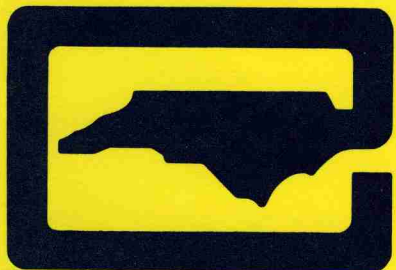


Annual Report

October 1, 1982 – September 30, 1983



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

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

*Charles D. Black*

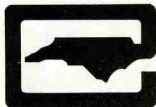
Associate Dean and Director

*Daniel D. Goffey*

Associate Dean & Administrator

DR. BOONE

*H. Boone*



AGRICULTURAL  
EXTENSION  
SERVICE

North Carolina State University  
School of Agriculture and Life Sciences

Agricultural Extension Service  
Office of the Director  
Box 7602  
Raleigh, N. C. 27695-7602

March 6, 1984

*[Handwritten signatures]*  
*J. E. Legates*  
*S. Legates*

TO: Department Heads  
Specialists-in-Charge  
District Extension Chairmen  
District Program Leaders

*Chester D. Black*

FROM: Chester D. Black, Associate Dean and Director

Enclosed is a copy of the Annual Report of the North Carolina Agricultural Extension Service for the fiscal year October 1, 1982 to September 30, 1983. Each of the reports in this document has been entered in a national data base and is accessible electronically from the federal Extension Office.

Our specialists have done a good job in reflecting the scope of the many Extension activities in the Annual Report. Some activity reports have been omitted in order to keep this volume to a reasonable size.

I appreciate the assistance of all our faculty and staff who contributed to this Annual Report.

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Enclosure

cc: Dean J. E. Legates  
Administration



AGRICULTURAL  
EXTENSION  
SERVICE

North Carolina State University  
School of Agriculture and Life Sciences

Agricultural Extension Service  
Office of the Director  
Box 5157  
Raleigh, N. C. 27650

November 28, 1983

Dr. Mary Nell Greenwood  
Administrator, ES/USDA  
Washington, DC 20250

Dear Dr. Greenwood:

Enclosed are three copies of the Annual Report for the North Carolina Agricultural Extension Service for FY 83. If there are staff questions related to the program areas, please direct these to:

Home Economics - Dr. Martha Johnson  
4-H and Youth - Dr. Don Stormer  
Community & Rural Development - Dr. Joe Phillips  
Agriculture - Mr. D. G. Harwood, Jr.  
1890 Program Component - Dr. Dan Godfrey or Dr. Dalton McAfee

It has been a very good year for Extension in North Carolina, despite the vagaries of the weather. We are especially proud of our new 4-year plan, "People's Plan - '87" and the internal study committee reports which should lead to a new, more effective era for our organization.

Sincerely yours,

*Chester D. Black*  
Chester D. Black  
Associate Dean and Director

ms

North Carolina FY 83 Accomplishment Report - NARS

Statistical Tables

NC01 - NC98	Agriculture and Natural Resources
NC100 - NC116	Community and Rural Development
NC117 - NC141	Home Economics
NC142 - NC164	4-H

TABLE I. EXPENDED PROFESSIONAL STAFF YEARS BY PROGRAM AREA 1/  
1862 INSTITUTIONS  
FY 83

	ANR			CRD			HE			4-H			TOTAL		
	No.	%		No.	%		No.	%		No.	%		No.	%	
PROGRAM COMPONENTS (See definitions in Section III)															
1. Crop production	83.8	29.39	4.0	10.94	1.5	.75	1.6	.65	90.9	11.7					
2. Livestock production	133.5	46.84	2.0	5.28	.5	.23	12.6	4.99	148.6	19.1					
3. Bus. mgt. & economics	29.0	10.17					.6	.23	29.6	3.8					
4. Agr. mkg. & farm supplies	17.2	6.02					.8	.33	18.0	2.3					
5. Natural resources	10.2	3.59	1.6	4.28			.5	.20	12.3	1.6					
6. Mech. sc., tech. & engr.	11.3	3.98							11.3	1.5					
7. Safety									6.5	2.57					
8. EFNEP-Fed. funded 2/ EFNEP-Non-fed. funded							19.5	9.59	7.4	2.91	3.2	1.28	26.9	3.5	3.2
9. Food and nutrition			1.0	2.72	44.3	21.83	.4	.17	45.7	5.9					
10. Pers. & famly. res. mgt.					21.4	10.54	38.1	15.07	59.5	7.6					
11. Family life, etc					19.4	9.57	4.7	1.86	24.1	3.1					
12. Textiles and clothing					23.1	11.37	5.8	2.30	28.9	3.7					
13. Human health					2.6	1.27	.6	.25	3.2	.4					
14. Housing & home environment			1.4	3.69	41.6	20.50	.2	.08	43.2	5.6					
15. Leadership development			2.2	6.00	17.4	8.58	79.7	31.26	98.7	12.7					
16. Org. devel. & maintenance			5.5	14.90	11.6	5.69	90.7	35.84	107.8	13.9					
17. Comp. comm. planning			9.0	24.21					9.0	1.2					
18. Comm. ser. & facilities			7.0	18.88					7.0	.9					
19. Ec., dev., mpwr. & careers			1.6	4.34					1.6	.2					
20. Govt. oper. & finance															
21. Leisure & cult. education			1.7	4.77	1	.67	.2	.08	2.0	.3					
TOTAL BY PROGRAM AREA	285	100.00	37	100.00	203	100.00	253	100.00	778	100.00					
PERCENT BY PROGRAM AREA		36.6		4.8		26.1		32.5		100.00					
															778

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.

North Carolina  
(STATE)

TABLE IV. EXPENDED PARAPROFESSIONAL STAFF YEARS BY PROGRAM AREA 1/  
 1890 INSTITUTIONS AND TUSKEGEE INSTITUTE  
 FY 83

PROGRAM AREA	PARAPROFESSIONAL STAFF		
	No.	1862	%
ANR	2.70	'	1.76
CRD	.22	'	.14
HE EFNEP--Federally funded	112.88	'	73.30
HE EFNEP--Non-federally funded		'	
HE OTHER	1.86	'	1.19
4-H EFNEP--Federally funded		'	
4-H EFNEP--Non-federally funded		'	
4-H Other	36.33	'	23.59
TOTAL	154.00	'	100

1/ 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.

TABLE X

POW&R FY83  
3/82ANNUAL PROGRESS REPORT  
STATE COOPERATIVE EXTENSION SERVICE  
PESTICIDE APPLICATOR TRAINING PROGRAMN. C.  
(State)

October 1, 1982 - September 31, 1983

I. Applicators Trained		Numbers to Be Trained	
	<u>Commercial</u>	<u>Private</u>	
Initial	950	1,150	For Initial Certification
Re-Cert.	2,800	15,310	For Recertification <sup>1/</sup> (Applicable Yes: No)
A. Private Applicators		16,460	<u>1,212</u>
B. Commercial Applicators		3,750	<u>992</u>
			<u>17,110</u>
			<u>3,110</u>

II. Expenditures for FY 83			
Source	Total Available for Fiscal Year	Expended	Balance Remaining
A. State Funds	-----	\$200,212 <sup>2/</sup>	0
B. EPA Funds	<u>\$55,666.95</u>	<u>32,921.99</u>	<u>\$22,744.96 <sup>3/</sup></u>

See Science and Education/Extension Service Administrative Handbook

- <sup>1/</sup> If recertification through training is not systematically required, check the box "no" and estimate the number of applicators expected to take advantage of the box.
- <sup>2/</sup> States must provide 50 percent or more of the cost of the Pesticide Applicator Training Program provided from non-EPA sources in order to receive EPA pass through funds.
- <sup>3/</sup> For FY 83 up to 100 percent of the EPA available funds from FY 83 can be carried over into FY 84. Carryover funds in excess of 100 percent will be charged against the FY 82 EPA allocation.

TABLE XI

N.C. COOPERATIVE EXTENSION SERVICE

FY 83 BASE DATA FOR COTTON PEST MANAGEMENT AND IPM PROGRAMS

A. PROGRAM COSTS(\$):	COMMODITIES OR OTHER PROJECT DESIGNATIONS					
	1.*	2.*	3.*	4.	5.	TOTAL
1. Smith-Lever 3(d) .....	x	x	x	x	x	x
2. Other CES Funds .....	73,000.	17,000.	88,000.			
3. Growers Payments to .....						
a. Extension Programs .....	122,137	14,160.	---			
b. Private Consultants/firms .....						
c. Growers Organizations/co-ops .....						
4. Others .....						
<b>B. ACRES OR UNITS HANDLED BY:</b>						
1. Extension Sponsored Programs .....	x	x	x	x	x	x
2. Private Consultants/firms .....	34,000.	1503	500,000.			
3. Growers Organizations/co-ops .....	50,000.	1000.	---			
4. Industry Fieldmen .....	2,000.	---	---			
5. Others Influenced by Extension .....	10,000.	1000	2,000,000			
<b>C. CES MAN-YEARS:</b>						
1. State Specialists .....	x	x	x	x	x	x
2. Multi-County staff .....	1	1	2			
3. County staff .....	28	4	2			
<b>D. NUMBER OF SCOUTS TRAINED</b> .....	110	4.	31**			
<b>E. NUMBER OF PRODUCERS TRAINED</b> .....	1,100.	12.	---			
<b>F. NUMBER PROVIDING IPM SERVICE:</b>						
1. Extension Sponsored Programs .....	x	x	x	x	x	x
2. Private Consultants/firms .....	20.	4	6			
3. Grower organizations/co-ops .....	10.	2	---			
4. Industry Fieldmen .....	6	2	---			
5. Others influenced by Extension .....	2	---	8			
<b>G. NUMBER OF CLIENTELE SERVED:</b>						
1. Extension Sponsored Programs .....	x	x	x	x	x	x
2. Private Consultants/firms .....	635	35	610			
3. Growers Organizations/co-ops .....	140	18	---			
4. Industry Fieldmen .....	110	20	---			
5. Others Influence by Extension .....	25	---	900			
<b>H. STATE ADVISORY COMMITTEE:</b>						
1. No. people on committee .....	11					
2. No. Agencies and Department Represented .....	8					
3. No. times Committee Met .....	3					

\* 1.- Field Crops

Alfalfa      Peanuts  
Corn        Sorghum  
Cotton      Soybean  
I. Potatoes    Tobacco

2- Apples  
    Blueberries  
3- Poultry

\*\* Industry Fieldmen



**\*TITLE**

Program Information Report

NC01

A Program to Reduce Nitrogen Use and Maleic Hydrazide Residues on Flue-Cured Tobacco in North Carolina

**\*TEXT**

Excess nitrogen application on flue-cured tobacco reduces the natural ripening process, curability and the quality of cured leaves. Excess nitrogen also encourages greater use of some pesticides since the growth of axillary buds and certain insect populations is increased. Of particular importance are objectionably high Maleic hydrazide (MH) residues in the cured leaf, which threaten to reduce the export demand for U.S. tobacco.

The goals of this program were: 1) to reduce nitrogen rates from an estimated 90-100 lbs/A to a statewide average of 70 lbs/A, 2) to reduce MH residues from approximately 140 ppm to the 80 ppm level requested by certain importers of U.S. tobacco, and 3) to increase the proportion of ripe, mature tobacco presented for sale to domestic and foreign buyers.

Resources utilized in the program included the mass media, bulletins and leaflets, approximately 50 production meetings, 25 on-farm tests, and county tours. The objective was to reach agri-business personnel and tobacco producers. Primary cooperation was with county Extension personnel who worked with these groups at the local level. Funding was primarily from the normal operating budget with grants from agribusiness.

Estimates by county agents indicate that excessive nitrogen use decreased from approximately 55% of the acreage in 1980 to 20% in 1982. Saving in cost of nitrogen was estimated to be about \$2 million annually. During the same period MH residues have decreased from 138 to 96 ppm, and the amount of ripe, mature grades has increased the profitability of the crop and less nitrogen use on tobacco may have reduced a possible source of water pollution.

Nitrogen use was obtained from fertilizer sales records and estimates by county agents, MH residues from analyses sponsored by ASCS, and leaf quality from USDA market reports.

The program has been beneficial and will be continued to further reduce excessive nitrogen use on most of the 300,000 acres of flue-cured tobacco now being grown in North Carolina and to prevent a reversal of the progress achieved to date.

