## TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>This program is designed for any group that is studying communication within the family, not just married couples. Areas treated are communication with children, with adolescents, between couples, and with whole family groups. Participants are given the opportunity to examine and improve communication skills.</p> <p>Home Economics agents organize area meetings with the Extension Homemakers Clubs or special interest meetings to deal with family communication.</p> <p>Five counties had area meetings that reached 600 people.</p> <p>3,000 participants learned communication styles and skills in 126 adult group programs.</p> <p>65 volunteers trained to improve communication skills.</p> <p>253 leaders attended training sessions and reported teaching 285 lessons.</p> <p>Fast-moving technology involving machines makes it even more important that people within families learn to express themselves clearly, listen carefully, and understand before going ahead.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Leo F. Hawkins, Extension Human Development Specialist  Agricultural Extension Service, N. C. State University  Raleigh, N. C. 27650 (919) 737-2770</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Teenage Development: North Carolina

## TEXT/DESCRIPTOR

<p><b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b></p>	<p>This emphasis included a variety of programs related to the physical development of early adolescents, teenage development, careers, preparation for parenthood, and teenage pregnancy. Twenty-two counties had such programs.</p>
<p><b>Innovations</b> <b>Linkage</b> <b>Clientele</b></p> <p><b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b></p>	<p>Preparation for parenthood classes involved seven counties and 816 youth, teenage pregnancy was discussed in five counties by 196 teens, teen development and careers in five counties by 1,954 teens, and physical development in four counties by 82 pre and early teens.</p>
<p><b>What were the accomplishments</b></p>	<p>4,000 teenagers were made aware of the important responsibilities related to parenthood, careers, and marriage.</p>
<p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p>	<p>70 parents involved.</p>
<p><b>How impacts were measured</b></p>	<p>One survey of parents of daughters indicates improved communication with daughters, help for parents in answering questions, and a great increase in questions to parents.</p>
<p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>Questions written by young people indicate many surprising gaps in knowledge and a lack of regular communication with parents or adults.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	<p>Leo F. Hawkins, Extension Human Development Specialist Agricultural Extension Service, N. C. State University Raleigh, N. C. 27650 (919) 737-2770</p>

## ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Proud Parent Packets - North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b>  <b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Agents teach the nutrition portion of Expectant Parent Classes organized by the Ob-Gyn Department of the local hospital. They also distribute "Proud Parent Packets" to all mothers having babies in the county hospitals. Last year 1000 were distributed.</p> <p>A random sample was selected for a survey. It revealed that all new mothers liked receiving the packet in the hospital; 94% read the material in its entirety; 59% filed the packet for future reference; 76% felt they and the baby would benefit from the information in the packet.</p> <p>Distribution of the packets also served as a means for getting a mailing list of new parents interested in "Baby Talk"--a series on human development.</p>
<p><b>Contact person</b>  <b>name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	

The Gerontology Program responds to the needs identified by county Extension Advisory Committees, by studies made in North Carolina, including research done by Dr. Vira Kivett, University of North Carolina at Greensboro in cooperation with the North Carolina Agricultural Experiment Station. The Gerontology specialist provides to the county Advisory Committee trends and problems in Aging identified at National level from research studies and National Conferences on Aging.

The purpose of the Extension program in Gerontology is four-fold:

- 1) Help youth and adults of All Ages increase understanding of Aging to prepare for their own later years and understand those who are now Elderly.
- 2) Retirement Planning to prevent problems in Later Years.
- 3) Help Older persons in adjustment to age-related changes - physical, social and psychological changes.
- 4) Helping Older Persons raise level of awareness and understanding about how to use the available Community support systems and education program to maintain their maximum independence and achieve their potential as persons.

During 1981 the major program emphases include the following:

- I. Social-Psychological Aging
- II. Retirement Planning
- III. Adjusting to Age-Related Changes and Losses
- IV. Elder Maintenance for Maximum Independence
- V. Inter generation Relations
- VI. Education for Preventive Health - the Elderly
- VII. Inflation Coping in Retirement
- VIII. Involvement of Older Adults

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Social-Psychological Aging

## TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Creating awareness to importance of understanding of Aging process in the Older mature years in order to improve attitudes and prepare better for own later years, while understanding and assisting present day elders. Agents offered 227 sessions to adult groups and 53 leader sessions to reach 7741 people.</p> <p>Factual information from Research in Aging was presented through quizzes and answer sheets, case studies, check sheets. Resource persons from Duke University County Health Department and Retired Persons Organizations involved.</p> <p>In addition, 226 mass media activities were reported.</p> <p>Agents indicated there was considerable interest and that 928 requests for additional information was requested.</p> <p>It is expected that club programs and special interest meeting will continue.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>K. Isabelle Buckley, Extension Gerontology Specialist, N.C. Agri. Ext. Service          P.O. Box 5097, N.C. State University          Raleigh, N.C. 27650          (919) 737-2770</p>

ACCOMPLISHMENT REPORT

FY 1981

BRIEF TITLE (include State name in title)

Pre-Retirement Education

TEXT/DESCRIPTOR

<b>Program Description</b>	The purpose of Pre-Retirement Education Program is to prepare for adjustment and prevent problems in later life. Agents report that 1757 adults were reached through special interest meetings and extension homemaker clubs.
<b>Emphasis</b>	
<b>Goals</b>	
<b>Scale</b>	
<b>Innovations</b>	Lawyers, financiers and Social Security Adm. were involved in seminars.
<b>Linkage</b>	
<b>Cientele</b>	
<b>Resources involved</b>	The Retired Persons Association were involved as resource persons as well as Senior Citizen Club Members. In addition to formal meetings, 1935 mass media activities were presented.
<b>Funds</b>	
<b>Staff time</b>	
<b>Other cooperators</b>	
<b>Special funding</b>	
<b>What were the accomplishments</b>	577 requests were made for additional information.
<b>What were the impacts</b>	
<b>Who benefitted</b>	
<b>What were benefits</b>	
<b>How impacts were measured</b>	
<b>What are implications for future program</b>	It is expected that Senior Clubs and groups will continue to be organized, and remain active.
<b>Cientele yet to be served</b>	
<b>Contact person name and title</b>	K. Isabelle Buckley, Extension Gerontology Specialist, N.C. Agri. Ext. Service
<b>organization address</b>	P. O. Box 5097, N.C. State University
<b>city, state, zip code</b>	Raleigh, N.C. 27650
<b>telephone</b>	(919) 737-2770



## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Adjusting to Age-Related Changes

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	Adjusting to Age-Related changes involves making adjustments to physical, social and psychological changes for example, sensory changes; retirement and losing friends; death of spouse and adjusting to widowhood.
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	Agents report reaching 6406 adults in 206 education programs.
<b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	Resources involved are, telephone company, TV dealers, AARP, "Widowhood Support Groups.
<b>What were the accomplishments</b>	581 widowhood support groups organized reaching 5,312 members. 10,467 Elderly visited by Volunteers.
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>	An extension packet for training Volunteers used a handbook for Widowhood Support Groups prepared.
<b>How impacts were measured</b>	
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	It is expected that families and Volunteers will continue to help the lonely and that participation in support groups will continue.
<b>Contact person name and title</b> <b>organization address</b> <b>city, state, zip code</b> <b>telephone</b>	K. Isabelle Buckley, Extension Gerontology Specialist, N.C. Agri. Ext. Service P. O. Box 5097, N.C. State University Raleigh, N.C. 27650 (919) 737-2770

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Elder Maintenance for Maximum Independence

## TEXT/DESCRIPTOR

<b>Program Description</b> Emphasis Goals Scale	The purpose of support care to Elders is to help each one maintain his own maximum level of independence. In-Home and Community Support systems are less expensive to tax payers than institutional care and are alternatives to institutional care.
<b>Innovations</b> Linkage Clientele  <b>Resources involved</b> Funds Staff time Other cooperators Special funding	Agents report cooperating with Councils on Aging in providing educational programs to 5,870 Elders 2,128 Mass Media Activities presented
<b>What were the accomplishments</b>	16,220 Elders served by Nutrition Sites and Home meals 8,065 are served by Chore and repair service 3,355 are served by Home-maker-Home Health Aide Services
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>	375 requests made for additional information following educational programs by Mass Media.
<b>How impacts were measured</b>	
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	Support Services and Networks will continue to develop as social consequence of extension educational programs.
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	K. Isabelle Buckley, Extension Gerontology Specialist, N.C. Agri. Ext. Service P.O. Box 5097, N.C. State University Raleigh, N.C. 27650 (919) 737-2770

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Intergenerational Relationships

## TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>A 4-H "Youth Looks at Aging" program is promoted to help develop understanding and good relationships between the generations - Youth and Elders.</p> <p>The contest has been sponsored by the AARP for 9 consecutive years. Agents report that 797 4-H Youth are reached with 142 educational programs</p> <p>Resulting in 169 intergeneration activities involving 2340 youth with Elders.</p> <p>Stories in record books show improved attitudes, increased understanding and good relationships.</p> <p>In addition to the formal program, 157 Mass Media activities were presented.</p> <p>It is expected that this program will continue to alert awareness, increase sensitivity to needs and develop self esteem in valuing each other.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>K. Isabelle Buckley, Extension Gerontology Specialist, N.C. Agricultural Extension Service, P.O. Box 5097, N.C. State University Raleigh, N.C. 27650          (919) 737-2770</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Preventive Education in Health for Elders

## TEXT/DESCRIPTOR

Program Description	
<b>Emphasis</b> <b>Goals</b> <b>Scale</b>	Preventive practices for health maintenance maximizes the level of independence and involvement of the Elderly. Agents report that 7479 Older adults were reached in 222 educational programs related to preventive health.
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	Preventive Health includes exercises, nutrition, accident prevention and preventive health screening.
<b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	Agents cooperate with Councils on Aging, County health department and recreation department.
<b>What were the accomplishments</b>	19,959 Older adults participated in hypertension clinics and 6,044 elder adults participated in glaucoma clinics, and 15,000 participated in exercises promoted by extension agents.
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>	
<b>How impacts were measured</b>	
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	It is expected that health of the elderly will continue to improve. Making it possible to remain alert and involved.
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	K. Isabelle Buckley, Extension Gerontology Specialist, N.C. State Agri. Ext. Service P.O. Box 5097, N.C. State University Raleigh, N.C. 27650 (919) 727-2770

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Inflation Coping in Retirement

## TEXT/DESCRIPTOR

<b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b>	<p>Self-reliance skills and health maintenance are the best inflation coping skills in retirement. Agents reported that 3,597 Older adults were reached through education programs related to income management.</p>
<b>Innovations</b> <b>Linkage</b> <b>Clientele</b>	<p>The program was packaged for special audiences by cross cutting Home Economics subject areas and other agency lines. In addition to formal programs, 1310 mass media activities were presented reaching a large audience.</p>
<b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b>	<p>Agents reported that 84,380 Senior Adults maintained self-reliance through self-sufficiency and self-maintenance skills. This project has been promoted for 2 years prior to this year.</p>
<b>What were the accomplishments</b>	<p>375 requests were received for additional information on management skills.</p>
<b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b>	<p>It is expected that senior adults will continue to receive management skills refreshing through extension</p>
<b>How impacts were measured</b>	
<b>What are implications for future program</b> <b>Clientele yet to be served</b>	
<b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b>	<p>K. Isabelle Buckley, Extension Gerontology Specialist, N.C. Agri. Extension Service  P. O. Box 5097, N.C. State University  Raleigh, N.C. 27650  (919) 737-2770</p>