**\*CONTACT**

W. D. Smith, W. K. Collins and G. F. Peedin  
Crop Science Extension Specialists (Tobacco)  
North Carolina State University  
P. O. Box 5155  
Raleigh, NC 27650

(919) 737-3331

**\*KEYWORDS**

Report No. NC01  
 State North Carolina  
 Fiscal Year 1983  
 Program Area Agriculture  
 (to be filled in by the sponsor)

Subject Matter Area **Fertilization**

Commodity, Subject **Flue-Cured Tobacco**

Address **Farmers**

Methods **On-farm demonstrations, farm publications, TV, radio, production meetings**

**Measurable Impacts/Results - Measurable social or economic consequences**

Enter Measurable Impacts/Results - Keywords	Enter quantity - (economic or social)
<b>*QUANTIFIED IMPACTS</b>	
Fertilizer use reduced	Nitrogen rate reduced 15 lbs/A on 114,000 acres
Marketing improved	Quality improved 25% on 325,000 acres
Marketing improved	MH residues reduced by 42 ppm on 325,000 acres
Productivity improved	Production costs reduced \$20/A on 114,000 acres

VOLUNTEER TIME CONTRIBUTED (to be filled in by the sponsor)

\*TOTAL NUMBER OF PERSONS

\*TOTAL DOLLAR VALUE

ESTIMATED PERSON-PROGRAM COSTS (Optional) (to be filled in by the sponsor)

Prof      Paid

\*TITLE

Program Title: Peanut Production in North Carolina

NC02 Peanut Production in North Carolina

\*TEXT

North Carolina peanut producers are faced with a continuing economic crunch caused by a reduction in peanut quota available to the grower and constantly rising production cost. The N. C. Agricultural Extension Service conducted meetings with peanut producers in each major peanut producing county emphasizing the need for following recommended production practices to produce quality peanuts for the U.S. consumer. The producer meetings were followed with on-farm tests to demonstrate to the growers that peanut production technology information was applicable at the farm level.

Meetings were held in 15 counties involving contact with over 1,000 peanut producers. Over 35 on-farm tests were conducted in 12 counties with cooperating peanut growers.

The primary objectives of the production meetings and on-farm tests were to help farmers evaluate their peanut production programs and to utilize the information and services available to them through the local agricultural extension office. Growers were provided peanut production guides to assist them in producing quality peanuts at minimum input levels.

The peanut growers attending the meetings accounted for 1/5 of the peanut growers in the state and approximately 1/2 of the peanut acreage. As a result of the meetings and participation by cooperating farmers in on-farm tests, peanut quality in North Carolina has been improved as measured by the Federal State Marketing Service grade standards. This improvement in quality was a result of emphasis by extension agents on maintaining a quality product during the harvesting and handling. In addition considerable emphasis was placed on the use of pesticides on a prescription basis. The resulting improvement in quality and the reduced pesticide usage are equivalent to a \$10 per acre increase in profit for the N.C. peanut producers.

The extensive work of our agricultural extension agents with the on-farm testing programs enhances our knowledge base on peanuts and increases our credibility with the peanut farmers. The acceptance of our overall extension program will help peanut farmers reduce cost of production and improve quality and market acceptance of the N.C. peanut.

\*CONTACT

Gene A. Sullivan  
Crop Science Extension Specialist - Peanuts  
P. O. Box 5155  
Raleigh, NC 27650-5155  
(919) 737-3331

Keywords are assigned to each project to describe the major activities, products, or services provided. Use the following instructions to assign keywords to each project. Separate each keyword by a comma. Separate each project keyword by a space. Do not abbreviate keywords.

**\*KEYWORDS**

County . . . . . **NC02**  
 State . . . . . **North Carolina**  
 Fiscal Year(s) . . . . . **1983**  
 Program Area(s) . . . . . **Agriculture**  
*(List as many as apply)*

Subject Matter Area . . . . **Crop Production, Marketing**

Commodity Subject . . . . **Peanuts**

Audience . . . . . **Processors, Farmers**

Methods . . . . . **Demonstrations, Meetings**

**Measurable Impacts/Results — Measurable social or economic consequences**

Enter Measurable Impacts/Results - Keywords

Enter quantity - (economic or social)

**\*QUANTIFIED IMPACTS**

<b>Money saved</b>	<b>\$10/acre (150,000 acres)</b>
<b>Improved quality</b>	<b>480 gal/diesel unit</b>
<b>Farmers participating</b>	<b>\$5/acre (150,000 acres)</b>
<b>Farmers participating</b>	<b>1,000</b>
<b>Cooperators trained</b>	<b>50</b>

**VOLUNTEER TIME (Optional)** *Use this field to indicate volunteer time multiplied by an assigned dollar value*

**\*VOLUNTEER HOURS**

**\*VOLUNTEER DOLLAR VALUE**

**ESTIMATED PROGRAM COSTS (Optional)** *Use this number of units to estimate the cost of the program*

**EST. PROGRAM COSTS**

**EST. PROGRAM COSTS**

**\*TITLE**

NC03

Inoculant Use on Soybeans in North Carolina

**\*TEXT**

An on-farm test program was initiated in 1975 to quantify benefits obtainable from inoculating soybeans in commercial situations, to compare available inoculants, and to serve as a basis for ensuing educational efforts. Thirty-seven tests were conducted in 22 counties from 1975-81, using campus resources to plant and harvest the test and collect needed samples, cooperating farmer resources to maintain the test, and county agents to manage the tests and utilize the tests to teach growers in the county. Some of the expenses borne on campus were covered by a grant from the N. C. Soybean Producers Association.

The test results showed it was economical to inoculate fields which had not produced soybeans recently, that soil applied inoculants were more effective and profitable than seed applied inoculants, and that unexpected strains of rhizobia were present in many of these fields.

Two agents estimated that within two years of completing their on-farm test, inoculant use in their counties changed from 100% seed-applied to over 50% soil-applied. One cooperating grower stated that the additional profits he made by using his test results on his next year's soybean crop more than repaid his investment in all past and future on-farm tests. He further stated that some neighbors increased profits more than he had from the results of his test. Telephone calls to the state specialist about non-nodulated soybeans decreased from 15-20 per year to 2, 0, and 1 in 1981, 1982 and 1983, respectively. At least eight separate research projects have been initiated in four states using samples or results of these tests.

**\*CONTACT**

Dr. E. James Dunphy  
Crop Science Extension Specialist  
1238 Williams Hall  
N. C. State University  
Raleigh, NC 27607 (919) 737-3141

Annual Report Form NCARS

Report. It is the responsibility of the user to ensure that all information is accurate. The user should be held as a guarantor for the accuracy of the information. It is not advised to use this form for any other purpose. Repeat each distinct word or phrase with each of the designated keywords.

**\*KEYWORDS**

County No. . . . . NC03  
 State . . . . . North Carolina  
 Fiscal Year(s) . . . . . 1983  
 Program Area(s) . . . . . Agriculture  
 (If necessary, apply)

Subject Matter Area . . . . . Crop Production, Crop Nutrition, Soybeans

Commodity/Subject . . . . . Soybeans, Crop Production, Crop Nutrition

Audience . . . . . Farmers, Agents, Researchers

Methods . . . . . On-Farm Tests, Media, Reports

Measurable Impacts/Results - Measurable social or economic consequences

Enter Measurable Impacts/Results - Keywords

Enter quantity -- (economic or social)

**\*QUANTIFIED IMPACTS**  
 Increased Profit

\$57/A

Increased Production

10 bu/A

VOLUNTEER TIME (Optional) *Average local hourly wage, multiply by hours*  
*of work done, value*

\*VOLUNTEER HOURS

\*VOLUNTEER DOLLAR VALUE

ESTIMATED PROGRAM COSTS (Optional) *Multiply number of participants*  
*by amount of cost of the item*

Prof      Pass

\*TOTAL PROGRAM COSTS

\*NET PROGRAM COSTS

**\*TITLE**

Program Title: \_\_\_\_\_

NC04

Johnsongrass Control in No-till and Conventional Planted Soybeans in North Carolina

**\*TEXT**

The lack of effective johnsongrass control in no-till double-cropped soybeans has been a limiting factor in the expansion of no-till planting in the piedmont area of North Carolina. No-till planting methods are proven practices for conservation of soil and moisture. On-farm tests were used to evaluate and develop control practices based on recently introduced herbicides for postemergence grass control. Fluazifop-butyl, mefluidide, and sethoxydim were applied over-top of soybeans when the johnsongrass was 12 to 20 inches tall. These were compared to a wick application of glyphosate. The entire test area was treated at planting with paraquat + alachlor + linuron. Therefore, annual grass and broadleaf weeds were controlled and only the effects of the johnsongrass were measured. In no-till soybeans two applications of fluazifop-butyl (Fusilade) or sethoxydim (Poast) were more effective than one application for controlling rhizome johnsongrass. Wick application of glyphosate was less effective. Soybean yields were increased by 28 bushels per acre with two applications of fluazifop-butyl or sethoxydim. In subsequent years the control program should include a single application to control johnsongrass coming primarily from seed. Also the residual grass herbicide could be eliminated, thus reducing herbicide costs. This johnsongrass control program will contribute to increased soybean yields and to expanded conservation tillage. In our tests the increased acre value over herbicide cost was \$160 per acre with soybeans at \$7 per bushel. The return to a grower would vary with this level of johnsongrass infestation.

In conventionally planted soybeans a single application of Fusilade or Poast gave similar johnsongrass control to preplant soil incorporated trifluralin (Treflan) or vernolate (Vernam) + trifluralin (Treflan) or vernolate (Vernam) + trifluralin.

**\*CONTACT**

W. M. Lewis and Alan C. York  
Extension Crop Science Specialists  
N. C. State University  
P. O. Box 5155  
Raleigh, NC 27650 (919) 737-2866

Keywords are words and phrases that summarize the content of the datafile. They provide a means of identifying the information, for reference, research and other purposes. They are not subject to copyright. Select the words that best describe the information. Do not abbreviate keywords.

**\*KEYWORDS**

Commod No. . . . . NC04  
 State . . . . . North Carolina  
 Year(s) . . . . . 1983  
 Program Area(s) . . . . . Agriculture  
*(List as many as apply)*

Subject Matter Area . . . . . Weed Control

Commodity/Subject . . . . . Soybeans

Audience . . . . . Farmers

Methods . . . . . Demonstrations

**Measurable Impacts/Results - Measurable social or economic consequences**

Enter Measurable Impacts/Results - Keywords	Enter quantity - (economic or social)
<b>*QUANTIFIED IMPACTS</b>	
Weeds reduced	95%
Yields per acre increased	28 bushels

VOLUNTEER TIME (Optional) - Average local hourly wage multiplied by hours equals dollar value		
*VOLUNTEER HOURS		
*VOLUNTEER DOLLAR VALUE		
ESTIMATED PROGRAM COSTS (Optional) Multiple amount by number of acres spent by cost on the EE		
*EST. PROGRAM COSTS		



\*TITLE

Project Title

NC05 A Computer Program for Forage-Animal Resource Management

\*TEXT

There are over 50,000 livestock operations in North Carolina where ruminant animals obtain 50-90% of their feed from forage crops. Managers of many of these operations are constantly faced with the task of matching forage production with daily animal requirements. This task is often difficult considering that there are 15 or more forage species, more than 100 varieties and numerous interacting soil factors which influence crop production.

The goal of this educational program was to train agents to develop forage-beef cattle systems which would be efficient and provide adequate supplies of feed for livestock producers. A computer program was written to assist the agents in developing recommendations for farmers.

This program uses information (such as number and type of cattle, yield estimates, acres and type of forage) given by the farmer, agent or student to calculate and print tables of total digestible nutrient (TDN) requirements and production. The first table summarizes the monthly TDN requirements for specified classes of animals. The second table summarizes the monthly TDN produced from specified acres of selected forage types. The third table presents a monthly balance (surplus/deficit) of TDN calculated by subtracting TDN required by the specified groups of animals from TDN produced by the specified forages.

This program is available to anyone with computer capability. It has been used to train students, county agents, researchers and industry leaders. The program has also been supplied to university workers in other states to be used for training purposes.

It is estimated that this computer program can have a significant influence on how producers select cropping programs to feed livestock. It is the only comprehensive program that can assist producers in making wise crop selections for specific classes of livestock.

\*CONTACT

Dr. James T. Green, Associate Professor  
Crop Science, N. C. State University  
P. O. Box 5155  
Raleigh, NC 27650 (919) 737-3142

FN 83 Account Statement Report NARS

Keywords are key words or phrases that describe the subject matter of the report. The keywords are used as a guide for searching the file. It is recommended that you use the keywords that may be used. See the manual for more information on the use of keywords.

**\*KEYWORDS**

Contract No. . . . . NC05

State . . . . . North Carolina

Fiscal Year . . . . . 1983

Program Area(s) . . . . . Agriculture  
*(List as many as apply)*

Subject Matter Area . . . . Forage

Commodity/Subject . . . . Forage

Audience . . . . . Agents, Farmers

Methods . . . . . Computer Demonstrations

Measurable Impacts/Results - Measurable social or economic consequences

Enter Measurable Impacts/Results - Keywords	Enter quantity - (economic or social)
<b>*QUANTIFIED IMPACTS</b>	
Agents, Farmers	Agents - 50
Feed Supply Management Improved	15%

**VOLUNTEER TIME (Optional)** *Enter total hours, note multiple dollar value*

*VOLUNTEER HOURS	
*VOLUNTEER DOLLAR VALUE	

**ESTIMATED PROGRAM COSTS (Optional)** *Multiple number of dollars expended by unit or other*

*EST. PRG. EXPENSED	Prof
*EST. PROGRAM COSTS	

**\*TITLE**

NC06            Integrated Weed Management Systems for Cotton in North Carolina

**\*TEXT**

Weeds cause an estimated \$0.7 million loss annually in cotton yield and quality. In addition, \$1.5 million is expended on control. Extension has devoted efforts toward the development and implementation of integrated management systems for weeds in cotton. On-farm tests are utilized as a research tool and an educational tool. Other educational efforts include grower meetings, newsletters, agent training, tours and bulletins.

One professional and one technician devote 25% of their time to this program. Funding has come mainly from industrial cooperators and grower organizations.

With preemergence and timely postemergence herbicide applications in combination with cultivation and crop rotation, broadleaf weeds can be effectively managed. Herbicide costs have not been reduced, but adoption of the program developed can increase net profit by up to \$100/acre due to decreased weed competition, reduced herbicide injury, and improved fiber quality. Educational programs to promote this integrated management program have been effective. The percentage of growers following the recommended program has increased from 30% to 60% in the past two years.

The program will be continued, with emphases on non-chemical control components such as rotation, field selection, and cultural practices.

**\*CONTACT**

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FD-302 Agricultural Program Report - AARS

Keywords in this report identify the specific program, activity, or subject matter. The keywords are not used as a guide for selection of reports. In addition, keywords are used to identify reports which may be of interest to other users of the phrase word search system. Enter keywords in the space provided below.

**\*KEYWORDS**

Section No. . . . . NC06  
 State . . . . . North Carolina  
 Fiscal Year(s) . . . . . 1983  
 Program Area(s) . . . . . Agriculture  
 (List as many as apply)  
 Subject Matter Area . . . . . Cotton, Weed Management  
 Commodity/Subject . . . . . Cotton  
 Audience . . . . . Cotton Growers, Agents  
 Methods . . . . . On-Farm Tests, Meetings, Newsletters, Production Guides

Measurable Impacts/Results - Measurable social or economic consequences

Enter Measurable Impacts/Results - Keywords

Enter quantity - (economic or social)

**\*QUANTIFIED IMPACTS**

Cotton growers with knowledge gained	1,000
Yield losses reduced	10-15%
Income increased	Variable - to 100%

VOLUNTEER TIME (Optional) - Average local hourly wage - \$11.11 per hour.  
 equals dollar value.

\*VOLUNTEER HOURS

\*VOLUNTEER DOLLAR VALUE

ESTIMATED PROGRAM COSTS (Optional) - Average local hourly wage - \$11.11 per hour.  
 equals dollar value.

\*EST. TOTAL EXPENDED

\*EST. PROGRAM COSTS

\*TITLE

NC07            Integrated Pest Management in North Carolina

\*TEXT

Integrated pest management programs have been initiated to demonstrate to growers and consultants the most efficient methods of producing crops and managing pests. The poultry IPM program works with industry fieldmen to teach them how to improve flock and pest management. Crops in the IPM program include alfalfa, apples, blueberries, corn, Irish potatoes, peanuts, potatoes, small grains, soybeans, sorghum and tobacco. Alfalfa, blueberries and sorghum were new crops this year. A weed identification and scouting training school was held for scouts and IPM agents. Scout training sessions were held for all crops; a total of 40 meetings. Individualized IPM projects in tobacco were developed to train growers whose farms were too small to employ a scout. A manual was developed for these growers. A slide-tape set on tobacco IPM and tobacco scouting was completed. Scouting manuals were developed for peanuts, soybeans, alfalfa and tobacco.

There are 24 counties with IPM programs operated by Extension. An additional 15 counties have private IPM programs through grower cooperatives or private consultants. Approximately 80,000 acres of crops are under private or Extension IPM programs. These efforts continue to reduce growers' costs, reduce pesticides, and increase net profits. For example, peanut leafspot applications were reduced by 1-3 applications this year, saving growers \$7-\$30/acre. The timing of alfalfa weevil treatments was improved, saving unnecessary retreatments. Weed control programs in all crops have improved due to added emphasis on weed monitoring. Emphasis in IPM will continue to be on providing better training and support documentation for IPM agents, working to develop IPM in new counties and on new crops, involving small growers in IPM and using microcomputers to improve current IPM programs.

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FD-927 (Rev. 10-1-80)

Keywords: List all relevant terms and phrases which describe the nature of the activity, providing a brief description of the activity and its purpose. Use the following as a guide: *Use the following as a guide: 1. Use only the most important and pertinent keywords. 2. Use only the most pertinent and pertinent keywords. 3. Use only the most pertinent and pertinent keywords.*

**\*KEYWORDS**

Control No. NC07  
 State North Carolina  
 Fiscal Year 1983  
 Program Area(s) Agriculture  
*(List as many as apply)*

Subject Matter Area Crop Production, Efficient Pesticide Usage

Commodity/Subject Crops and Livestock

Audience County Agents, Farmers, Poultry Producers, Poultry Integrators, Consultants

Methods Workshops, Demonstrations

**Measurable Impacts/Results -- Measurable social or economic consequences**

Enter Measurable Impacts/Results -- Keywords	Enter quantity -- (economic or social)
<b>*QUANTIFIED IMPACTS</b>	
<b>Acres Impacted</b>	34,000
<b>Yields per Acre Increased</b>	10%
<b>Animal Damage Reduced</b>	10%
<b>Income Increased</b>	5%

**VOLUNTEER TIME (Optional)** Average local time multiplied by hours spent daily value

\*VOLUNTEER HOURS

\*VOLUNTEER DOLLAR VALUE

**ESTIMATED PROGRAM COSTS (Optional)** Method of program cost estimation (include cost of staff, materials, etc.)

\*STAFF AND EXPENSES

\*EST. PROGRAM COSTS

\*TITLE

NC08            Pesticide Training for Dealers and Commercial Applicators in  
                 North Carolina

\*TEXT

North Carolina has developed an extensive program to recertify and update its licensed pesticide dealers and commercial applicators. Sixteen hundred (1600) dealers, 1800 commercial applicators and 100 public operators will receive 3-10 hours of specialized training by June 30, 1985 (dealers by June 30, 1986) to meet state and federal licensing and recertification requirements. In addition, 20 two-day schools are conducted annually for approximately 1000 persons seeking pesticide licenses for the first time.

Recertification training will be conducted in most of the 100 counties by North Carolina Agricultural Extension Service Specialists and/or County Extension Service Pesticide Coordinators. State funds will be supplemented by EPA monies (\$24,848 for this fiscal year).

During the previous fiscal year training opportunities were provided for Aerial, Agricultural Pest Plant and Animal, Public Health, Ornamentals and Turf, Rights of Way, Forest and Demonstration and Research Commercial Applicators and Public Operators and for Restricted Use Pesticide Dealers. Over 3110 persons participated in over 150 training opportunities and reported increased expertise in pest control strategies, pesticide use and the use and calibration of pesticide application equipment.

During FY 84 we expect to equal the numbers of pesticide education classes held and the persons attending (many will attend more than one class). These classes or testing are mandatory for commercial dealers, applicators and public operators and are attended by many private pesticide applicators (farmers) who are not currently under recertification requirements in North Carolina.

It is hopeful that by 1985 a program for recertifying North Carolina's 52,000 Private Pesticide Applicators (farmers) will be implemented.

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Keywords are the subject terms that describe the content of the report. They are used to identify the report in the program database and to provide a means of searching the database for reports on a particular subject area. Keywords should be entered in the space provided below.

**\*KEYWORDS**

Contract No. **NC08**  
 State **North Carolina**  
 Fiscal Year(s) **1983**  
 Program Area(s) **Agriculture**  
*(List as many as apply)*

Subject Matter Area **Pest Control, Pesticide Selection and Use**

Commodity/Subject **General/Pest Control**

Audience **Pesticide Dealers, Commercial Applicators and Public Operators**

Methods **Classroom Instruction/Workshops/Demonstrations**

**Measurable Impacts/Results - Measurable social or economic consequences**

Enter Measurable Impacts/Results - Keywords	Enter quantity - (economic or social)
<b>*QUANTIFIED IMPACTS</b>	
Program developed for	4700
Training provided to	3110
Classes conducted	150
Counties assisted	100

VOLUNTEER TIME (Optional) *Enter number of hours and dollar value*

**\*VOLUNTEER HOURS**

**\*VOLUNTEER DOLLAR VALUE**

ESTIMATED PROGRAM COSTS (Optional) *Enter number of staff years and dollar value*

**\*STAFF YRS. EXPENDED** Prof Para  
 4.0

**\*EST. PROGRAM COSTS** \$100,000



\*TITLE

NC09            Increased Income from Cantaloupes in North Carolina

\*TEXT

In 1973 North Carolina farmers grew less than 1,000 acres of cantaloupes with an estimated farm value of less than \$500,000. The demand for locally grown cantaloupe far exceeded supply, and melons were coming from as far away as Indiana. Quality of most locally grown melons was low, diseases rampant, and varieties were grossly outdated.

Recognizing the need to produce more cantaloupes and also the opportunity to increase the income of small growers, a broad range of extension activities was initiated. Cooperating with specialists from Entomology, Plant Pathology, Economics and Weed Science, a single two-acre demonstration was established in 1974 with a grower in Warren County. The objectives were to demonstrate proper pest control and pollination, evaluate new and improved varieties and increase yield. In subsequent years these demonstrations have continued annually, and the use of plastic films, trickle irrigation and the use of transplants have been included to increase earlier yields. Grower meetings and field days have been used to teach growers proper ways to produce cantaloupes. Cooperation with industry has been utilized to develop the use of films and trickle irrigation in the production system.

Acreage of cantaloupes has increased constantly since 1973 from about 1,000 acres to an estimated 4,300 acres in 1983. Farm value has also increased from less than \$500,000 to an estimated \$4 million in 1983.

For the first time since the mid fifties cantaloupes are being commercially graded, packed, precooled and sold to both in-state and out-of-state markets.

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**\*KEYWORDS**

NC09  
North Carolina  
1983  
Agriculture

Vegetables (Cantaloupes)

Crop Production

Farmers

Demonstrations/Workshops

Measurable impacts/Results

**\*QUANTIFIED IMPACTS:**

Acres increased

3,000

Income

\$3.5 million

\*TITLE

NC10 North Carolina Agricultural Extension Weather Program

\*TEXT

Twice daily agricultural weather advisories continued to be issued from the Agricultural Weather Office at NCSU. New advisory topics included growing degree day and IPM information. Forecasts of freezes, spraying conditions, animal heat/cold stress, soil temperatures, and planting and harvesting conditions continued. Advisories were disseminated statewide over the NOAA Weather Wire Radio network, the Associated Press newswire and commercial radio and TV stations. In addition, a summary of the previous week's weather data is compiled and published every Monday in the bulletin, "Weather and Crops."

The National Weather Service (NWS) again supplied a grant to cover operating expenses for the office. The Touch Tone volunteer network continued to supply data from nearly 80% of North Carolina's 100 counties. The number of Touch Tone stations with standard shelters increased from 36 to 41. Soil temperatures continued to be compiled from 12 Touch Tone stations daily. A new teletype machine was added during the year, providing much lower cost and better efficiency.

A Radio Shack Model 12 microcomputer was purchased during the year, greatly enhancing the capabilities for more efficient data manipulation and crop-weather modeling.