## ACCOMPLISHMENT REPORT

FY 1983

## BRIEF TITLE (include State name in title)

Involvement of Older Adults

## TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Assistance was provided to 96 Extension Leaders and 345 non-extension senior adult leaders and 4,391 others in "Working with Older Adults", a packet and handbook of programming, group techniques.</p> <p>Visualizing your program was developed by specialist and provided to 100 county home agents. In addition 273 mass media activities were presented.</p> <p>13,574 Senior Adults continue their development and fulfillment through serving as Volunteers in Community.</p> <p>24,057 Senior Adults and Elders participate in 3220 Senior Clubs and groups that are served by Extension.</p> <p>357 requests for additional information were received.</p> <p>It is expected that the Older Adults will continue to find involvement in volunteer or paid work to fulfill potential.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>K. Isabelle Buckley, Extension Gerontology Specialist, N.C. Agri. Extension Service          P.O. Box 5097, N.C. State University          Raleigh, N.C. 27650          (919) 737-2770</p>

12. TEXTILES AND CLOTHING

Clothing is one of the first areas within the family budget to experience the money squeeze. As a non fixed monthly expenditure, clothing can be decreased or increased depending upon the availability of the family's economic resources. Because of its discretionary status, sound decision-making procedures in the form of planning, selecting and coordinating a functional wardrobe in addition to assessing available clothing alternatives, are essential in maximizing the available family clothing allowance. These decision-making procedures constitute the major thrust of the 1980-81 North Carolina Agricultural Extension clothing program. Specifically these include:

- I. Buymanship and Acquisition Alternatives
- II. Refurbishing and Storage
- III. Home Sewing
- IV. Energy
- V. Aesthetics and Personal Appearance

Harriet R. Twiss, Director  
 Clothing Specialist-Extension  
 7-1, State Hall Annex, NCSU  
 Raleigh, N.C. 27607

Contact person  
 name and title  
 organization  
 address  
 city, state, zip code  
 telephone

## ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

North Carolina Buymanship and Acquisition Alternative Clothing Programs

**TEXT/DESCRIPTOR**

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Buymanship and Acquisition Alternative Programs to help families reduce their clothing cost were implemented. These varied consumer education programs dealt with wardrobe planning clothing alternatives such as "To Buy or To Sew," "Shopping At Discount Stores" and recycling clothing and clothing for men. Too, a clothing handicapped program was also used to train health educators.</p> <p>An "Investment Dressing" publication is now in its second printing, plus a 6½ minute TV segment for regional television.</p> <p>Results reported by home agents from these varied programs showed that 270 adult programs and 85 youth programs were presented reaching 8,581 and 1,832 respectively. Too, 976 newspaper and radio programs were given. Additionally, 87,524 articles of clothing were recycled at a cost value of \$875,240. The figures were reported on the 1980-81 Home Economic Accountability Factors Sheet using the survey method.</p> <p>Clothing related home appliance equipment has shown up as a developing program trend which needs to be addressed during the 1981-82 year.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	<p>Harriet R. Tutterow, Extension  Clothing Specialist-In-Charge  F-1, Ricks Hall Annex, NCSU  Raleigh, N.C. 27607</p>



## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

North Carolina Refurbishing and Storage Clothing Program

## TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Clothing care and maintenance programs to extend the wear life of garments currently in the wardrobe were used by home agents as a means of teaching clothing money management. To aide in combating inflation related stress. The three phase program stresses 1) mending and repairing skills; 2) stain removal techniques; and 3) refurbishing and storage.</p> <p>One module agent for in-service training was devoted to refurbishing and storage. Twenty agents received the information. Too, a new leader lesson and visuals were developed. For mass media 9 clothing care scripts were added to Extension Teletip. In the laundry area a program on "Laundry Problems of the 80's" was piloted, resulting in the program being offered statewide.</p> <p>Results reported by home agents from these three programs showed the following: a) 239,829 garments were mended or repaired; and b) 262,911 stains were removed with a money value realized of \$132,455.50 by the do-it-yourself technique as opposed to sending the garment to the dry cleaners. These figures were reported on the 1980-81 Home Economic Accountability Factors Sheet using the survey method.</p> <p>Persons who benefited from the programs were the ones who learned how to mend, repair, refurbish and store their clothing appropriately so that the clothing items can remain in the current wardrobe without having to be replaced.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b>  <b>telephone</b></p>	

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

North Carolina Home Sewing Program

## TEXT/DESCRIPTOR

<p><b>Program Description</b></p> <p><b>Emphasis</b> <b>Goals</b> <b>Scale</b></p> <p><b>Innovations</b> <b>Linkage</b> <b>Clientele</b></p> <p><b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>Clothing Construction Workshops, special interest lessons and demonstrations were used by home agents to help N.C. Consumers learn or improve skills, and learn time-saving, efficient methods for making clothing for their families. Clothing construction as a means of stretching the family clothing budget can produce a savings of 62% over the cost of similar ready-to-wear.</p> <p>One in-service training workshop was conducted for 20 agents in modified tailoring techniques. A 45 minute teaching video-tape, written instructions, and construction samples were developed by agent use. As a result, more than 30,700 garments have been tailored during the past year.</p> <p>Approximately 16,000 adults and 5,350 youth participated in clothing construction programs during 1980-81. Additionally, 1325 trained volunteer leaders have taught lessons involving numerous other home sewers.</p> <p>In total, more than 250,000 garments have been constructed by adults, and 16,344 by youth during the past year. Estimating savings realized at \$15 per garment constructed, and \$90 per garment tailored, North Carolina consumers realized savings of \$6,263,825 through home sewing in 1980-81.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	

## ACCOMPLISHMENT REPORT

FY 1981

**BRIEF TITLE (include State name in title)**

Energy Reduction Through The Selection of Appropriate Clothing and Application of Home Laundry Techniques in North Carolina

**TEXT/DESCRIPTOR**

<p><b>Program Description</b> <b>Emphasis</b> <b>Goals</b> <b>Scale</b></p> <p><b>Innovations</b> <b>Linkage</b> <b>Clientele</b></p> <p><b>Resources Involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b> <b>Who benefited</b> <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>To reduce the amount of energy being used in the home, a two prong program thrust on dressing warm and energy conservation through laundry practices was offered to N.C. Homemaker Clubs, young families and adolescents.</p> <p>A publication, "Keep Warm Clothes" gives a synopsis of how to select fibers, fabrication and styling which if heeded can lower the home thermostat setting. Three Extension Teletip scripts on energy conscious clothing were made available for public use. In the area of laundering, "Buying a Washing Machine For Energy Conservation" and "Laundry Techniques for Energy Conservation" 5 minute radio scripts were written for county agent use.</p> <p>During the year 134 clothing energy programs were presented to homemaker clubs and special interest audiences along with 276 newspaper articles and radio talks given. As a result of these programs, agents reported that 1055 people have requested additional clothing energy conservation information. Also, 1 television segment, "Dressing Warm" was presented on Extension Public Television "Almanac" program. Contact person Judy Mock, Clothing Specialist.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b> <b>telephone</b></p>	

## 14. HOUSING AND HOME ENVIRONMENT

A 1 How and to what extent has the work in the department contributed to meeting needs or solving problems?

During the year 1980-81, two of the major problems facing North Carolina families were given priority by the Extension Housing, Home Furnishings and Crafts Department. These were: (1) the need for families to learn to adjust to energy shortages and increased costs, and (2) the need for families to learn to use their available resources during the current inflationary period.

Educational emphasis on energy management resulted in 72,646 families making energy conservation changes in their homes for a combined savings of \$25,465 on their energy bills. Families have learned that changes in behaviors or lifestyles can affect energy use and the resulting costs. Emphasis has been placed on decorating to conserve energy, selection of energy efficient appliances and house renovations to improve energy efficiency. Many families are exploring new energy sources for their homes such as wood, passive and active solar, and even earth sheltering in some parts of the state as evidenced by the over 16,000 requests for additional information in the areas of housing and energy.

Since developemnt in 1979-80, the eight Energy Efficient House Plans have increased in use by North Carolina residents. Of the forty-eight house-plans available via the House Plan Service during 1980-81, these eight plans accounted for over 30 percent of all plans sold. In a number of instances these houses have been used as result Demonstration Houses (Carteret, Johnston, Wilson, Bladen and Halifax counties) with an average attendance of 75-250. The two plans (7-EE and 8-EE) developed through a joint effort with the N. C. Farmers Home Administration have been the most

requested. These two passive solar house plans have been built in 70 counties, and FmHA reported over 260 houses completed.

In September 1981, the NCSU Passive Solar Energy Research and Demonstration House was opened to the public. This cooperative venture between four NCSU schools (School of Design, School of Agriculture and Life Sciences, School of Forestry, School of Engineering), industry and government has produced an excellent facility where consumers can see first hand new technology in the use of solar energy, energy conservation, application of design and space utilization principals, plus serve as a research center. Extension professionals and county clientele will have the opportunity to visit the site, receive educational information and hopefully change current attitudes and behaviors in the use of alternatives in energy, housing, and house furnishings. (See attached news article.)

The state 4-H Home Environment Demonstration program continued to emphasize energy conservation. This program emphasis has helped the youth who participated to learn more about saving energy in their homes. In 1981, 28 4-H members participated in District Day Demonstration activities. The State Home Environment Winner was a youth from Johnston County who had previously participated in that county's first Youth Energy Day.

Three hundred eighty-four 4-H'ers from fourteen (14) counties participated in energy activities as a part of a research project on attitudes and behaviors of youth toward energy conservation. The study indicated that youths who had experienced energy conservation education were more willing to make behavioral than attitudinal changes in their use of energy.

The Housing and Home Furnishings Department participated in the design and implementation of the 1980 N. C. State Fair Energy Dome. The dome featured numerous energy conservation ideas with one section specifically emphasizing ways to conserve energy in the home.

To provide North Carolina consumers with information on the recently enacted Federal Appliance Labeling Law and how to use the information, the department participated in a cooperative program with specialists from Foods and Nutrition and Family Resource Management. A learning packet was developed for use in area and club homemakers meetings, programs for civic groups, and as resource materials for mass media. Over 6,000 adults participated in programs on household equipment and county offices received 3,285 requests for additional information in this area.

Both the Housing and Home Furnishings programs have emphasized ways of coping with inflation. Many counties held series of classes for the general public in ways to conserve money when decorating, remodeling houses or refinishing furniture. Furniture refurbishing was of particular emphasis by more than one-half of the counties. These workshops, where people learn techniques to restore old furniture to usable pieces, reached county clientele not previously a part of Extension. In particular men, newlyweds, young families, retirees and in one case a deaf mute were introduced to Extension education via these activities. According to the 1980-81 Home Economics Accountability Report, 21,203 families used skills taught in home furnishings to save over one million dollars. Over 22,000 families used skills taught in housing to save an estimated \$1,494,384. This is a combined savings in home furnishings and housing of over 2.5 million dollars.

Forty-one counties participated in the cooperative program "Your Wood Can Last for Centuries" which was designed to make the general public more aware of wood protection methods and ways to deal with moisture problems. Approximately 1,400 people attended meetings and over 72,000 publications were distributed.

For the past two years, eight Western District counties have participated in a project to reach mobile home residents via a specially prepared newsletter. One county, Graham, did an in-depth evaluation of the program this year. Seventy-five of the 90 mobile home families enrolled in that county responded to the evaluation. All of the respondents wanted to continue receiving the letter and they especially found useful the information on maintenance and energy conservation. Similar results have been reported from other counties participating, and all indicate they are reaching a new audience.

The North Carolina Creative Crafts program continues to be primarily a leader program conducted by volunteers. In 1980-81 almost 6,000 leaders were trained, who in turn reached over 30,000 adults and 5,000 youth.