Dissemination of the advisory to commercial broadcasting stations was aided when a telephone recording machine was added during the year. Ten or more stations record and replay advisory information daily. Combined with other means of dissemination, nearly 40% of the commercial stations in the state broadcast advisories daily, putting nearly every farm in the state within broadcast range.

In April a severe freeze was correctly forecast three days in advance and briefly delineated frost protection methods. Conservative estimates for strawberries alone indicate that advisory information saved over \$1 million of the \$2.5 million crop in 1983.

Last year's savings to peanut growers alone are estimated at nearly \$2.2 million through reduced and more timely sprays.

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**\*KEYWORDS**

NC10  
North Carolina  
1983  
Agriculture

Subject Matter Area      Animal and crop production  
Classification Subject    Horticultural and agronomic crops, livestock, poultry, swine  
Farmers, transporters  
Radio, Teletip, Newsletters

Measuring impacts: Results    Measurement    The results of the study

Expected measurable impacts of

**\*QUANTIFIED IMPACTS**

Decision making improved

Farm management improved

**\*VOLUNTEER HOURS**                      5200

**\*VOLUNTEER DOLLAR VALUE**      \$17,420.00

**\*STAFF YRS. EXPENDED**                      Prof      Para  
1.5

\*TITLE

NC11            Conifer Transplant Production in Western North Carolina

\*TEXT

Fir, hemlock and spruce sales for both Christmas trees and nursery stock accounted for over \$15 million 1983 western North Carolina farm income. By 1986, sales should be nearly \$25 million per year.

Out-of-state grown transplants represented over 70% of the 1983 harvest. By 1985, less than 20% of the harvest will be from out-of-state transplants. One million dollars of N.C. farmers' money that was being sent out of state for transplants annually is now staying home.

Accomplishing this turn around, i.e., creating a viable, competitive industry where one didn't exist, required cooperative work by growers, researchers and Extension. Intensive on-farm research programs in fertility, pest control, and cultural practices were coupled with a many faceted Extension program.

Demonstrations were conducted in most mountain counties showing farmers that they already possessed most of the skills and equipment to fumigate, plant and care for conifer transplants. New skills were also taught at these sessions. TVA sponsored on-farm test demonstrations sprouted in many mountain coves to support community communication and local tours. 4-H projects in transplant production were encouraged. Each winter, county grower meetings highlighted new research findings, while crediting progressive and successful cooperators.

As a result, in a period of just five years, farmers have added another intensive, high value horticultural crop to their diversified production. They have learned that the agricultural production skills employed in field crops and vegetables can profitably be applied to a new enterprise.

This industry is now self-sustaining from seed collection to tree harvest. Seeds, seedlings, transplants and finished trees are now being exported to surrounding states and overseas from a region that formerly had to depend on outside help to obtain these products.

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**\*KEYWORDS**

NC11  
North Carolina  
1983  
Agriculture

Horticulture

Conifer Transplant Production

Farmers

Demonstrations, Tours, Workshops

Measurable Impacts Resulting From

**\*QUANTIFIED IMPACTS**

New enterprise

\$1 million/yr  
(2 million transplants)

\*TITLE

NC12 Teaching EFNEP Families Home Vegetable Gardening Information  
in North Carolina

\*TEXT

Traditionally, limited resource (EFNEP) families have put forth little effort to contact the Extension Service for information and training that can improve their life style. Realizing the progress that EFNEP aides have made in teaching nutrition and consumer information to limited resource clientele, a two-year training program was set up to teach EFNEP aides the basics of vegetable gardening. There are 224 aides working in 88 of North Carolina's 100 counties. Half-day training sessions were held at nine locations across the state to train the aides in vegetable gardening through slide lectures and a 32-page handout. A total of 164 aides attended the training.

Prior to the training sessions, 10 copies each of 6 different vegetable gardening slide sets were developed and put in the Department of Agricultural Communications for county agents and EFNEP aides to use in the county. Funds for slide duplications were provided by the Extension Administration. In addition to the slide sets, 15 videotapes on an assortment of vegetable gardening features were produced for Extension's weekly television program, "Almanac," by the University of North Carolina Center for Public Television. The videotapes were duplicated and made available to the agents and aides for use on their county video machines for training clientele or independent study.

According to narrative reports and supervisory personnel for the aides, at least 1000 EFNEP families grew a vegetable garden in 1983, for a statewide value of \$150,000. The results prove that the more competent the aides are about gardening cultural methods, the more successful the aides will be in convincing EFNEP families to plant vegetables to help supplement the family's food budget.

Training EFNEP aides to train limited resource families about vegetable gardening has great potential for easing the burden placed on this clientele group by today's economy.

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**\*KEYWORDS**

NC12  
North Carolina  
1983  
Agriculture

Horticulture

Vegetable Gardening

Paraprofessionals, low income

Workshops, slide tapes, videotapes, publications

**\*QUANTIFIED IMPACTS**

Knowledge gained

Attitudes changed

Money saved

\$150,000

Persons trained

164



\*TITLE

NC13 Reducing Glyphosate Damage to Conifers in North Carolina

\*TEXT

Eight counties in western North Carolina grow over 700 acres of conifers for Christmas trees and ornamentals. Many growers have applied glyphosate over the top of conifers without realizing they were causing bud abortion and a resultant "thinning out" of the trees' foliage.

In 1982 a rate by time of application demonstration was initiated on a growers' farm. A grower donated land and 1000 conifer seedlings for the test. In August 1983, 89 growers and agents attended a field day. They were shown that conifers will tolerate high levels of glyphosate but buds are affected the next growing season. Timing is more critical than the rate of chemical used in influencing bud damage. The growers were shown that buds must be fully developed before applying glyphosate or bud abortion will occur.

With 700 acres of conifers in the eight surrounding Appalachian Mountain counties planted at 1500 plus trees per acre, a reduction in wholesale value from \$15 to \$12 by reducing the number of branches would cost our growers \$3,150,000. Additional discussions of this information will be presented at winter meetings in 1983-84 to the area producers.

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**\*KEYWORDS**

NC13  
North Carolina  
1983  
Agriculture

Subject Matter Area: Herbicide Use

Commodity: Conifers/Christmas Trees

Audience: Farmers

Media: On-farm Tests and Grower Field Day

Measurable Impacts/Results

**\*QUANTIFIED IMPACTS**

Losses reduced

3.15 million

**\*TITLE**

NC14            Cultivation of Ginseng in North Carolina

**\*TEXT**

The demand for and value of ginseng root has increased in recent years as the wild supply has diminished. Requests by Extension agents and farmers for information on growing this herb also have increased; however, almost no research based information on its culture has been available.

Ginseng is being grown successfully on a commercial scale in other parts of the country where returns per acre following a four-to-eight year growing period may reach \$100,000. Prospects of developing a viable industry in western North Carolina, where ginseng grows natively, appear good.

Plantings of ginseng were initiated at the Mountain Horticultural Crops Research Station in 1978 to demonstrate common techniques of culture and to measure responses to various cultural procedures. Significant responses to soil pH and phosphorus content have been obtained as well as to plant population, type of mulch, and amount of shade. Approximately 12 on-farm demonstration plantings have been made in 5 counties.

An estimated 500 people have visited the on-station plots. An equal number have called or written for information. Approximately 20 grower meetings have been conducted in 11 counties at the request of county agents. The estimated average attendance was 20.

At least seven plantings of an acre or more have been made in western North Carolina since 1980; several dozen smaller plantings also are known to have been made. The estimated total acreage for the region is 35. Potential income from successful culture of this acreage is \$3 million. An annual planting program of 15 acres per year would project an annual income of \$1 million or more.

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**\*KEYWORDS**

NC14  
North Carolina  
1983  
Agriculture

Horticulture

Ginseng

Small farmers

Measurable Impacts, Results

**\*QUANTIFIED IMPACTS**

Acres planted

35

Grower visits

500

\*TITLE

NC15 Potted Chrysanthemum Production in North Carolina

\*TEXT

North Carolina bedding plant growers have requested new crop species to grow year round that would complement their spring bedding sales. N. C. Agricultural Extension Service teaching efforts provided information for the increased production and marketing of potted chrysanthemums. The primary objective of the teaching effort was to provide technology necessary to grow potted chrysanthemums year round. Teaching techniques included preparation of production fact sheets, panelists and featured speakers at annual short courses, field days, and area floral meetings. One hundred bedding plant growers were provided information that outlined photo-periodic control, fertilization, media, cultivars, growth regulators, and insect disease control. State subject matter specialists, research scientists, county agents and industry representatives were involved in this teaching effort. A total of 30 demonstrations were provided in 15 counties. The number of potted chrysanthemum growers has expanded from 38 in 1970 to 68 in 1982. The number of units produced during the period increased from 0.8 to 1.55 million. The wholesale value increased from 1.4 to 5.43 million dollars. The educational thrust made by Extension provided bedding plant growers a valuable crop to rotate with spring bedding plant production. This has enabled citizens to purchase quality plants from mass markets at reasonable costs.

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**\*KEYWORDS**

NC15  
North Carolina  
1983  
Agriculture

Horticulture

Potted Chrysanthemums

Bedding Plant Growers

Demonstrations, Publications, Workshops

**\*QUANTIFIED IMPACTS**

Skills learned

100 bedding plant growers  
attended training sessions

Income increased

\$1.4 to \$5.43 million

Demonstrations

15 counties had on-farm tests

Practice adopted

30 new potted chrysanthemum  
growers

\*TITLE

NC16 Labor-Saving Advances in Muscadine Grape Pruning in North Carolina

\*TEXT

About 360,000 kilograms of muscadine grapes are grown on 680 hectares in North Carolina. Conventional hand pruning of muscadine grapes is a very labor intensive and costly cultural practice. About an hour per mature, vigorous vine is required to selectively remove old, damaged or crowded fruiting spurs and to cut back all shoot growth of the previous summer to fruiting spurs 10 to 12 centimeters long. With 545 vines/hectare and labor at \$3.35/hour, the cost of pruning is \$1825.75/hectare. At the 1982 return of 23¢/kilogram, almost 8,000 kilograms/hectare are required to pay the pruning cost. To reduce the pruning expense, many growers have replaced the selective pruning with a hedging treatment. However, after repeated hedging at greater distances from the cordon, a large dense mass of weak shoots develop that are difficult to harvest. Demonstration plots that contained three hedging configurations that could be established and maintained mechanically were evaluated from 1979 to 1983. The mechanically pruned treatments were compared with selective hand pruning on mature 'Carlos', 'Magnolia' and 'Noble' vines. Hedging to a 20 x 20 centimeter configuration resulted in an average yield of 64 kilograms/vine compared with 52 kilograms/vine with selective hand pruning during three harvest seasons. However, the vine growth remaining in the 20 x 20 centimeter area became more dense and tangled each year and contributed to difficult harvesting. The dense tangled growth did not develop when a 10 x 40 centimeter configuration was annually alternated from a horizontal to a vertical orientation or vice versa. The orientation of the 10 x 40 centimeter configuration did not affect yield. Combined yields from both orientations averaged 59 kilograms/vine during three years. Berry size or quality were not adversely affected by the alternated 10 x 40 centimeter configuration compared with the selective hand pruning treatment. Mechanical hedging to an alternating rectangular configuration offers the potential for reducing pruning costs by \$750 to \$1,000/hectare with little reduction in production, vine condition or ease of harvest. Three growers are trying this system on a total of 50 hectares.

\*CONTACT

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**\*KEYWORDS**

NC16  
North Carolina  
1983  
Agriculture

Grape Production

Muscadine Grapes

Farmers

Demonstrations

Measurable Impacts Results - Measurable Impacts Results

**\*QUANTIFIED IMPACTS**

Productivity improved

Reduced pruning costs  
\$750 to \$1,000/hectare

Persons trained

40



**\*TITLE**

NC17            New Tomato Variety Adoption in North Carolina

**\*TEXT**

Vegetable growers are always interested in new tomato varieties, but are often confused by the large number of offerings on the market. By comparing several promising varieties across the state in a coordinated effort, results can be shared and their performance in a single year can be equal to several years of testing at only one site. Since growers have great interest in new varieties, such a trial provides a vehicle for disseminating other improved cultural practice information also. During 1982 and 1983, 38 tomato trials were conducted in 24 counties. In these trials nine varieties were tested in replicated plots (three of which were used both years) and eight varieties were evaluated in single plot observations. All growers took soil tests and most adjusted their fertilizer program. Thirty growers, 23 county agents, 1 specialist, 1 researcher and 7 commercial seedsmen cooperated in the trials. These trials were visited by the specialist, a university plant breeder or seedsmen 50 times and by 600 county clientele in 20 county tours. Data were collected on 20 trials, while 7 trials were only observed. Growers in 28 of the trials have accepted one or more of the new varieties for their commercial plantings. In 8 instances growers have initiated commercial production of tomatoes as a result of the demonstration. Ten growers have adopted a new trellising method. Twenty growers improved their pesticide application methods. Adoption of new varieties and cultural practices has increased yield by 250 boxes per acre and earliness by one week which resulted in an increase of \$2075/acre in gross return. The growers immediately connected with the trial have realized an increase of \$83,000.