The crafts program has an active marketing aspect. Many families supplement their income by selling the products produced. Sales resources are developed through crafts fairs and other retail sources. According to the 1980-81 Home Economics Accountability Report, 17,608 families in the state used skills taught in crafts workshops to add almost \$1,250,000 to their income.

2. New problems, opportunities or demands to which program responded.

Water shortages posed a threat for sections of North Carolina this past year. In order to provide North Carolina residents with information on water conserving techniques, the department cooperated with the Biological and Agricultural Engineering and Community Development Departments to train agents from 49 counties. Over one-half of the 49 counties have conducted workshops, mall displays, mass media series, and several used the topic for county and state fair exhibits. Durham County reported over 2,000 contacts in two program efforts. In addition, Durham county agents developed a youth program and have plans for a factory lunch-break program.

Do-it-yourself programs were sponsored in six counties. These were on-hands workshops utilizing all county staff members, volunteers, and specialists. Over 106 people participated in the Wake County program which reached a non-traditional Extension audience. Fifty percent of the attendants were under 35 years of age and 40 percent were men.

Buncombe County responded to a county need for a program to help disabled homemakers. Working with other county health agencies, 34 persons were reached. Another county (Forsyth) developed a program on designing housing for handicapped individuals and reached 30 participants.

Energy Resource Centers were established in each county to provide consumers with up-to-date energy information. This was an across-Extension effort.



3. Developmental work or updating.

A research project is underway by one Housing and Home Furnishings Department member to study the use and feasibility of establishing videocassette libraries in county Extension offices for clientele use in individualized learning situations. The program, aimed at young adults, will utilize home furnishings subject matter. Twenty N. C. counties are scheduled to participate in 1981-82.

4. Important statewide training programs conducted for staff or volunteers.

Agent training in the areas of housing alternatives, window treatments, water conservation and program evaluation were held in 1980-81.

Thirty-nine agents were enrolled in the "Your Space in the Future" training session in November. These agents were provided information and resources which would facilitate the development of similar programs in their counties. To date, six counties have either conducted or planned such activities and others are planned. Average attendance is 50-150.

Agent training was conducted with 19 agents participating in window treatment construction skills. Approximately 30-40 classes are conducted on this subject each year in the state.

When water conservation became a major concern in the state, a cooperative program between Biological and Agricultural Engineering, Community Development, and Housing and Home Furnishings was developed. Forty-nine counties received training to develop a water management program in their counties. This effort will continue into 1981-82.

Specialist from the Housing and Home Furnishings Department participated in the statewide impact assessment training for county and state staff.

5. Special studies, surveys and evaluation.

An experimental study was conducted to examine attitudes and behaviors of a sample of 284 4-H youths residing in 14 counties in Piedmont, North Carolina to determine influences of energy conservation education. Each youth completed a pretest and posttest. The experimental groups received energy education instruction in the form of a "4-H Energy Fun Day" after completing the pretest, while the control groups received no energy-related instruction.

Over one-half of the responses from the pretests denoted favorable attitudes and less than 25 percent of the responses denoted favorable behaviors. The study indicated that youth who had experienced energy conservation education were more willing to make behavioral changes than the youth who had received no energy-related instruction.

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

Influences of Energy Conservation Education on Attitudes and Behaviors of Selected Youths in Piedmont North Carolina

## TEXT/DESCRIPTOR

<p><b>Program Description</b>  <b>Emphasis</b>  <b>Goals</b>  <b>Scale</b></p> <p><b>Innovations</b>  <b>Linkage</b>  <b>Clientele</b></p> <p><b>Resources involved</b>  <b>Funds</b>  <b>Staff time</b>  <b>Other cooperators</b>  <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b>  <b>Who benefitted</b>  <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b>  <b>Clientele yet to be served</b></p>	<p>Energy continues to be a precious commodity in North Carolina. An experimental study was conducted to examine attitudes and behaviors of a sample of 284 4-H youths residing in 14 counties in Piedmont, North Carolina to determine influences of energy conservation education. Each youth completed a pretest and posttest. The experimental groups received energy education instruction in the form of a "4-H Energy Fun Day" after completing the pretest, while the control groups received no energy-related instruction.</p> <p>The program required cooperation with Extension Housing and Home Furnishings and 4-H Departments and the UNC-Greensboro School of Home Economics.</p> <p>The analysis of data involved descriptive statistics and test of hypothesis.</p> <p>Over one half of the responses from the pretests denoted favorable attitudes and less than 25 percent of the responses denoted favorable behaviors.</p> <p>For a majority of the attitudinal and behavioral scales there were no significant differences. When differences occurred, the control groups indicated more favorable attitudinal changes, while the experimental groups indicated more favorable behavioral changes.</p> <p>Energy-conscious changes were exhibited in both the control and experimental groups, but in a different manner. These findings could be of value to educators, curriculum developers, program evaluators, and others who are working or doing research in the field of energy.</p>
<p><b>Contact person name and title</b>  <b>organization</b>  <b>address</b>  <b>city, state, zip code</b></p>	<p>Dr. Linda Flowers McCutcheon          Extension Home Furnishings Specialist          N. C. Agricultural Extension Service          210 Ricks Hall, NCSU          Raleigh, NC 27607          919/737-2770</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

North Carolina "Passive Solar Research &amp; Demonstration House"

## TEXT/DESCRIPTOR

<p><b>Program Description</b></p> <p><b>Emphasis</b></p> <p><b>Goals</b></p> <p><b>Scale</b></p> <p><b>Innovations</b></p> <p><b>Linkage</b></p> <p><b>Clientele</b></p> <p><b>Resources involved</b></p> <p><b>Funds</b></p> <p><b>Staff time</b></p> <p><b>Other cooperators</b></p> <p><b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b></p> <p><b>Who benefitted</b></p> <p><b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b></p> <p><b>Clientele yet to be served</b></p>	<p>North Carolina residents face higher energy and home costs. The solar house was developed to encourage energy conservation and advance the use of solar energy in housing through demonstration, education and research programs. The house was designed in a traditional style to show North Carolinians how passive solar techniques can be incorporated in a structure, in complete harmony with tradition as well as contemporary styling.</p> <p>The solar house was an industry/education/government project administered by the NCSU School of Engineering. Financing was supplied by the N. C. Home Builders Association, Energy Division of the N. C. Department of Commerce, the U. S. Dept. of Energy, Southern Solar Energy Center, Carolina Power &amp; Light Company, and the Alternative Energy Corporation.</p> <p>The interior of the house was planned by Extension Specialists from the Housing &amp; Home Furnishings Department.</p> <p>To date, the primary accomplishment has been the completion, dedication and opening of the house to the public. Future uses include: laboratory for short courses, workshops and conferences; data collection (both mechanical and consumer opinion); and demonstration to the public. Extension agents will view the house during State Conference. County groups will be encouraged to tour the house and examine the energy conserving and solar features.</p>
<p><b>Contact person name and title</b></p> <p><b>organization</b></p> <p><b>address</b></p> <p><b>city, state, zip code</b></p>	<p>Dr. Glenda M. Herman Specialist in Charge Housing &amp; Home Furnishings 210 Ricks - NCSU Raleigh, NC 27607 919/737-2770</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

North Carolina "Mobile Home Newsletter"

## TEXT/DESCRIPTOR

<p><b>Program Description</b></p> <p><b>Emphasis</b> <b>Goals</b> <b>Scale</b></p> <p><b>Innovations</b> <b>Linkage</b> <b>Clientele</b></p> <p><b>Resources involved</b> <b>Funds</b> <b>Staff time</b> <b>Other cooperators</b> <b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b> <b>Who benefitted</b> <b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b> <b>Clientele yet to be served</b></p>	<p>Mobile home residents are an audience often not reached by traditional Extension means. In 1979-80 eight counties in western North Carolina initiated a pilot project to deliver educational information to mobile home residents in the area. Working together, the eight home economics agents developed a newsletter and shared responsibility for writing the articles.</p> <p>Each county secured their own mailing list and provided secretarial time to reproduce the newsletters. Contacts varied from 100 to over 2,000 depending on the county.</p> <p>After two years, the program is an unqualified success. Evaluations showed a high favorable response (85-90%) and indicated the people reached via this method were not traditional Extension clientele. One county (Graham) reported that information on maintenance and energy conservation to be most helpful (83% reporting). Also, these respondents indicated that behaviors were changed. Sixty percent underpinned the mobile unit and 55% tied the unit down after receiving the information on how to do the job. In addition, 80% or more put up storm windows or plastic and weatherstripped.</p> <p>The newsletter will be continued in these counties and expanded to other areas upon request.</p>
<p><b>Contact person name and title</b> <b>organization</b> <b>address</b> <b>city, state, zip code</b></p>	<p>Dr. Glenda M. Herman Specialist in Charge Housing &amp; Home Furnishings 210 Ricks - NCSU Raleigh, NC 27607 919/737-2770</p>

## ACCOMPLISHMENT REPORT

FY 1981

## BRIEF TITLE (include State name in title)

North Carolina "Water Watch"

## TEXT/DESCRIPTOR

<p><b>Program Description</b></p> <p><b>Emphasis</b></p> <p><b>Goals</b></p> <p><b>Scale</b></p> <p><b>Innovations</b></p> <p><b>Linkage</b></p> <p><b>Clientele</b></p> <p><b>Resources Involved</b></p> <p><b>Funds</b></p> <p><b>Staff time</b></p> <p><b>Other cooperators</b></p> <p><b>Special funding</b></p> <p><b>What were the accomplishments</b></p> <p><b>What were the impacts</b></p> <p><b>Who benefitted</b></p> <p><b>What were benefits</b></p> <p><b>How impacts were measured</b></p> <p><b>What are implications for future program</b></p> <p><b>Clientele yet to be served</b></p>	<p>In the summer of 1981, parts of North Carolina were threatened by drought situations. In order to help counties identify ways to manage their water supplies, a state program "Water Watch" was developed. Specialists from Biological and Agricultural Engineering, Community Development and Housing and Home Furnishings cooperated to produce demonstration boards, slide/tape sets, leaflets and news articles. Agents in 49 of the 101 county units attended a one-day training to outline the program and develop a county water management program.</p> <p>Program implementation is in progress. One county (Durham) varied audience contacts from mall exhibits reaching 1,000 plus persons; a youth poster contest; two special interest programs with 85 in attendance and many calls to the office for additional information.</p> <p>A follow up in Durham of the 85 program attendants is planned and contact has been made to take the program into a factory as a lunch-n-learn effort.</p> <p>Statewide, agents in the other 52 county units will be trained to conduct county programs.</p>
<p><b>Contact person name and title</b></p> <p><b>organization address</b></p> <p><b>city, state, zip code</b></p>	<p>Dr. Glenda M. Herman Specialist in Charge Housing &amp; Home Furnishings 210 Ricks - NCSU Raleigh, NC 27607 919/737-2770</p>

## 15. LEADERSHIP DEVELOPMENT

A. Nature and Scope of Program

The North Carolina Extension Homemakers Association, Inc. is the most active volunteer delivery system for the diffusion of Home Economics information to a wide circle of clientele.

Membership Study:

In 1981 the membership study of the Association surveyed was summarized and a need was found for an up-date in new members since their membership drive began in 1980. The 1981 summary showed an increase of 3,835 members. This total growth is not reflected in their total numbers due to drop-outs, death, mobility, and women continuing to enter the work force. This study, North Carolina Extension Homemakers: A Study of Membership, Program Delivery, and Educational Impact, should be ready for distribution by early spring 1982.

Statewide Projects and Activities:

The Homemakers got underway with the lay leader consultant system during the year. A job description and task were delineated for these nine consultants who committed themselves for six years in this position. They are assuming the role formerly filled by the professional Extension staff members, who now serve as resource persons when called upon. The consultants met in August with their resource persons and the State Association Consultant to plan their program of work retreat held in September at Betsy Jeff Penn 4-H Center.\* This group communicated with their State Program of Work Chairman and Vice Chairman who, in turn, conducted training for the District Program of Work Chairmen. The district chairmen left Penn Center armed with the

knowledge, skills and materials to train the county program of work chairmen at their respective district training sessions. Each level of the Association feels good about this system of leadership development because they know what is expected of them as leaders.

Two major state projects were completed in 1981. The library at NCSU asked the assistance of the Extension Homemakers with their project to reach a million volumes. The N. C. Extension Homemakers contributed \$1,906 to this drive to provide funds to purchase books. They were indeed a "Friends of the Library" supporter.

The International Committee's statewide Guatemala Water project was completed with a total contribution of \$6,715.53. The original project was to provide water to the 750 residents of Poza; however, as the project developed it was discovered that the water line would be going by the Village of Canul, with 175 residents that could be served by the same project. Therefore, 925 residents have clean water as the result of the NCHCA, Inc. original "Clean Water for Children" project. This project began as a state project for the International Year of the Child.

Forty official delegates attended and participated in classes, seminars and general sessions at the 1981 National Council meeting at Durham, New Hampshire. Enroute briefing sessions were held for the delegates to be prepared to participate in assigned areas and upon the return trip, the bus turned into a classroom again as the in-coming state and district officers and in-coming state program of work chairmen reported on ideas gained to be implemented in their fall training sessions at Betsy Jeff Penn 4-H Center.\*



The N. C. delegation received recognition at National for the following:

State Reports:

International - First Place

Health, Foods and Nutrition - Second Place

Family Resource Management - Third Place

Public Awareness Tapes:

Citizenship and Community Outreach - First Place

Cultural Arts, Clothing and Textiles - First Place

Membership - First Place

Public Relations - Second Place

Health, Foods and Nutrition - Third Place

During the week of May 18-23, 1981, four buses filled with Citizenship, Community Outreach; International; and Cultural Arts, Clothing and Textiles Club, County, District and State Committee Chairmen participated in a special Know America Seminar in Washington, D. C. The N. C. Extension Homemakers had experienced all of the regular opportunities in the usual Know America program so a program was developed to fit the needs of the N. C. Extension Homemakers. Each bus had a lay leader consultant serving as educational leader as each bus had a separate program for the week. The seminar was planned to accommodate buses in multiples of three's; therefore, the fourth group was known as the Kalidoscope and received one plus days of each of the other three planned programs, plus several special programs planned specifically for this bus group.

A highlight of the trip was the Congressional Banquet and the presentation by NCEHA, Inc. of a hugh gold framed mirror and brass

Homemakers met with this group in 1979 during their International European Study Tour.

The State Executive Board cooperates with other groups during the year. For instance, they sponsor semi-annually retirement receptions for state staff. Twelve individuals plus their families with the state Agricultural Extension Service staff were present for two receptions during the year.

At the Family Living Seminar, the State Executive Board was in charge of the coffee hour for 200 attending this annual event.

Forty international student families were hosted by Brunswick County in the NCEHA, Inc. annual cooperative program with the School of Agriculture and Life Sciences International Program's Department.

NORTH CAROLINA  
PROGRESS REPORT FOR FY-81  
COMMUNITY RESOURCE DEVELOPMENT

INTRODUCTION

Extension's educational program in Community Resource Development was directed towards community issues or community problems that usually require group action for solution. The Extension staff members work in cooperation with lay people and local government officials. Lay people as leaders and as cooperators in the action program are involved in most of the Extension programs throughout the state.

Extension professionals in Community Resource Development education programs help people understand current social and economic conditions, trends; provide information; help them analyze situations; explore available alternatives; develop and conduct a plan of action; and evaluate educational programs planned. In such a process Extension professional staff performs the role of expert consultant, motivator, advisor, marshaler of resources, director of the process, planner, evaluator; and provides linkage to a host of resources.

A network of communication and organization is maintained throughout the state through which programming occurs. There is significant interaction at the state, regional, county, and local levels to assist leaders in programming. These interaction levels are also levels of decision-making and levels at which problems can best be attacked. In some cases regional or state cooperation is necessary for local program impact.

Leaders and cooperators are trained in the applicable processes in the concepts of group work and how to organize and schedule work to be done. Throughout the state thousands of people are involved on a variety of committees and task

forces on the Extension program being conducted. In recent years local staff members have worked with our leadership in forming an Extension Advisory Committee in each county. Four major committees are formed and relate to the four major program areas. The Community Resource Development Committee is active in most counties and a number of special committees has been organized to give leadership to the program emphasis of that county. This organization will be continued in the years to come and should provide excellent guidance to Extension professionals for program priorities and locate resources for program development.

Specific accomplishments during this year include those listed below.

1. Leadership training was provided for 52,000 leaders in a variety of community development programs.
2. Ten counties had approximately 9,000 citizens cooperating to improve or extend water systems.
3. Local volunteer programs to enhance visual beauty directly involved 38,000 citizens in 65 counties.
4. Local community watch organizations for crime prevention increased by 115 and others became more effective by increased participation and improved knowledge and understanding of criminal action.
5. Educational programs on land use planning process, alternatives, and issues involved 48,000 citizens.
6. Demonstrations on alternatives for sewage treatment disposal were applied in three regions of the state.
7. Technical assistance was provided on 22 major waste management projects.
8. Some 6,721 people received intensive training as they worked through solving community problems in cooperation with Extension professional and key leaders.

COMPONENT 15, 16: COMMUNITY ORGANIZATION, MAINTENANCE, LEADERSHIP DEVELOPMENT, AND CITIZEN PARTICIPATION

The development of leaders as individuals and as members of

groups is one of Extension's basic missions. In Community Development most issues about which people are concerned require group action and involve process skills and individual ability along with program expertise. Capable and skilled leaders are essential for the resolution of community problems and issues. Leadership development is facilitated by Extension, primarily through the process of solving some community problem. Leaders learn to develop their ability while performing a variety of tasks and responsibilities for the groups they represent.

Extension maintains a variety of organizations through which citizens can channel their efforts, and organizations needed are developed or modified throughout the year as needed. Increased emphasis was given this year to developing the Community Resource Development Committee of the Extension Advisory Leadership System and the subsequent special committees needed in each county. On-going citizen committees, such as county development councils, beautification councils, Farm-City Week committees and others continue to act and perform a variety of missions.

Major accomplishments included:

1. Assisted in organizing 230 special or ad hoc groups for community problem solving.
2. Provided training for 2,650 leaders for local community clubs.
3. Improved effectiveness of 178 organizations through leader training or adjustments in organizational structure.
4. Provided 27,290 leaders improved skills in community problem solving.
5. Citizen participation was enhanced in 187 different projects involving the active participation of 3,900 citizens.

COMPONENT 5: NATURAL RESOURCES AND ENVIRONMENT

A. Energy Conservation and Management

Of vital importance to North Carolina and the nation are

energy resources. The scarce energy resources are becoming more expensive and limit the development of many needed services and facilities. Escalating costs drain resources of local governments and agencies which affects the degree of service provided. Management skills and programs for energy are being developed throughout the nation and conservation of resources is being stressed.

A major concern was the lack of a central point for information on energy throughout North Carolina. Leaders observed many sources both private and public from which energy information was made available. There was a need for a central reference point for information to be available on a local basis to serve the variety of needs and questions raised by local leaders and those interested in conserving and managing the nation's energy resources.

Program accomplishments include:

1. A task force met and developed an overall plan for the Energy Information Center to be located in each local Extension office.
2. The Energy Information Centers feature an attractive table-top display which promotes use of energy information sources by local people. The display includes a reference notebook, consumer information handouts, leaflets, and a reference library.
3. The Information Centers were placed in every county of the state in the Extension office and were used in special energy exhibits in malls, shopping centers, at special meetings, or at other events where energy was the topic.
4. It is estimated that 190,680 people used the Information Center directly and many others are aware of its availability throughout North Carolina.
5. The Energy Information Centers will continue to be kept up-to-date and will provide the latest sources of information on energy.

### B. Visual Environment

A major problem in North Carolina continues to be the abuse of visual beauty environment. This occurs by improper disposal of used up resources which become litter as opposed to solid waste. In addition, there is a need to plant a variety of ground covers and other plant materials to prevent erosion and provide for landscape beauty of many public and private areas throughout the state. There is also some interest in recycling metals, paper, cardboard, and glass. Most programs are operated on a volunteer basis with the exception of metal. These organizations help to reduce the visual pollution throughout the state and consume a substantial amount of volunteer resources.

About half the counties in North Carolina have developed organizations dedicated to enhancing visual beauty and reducing a variety of litter or other polluting habits of people.

#### Results include:

1. Sixty-two counties have a committee responsible for developing volunteer action on beautification of their area with subsequent subcommittees identified.
2. Approximately 25,856 citizens have been involved directly in educational programs or projects aimed at reducing litter and enhancing visual beauty.
3. A program to involve public school students in beautification has reached approximately one-third of all school students in North Carolina.

### C. Wastewater Treatment for Individuals and Small Communities in North Carolina

The program on "Wastewater Treatment for Individuals and Small Rural Communities" emphasized an educational effort based upon best available technology. Two major areas of emphasis emerge; water conservation and alternatives to conventional waste treatment methods. At present, two municipal land treatment systems are installed and operating in North Carolina and

approximately 40 additional are planned. A major goal is to provide training to the operators of these systems and to continue to encourage implementation of land treatment where it is most cost effective.

This program was developed under grants from the N.C. Department of Natural Resources and Community Development and a Title V grant through the Rural Development Panel at N.C. State University in the amount of about \$35,000 annually. Departmental laboratory testing facilities for wastewater analyses were also essential for this project.

Individual On-Site Treatment — Soil and on-site wastewater treatment workshops have been accomplished in cooperation with state agencies with about 40 counties represented at the most recent. Several demonstration systems have been installed in all physiogeographic regions of the state. Recently one county has requested of the state the establishment of an on-site waste-water management district. As a result of these efforts, approximately 40 land treatment and other alternative systems are proposed for North Carolina. At the inception of this waste-water management program, there were only two systems proposed. Since this program has been underway, those two systems have received considerable assistance from Extension.

At present the waste management program is serving a large number of community, county, and industrial generators throughout the state and solutions to the age-old problem of waste management are being facilitated. All individuals, communities, and industries generate waste and the objective of the program is to find cost-effective solutions to solving the problem.

D. "Waterwatch" - A Water Conservation Program in North Carolina

The week of October 21, 1981 was declared Water Conservation Week in North Carolina by Governor Hunt. With this formal announcement, the Extension water and energy management program



entitled, "Waterwatch" was started. A series of public awareness campaigns culminated in the retrofit of the Governor's Mansion with water conserving devices. Then, a series of semi-technical publications and slide tape sets were produced for wide dissemination throughout the State. These activities culminated in statewide training for county agents. The Waterwatch program is now at the stage of providing continuous program support to those individual agents who identify water conservation as an area of program responsibility.

Based upon the data collected over the past six months alone, the projected annual water and energy savings in the Governor's Mansion will amount to over \$500 per year. In similar demonstration projects elsewhere in the State monthly savings of \$15 to \$20 per family for both reduced water and electricity are not uncommon.

The implications of Waterwatch are far-reaching. Based upon the demonstration work accomplished to date and the data gathered, substantial savings in both water and energy resources are possible. Any family which participates in the Waterwatch activities recommended, i.e. retrofit and management, stands to save a total of \$15 per month in their water and energy costs. If this figure is projected statewide, then the savings to homeowners in North Carolina could be as high as \$10,000,000 per month. If only 10 percent of North Carolinians were to adopt the practices recommended in Waterwatch, then annual savings of approximately \$12,000,000 would be possible.