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**\*KEYWORDS**

NC17  
North Carolina  
1983  
Agriculture

Vegetables, Pest management

Tomatoes

Farmers

Demonstrations

Measurable impacts: Results

**\*QUANTIFIED IMPACTS**

Yield/acre increased	250 boxes/acre
Pest control increased	20 growers
Income increased	\$83,000

	Prof	Para
*STAT YRS. EXPENDED	.48	

*EXT PROGRAM COSTS	\$12,000
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\*TITLE

NC18            Trickle Irrigation for Intensive Vegetable Production in  
                 North Carolina

\*TEXT

Irrigation is an integral part of any vegetable operation regardless of its size. The old saying, "You pay for irrigation whether you have it or not" certainly rings true. Irrigation is essential for maximum production and top quality produce. For many smaller operators the cost of purchasing conventional irrigation equipment is prohibitive and so they continue to "gamble" on natural rainfall. With trickle irrigation a grower can irrigate a wide variety of crops -- tomatoes, peppers, squash, eggplant, cantaloupes, cucumbers, watermelons, pumpkins and even the "cole" crops with less investment.

To demonstrate the advantages of trickle irrigation, on-farm tests were conducted throughout the state comparing trickle irrigation with reliance on natural rainfall. In some tests the total intensive system (plastic mulches, fumigation and trickle irrigation) was compared to natural rainfall, while in others only trickle irrigation was compared. Through our demonstrations we showed increases in yields, earliness and quality of the produce.

We worked with industry to develop a small portable irrigation unit that has the capacity to run a 2-3 acre trickle system or 1 + acre overhead irrigation system. In many instances growers have a farm pond that can provide irrigation water. In order to efficiently utilize this resource through a trickle irrigation system, the pond water must first be thoroughly filtered to prevent plugging of the small opening in the trickle tube by algae, silt and trash particles. The machine will work nicely for our smaller operators.

In response to the on-farm demonstration and meetings the number of acres of trickle irrigation increased from around 15-20 acres to 150 acres. We anticipate even greater increases in the future.

\*CONTACT

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**\*KEYWORDS**

NC18  
North Carolina  
1983  
Agriculture

Trickle Irrigation, Vegetables, Water Management

Vegetable Crops

Farmers

Demonstrations

Measurable Impacts/Results

**\*QUANTIFIED IMPACTS**

Productivity improved

1/3 more yield/acre

Water saved (trickle)

1/2 less irrigation water  
used/acre

**\*TITLE**

NC19      Burley Tobacco Soil Test and Fertilization in North Carolina

**\*TEXT**

Burley tobacco is the leading crop commodity in western North Carolina with sales of \$55 million in 1982. In 1982 low soil pH was estimated to result in annual loss of 7.5 million pounds of tobacco having a value of \$13.5 million. At the same time soil analyses show that 59 percent and 87 percent of the soils tested were high to very high in P and K respectively and needed no additional P and K fertilizer. Growers, however, continue to fertilize with a complete fertilizer material such as 5-10-5. In spite of these soil conditions, only about 10 percent of the growers were using soil test analysis as a guide to fertilizing burley tobacco. These figures were discussed in winter grower meetings with estimated losses due to low soil pH and cost of excess fertilizer emphasized. As a result, county extension agents reported an increase in the number of burley tobacco soil samples for the 1983 cropping season.

In order to gain grower confidence in soil testing, four on-farm tests were established in 1983 to demonstrate the value of soil test in lime and fertilizer usage. The program will be continued with evaluations based upon soil samples submitted to the N. C. Department of Agriculture for analysis.

Funding has been through normal research and extension budgets of the project leader and a grant from the North Carolina Tobacco Foundation, Inc. It is estimated that about 0.2 MY was contributed to this effort.

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**\*KEYWORDS**

County NC19  
State North Carolina  
Year 1983  
Subject Agriculture

Special Methods Soil Test - Fertilizer Use

Crop Burley Tobacco

Personnel Farmers, Agricultural Extension Agents

Methods Demonstrations

Measurable Impacts, Results

**\*QUANTIFIED IMPACTS**

Field demonstrations

4

\*TITLE

NC20 More Efficient Use of Nitrogen on North Carolina Crops

\*TEXT

In 1982 over 320,000 tons of nitrogen (N) were used in the production of feed grains, tobacco, oil crops, forage and horticultural crops in North Carolina. More N is used than any other fertilizer supplied nutrient; also more money is spent for this element than any other nutrient. Since there is no satisfactory routine soil test, crop and livestock producers do not have a particularly precise means of determining an optimum rate for each soil and crop situation. Furthermore, it is estimated that over 350,000 acres of cropland is planted into a soil surface covered with previous crop's residue (no-till, min-till or conservation tillage). Agronomists are concerned that a portion of the urea-N and urea containing N solutions may be lost to the atmosphere when surface applied.

Demonstrations (on-farm tests) are being used to verify the value of incorporating urea or urea-containing solutions to possibly reduce N volatilization under no-till plantings. These tests utilize no-till corn planted into soybean residue in both the Coastal Plain and Piedmont regions of North Carolina.

Extension agents, fertilizer industry representatives and farmers are being shown these demonstrations; the trial results are being offered at county meetings, and in the near future considered in possible modifications in publications and general N use suggestions printed on soil test reports. In addition to specific suggestions for more efficient use of urea, additional emphasis will be given to using any form of N more efficiently. It will be stressed that split applications of N, especially on corn, will ensure more efficient use.

It is anticipated that efforts of three extension soils specialists, particularly, the support and encouragement of other soils specialists and crop science specialists will maintain or even improve the efficient use of N sources and nitrogen containing mixed fertilizers.

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**\*KEYWORDS**

NC20  
North Carolina  
1983  
Agriculture

Soil Management

Nitrogen Use, more efficient

Farmers, Fertilizer Dealers

Workshops, Leaflets, Public Meetings, Radio, IV

Measurable Impact

**\*QUANTIFIED IMPACTS**

Nitrogen Use, more efficient



**\*TITLE**

NC21 Tillage Alternatives for Crop Production - North Carolina

**\*TEXT**

Tillage practices should be matched to specific soil conditions. Through county agents, Soil Science Extension aids farmers' understanding of soils and tillage in 50 counties of the state. Research information required adaptation, demonstration and teaching. Accomplishments are measured by meeting attendance, agency interest and observed change in tillage practices. This is a long-term thrust; most demonstrations and publications are needed. Also, Soil Judging Handbook was revised for widespread use in high school soils instruction.

Farmers cooperate in test plots; growers associations provided grant on nitrogen methodology for no-till corn.

Results and concepts presented in 16 county meetings, statewide no-till conference conducted and well attended; numerous questions answered and farm visits made, widespread use of no-till publication. Use of revised Soil Judging Handbook by most agriculture teachers in the state.

Emphasis of tillage demonstrations on selected soils; emphasis on tillage alternatives for double-cropped soybeans; emphasis on new publications concerning tillage practices.

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**\*KEYWORDS**

NC21  
North Carolina  
1983  
Agriculture

Crop Production, Strategic Tillage, Conservation Tillage,  
Cost Comparison of No-Till, Soil Judging  
Corn, Soybeans

Farmers, Teachers, Youth

Demonstrations, Meetings, Publication

Measurable Impacts Results

**\*QUANTIFIED IMPACTS**

Awareness Created

Meetings Conducted

Article Published

Copies Distributed

Handbook Revised

Number Students Using

\*TITLE

NC22 The North Carolina Master Beekeeper Program: A System to Upgrade the Skills of North Carolina Beekeepers and to Increase Public Awareness of Beekeeping

\*TEXT

The N. C. Master Beekeeper Program was initiated in FY 83 as an umbrella arrangement for all of the ongoing N.C. Agricultural Extension Service programs in apiculture (beekeeping) education. The program is a four-step process whereby interested beekeepers are provided with classroom and practical training in a progressive sequence that allows them to acquire various levels of beekeeping expertise. A beekeeper must pass a series of written and practical tests at each step of the program before he may continue to the next higher step. A unique feature of the program is that it requires the higher level participants to perform stated amounts of public service before they can advance through the program. The public service requirement may be satisfied by either educating beginning beekeepers or by general education work with the public concerning bees and beekeeping. The public service work is monitored to insure its quality by the Extension Apiculture office. Individuals completing the various levels of the program will serve as a cadre of trained volunteers who will supplement the limited resources of the N.C.A.E.S. apiculture program in servicing both the beekeepers and the general public. During the first year of operation, the N. C. Master Beekeeper Program has proven to be very successful and a series of regional beekeeping short courses has been conducted across the state. To date, nine introductory and two advanced level courses have been conducted with a total enrollment of over 1,250 students. One measure of the success of the program offerings is that, with one exception, over 50% of the individuals attending the short courses had crossed a county line to attend the course. Of the original program participants, over 250 have already completed the requirements for the first level of the program, called the Certified Beekeeper Level. In addition, approximately 175 individuals have started on the second level of the program, the Journeyman Level, and have begun work on completing their public service requirements by conducting N.C.A.E.S. approved programs in the areas of beekeeper education and general public education concerning beekeeping. The success of the overall program is resulting in a cadre of trained volunteers who can be and have already been called upon to service the apicultural needs of the citizens of North Carolina without any increase in the resources allocated to the N.C.A.E.S. apiculture program.

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**\*KEYWORDS**

NC22  
North Carolina  
1983  
Agriculture

Apiculture (Beekeeping)

Apiculture

Volunteers, Adults, Youth

Classroom Instruction, Large Group Presentations, Small  
Group Presentations, Workshops, Newsletters, Slide Tapes,  
Video Tapes, Leader Training

**\*QUANTIFIED IMPACTS**

Skills learned

Over 1,250 persons enrolled and  
over 250 completed first level

Citizens participating

Over 1,250

Trained volunteers

Approximately 175 individuals  
in public service work  
250 individuals completed first  
level of program

Knowledge obtained

\*TITLE

NC23            Darkling Beetle Control in Poultry Houses in North Carolina

\*TEXT

The lesser mealworm, or darkling beetle, infests greater than 95% of all poultry growout houses in North Carolina. Studies have shown that if not controlled, darkling beetles can damage up to 25% of the insulation in a house in a period of one year. Control of these beetles has relied upon the use of chemical treatments two to five times per year at a cost of \$100/treatment. By utilizing an integrated approach to solve the pest problem, the Extension Service has been able to reduce the number of sprayings to one to two per year and to reduce treatment costs to \$12/house/treatment. Monitoring the population and selectively treating only houses with significant beetle populations at the proper times in the beetles' life cycle has enabled the producers to get significantly better control at lower costs.

Demonstrations were conducted with county agents and integrators to aid producers in utilizing an integrated management approach for beetle control. Monitoring techniques were developed that are easily used by producers to determine the best possible time for treatment. Proper pesticide application techniques were an integral part of all demonstrations.

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**\*KEYWORDS:**

NC23  
North Carolina  
1983  
Agriculture

IPM of poultry pests

Pest management, poultry

Farmers, organizations

Demonstrations, publications, workshops

Measurable Impacts Report

IPM Education

**\*QUANTIFIED IMPACTS:**

Practices adopted	200 growers
Pest control increased	60%
Damage reduced	10%

**\*TITLE**

NC24 Poultry Integrated Pest Management in North Carolina

**\*TEXT**

Ectoparasite control in poultry is an important aspect of poultry production in North Carolina. Demonstrations of the impact of Northern fowl mite (NFM) on broiler-breeder layers have shown that mites decrease feed conversion and increase the cost of producing a dozen eggs by as much as \$.06/dozen with mites at moderate levels. In another demonstration in North Carolina, Northern fowl mites were shown to be transferred between farms via egg flats and cases at a rate of 20 adults/case. Proper IPM techniques are needed to avert these losses and through the Extension Service Poultry Integrated Pest Management program, training is offered to producers and servicemen to enable them to manage these pests and avert losses.