The Waterwatch program developed by a full-time Extension Specialist has involved substantial input from the staffs of Biological & Agricultural Engineering, Community Development, and Housing and House Furnishings. Timely support from the Department of Agricultural Communications was critical to the success of this program.

#### COMPONENT 14: HOUSING AND HOME ENVIRONMENT

##### Energy Use Reduction in North Carolina Residences

Evaluation of energy conservation measures has been underway during this year. Two publications have resulted with three more in process.

If 50% of the 2,000,000 North Carolina households implement the conservation ideas conveyed, approximately 29.2 trillion BTU's can be saved annually. This would be equivalent to 8.55 billion kwh which at the rate of \$0.06/KWH would approximate a savings of 500 million dollars annually.

This work is conducted by one full-time Agricultural Engineering specialist in cooperation with the Housing and House Furnishings Department.

#### COMPONENT 17: COMPREHENSIVE PLANNING

North Carolina has made significant progress in planning for growth and development by utilizing the land-use planning concept. Many areas in the state continue to have land-use problems and lack the capacity to deal with these in an orderly and systematic manner. The population is now growing at a very rapid rate in some selected areas while others have declining populations. The fact remains that growth pressures are causing complications in planning for the use of land.

The focus of the educational program has emphasized the spatial aspect of growth and development and has helped people become aware of the process involved, the policy alternatives, and the capability of certain soils for development. Other important factors include a rapid growth in non-farm population, conversion of farm land to other uses, and a planning philosophy that has been urban oriented.

The Extension program is focused on developing educational materials and facilitating interaction of leaders and related planning professionals. The experiences were designed to increase the knowledge and understanding of the public in the issues and some of the policy and planning alternatives.

Results achieved include:

1. About 7550 leaders in 23 counties have a better appreciation of the consequences of unplanned growth and some have become involved in the planning process.
2. A comprehensive soil survey is either completed or in some stage of development in 56 counties.
3. Nineteen counties made some improvements or adjustments in plans or implementation measures being enforced.
4. The cooperation of relevant agencies improved in nine counties.

COMPONENT 18: COMMUNITY SERVICES AND FACILITIES

Environmental Health Sanitarians and State Regulatory Agency  
Personnel Training - North Carolina

The North Carolina Extension Service's Waste Management Assistance Program is providing training to local and state government agency personnel in the evaluation and design of on-site waste disposal systems. Educational programs and demonstrations were conducted to provide information and encourage utilization of new technology and methodology in evaluating soils and designing alternative systems for on-site waste disposal for non-urban households, rural communities and schools, recreational areas and rural industries and businesses.

The program involved four specialists with a total professional staff time of 1 MY. Experiment Station personnel from the Soil Science Department were involved in the design and evaluation of demonstration projects used in the workshops. The local and/or state agencies provided sites and facilities

for conducting the program.

In the process of conducting some 23 workshops and demonstrations in the state, approximately 780 agency personnel representing over 50 counties and some eight state and federal agency functions, received training during the past year. Through these workshops, conferences and demonstrations over half of the state's Piedmont and Mountain counties have developed new sewage-disposal guidelines incorporating alternative system design into their regulations. New construction valued well into the millions of dollars began on sites once classified as unsuitable for development. Just as important, dozens of failing or potentially failing waste systems were replaced with the new designs to offer improved protection of water supplies.

Demand for help in waste management problems now encompasses most counties of the state and include needs of the large municipalities and industries in information on land application of waste materials. Other states are now asking for assistance from Extension personnel in developing similar programs in their states.

## THE 4-H MISSION IN NORTH CAROLINA

1. The goal of 4-H is to assist youth in meeting the basic needs, developmental tasks, and essential life skills through planned "learning by doing" experiences. A necessary corollary of the youth development goal is the development of volunteers as individuals and leaders in the 4-H program.
2. 4-H is one of four educational programs of the North Carolina Agricultural Extension Service involving youth and adults. 4-H is:
  - a. informal and out of school,
  - b. community based and locally determined,
  - c. primarily group focused and family oriented,
  - d. volunteer operated, and
  - e. supervised by professional staff.
3. 4-H uses knowledge as a means of meeting basic and developmental needs and acquiring essential life skills.
  - a. 4-H emphasizes subject matter related projects and activities using extension and land-grant university resources.
  - b. 4-H structures the learning environment using knowledge from the social and behavioral sciences and the humanities to promote the acquisition of life skills.
  - c. The mix of subject matter and educational methods in a democratic environment provides for the personal development process.
4. 4-H is operated by volunteers under the supervision of a professional extension staff.
  - a. Some volunteers use subject matter as their orientation to interacting with youth and adults in 4-H.
  - b. Other volunteers structure groups and learning experiences for youth using the social and behavioral sciences.
  - c. And, other volunteers render services in support of individual 4-H'ers and the 4-H Program in general.
  - d. Professional extension staff members teach volunteers to use subject matter, educational methods, and the democratic process to achieve human development objectives.
5. 4-H is publicly supported by county, state, and federal governments. Private resources, both human and material, are used to enrich the learning experience of youth and adults.

## 1. Crop Production

Efforts to provide subject matter knowledge related to crop production in North Carolina are a part of the 4-H youth development process. Emphasis is being placed on the total growth of youth through participation in subject matter based projects. The North Carolina population continues its trend toward urban-suburban living, emphasizing the need for an understanding of subject matter related to crop production.

In fiscal year '81 training in crop science and field crops subject matter, including appropriate 4-H project material, was given to both 4-H and subject matter agents at the county level. This approach is expected to reap dividends in 1982 in terms of program participation. One emphasis was upon identification of potential volunteer leaders for youth by the subject matter agent working with that particular clientele. Participation in field crops and soil and water curriculum areas have remained low. The low participation level was discussed at length but the State 4-H Curriculum Development Committee and several recommendations were brought forth to try and reverse this trend in the future.

Some modifications were made with regard to 4-H participation in the National Junior Horticulture Achievement programs. Emphasis was placed on greater involvement and quality of participation in this ongoing event.

The number of youth participating in the crop and plant science projects in 1981 was 2,430. The number participating in soil and water related projects in 1981 were 670 as compared to 738 in 1980.

## 2. Livestock Production

### **Beef**

The 4-H Beef Program is designed to: 1) help 4-H members learn production and management practices through actual use in 4-H livestock projects, 2) train 4-H members in the individual appraisal of meat/animals by this method, and 3) involve 4-H'ers in a wide range of activities involving feeding, management, selection, breeding, fitting and showing beef animals.

4-H beef-related activities included production projects involving feeding, breeding management, marketing and showmanship. Demonstration activities involved production, beef selection and beef cookery. The heifer project and beef cookery demonstrations received special emphasis.

A total of 410 steer, 179 beef breeding, 99 grazing projects, 176 steer performance records, and 64 beef char-grill demonstrations were included in beef activities throughout the state. The youth involved learned the responsibility and discipline required in beef production.

### **Horse**

The 4-H Horse Program area is designed to: train 4-H club members in the visual appraisal of horses and to state their reasons for ranking horses by this method, 2) develop and promote the initiation of a handicapped riding program in 4-H, 3) teach youth the proper show procedures and training techniques for use with their project horses at area clinics and horsemanship camps, 4) encourage the development of trail rides and packing trips, using horses by 4-H members, and 5) make families aware of the recreational potential and educational opportunities in conducting trail rides.

4-H horse-related activities included horse bowl contests, horsemanship camps, judging contests, district and state shows, public speaking contests, demonstrations, camping and hiking trips, horse management workshops, trail rides, handicapped riding schools, essay contests, clinics and retreats. The 4-H Horse Program is the fastest growing 4-H program in the state. Yet, there is a tremendous potential for expansion in certain districts.

Horse projects in this state totaled 6,005 in 1981 an increase of 710 over 1980. This included the following: 2,098 horse and pony projects, 130 horse public speaking, 296 horse judging, 95 horse demonstrations, 1,147 county horse shows, 558 district horse shows, 253 state horse shows, 307 horse bowls, 685 trail rides, 398 horsemanship camps, and 38 mare and foal projects.

The 6,005 4-H'ers involved learned the responsibility and discipline required in horse care. Project books were completed with above average attendance at clinics, demonstrations, contests and activities.

### **Poultry**

The objectives of the 4-H Poultry Program area are to: 1) develop a knowledge of the management and skills necessary to produce poultry and poultry products, 2) increase the participation in 4-H poultry activities and events, and 3) provide 4-H agents and leaders with information to obtain more participation in poultry and veterinarian science projects and programs.



The 2,963 youth involved acquired a greater awareness and appreciation for a variety of poultry activities and events. The 4-H poultry science and embryology activities included poultry projects, turkey, geese, pigeons, etc. projects, poultry demonstrations, poultry barbecue demonstrations, and junior and senior junior egg cookery demonstrations. There was a much greater interest in the science oriented projects such as incubation and embryology. There has been an increased interest on the part of 4-H agents in conducting embryology-type programs in the counties. There has also been an increase in the request for literature in the poultry program area. A total of 6,183 youth participated in poultry projects, poultry demonstrations, poultry barbecue demonstrations, and junior and senior egg cookery demonstrations. There was also participation at the national level in poultry barbecue, egg cookery and judging.

#### **Sheep**

This project activity involved feeding, breeding, management, showmanship, marketing and shearing sheep. 4-H youth fed and cared for ewe lambs consigned by breeders. Income was shared by youth and consigners. Market lambs and ewe shows will continue to receive emphasis.

The number of youth participating in sheep projects in 1981 was 137.

#### **Swine**

The swine project activities involved feeding, breeding, management, showmanship and marketing. Demonstrations involved production, pork selection and cookery. The market pig performance record and pork cookery will continue to receive emphasis.

Activities this year totaled 882, with the following breakdown: 648 market pig projects, 37 brood sow projects, 140 pork production records, and 57 pork cookery demonstrations.

### Dairy

The 4-H Dairy Program is designed to: 1) provide youth, leaders and agents instruction in dairy technology other than showing and selection, 2) provide youth, leaders and agents instruction in dairy cow showing and selection, 3) update and implement use of the 4-H literature, and 4) assist agents and leaders in planning and conducting programs which complement the 4-H Dairy Program.

4-H dairy-related activities included the dairy calf project, dairy industry (production and steer), dairy posters, dairy judging, dairy shows, dairy bowl and dairy conference and/or tour.

Increased participation in the state junior dairy show is indicative of growth and improvement in the junior dairy program statewide. Two significant things have happened in recent years to improve the program. First, a very strong and active junior breeders association has been established within the Holstein breed. This group meets at the time of the state junior dairy show and each of the members are involved in the show. Their activity has generated greater support from adults throughout the breeders association. Secondly, several subject matter clubs have been organized with strong lay-leader support. These dairy clubs make the state show a part of their annual activities. Regulations for entry in the show have been modified to accommodate members of these clubs who work with animals owned by cooperating breeders. The emphasis is on giving the youngster an opportunity to learn through working with an animal, even though the animal may belong to someone else.

The following statistics suggest the trend of growth in the state dairy show. In 1971, 176 animals were shown in the state show. In 1979, 256; 1980, 266; 1981, 274. The overall participation in 4-H dairying for 1981 was 1,711.

#### **Dairy Goat Project**

For several years there has been interest among a few dairy goat enthusiasts in the state to establish a statewide 4-H dairy goat project. During the past six or eight years, a manual and record book have been available for those who want to participate in this project activity. But, there was no statewide sponsorship established. According to 1980 figures 117 youth were enrolled in the project in North Carolina. The enrollment in the goat program for 1981 is 98. This new dimension to dairy project work will make it possible for a much larger number of youth in suburban and rural non-farm situations to participate in dairy related activities.