Thirty-one servicemen were trained to scout houses, identify poultry pests and recommend proper control practices. Servicemen were trained to recognize NFM, bedbugs, redmites and darkling beetles and to utilize sound monitoring techniques for these pests. The trained servicemen are responsible for the health of 1/2 million broiler-breeders and 610 growers in North Carolina. Their IPM training will enable them to better identify pest problems and to recommend treatment prior to economic damage to the producers. The additional trained servicemen bring the total number of broiler-breeders under the IPM program to 2.5 million, with an added 10 million turkeys and broilers.

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**\*KEYWORDS**

NC24  
North Carolina  
1983  
Agriculture

Subject: IPM of Poultry Pests  
Availability Subject: Poultry, pest management  
Users: Farmers, integrators, organizations  
Topics: Workshops, publications, demonstrations

**Measurable Impacts Results****\*QUANTIFIED IMPACTS**

Practices adopted	1.25 million birds
Pest control decreased	70%
Damage reduced	20%



\*TITLE

NC25 Cotton Insect Management in North Carolina; an Integrated Approach

\*TEXT

The development and implementation of more efficient, integrated cotton insect management systems leading to increased producer profits is our major thrust. This is being accomplished via a statewide program utilizing black light and pheromone trapping; frequent, systematic scouting; utilization of beneficial arthropods in management decisions; direct visits with extension agents and the acceptance of a more interdisciplinary approach to cotton production. In 1983 seven regional cotton scouting schools were conducted, each with a classroom and a field component and most with a follow-up in-field review several weeks later. One hundred thirty-eight persons attended. Our statewide system of black light traps (bollworm moths) monitors this #1 pest and alerts producers, agents, consultants and other interested parties as to the timing and intensity of their presence. The black light system is the Cotton Belt's most intensive such network. Our 1983 demonstrations and research focused upon 1) the relationship between boll weevil trap placement and collection efficiency (in support of the Eradication Program), 2) European corn borer management via crop manipulation, 3) growth regulator effects on insect management and yields and 4) Heliothis control via selective use of newly registered compounds. Our cotton pest management newsletters are mailed to all cotton producers on an as-needed basis.

Project funding is primarily via Smith-Lever funds, supplemented by the state and small grants, mostly from industry.

Increased producer reliance on recommended practices, including more intensive, frequent scouting, adherence to economic thresholds and the adoption of shorter season cotton management approach have collectively resulted in a more efficient cotton insect management climate in North Carolina. This has been underscored by the dramatic drop in cotton insecticide use during the past few years, especially within the Boll Weevil Eradication Zone.

Future emphasis will be continued emphasis of the current cotton IPM program via timely demonstrations, greater agent involvement, enhanced trapping system efficiency and implementation of sound scouting procedures.

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**\*KEYWORDS**

NC25  
North Carolina  
1983  
Agriculture

Crop protection

Cotton

Producers, extension professionals and consultants

Demonstrations, newsletters

Measurable impacts: Results

**\*QUANTIFIED IMPACTS**

Trained scouts, consultants

138

Pesticide reduction

Approx. \$20/acre

Insect damage reduction

Approx. \$20-\$80/acre

Producers reached

Most

**\*EST. PROGRAM COSTS**

\$49,910

**\*TITLE**

NC26            Training Aids for Insect and Mite Control on Ornamental Plants  
                 Provided for Horticultural Agents in North Carolina

**\*TEXT**

One hundred and fifty agents on the horticultural agent mailing list were provided with six new insect notes, one of which is a script for a set of 36 slides on INSECT AND MITE PESTS OF ROSE. Three other insect notes were revised for a total of 46 insect notes. An additional three slide sets were made available to horticultural agents for their use in training Master Gardeners: INSECT AND RELATED PESTS OF FLOWERS AND FOLIAGE PLANTS (to accompany AG-136 of the same title), INSECT AND RELATED PESTS ASSOCIATED WITH TURF (to accompany AG-268), INSECT AND RELATED PESTS OF SHRUBS (to accompany AG-189). A 177 page manual, INSECT AND RELATED PESTS OF VEGETABLES, was submitted for publication. The galleys were mocked up in this office into rough page proofs and the resistos processed in our darkroom for 245 illustrations which saved considerable time and cost in the stripping in of the final page proofs. The manual should be available late this year or early next year. These training aids should save time in diagnosis by horticultural agents and Master Gardeners who will then be able to provide more effective remedies for insect and mite control on ornamental plants.

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**\*KEYWORDS**

NC26  
North Carolina  
1983  
Agriculture

Pest Identification

Ornamentals

Horticultural Agents

Training Aids

**\*QUANTIFIED IMPACTS**

Agents trained

150

**\*TITLE**

NC27            Protecting Log Homes from Insect Attack in North Carolina

**\*TEXT**

Log houses continue to be very popular with home buyers. Most of those purchasing such homes are not aware of the protective measures that must be taken to prevent insect damage in the logs. Many manufacturers of log houses are not aware of the proper handling of the raw logs and manufactured elements to prevent insect attack and subsequent damage, sometimes years after delivery of their product. The result is that a large number of relatively new log houses have significant problems with insect damage and the more serious problem of wood decay that usually follows insect attack. Information on the best preventive and control measures to protect log houses from insect attack is very inadequate.

The responsible specialist has obtained the cooperation of several manufacturers of log houses in the state in gathering information on the types of insects causing problems, the parts of the buildings most often attacked, the age of the logs, and a history of chemical treatments applied to the logs. The data is being evaluated and collated to allow analysis. The results of these efforts should lead to a better understanding of the economic significance of the problem and the areas which need further study in order to make good recommendations to the manufacturers and to the public. Present recommendations are being refined as new observations and data come to light.

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**\*KEYWORDS**

NC27  
North Carolina  
1983  
Agriculture

Wood use, family housing

Forest products

Log home manufacturers and owners

Letters, visits, telephone calls

Measurable Impacts/Results

**\*QUANTIFIED IMPACTS:**

Log home manufacturers	4 companies
Log home owners	20
County Extension agents	10

\*TITLE

NC28 North Carolina Pesticide Information Retrieval System

\*TEXT

In order to adequately handle the vast amount of pesticide registration information, efforts were undertaken to computerize national pesticide registration status information. The service has been designated as the National Pesticide Information Retrieval System (NPIRS). The service is currently managed by Martin Marietta Data Systems. The N.C. Pesticide Information Retrieval System (NCPIRS) was established in 1982 to: provide access for state level personnel to the NPIRS; provide computer programming and electronic data processing expertise to assist in accessing the NPIRS; provide feedback to the NPIRS administration regarding the accuracy of the data base; provide suggestions for improving NPIRS services; assist in evaluating the private vendor selected for providing NPIRS services; develop programs for educating state level personnel on the use of the NPIRS; conduct pesticide information searches as requested by state level personnel; develop an administrative scheme for pesticide information retrieval activities for North Carolina.

During initial operation, activities of the NCPIRS were centered on promotion of the system. This included lectures and demonstrations. A user's manual was developed and will be used to assist individuals making requests for pesticide information. Current plans include development of a data base of information pertaining to the types of requested information and the types of users. This data base will be used to assess future costs of operations and to develop cost recovery procedures for information requests which originate outside the N. C. Agricultural Extension Service.

The NCPIRS has been used by Extension personnel with a broad range of commodity responsibility. Use of the system improved their ability to adequately assess pesticide product labels with speed and accuracy. More recently the system has been employed by researchers from local industries. They used the system as a tool to identify areas for product development and for efforts to gain or expand registration for new and existing products.

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**\*KEYWORDS:**

NC28  
North Carolina  
1983  
Agriculture

Pesticide Use

Computer Use, Crop Protection, Pesticide Education

Farmers, Paraprofessionals, Teachers, Distributors

Computers, Demonstrations, Workshops

Measurable Impacts Revealed

**\*QUANTIFIED IMPACTS:**

Multiagency cooperation

1 state, 1 federal regulatory  
agency

Pest control increased

Facilities and services improved

Search and response time  
reduced by 2/3

Productivity and decision making improved



\*TITLE

NC29 North Carolina Pest Survey Information Exchange System

\*TEXT

Pests remain the major source of loss in agricultural systems. The major weapon against crop plant pests is a system for predicting the occurrence of pests so that appropriate preventive measures can be initiated. Also, there must be some means for evaluating both the efficacy of preventive and remedial treatments and the changing distribution of the crop plant pests. The N. C. Agricultural Extension Service has been participating in the National Cooperative Plant Pest Survey and Detection Program to provide an interface between county, state and federal level personnel involved in pest survey and detection activities; provide computer facilities and programming expertise to assist in the development of a crop pest monitoring and prediction system; provide assistance in the development of models which attempt to predict outbreaks of pests prior to their occurrence; develop a computer communications network for collection of pest survey data and for distribution of pest survey summary reports.

Long-term planning is in progress under the guidance of an interdepartmental committee for plant pest survey and detection. Initial plans call for working with a small number of county people to develop software, teaching materials and methods for establishing computer communications between an N.C. State University computing facility and the county offices. These procedures will then be used to expand the computerized pest survey information exchange to include as many county IPM programs as is possible. Additionally, these methods will be applied to survey programs which are conducted by other organizations. Throughout the course of development, methods for summarizing and using the collected information in productive models will be expended.

In the first year of operation, the Pest Survey Information Exchange Program has provided rapid, accurate and complete services for collecting, processing and summarizing the pest survey portion of several integrated pest management programs. This has been accomplished by effective use of computer-to-computer communications and efficient application programming. Seven counties were involved in the communications work and approximately 15 were involved in data acquisition and processing.

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**\*KEYWORDS**

Project No.

NC29

State

North Carolina

Project Year(s)

1983

Program Area(s)

Agriculture

Project Title

Subject Matter Area(s)

Computer Use, Crop Production, Crop Protection

Generalized Subject(s)

Pest Management, Forest Management, Weed Control, Plant Disease Control, Horticulture

Activities

County, State and Federal Agency Personnel

Methods

Computers, Demonstrations, Newsletters, Workshops

Measurable Impacts/Results - *(Optional)*

Enter Measurable Impacts/Results - *(Optional)* - Keywords

**\*QUANTIFIED IMPACTS**

Decision making improved

Services improved

Productivity improved

Skills gained

**\*TITLE**

NC30            Insect Management on Turfgrass in North Carolina

**\*TEXT**

Turfgrass management is highly specialized and many Extension agents as well as turf managers need regular update training on management systems that improve efficiency, insect control and reduce pesticide usage. Three workshops were presented to turf professionals in 1983. Additional training was provided for Extension agents in conjunction with the Annual Extension Conference. Pest control strategies were given at an annual turfgrass conference and 10 meetings.

An estimated 1,000 - 1,200 turf workers attended one or more of the above workshops in which insect IPM or pesticide recertification credit was given.

Each workshop or meeting involved other Extension specialists in the development of program material. Local Extension personnel assisted with planning and coordinating and in the conduct of six insect control demonstrations.

The long-term effect of educational programs of this type will aid turfgrass managers as well as local Extension agents in making decisions regarding the use of pesticides.

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**\*KEYWORDS**

NC30  
North Carolina  
1983  
Agriculture

Turfgrass/pest management

Crop management/pest management

Leaders/Extension agents

Workshops, demonstrations

**Measurable Impacts/Results**

Measurable Impacts/Results - Keywords

**\*QUANTIFIED IMPACTS**

Extension agents trained	200
Turfgrass managers trained	1000
Decision making improved	30%
Pest control increased	25%

**\*TITLE**

NC31            Insect Management on Fruits and Vegetables in North Carolina

**\*TEXT**

County plant clinics, volunteer garden leader programs and training of Extension agents, scouts and growers on crop protection continues. Over 46 counties have clinics, 6 have master gardeners, 10 had on-farm tests and 12 with IPM programs have fostered an improved professional approach to solving plant pest problems. Freeze-dried insect kits with life-history notebooks were located in four counties. An additional 10 are planned. Thirty agents received training at Annual Conference, over 40 participated in field days, and 15 agents and 20 pesticide dealers received intensive vegetable insect training and pesticide recertification at a one-day field day. Publications, workshops and a comprehensive Vegetable Insect Manual augment 30 winter meetings.

Insect trapping (20 traps) and field scouting (10 crops) continue to provide 100 counties with relevant information on insect occurrence and population trends. Information was disseminated in newsletters (30), seasonal survey reports and weekly pest alert tapes. Over 20 cucumber and pepper tapes have kept concerned agents, fieldmen and growers updated on crop and pest status and improved pest control was obtained.

Thirty on-farm tests with industry support involving 12 crops, 30 insects and over 50 insecticide formulations and rates help demonstrate insect control. Four state and two emergency registrations were obtained. A high-pressure sprayer on peppers and cabbage and an air-blast sprayer on potatoes demonstrated insect control and improved grower understanding of insecticide coverage and proper timing of sprays. Several growers intend to purchase high-pressure sprayers.

Six counties in southeastern North Carolina received an educational packet (notebook, slide set/script) and participated in a workshop on the sweet potato weevil. Multimedia activities ensued and a general public awareness was aroused. Cooperative educational and regulational efforts have kept this serious threat to our sweet potato industry in abeyance.

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**\*KEYWORDS**

Year: NC31  
State: North Carolina  
Year Started: 1983  
Program Area: Agriculture  
Subject Matter Area: Crop Protection  
Crop: Vegetables, gardening, IPM  
Audience: Farmers, processors, homeowners, consultants, volunteers  
Methods: Demonstrations, newsletters, Teletip, tours, publications, plant clinics, insect kits

**Measurable Impacts/Results****\*QUANTIFIED IMPACTS**

Knowledge gained	1,800
Attitudes changed	350
Decision making improved	850
Insecticides registered	6

\*TITLE

Training and Recertification of Aerial Applicators in North  
Carolina

NC32

\*TEXT

Aerial applicators actively apply pesticides in all areas of North Carolina. The potential impact of this activity, both positive and negative, on agriculture, humans and the environment is, thus, great. To ensure safe and efficient operations, aerial applicators must be recertified through approved training (or retesting) each two years. The North Carolina Agricultural Extension Service has agreed to provide recertification training for all pesticide applicators and dealers.

Over 18 hours of recertification training in aerial application were offered by Extension Specialists and other professionals (four hours required each two years for basic recertification). To maximize its effectiveness, training was generally offered in conjunction with high attendance events such as the annual meeting of the N. C. Agricultural Aviation Association. Topics covered included drift control, safety, ULV application, regulations, swath analysis, insect control and reduction of pesticide hazard to bees. Seventy-five aerial applicators and approximately 20 others were trained in these sessions. Applicators were also notified of recertification opportunities offered by other programs. As a result of this and the previous year's training, 103 of about 140 in-state aerial applicators met recertification requirements for the current two-year cycle.

In addition to classroom training, three two-day fly-ins were held in cooperation with the N. C. and National Agricultural Aviation Associations. At each of these events, computer-based swath analysis equipment was used to improve the pesticide deposition patterns of aircraft. (Improvement was verified through retesting after suggested adjustments had been made.) Such improvements result in more efficient pest control, less crop damage and reduced pesticide drift. A total of 23 aircraft were tested. All three fly-ins were a part of the NAAA Operation Safe program and one was the first such fly-in nationally.

The recertification program, including swath analysis fly-ins will continue in future years.

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**\*KEYWORDS**

NC32  
North Carolina  
1983  
Agriculture

Aerial Application

Aerial applicators, pesticide applicators, pesticide  
dealers, Extension professionals  
Computers, slide tapes, workshops, fly-ins, events

Measurable Impacts Resulting From Key Words

**\*QUANTIFIED IMPACTS:**

Persons trained	95
Applicators recertified	103
Aircraft tested	23



\*TITLE

NC33      Blue Mold Control on Burley Tobacco in North Carolina

\*TEXT

The 1979 blue mold epidemic caused a 40% crop loss in the burley tobacco crop in North Carolina which translated to an \$8.5 million loss in on-farm income. Little or no control measures were used by farmers for blue mold that year. Based on field research and on-farm tests conducted in 1979, a control strategy for blue mold was developed and recommended to farmers for the past four years. The control strategy involves the use of a fungicide, metalaxyl, which has specific activity against the blue mold fungus. The fungicide is recommended as a soil treatment prior to seeding in the plant bed and prior to transplanting in the field. Information about the control strategy was disseminated in Extension publications, newsletters, and county and area meetings. During the past four growing seasons, the control strategy has been used on approximately 80% of the N.C. burley tobacco crop; and losses to blue mold have averaged approximately 2% per year. Without controls, it is estimated losses would have averaged approximately 10% yearly or \$2.8 million, \$5.8 million and \$5.4 million for 1980, 1981 and 1982, respectively.

\*CONTACT

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**\*KEYWORDS**

NC33  
North Carolina  
1983  
Agriculture

Plant Pathology

Plant Disease Control

Farmers, Extension Agents, Agribusiness Firms

Demonstrations, Newsletters, Workshops

Measurable Impacts Results

**\*QUANTIFIED IMPACTS:**

Plant diseases reduced

80% disease reduction

Practice adopted

80% of acreage

Increased income

\$8.4 million over 3 year period

\*TITLE

NC34 Management of Peanut Black Root Rot in North Carolina

\*TEXT

Since the first report of black root rot in North Carolina (1970), this disease has spread to every peanut county and has become our most important soil-borne disease. Prior to 1982 no effective control procedures were available and, as a result, many fields became unsuitable for peanut cultivation. In 1982 a partially resistant peanut variety (NC8C) was released by NCSU. By combining this variety with certain preplant soil fumigants, excellent disease control has been demonstrated. State labels have been obtained so growers can use these fumigants. Due to the high cost of these chemical treatments, scouting and disease mapping (record keeping) procedures have been developed. These techniques have been taught in all peanut counties to aid growers in treating only infested areas of the field or farm. A microcomputer program is now under development for county agents to use in calculating the cost-effectiveness of these treatments for each grower's circumstance. As much as \$870 net return per acre has been demonstrated using chemical treatment and genetic resistance in combination.

\*CONTACT

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**\*KEYWORDS**

NC34  
North Carolina  
1983  
Agriculture

Crop protection

Plant disease control

Farmers, distributors

Computers, demonstrations, newsletters, newspapers,  
publications, radio, television, tours.

Measurable Impacts:

**\*QUANTIFIED IMPACTS**

Pest control increased	95%
Plant disease reduced	95%
Productivity improved	350%
Yields per acre increased	3400 pounds per acre

\*TITLE

NC35            Monitoring the Quality of Swine Rations in North Carolina

\*TEXT

High quality balanced swine rations are essential for profitable swine production. Poor weight gains and reduced feed utilization result from feeding poor quality rations due to incorrect formulation, improper ingredients, poor quality ingredients and/or poor mixing and handling practices. Increased numbers of swine producers developing on-farm mixing systems have magnified this problem.

Swine Extension Husbandry conducts an on-going swine nutrition education program which emphasizes the importance of adequate nutrition and encourages the production and utilization of high quality rations that meet the animal's requirements. Through the use of regional conferences, county producer meetings, newsletters, agent training and producer-agent consultations, the importance of monitoring the quality of swine rations is emphasized. Swine producers are encouraged to routinely check the adequacy of nutrition programs and quality of mixing and handling systems by obtaining a chemical analysis of their rations.

The North Carolina Farm Feed Testing Service, which is a cooperative program of the N. C. Department of Agriculture and the N. C. Agricultural Extension Service, provides routine ration analysis for livestock producers. In 1981-82, approximately 975 swine samples were submitted for analysis. During 1982-83, 1414 swine samples were submitted and represented approximately a 40 percent increase in the number of samples checked. These data indicate a significant increase in the number of swine producers monitoring their swine feeding programs.

Results from the feed testing service provide valuable information which helps producers maintain proper calibration of mixing equipment, identify poor quality or toxic ingredients and check the adequacy of their nutrition programs. Judicious application of the feed analysis results will aid producers in the development of high quality swine rations that promote fast and efficient production of pork.

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**\*KEYWORDS**

NC35  
North Carolina  
1983  
Agriculture

Subject Matter

Swine Production

Product Name

Swine

Users

Swine Producers

Regional Conferences, Newsletters, Farm Visits,  
County Producer Meetings

**\*QUANTIFIED IMPACTS**

Practice adopted

40 percent increase

**\*TITLE**

NC36            The North Carolina Swine On-Farm Performance Testing Program  
                 1973-1982

**\*TEXT**

The N. C. On-Farm Performance Testing Program has provided an opportunity for both commercial and purebred swine producers to make genetic improvement in their animals on a within-herd basis. The testing program gives the breeder a measurement of backfat thickness and growth rate and the utilization of these two criteria in selecting breeding animals should result in improved feed efficiency and carcass quality. The feasibility of making breeding stock selections on the basis of measuring economic traits has been demonstrated and fairly well accepted.

The program has expanded from 21 producers testing about 4,000 pigs in 1973 that indexed 140, to 42 producers testing 15,500 pigs that averaged indexing 156 in 1982. The time required to reach 220 pounds has been reduced by about five days, and the average backfat has been reduced about .15 inches.

In 1982 the 8,600 purebred pigs probed .18 less backfat and indexed 20 points higher than crossbred pigs that numbered nearly 7,000. Though the best performance is exhibited by purebred entries, both purebreds and crossbreds show trends in the right direction but indicate that progress is at a relatively slow rate. Many of the better purebred animals will be used in crossbred herds and hopefully will have a positive influence. With 15,000 or more pigs performance tested each year, performance tested breeding stock will be available and there will be some records established that other producers can use for guidelines or goals.

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**\*KEYWORDS**

Country: NC36  
State: North Carolina  
Year: 1983  
Topic: Agriculture

Major Area: Pork Production Efficiency

County: Swain

Organization: North Carolina Pork Farmers

Measurable Impacts

Enter Measurable Impacts

**\*QUANTIFIED IMPACTS**

Pork Farmers 42

Productivity Improved 9%



**\*TITLE**

NC37           Mycotoxins in the Swine Industry in North Carolina

**\*TEXT**

Mycotoxins are known to slow down the growth rate and feed efficiency in growing swine. In addition, it is known that mycotoxins can cause an exacerbation of infectious and parasitic diseases of swine. Aflatoxin and ochratoxin are known to suppress factor four of compliment, which suppresses the immune system. Under the influence of these toxins, the pig does not have the ability to fight diseases in a normal manner. Diseases and parasites are the most serious problems in the swine industry. On many farms we did not understand why the vaccine did not prevent the disease as it normally would in a healthy herd. The same was true of drugs--they simply didn't work where they should have normally worked. It took some years before we discovered the extent and magnitude of the mycotoxin problem in swine feeds. The mycotoxins are found commonly in Southeastern corn, wheat, milo and soybean meal. The reason we have a more serious problem here than the Midwest is due to high temperatures and humidity at harvest in the Southeast. In the Midwest, harvest is later in the fall and it is much colder--this inhibits the mold development. The 15.5% moisture level also enables these molds to grow in storage more in the Southeast than the Midwest. The molds grow at over 14% moisture level if adequate temperatures are present.

In view of the above facts, we are trying to get moisture levels of grain to below 13% moisture. This along with an educational program on the proper drying and storage of grains will enable the Southeastern swine producers to use our local grains without the mycotoxin problem. Our producers must also decontaminate the grain bins and grain storage areas at least once a year with 1 part chlorox and 9 parts water. The problems have been with us for years; however, we do now have sophisticated testing where we can detect a fraction of a part-per-billion in the feed.

**\*CONTACT**

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**\*TITLE**

NC37           Mycotoxins in the Swine Industry in North Carolina

**\*TEXT**

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**\*KEYWORDS:**

County No. **NC37**  
State **North Carolina**  
Fiscal Year(s) **1983**  
Program Activity **Agriculture**  
(List as many as apply)

Subject Matter Area **Production Efficiency**

Community Subject **Pork**

Audience **Farmers**

Methods

Measurable Impact Results

Enter Measures of Impact

**\*QUANTIFIED IMPACTS:**

<b>Pork Farmers</b>	<b>500</b>
<b>Productivity Improved</b>	<b>10%</b>

**\*TITLE**

NC38      Improving Sow Productivity - North Carolina

**\*TEXT**

Profitability of swine production is directly related to the reproductive efficiency of the breeding herd. Extension Swine Husbandry has emphasized the need to improve sow productivity as a means of increasing reproductive efficiency. This program has involved swine specialists and livestock agents and is aimed at all swine producers maintaining sows. Efforts by these individuals have been directed toward educating swine producers about the reproductive processes, outlining management ideas to improve sow productivity, and providing information about breeding systems, production schedules and production records.