### **5. Natural Resources and Environment**

The rapidly increasing population of North Carolina and their rising prosperity place demanding pressures upon the State's natural resources and environment. The constantly increasing consumer demand for timber production, habitat, outdoor recreation opportunities and water and soil resources demands an educated and alert public for proper utilization and protection. Young people (both youth and adults) are critical clientele because they are the prime users and future managers of these resources. Presently, a widespread philosophy of mining rather than managing our forest resources exists. All North Carolinians and especially young people must be reached with the conservation and effective utilization message so they can become wise managers of North Carolina natural resources. Forestry

practices, meteorological knowledge, environmental awareness, outdoor recreation, and wildlife management are major thrust areas which have been focused upon to help communicate the message.

### Forestry/Wildlife

Of concern the past few years has been more effective literature for both forestry and wildlife 4-H projects. The development and statewide distribution of the newly developed materials in forestry, wildlife and woodworking have stimulated new interest in counties for these programs. This past year 4-H wildlife project demonstration participation increased over 33 percent. Several counties in the state have initiated forestry field days and competitions. Forestry/wildlife camp, which recently had decreasing attendance and was cancelled earlier this year, arose again from local interest which resulted in greater participation by local resources and volunteers. Plans are presently being developed for next year's camp which will utilize this volunteer leadership approach statewide.

This linkage with local resources and volunteers is presently having more emphasis in the development of our county programs. Early in the planning year a packet of natural resources information was sent to all counties to assist in their planning process. Training workshops for national archery instructors were held for leaders, and new leader training workshops in other topics are planned for the spring. To encourage support for related associations and commodity groups at the county level the state demonstration winners in forestry and wildlife presented their demonstrations at state forestry and wildlife association meetings. These presentations impressed the associations to the point they have requested the state winners be on the annual program. This recognition should soon be felt in the counties as the state specialists encourage counties to utilize the

county associations for project support. Additionally, team effort of all Extension agents has been encouraged through six district workshops involving subject matter agents, county chairmen, and 4-H agents.

### **Meteorology**

Meteorology, a new Extension emphasis, is still in its infancy for both adult and youth programs. Since the 4-H meteorology project materials have been distributed for only a few years, plans have only begun in developing volunteer leadership and program support for the new projects. A new project planning guide for leaders was developed this year and has served as an example for most other project planning guides currently being developed. Of interest to both urban and rural youth as a 4-H project, primary development for the future will center around meteorological implications for agricultural, horticultural, and energy conservation practices.

### **Marine Science**

The North Carolina 4-H marine education program evolved from a demonstrated need for a comprehensive program of that nature for North Carolina 4-H youth. Youth and adults involved in 4-H continue to express a keen interest in learning more about the various facets of marine studies. The following objectives were established at the beginning of this program:

1. to develop and promote the use of marine materials for Extension agents and volunteer leaders.
2. to assist in the development of a volunteer leader training program available for youth by 4-H, Sea Grant, Marine Resources Centers, and other public education agencies.

3. conduct a statewide activity that deals with marine education topics including training and workshops for volunteer leaders, agencies and youth.

The 1981 Marine Education Workshop proved to be one of the most successful ever held. Twenty youth from across the state and four adults experienced an extensive week of marine education programs at Mitchell 4-H Camp. Workshop highlights included trawling aboard a university research vessel at Morehead, beach and marsh studies at the North Carolina Marine Fisheries, and the U.N.C. Institute of Marine Science.

In addition to the marine workshop for older teens, the Mitchell 4-H Camp stressed Marine Awareness for all participants in 1981. Equipment purchased for the camp included a 30 gallon salt water aquarium, seine nets, cast nets, crab pots and clam rakes. A marine "library" of field guides, reference books and posters was also provided. Campers were involved in a minimum of 6 hours of marine classes. In addition to activities at camp, many counties visited the North Carolina Marine Resources Center and Hamocks Beach State Park. 1,062 youth attended Mitchell 4-H Camp during the summer of 1981. Agent and leader evaluations of the marine classes are available.

Instructional materials covering the following topics are being developed. Written materials include member and leader manuals as well as project planing guides.

Seafoods	Transplanting Marshgrass
Maintaining of Salt Water Aquarium	Marine Photography
Sampling Plankton	Marine Safety
Pressing Algae	Estuary
Beaches	Marine Arts and Crafts

A youth fishing program packet developed by the American Sport Fishing Education Foundation has been purchased for each county.

In addition to written materials various slide sets and films have been developed for the program. In conjunction with the North Carolina Office of Marine Affairs, video tapes will be provided on several topics to facilitate agent and leader training.

Marine Awareness workshops have been conducted in various counties across the state.

1. Junior Leaders District Retreat -- Participants made fish prints, observed live plankton, and learned about SCUBA diving. More than 100 participated.
2. North Central District 4-H Council -- Participants learned to use a seine net and cast net at Hazel Lake, Betsy-Jeff Penn with 60 teenagers participating.
3. Scotland County -- Workshop on SCUBA diving with 20 participants.
4. Catawba County - 4-H Marine Awareness Sea Grant Workshop for teachers and volunteer leaders. Discussed North Carolina 4-H Marine Awareness materials and activities with 20 participants. Adults made fish prints, participated in Food Web games and prepared squid.
5. North Carolina Volunteer Leaders' Convention -- October 24 program exhibit, brochures and materials. Workshop for leaders on squid biology and preparation.
6. Annual 4-H Agent Conference -- Workshop concerning new curricula - Marine Awareness materials.

## 6. Mechanical Science, Technology and Engineering

The 4-H program is placing new emphasis on the 4-H project by utilizing subject matter in developing youth life skills. The emphasis involves the use of the subject matter agent in project development and implementing the plan-do-and-review project approach. The mechanical science projects enrollment has been maintained recently, but with youths interest in engineering and mechanics and 4-H program emphasis on the use of subject matter, an increase in enrollment is expected. Electronics and first aid have the greatest potential for program outreach.

Educational experiences are provided in the mechanical sciences in the form of projects, demonstrations, bowls, and special contests. A tractor and machinery operation certification program is available for youth under 16 years of age in order for them to be hired as machinery and tractor operators. The woodworking project will get a boost in enrollment as the mountain heritage project is developed with opportunities for today's youth to have a hands-on experience in woodworking and carving skills achieved by their forefathers.

### **Electric Congress**

The 4-H electric congress, sponsored by the four major electric power companies provides 200 county electric project winners, volunteer leaders and county staff with special awards and recognition. Each of the four power companies provide project members incentives in the form of TV, stereos and tape recorders for county winners. In order to revitalize the project and increase electric project enrollment a committee of state staff and power company representatives was formed. Initial plans call for new 4-H electric project records and leader guides. A training program on electric



project development will be provided for volunteers and county staff attending 4-H electric congress next year. The 4-H department, engineering department and electric power companies are committed to more training to increase the quality and quantity of electric programs.

### Energy

The State 4-H Council selected "Energy" as its program thrust for 1981-82. The identification and mobilization of resources began in August of 1981. A major part of the council's initial thrust was water conservation. A packet of water-saving devices was assembled and mailed to all counties in the state. This water-conservation program had two basic thrusts--water conservation and fund raising for local clubs.

An energy packet "4-H--the Energy of the Future" was developed for local 4-H units. The packet, second in a series, included the following topics:

What is Energy?

Food Energy and You

How Do We Use Energy?

Energy Alternatives

Let the Sun Shine

Recycling

It's A Matter of Choice

You Can Make A Difference

Our Future World

The units have 35 lesson plans for the volunteer. Each lesson plan is written to stand alone or in culmination with other lesson plans. Energy has also been emphasized in statewide events, district retreats and county programs.

Sixty counties have organized programs for youth in energy conservation with over 10,000 youth participating.

An example of a successful energy program was held in Johnston County. Over 500 youth were involved in designing Energy Conservation Projects on the county-wide level. Eighty-seven exhibits were displayed for a two day Energy Fair at the Agricultural Building in Smithfield. Five hundred dollars in premiums were awarded. Over 400 people viewed the exhibits. Over 98 resource people were involved.

## 7. Safety

### 4-H Fire Prevention and Control

The 4-H Fire Prevention and Control Program is designed to teach boys and girls the basic fundamentals of fire prevention and control. The saving of lives and the reduction in property damage because of fire is of great concern. The program is conducted in the local community fire department. In FY'81 more than 226 local fire departments in 27 different counties were involved in this effort. A steering committee including local firemen and Extension agents worked cooperatively in planning and implementing the program. This year for the first time in several years North Carolina experienced a reduction in the number of fire deaths -- 317 in 1979, 277 in 1980. We feel 4-H certainly has had an impact in this decline in death rate. The 4-H Fire Safety Program in North Carolina began in 1973. The program has been conducted continuously since that time with the program having been conducted in approximately 75 counties. Thus, we feel with the youth audience that is being taught the program has had definite impact on this reduction. In addition to the county Fire Safety Programs, one area Fire Safety Quiz Bowl has been added to this educational effort with two additional area bowls planned for the coming year.

#### 4-H Mini-Bike Safety

4-H Mini-Bike Safety is designed to teach 4-H members the need for strict safety consciousness when operating a mini-bike. This is accomplished by a series of lessons in which instructions are provided in such areas as: safe clothing that the operator should wear, fundamentals of the bike operation, and rules and regulations concerning mini-bikes. One county (Pitt) conducted a program involving some 20 youngsters in the effort in FY'81. A comprehensive safety program was developed by a steering committee of educators and relevant business related businessmen from the county.

#### 4-H Safety Demonstrations

The 4-H Safety Demonstration continues to be a very popular demonstration area for 4-H members in North Carolina. In FY'81 40 young 4-H members from across the state presented safety demonstrations including pesticide, mini-bikes, water, gun and hunter, fire, and tractor.

#### Traffic Safety Poster Contest

The objective of this contest was to create safety awareness for 9-12 year old youth. It was designed to give an opportunity to develop safety skills and other concepts.

In FY '81 the Traffic Safety Poster Contest was conducted in 30 counties with 3,000 boys and girls involved.

### 8. Food and Nutrition (EFNEP)

4-H EFNEP endeavors to deliver low-income youth opportunities to learn principles of good nutrition and diet, acquisition and use of appropriate foods, while contributing to the personal development of future

citizens. The use of volunteers is recognized as an essential element in reaching 4-H EFNEP's potential audience.

Major emphasis in 1980-81 centered on progression of 4-H EFNEP units, their youth and volunteers, into an ongoing 4-H program; thus volunteers became increasingly necessary to support 4-H EFNEP. It was realized that 4-H EFNEP reached a large audience, but only when the EFNEP aide was the instrumental leader.

To address and focus attention upon volunteer development and 4-H EFNEP progression, district training was provided for professional staff in all EFNEP units. At the same time a special six months 4-H EFNEP project was initiated. Thirty-eight counties were awarded 4-H EFNEP personnel to build upon their existing 4-H EFNEP base. In all districts, area EFNEP agents and county EFNEP staffs presented the suggested progression model, matrix for 4-H EFNEP to 4-H, and volunteer training/development modules to EFNEP and temporary 4-H EFNEP aides. The 4-H EFNEP aides receiving orientation in nutrition content, youth audiences, and volunteer development worked in targeted areas getting 4-H EFNEP units that could and would exist beyond the aides intervention.

An evaluation conducted in project participating counties identified 313 principally leader led units from 465 total 4-H EFNEP groups which involved 775 volunteers. An individual progress report indicated seven 4-H units, varying from 4-H clubs to special interest programs, organized from 4-H EFNEP. The concluding statement expressed pride in their cooperative effort and a pledge to continue efforts to bring more 4-H opportunities to EFNEP groups. Evidence of additional success will be reflected as EFNEP youth become more involved in an ongoing 4-H program and develop

their individual potentials. Another strength for 4-H EFNEP in 1981, is the emergence of team and cooperative effort on the part of the county professional and paraprofessional EFNEP staff.

## 9. Food and Nutrition

All food agents in the state were given special training in 4-H foods project material and ways of working with 4-H volunteers. The new projects were developed this year entitled "Make Way For Milk" and "Food Conservation and Safety." It was gratifying to note that the number of foods demonstrations increased 17 percent over last year.

More effort was made to have smooth transition from EFNEP to 4-H. In Forsyth County, the 4-H staff, food agent and program aides met jointly to discuss the transition. Ten areas were identified where work needed to be done and various staff members volunteered to work in those areas. Seven graduating EFNEP groups have become 4-H clubs and three new EFNEP groups have been organized.

A packet of materials on food conservation and safety was distributed to all foods and nutrition agents. Thirty-seven thousand youth were enrolled in foods and nutrition and food conservation learning experiences through projects, activities demonstrations.

"Looking Toward Adulthood" the third in the series of 4-H health manuals was completed and released. Also a 4-H members project manual "Peanuts - Nutrition in a Nutshell" was completed and released.

## 10. Personal and Family Resource Management

### Financial Management Programs

According to agents' reports, the behavioral changes resulting from participants in management programs were 12,649 families teaching children to use money wisely. There were 1,293 youth enrolled in consumer education learning experiences through projects, activities and demonstrations for the fiscal year 1980-81. More than 1,100 youth participated in home management projects.

## 11. Family Life, Child Development and Human Relationships

During the program year 1980-81 a total of 22 counties had programs that combined youth needs and human development subject matter. Preparation for parenthood classes involved 12 counties and 816 youth, teenage pregnancy was discussed in five counties by 196 teens, teen development and careers in five counties by 1,954 teens, and physical development in four counties. Slightly over 4,000 teenagers were made aware of important adult responsibilities related to marriage, parenthood, and careers.

In one county there was a six week (one class a week) marriage preparation class for two home economics classes. These were taught by the Extension Home economics agent in cooperation with the health department, the mental health association, and the public school. An evaluation indicated that the students became aware of the responsibilities of marriage and the need for preparation. The class members asked for more discussion time and opportunities to discuss these matters with members of the opposite sex.

Another county had classes for boys ages 11 and 12 in the evening, and all day classes for girls ages 11 and 12, entitled "Growing Into Manhood" and "Growing Up and Liking It." Five sessions in all were held during the past year reaching 82 youth and 70 parents. A survey of parents of daughters indicated improved communication with daughters, help for parents in answering questions, a great increase of questions to parents.

## 12. Textiles and Clothing

Buymanship principles were the thrust of the 1981 4-H older youth clothing camp with 85 youth and 25 volunteer leaders attending. Programs included: "Knit Savvy", which gave criteria for selecting single knit garments and "Put On's and Hang Ups", accessories to extend the wardrobe emphasizing the detachable collar.

In addition, 85 programs on buymanship were given reaching 1,832. Too, 976 newspaper and radio programs focused on clothing selection and buymanship.

The statewide Back-To-School contest for youth, ages 9-13 involved many young people in their first home sewing experiences. The contest, sponsored in conjunction with the North Carolina Cotton Growers Wives involved 191 participants and 20 older youth in teaching capacities.

About 16,000 adults and 5,350 youth participated in construction programs; and 4,500 adults and youth participated in fitting programs during 1980-81. Additionally, 13,325 volunteer leader-taught lessons have involved numerous other home sewers. Thirty-four 4-H'ers participated in the sewing contests at 4-H District Activity Days demonstrations.

Enhancing one's personal appearance is an important aspect of maximizing one's clothing and grooming resources. During recent years, there has been an increase in requests for personal appearance information. Personal appearance, as a communication of social values and self-expression, encompasses grooming, personal development, and aesthetics.

Many individuals need assistance in making the most of their personal appearance. Groups identified for major emphasis were: amply endowed or large figures, working women, and 4-H youth.

Agents have reported a total of 144 lessons taught in the areas of personal appearance and aesthetics with participation by approximately 10,000 adults and youth. In addition, trained volunteer leaders presented 150 adult and youth lessons. Forty-five counties used teaching kits "Accentuate the Positive," "Mastery of Camouflage," "Looking Your Best Pays Off," "What's Your Message," and "Color Bibs" in aesthetics lessons.

Eighty-five 4-H'ers participating in the statewide clothing camp participated in personal development and aesthetics workshop sessions as a part of the weekend camping experience. Also, many agents develop personal appearance workshops for youth as one segment of a comprehensive youth program leading up to the spring 4-H County Fashion Revues.

In total, more than 250,000 garments have been constructed by adults, and 16,344 by youth during the past year. Estimating savings realized at \$15 per garment constructed, and \$90 per garment tailored, North Carolina consumers realized savings of \$6,263,825 through home sewing in 1980-81.



### 13. Human Health

#### 4-H First Aid

A complete 4-H first aid program has been developed with curriculum for the nine and ten year old youth. The project can be implemented for 4-H'ers or non-4-H'ers in the community club or special interest delivery modes. An instructor's guide has been developed with teaching aides in the form of four slide/tape programs, movies and other hands-on learning experiences. The first aid project was developed to utilize the trained EMT and Rescue Squad staff as instructors. The first aid project will complement the existing fire safety project in providing youth two excellent learning experiences in an effort to enroll them in the on-going 4-H program.

### 14. Housing and Home Environment

The state 4-H Home Environment Demonstration program continued to emphasize energy conservation. This program emphasis has helped the youth who participated to learn more about saving energy in their homes. In 1981, 28 4-H members participated in District Activity Day Demonstration activities. The state home environment winner was a youth from Johnston County who had previously participated in that county's first Youth Energy Day.

Three hundred eighty-four 4-H'ers from 14 counties participated in energy activities as a part of a research project on attitudes and behaviors of youth toward energy conservation. The study indicated that youth who had experienced energy conservation education were more willing to make behavioral than attitudinal changes in their use of energy.

Twenty-eight 4-H'ers participated in the spring contests at District 4-H Activity Days.

## 15. Leadership Development

### Program Objectives

During the planning year 1980-81 there was a continuing emphasis on the development of volunteer leadership staff design through the utilization of the concept of "leadership teams" for delivery of the 4-H program through two major modes: 1) the community 4-H club and 2) the community 4-H project club. These two delivery modes were supported through a third delivery mode; special interest programming which is also volunteer staffed. The leadership team design for the two major delivery modes are inclusive of role relationships and responsibilities across five team positions: 1) organizational leaders, 2) project leaders, 3) activity leaders, 4) team leaders, and 5) community resource persons.

### Pursuit of Objectives

Established objectives were pursued through development and delivery of major 4-H agent training in the area of leadership team formation and orientation with an emphasis on team building skills at the community/neighborhood unit delivery level.

A second major thrust was made in the area of middle management skill development through the utilization of county volunteer leader/agent teams at the "middle management track" during the Southern Region Leader Forum at Rock Eagle 4-H Conference Center, Eatonton, Georgia in October. Indications are there is growing acceptance of the "multi-leader" model.

### Innovative Approaches in Volunteer Staff Development

The second annual North Carolina Volunteer 4-H Leaders' Convention was held November 1-2, 1980 at the McKimmon Center in Raleigh, NC. The constitution which had been designed by a representative committee of North Carolina volunteers coming from the seven district level leader associations was endorsed. Attendance at the convention was 338 and was representative of some 65 county volunteer leader associations and seven district level volunteer leader associations.

A continuing emphasis on the development and utilization of leader associations was made through the clarification of the role of the 4-H agent/advisor sponsor to district volunteer associations in an attempt to link resources and funding, as well as programming, across extension district boundaries.

The newly formed association inclusive of its executive board and board of directors, which includes two representatives from each district association, has developed a full slate of activity and will become the key planning group for the development of the 1981 volunteer convention scheduled for the fall of 1981.

### Training Aimed at Low Income Audience

Volunteer and salaried staff efforts were directed at expanding the availability of 4-H programming through cooperation with the 4-H expanded food and nutrition programs by utilization of materials developed in cooperation with Michigan and Pennsylvania during the "low income project." The formal title for the program was "Volunteer Staff Development with Low-Income Audiences". The materials developed were planned for statewide utilization in giving both salaried and volunteer staff advanced skills at moving 4-H expanded food and nutrition audience groups from that program into standard 4-H groups. That training is scheduled for the winter of 1981.

### 16. Organization Development and Maintenance

The development of materials for organization, development and maintenance (program development) was completed by the addition of a comprehensive chapter in the 4-H Extension Agents Guide. The support materials now include four handbooks explaining the purpose, functions and interrelation of the 4-H and youth development committees, the 4-H Leaders' Association, the 4-H County Council and the 4-H agents. The chapter in the agents' handbook deals primarily with needs assessment and processes whereby the needs may be met. All 4-H Extension agents have received instructions on these processes in FY'81. One hundred percent of the counties now have 4-H youth development committees, 88 percent have 4-H county councils and 64 percent have volunteer leader associations.

Youth in 4-H desire involvement in a program of developmental activities. The nature of public funding prohibits the use of these dollars and direct support of activities for young people and their volunteer leaders.

These necessary activities require resources and they must come from the private sector.

Private support is used for programs such as volunteer leader training, awards and recognition for 4-H members, educational trips, scholarships for in-service and formal education and international programming. Private resources are generated in every county in North Carolina in addition to those at the state level. A state "4-H Development Fund" operates an annual budget in the range of \$100,000 to \$175,000 annually. The 100 counties in North Carolina raise approximately \$1,100,000 annually in support of their 4-H programs.

#### **New 4-H Camp**

A new 4-H camp was secured during the past year. The facility is on a 330 acre tract of land and has an existing resident camp facility on the site. The new location is 25 miles north of Winston-Salem and consists of approximately 30 buildings. The plant was a gift of the North Carolina Sertoma Clubs and the North Carolina Easter Seal Society.

A renovation program of \$250,000 is underway to prepare the facility for the 1982 camping season. Funds are being raised through the North Carolina 4-H Development Fund, Inc. The Sertoma Clubs of North Carolina and the North Carolina Jaycees are taking an active part in the raising of funds to renovate and expand the facilities.

The work on the site is being done by a crew of inmates from the Stokes County Prison unit. The inmates are supervised by three professional tradesmen in carpentry and painting.

### Extension 4-H Agents

In order for the 4-H program to be a proactive, evolving developmental program for youth and volunteers the development of a competent professional staff is requisite. The state 4-H staff has the responsibility of keeping 4-H agents competent in the development of 4-H programs for youth through volunteers. To accomplish this goal 4-H agent training is based on concepts which deal with the philosophy and objectives of 4-H; delivery modes; volunteer leadership development; how to work with councils, boards, and committees; development of 4-H curriculum; management of support for 4-H and evaluation and accountability.

The structure for this training occurs through three phases: orientation, inservice, and graduate study. During the past year all newly employed agents with significant 4-H responsibility and reassigned agents attended three orientation sessions for a total of seven days of training which dealt with program development, curriculum development, and leadership development. Over 85 percent of all agents with 4-H responsibility attended inservice training of one week; a two tract program which dealt with leadership development. In graduate study a special study tour of four states was attended by thirteen agents, at their expense, dealing with the theories of societal, organizational, and human development as seen through the actual implementation of the 4-H programs of those states.

This already determined program of training will be complemented in the coming year by the newly approved inservice training development policy for all of Extension. This new procedure will ensure proactive needs assessment before the development of annual calendars of training. To implement this procedure a process for needs assessment of agent training needs is now being developed.

### Paraprofessionals

In addition to the professional staff, an important aspect of the continuing development of 4-H is the program assistant program. Salaried extensions of the 4-H agent, the program assistants are providing expansion of the program through the organization of new clubs and maintenance of established clubs. Currently there are 42 paraprofessionals employed in the Expansion program, 11 paraprofessionals in the 1890 program, and 1 paraprofessional presently working with the county 4-H programs.

As requested by the 4-H Agent's Association and the Federation of Extension organizations, a study of the training needs of 4-H program assistants as perceived by both agents and program assistants has been conducted. Data from this study is being utilized to present training curriculum. Additionally, assessment of the strengths and problems of the program is currently being determine through on-site visitations. Supervision of the program assistants remains a priority problem and training is currently being planned for supervising agents to alleviate the problem. Plans are developing for an overall evaluation of the current utilization of program assistants.

### North Carolina 4-H Congress

The North Carolina 4-H Congress provided over 1,000 youth and adults a means to relate to the total 4-H program, develop communication skills, attend interesting classes and participate in educational programs in FY'81. Held on the NCSU campus, the events helped the youth to develop self-confidence, provide recognition and gain acceptance by their peers. The 1981 Congress provided delegates the opportunity to participate in educational workshops and to listen to outstanding speakers. The theme of

the 1981 Congress was "Communication". The keynote speakers stressed communication throughout the week. The following workshops were conducted:

"TV Careers: Those You See and Those you Don't"

Careers in Photography

Starting Out in Broadcasting

Communicating Through Storytelling: A Meeting of Meaning

"After Woodward and Bernstein...Now What?"

Personal Communications

Expanding Your Crime Prevention Efforts

Cumulative Records

Computers for the Novice

Graphic Arts

Communicating with Laughter

Marine Science

Community Discovery

Dramatic Arts

## 18. Community Services and Facilities

### Program Objectives

The North Carolina 4-H thrust in the area of community services and facilities continues to focus on the 4-H community resource development program as delivered through project materials entitled "Involvement Unlimited." Major changes during the year included the addition of a statewide project in the area of community service to the developed project materials.



### **State Leadership Learning Lab**

One of the innovative approaches used in support of the 4-H community resource development program is a weekend "leadership learning lab" conducted in the fall of the year at Betsy-Jeff Penn 4-H Conference Center designed to train county groups made up of salaried, volunteer, and 4-H'er staff members in the social action process and the development of action plans for application in the context of analyzed county needs.

The 4-H community development program is in its fourth year of development and continues to expand. The initial involvement was approximately six counties, now there are 18 active counties involved with the program.

### **Innovative Program Delivery Design**

The 4-H community resource development program in North Carolina represents a major attempt at a very real decentralization of program and resource availability to all socioeconomic levels in the counties of the state. A large majority of the active groups are in fact in limited resource situations and are developing programs in response to community/neighborhood needs which might be labeled "limited resource." The underlying principles of the program are couched in the decentralized philosophy in which neighbor/ community groups are allowed to identify existing problems, marshal both human and economic resources in response to those problems and actualize a planned program .

### **Continuing Private Sector Support for the 4-H Community Resource Development Program**

The "leadership learning lab," which has become an annual function, is supported in large part through private sector funding and will continue to be a line item on both the volunteer staff development and the 4-H community development budgets.

### Crime Prevention

The 4-H Crime Prevention Program was inaugurated in FY'80 with financial support from the North Carolina Department of Crime Control and Public Safety. In FY'81 the outside resources to this program totaled more than \$30,000. An initial grant of \$5,000 was used to:

- 1) produce two slide sets concerning crime prevention and 4-H's role in crime prevention.
- 2) begin the development of a videotape to be used for statewide educational television.
- 3) compile 225 copies of a crime prevention resource guidebook for use by agents and volunteers.

In addition a mobile unit with two employees was used to travel the state during the summer, going to 4-H camps, district activity days, and to the North Carolina 4-H Congress. This means was used to introduce the program, reaching more than 15,000 youth and adult volunteers. A follow-up grant from Crime Control and Public Safety, in support of the State 4-H Council decision to adopt Crime Prevention as the State Citizenship/Leadership/Community Service emphasis for the year, amounts to \$5,500. These funds were used to plan and conduct a statewide retreat by training 4-H representatives and law enforcement persons in each county. In addition, the mobile educational unit and employees from the crime prevention program were available during the year for county, district and state activities. In cooperation with other agencies, such as crime control, sheriffs and police departments, farm bureau, and others enhanced this effort and potential impact. The program will continue in FY'82. The present crime prevention program is integrated at the county level among the four program components of the Extension Service.

The State 4-H Council adopted as the program thrust "Crime Prevention" for the '80 and '81 program year. The slogan "Partners in Prevention" was disseminated to all counties. Ninety percent of the counties participated in this program. Involvement in the program ranged from the local club 4-H member to the Governor of the State. This program proved to be one of the most successful and visible conducted in North Carolina. Over 100 4-H members volunteered for more than 100 hours in this endeavor to reach more than 10,000 households with Operation Identification. Ten thousand 4-H members and 3,000 volunteers were involved. Thousands of hours of volunteer service were rendered by teen leaders and volunteer leaders throughout the state. One statewide retreat was held and six district retreats were held to train adults and team volunteers in this program. More than 750 workshops were conducted. 4-H'ers and their leaders organized more than 60 community watches and assisted in organizing another 64. More than 1,000 pieces of farm machinery were marked to prevent theft.

The program culminated at North Carolina 4-H Congress, where a breakfast was held for 250 4-H members recognizing their many accomplishments. The Governor of the State was present to recognize the winners in the various categories. Ninety-four 4-H members were recognized individually by the Governor for their efforts in this movement.

## 19. Economic Development, Manpower and Careers

### Careers

The objectives of the 4-H Career Program are: 1) to broaden the knowledge of 4-H members about career opportunities, 2) to help youth clarify their interests and aspirations, 3) encourage youth to give serious thought to career planning, 4) to stress the importance of preparation for

jobs, and 5) to encourage part-time work experience at trial jobs, 6) to stress the importance of self analysis in considering the world of work. A major thrust of the career program effort this year was to help 4-H leaders incorporate career education into the 4-H program through activities. There are a variety of topics and activities appropriate for different age groups. Every young 4-H'er can benefit from participating in some of the career activities available. 2,615 youth were involved in the career exploration, self-determined and other economics, jobs, and careers projects. They were also involved in a variety of activities from career fairs to seminar tours. A major emphasis was to involve and train volunteer staff on how to incorporate career programs into the ongoing 4-H delivery system. The following are some of the accomplishments of the career programming effort for 1981: 1) Two 4-H volunteers and a state staff member participated in the National 4-H Leaders Forum on Economics, Jobs and Careers; 2) A state careers advisory committee has been organized consisting of three volunteer 4-H leaders and two Extension 4-H agents; 3) The careers advisory committee conducted two sessions on incorporating careers into the ongoing 4-H program at the State 4-H Leaders Convention in October; 4) A 4-H leaders guide to incorporate careers into the 4-H program has been produced; 5) A traveling exhibit on the new 4-H Careers Program has been developed and utilized in an idea forum and as a standing display at the State Leaders Convention; and 6) Two counties are conducting pilot programs in the area of economics, jobs and careers.

Economic Development, Management and Careers

Plans have been made to conduct the following activities related to careers: 1) The careers advisory committee will conduct a seminar for 4-H agents on incorporating careers into the 4-H program in November; 2) Two additional 4-H leaders have been identified from pilot counties to attend the 1982 National 4-H Leaders Forum on Economics, Jobs and Careers. These individuals will become a part of the statewide careers advisory committee;

3) A major project for the careers advisory committee is planning and implementing a state leaders forum on careers, to be held in May 1982. The primary thrust of this forum will be to train 4-H volunteers in working with other volunteers and youth in incorporating careers into the ongoing 4-H program; and 4) The theme for 4-H Congress in 1982 will be on careers. A special event of this Congress will be a trade fair held during the week of State 4-H Congress.

#### **Economics in Action - American Business System**

Economics education efforts consist of the 4-H Economics in Action program (special interest format) and the American Business System 4-H Demonstration program.

Extension Economics Specialists and Extension 4-H Agents assisted volunteer business and community leaders with the planning, implementation, and evaluation of 13 4-H Economics in Action programs which reached 580 high school students. Through interaction with 145 volunteer business persons representing 120 private businesses, the young people learned about the realities of their economic environment.

The American Business System 4-H demonstration program reached 50 young people. This Extension 4-H youth program has allowed the participants to increase their economic understanding of the business world and to develop their public speaking skills.

In efforts to measure the impact of the 4-H Economics in Action program, pre- and post-tests were presented on an experimental basis. Improved scores (informal) indicate that students improved their understanding of selected concepts.

## 21. Leisure and Cultural Education

North Carolina's rapidly expanding population is also experiencing increasing time for leisure. Simultaneously, monies from foundations and government for leisure and cultural related projects are fast dwindling to minute amounts. These two factors taken together produce the need for local individuals to work together in locally supported projects which provide recreational and cultural pursuits. Education needs to be provided to help individuals understand and develop those skills and values.

The goal of the 4-H program in NC is to assist youth in meeting basic life needs, developmental tasks, and essential life skills. The emphasis of the program in the past has been in the biological, physical, and social sciences. To help meet the basic needs of the total individual the 4-H program places special emphasis on such project areas as dramatic arts, dance and music, communication arts, crafts, public speaking, and international programs.

As a three phase program, drama, music and dance have found increasing success in many counties around the state. Since the initial dramatic arts workshop and the introduction of the drama project materials, an increasing number of counties have begun drama and/or other arts groups. Some of the resultant productions have even outdrawn local sports events in attendance. One county's summer drama effort resulted in the further development of other community cultural activities. The skills required for these type activities have resulted in high usage and linkage of volunteer leadership. Other activities such as clowning have also begun to develop.

Communication arts participation has shown dramatic increase during the past two years. Development of youth in the production of the Visual Newsletter at State Congress has stimulated great interest throughout the state and increased participation at state held 4-H communication workshops.

Public speaking has begun to have increased participation as district activity days have had more speeches given over the past two years. Several counties have had intensive public speaking workshops in conjunction with civic groups such as Toastmasters and Kiwanis.

International 4-H programs have also been growing as seven inbound and three outbound IFYE's participated this past year. Several counties such as Harnett and Jones incorporated an international theme in their awards night program while other counties have incorporated international themes in county council meetings, parade floats, and fair booths.

### Camping

North Carolina 4-H camp programs were offered at four state operated resident camps as well as various locally operated sites across the state in fiscal year 1981. Recognizing camp as a method of education, it was used as both a means to deliver subject matter and as an end in itself. Participation by 4-H members in resident camping has leveled off since fiscal year 1979 through fiscal year 1981 after a steady decline since 1972.

Certain counties or areas of the state have implemented camping programs for special audiences. Examples of these would be "high risk youth", or day camps instituted for EFNEP youth, or to introduce new audiences to 4-H.

The resident camp programs have been modified to emphasize 4-H project material that blends with the unique environment of each of the physical plants. The opportunity to renovate an older physical plant will make available a new site for camping in fiscal year 1982. This site has a key location and outstanding resource base for the youth of North Carolina.

The camping subcommittee of the North Carolina 4-H Development process reviewed the camp programs in fiscal year 1981. Their recommendations are being acted upon and will be emphasized in the program planning for fiscal year 1982.

Resident camp for 9 through 13 year old youth accommodated approximately 3,500 in fiscal year 1981. In addition over 275 adult volunteer leaders participated in the programs. In addition, the camps were operated to accommodate an additional 1,000 4-H and other youth through various programs.