Litter size, open sow days, conception rate and prenatal losses are factors contributing to sow productivity. Of these factors, only litter size can be quantitated since it is recorded by the N. C. Department of Agriculture. Pigs saved per litter from sows farrowed in North Carolina have increased from 7.17 in 1979 to 7.28 in 1980, 7.55 in 1981 and 7.69 in 1982. The number of pigs produced per sow per year is often used as the yardstick to measure sow productivity and is reflective of the factors listed above. Therefore, the impact of saving more pigs per litter is an increase in the number of pigs produced per sow per year and an improvement in sow productivity. This is beneficial to sow producers as well as other sectors of the swine industry.

Further efforts will be made to gather information about the factors influencing sow productivity and then to convey this information to swine producers via meetings, articles and press releases. Swine producers will be the primary beneficiaries of these efforts as an improvement in sow productivity, as measured by litter size and number of pigs produced per sow per year, is accomplished.

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**\*KEYWORDS**

NC38  
North Carolina  
1983  
Agriculture

Production Efficiency

Pork

Farmers

**\*QUANTIFIED IMPACTS:**

Productivity Improved

5%

**\*TITLE**

NC39            Electronic Swine Records in North Carolina

**\*TEXT**

The advent of the on-farm computer has provided swine producers with the capability of storing and summarizing large amounts of data on relatively large numbers of animals. This, coupled with increased interest in measuring and improving sow productivity and other production traits, led to a need for a comprehensive software program that would provide this selection and management information.

SWINEGI, a microcomputer program and its external documentation, GENETIC IMPROVEMENT IN SWINE - A USER'S MANUAL FOR A COMPUTERIZED SELECTION PROGRAM, was developed for that purpose by Extension Swine Husbandry. This program outlines a selection procedure for improving swine performance. It is based on the methods outlined by the National Swine Improvement Federation (NSIF) and described in their publication, GUIDELINES FOR UNIFORM SWINE IMPROVEMENT PROGRAMS.

Part I includes procedures for (1) developing Sow Productivity Indexes on individual sows within a farrowing group, (2) summarizing Sow Productivity Indexes on each sow in an overall herd report, and (3) (3) developing genetic defect summaries within sires and sow families. It also includes support programs for deleting individual sows and boars from the record.

Part II includes procedures for developing General, Maternal, and Paternal Index values on individual gilts and boars.

The intended audience for this computer program was the purebred swine industry, but many commercial swine producers have been attracted to it because of the management value of some of the information included.

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**\*KEYWORDS**

Number: NC39  
State: North Carolina  
Year: 1983  
Subject Area: Agriculture

Subject Matter Area: Production Efficiency

Commodity Subject: Pork

Audience: Swine Breeders

Methods: Electronic Record Processing

**Measurable Impacts Results****\*QUANTIFIED IMPACTS**

Swine Breeders	20%
Increased Animal Productivity	15%

\*TITLE

NC39            Electronic Swine Records in North Carolina

\*TEXT

The advent of the on-farm computer has provided swine producers with the capability of storing and summarizing large amounts of data on relatively large numbers of animals. This, coupled with increased interest in measuring and improving sow productivity and other production traits, led to a need for a comprehensive software program that would provide this selection and management information.

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Part II includes procedures for developing General, Maternal, and Paternal Index values on individual gilts and boars.

The intended audience for this computer program was the purebred swine industry, but many commercial swine producers have been attracted to it because of the management value of some of the information included.

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**\*KEYWORDS**

NC39  
North Carolina  
1983  
Agriculture

Subject Matter Area      **Production Efficiency**

Geographic Subject      **Pork**

Audience                **Swine Breeders**

Medium                    **Electronic Record Processing**

**Measurable Impacts/Results****\*QUANTIFIED IMPACTS**

Swine Breeders	20%
Increased Animal Productivity	15%

\*TITLE

NC40 North Carolina Market Hog Show 1964 - 1983

\*TEXT

The North Carolina Market Hog Show, featuring the carcass contest with the Extension Service as a sponsor, has been a significant factor in North Carolina swine improvement over the years. It could be characterized as an outgrowth of the meat certification program which was very instrumental in teaching breeders and producers the difference between muscle and fat. The carcass results during a 20-year span, involving approximately 1,000 hogs, have been examined for trends and changes because during this period, similar show management, rules and guidelines have prevailed. Breeders entered hogs to see how they compared with others. Animals entered should represent the good-to-better hogs available at the time. The trends over the 20-year period are toward heavier animals, longer carcasses, less backfat and larger loin eyes. The average figures for 500 pigs representing the first 10 years were 206 lb. live weight, 152 lb. carcass, 30.3 inches long, 1.23 inches backfat and 4.66 inches loin eye, compared to 215 lb live weight, 160 lb. carcass, 31.3 inches long, 1.15 inches backfat and 5.21 inches loin eye for 500 pigs representing the last 10 years.

For each of the years carcass data were compared for animals judged champions on foot and for animals that were judged champions on the rail. In general, the champions on foot were about 6.5 lb. heavier, a half inch longer, carried about .2 inches more backfat and exhibited about an inch less loin eye area. The same trends are evident when the average figures for the champions are compared to average figures through the years for the 1,000 hogs measured.

A performance tested class will be featured in the 1984 North Carolina Market Hog Show. The object of the contest will be maximum pounds of quality lean pork per day on test. This will be a further effort to keep the North Carolina Market Hog Show viable and a major force responsible for improvement in the North Carolina swine industry.

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Keywords

**\*KEYWORDS**

NC40  
North Carolina  
1983  
Agriculture

Subject Matter

Pork Production Efficiency

Developed by/State

North Carolina Pork Producers

Method

Measurable impacts of sub:

**\*QUANTIFIED IMPACTS**

Pork Farmers 200

Productivity Improved 5%

\*TITLE

NC41 North Carolina Swine Housing Underfloor Manure Pit Recharging

\*TEXT

Flush systems have become quite popular in recent years for frequent removal of wastes from swine confinement building storage pits. Some documented advantages include: (1) reduced solids accumulation in pits, (2) reduced pit gas and odor generation, (3) improved animal performance, (4) better in-house working environment, (5) fewer herd health problems, (6) removal of potential disease reservoirs, (7) decreased metallic equipment deterioration, (8) enhanced lagoon performance, and (9) reduced nuisance complaint potential. Although existing buildings designed for prolonged pit storage of manure can be adapted for frequent flushing, extensive renovation costs are often incurred.

The above-mentioned advantages can be achieved in an existing swine building, however, through a less costly system of pit recharging. At least once per month (preferably once a week) the entire contents of a manure pit is gravity drained to a lagoon, the pit standpipe is replaced, and the pit is recharged with a foot of liquid pumped from a properly designed lagoon. This routine schedule dilutes the pit contents and resultant gases with new liquid and removes solids which have accumulated on the pit floor. The recirculation of lagoon liquid also enhances lagoon performance by establishing a partially aerobic bacteria which gives a reddish tint to the lagoon and reduces the likelihood of odorous hydrogen sulfide emissions.

An existing finishing building could be retrofitted with a pit recharge system for approximately \$3000 less than it would cost to convert to a frequent flush arrangement. One producer documented through extensive records that by installing a recharge system into his underfloor manure storage pits, his finishing hogs were going to market six pounds heavier, ten days earlier, and consuming 0.1 pound less feed per pound of gain. Mortality on the feeding floors, which had ranged up to 4%, was down to 0.75% and the injectable and water-administered medication had been cut in half. On a \$54 hog market, he estimated that these improvements netted an additional \$3/market hog sold.

This technology was presented to producers at four Regional Swine Conferences having a total attendance of 351. Approximately 50 individual requests for assistance have also been met.

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**\*KEYWORDS**

NC41  
North Carolina  
1983  
Agriculture

Subject Matter Area      **Waste Management**

Commodity Subject      **Swine**

Audience      **County agents, farmers, small farmers**

Methods      **Newsletters, publications, workshops**

**Measurable Impacts Summary****\*QUANTIFIED IMPACTS**

Productivity improved

hogs marketed 6 lbs heavier, 10 days earlier on 0.1 lb less feed per lb of gain

Net income increased

\$3/market hog on \$54 hog market

Practices adopted

50 buildings

Prof      Para

\*STAFF YRS. EXPENDED

.75

**\*TITLE**

NC42 Beef Production and Management in North Carolina

**\*TEXT**

North Carolina beef producers who winter stocker cattle benefit from greater marketing flexibility, increased sale weights and improved profits compared to selling feeder calves. Production technology is available to obtain optimum growth while minimizing cost of gain and maximizing profits.

Computer programs are used to assist farmers and agents regarding least cost rations and projections of animal performance and net returns. The ultimate client is the beef producer; however, agents involved often become more knowledgeable regarding analysis of feeding programs and predicting performance and returns. Thus, in many cases agents are capable of handling subsequent requests.

Cattle producers submitted 21% more feed samples for nutrient analyses in 1982-1983 than in 1981-1982, indicating increased awareness of feed quality and the need for properly formulated diets. During the same period, requests for assistance with stocker feeding and management programs has increased. In all cases farmers are concerned about alternative feed sources and ration formulations that will minimize production costs. Sale weights on stocker cattle indicate progress made with production systems. Steers and heifers were 7.7 and 5.9 kg heavier, respectively, at sale time in 1983 than in 1982. The extra value of this added weight (based on 1983 prices) on 15,365 stockers sold in state graded sales was \$151,860 or about \$10/head. In many instances, a properly balanced diet, use of a growth stimulant, or a sound health plan can increase performance by the amounts observed. Often the increased performance is obtained for \$5/head or less. Assuming that 15 to 20% of spring stockers are sold through graded sales, the total projected value of the added weight due to improved management could amount to \$760,000 to \$1,012,000.

Optimum sale weights for steers and heifers are 340 and 295 kg, respectively. Corresponding actual weights in 1983 were 268 and 236 kg. Increased efforts are needed to convince farmers to implement known technology to obtain optimum stocker production and weights.

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**\*TITLE**

NC43 North Carolina Beef Cattle Reproductive Management Program

**\*TEXT**

Program emphasizes the economic importance and advantages of reproductive management - controlled breeding periods vs. year-round breeding - as the framework for a cowman's overall management program. To improve cowherd reproduction and production efficiency, four management tasks are emphasized: (1) nutritionally developing yearling heifers for breeding beginning 21 days prior to and for no longer than 21 days into the breeding period for the cowherd; (2) breeding period for the cowherd is reduced to 60 days and synchronized with forage and labor resources; (3) pregnancy diagnosis to cull open and late-bred females and (4) evaluation of bulls to optimize their breeding potential.

Twenty-six Extension Livestock Agents have plans of work to improve reproductive management. The agents in these counties and their cooperating demonstration herds are providing the framework for this major program effort. At least one or two commercial producers are being asked to establish a demonstration herd in each county for a period of 3 to 5 years, depending upon present herd reproductive status. Local veterinarians, financial and industry representatives, and state and area specialists in agronomy and animal science are being asked to assist and/or support this program. A Calving Sequence Analysis program is being incorporated into our existing Beef Cattle Improvement Program to get a better monitor of herd nutritional and reproductive management. This records program places emphasis on management to get a high percentage of the cowherd calving the first 21 days of the calving period. This approach is believed to be the best way to monitor and improve reproductive efficiency.

Numerous state, area and county educational programs were given to create program awareness and agent training. Some of the demonstrational herds started three years ago are beginning to provide the results verifying estimates that an additional \$50 per cow-calf unit can be obtained by herds attaining a calving sequence record of 70-25-5 (70% of calves are born the first 21 days of the calving period instead of 30%). The long-range goal is to expand this program to 60 counties by 1987.

**\*CONTACT**

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**\*TITLE**

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**\*KEYWORDS**

NC43  
North Carolina  
1983  
Agriculture

Subject Matter Area: Beef/Management

Primary Subject: Beef

Activities: County Livestock Agents, Beef Producers

Methods: Demonstrations, Clinics, Meetings

Measurable Impacts-Results: Measurable

Measurable Impacts-Results: Key words

**\*QUANTIFIED IMPACTS**

Awareness created

1500

**\*TITLE**

NC44 Feeder Calf Market Development in Northeastern North Carolina

**\*TEXT**

Marketing through organized, state graded feeder calf sales has been shown to return up to \$35 more per calf than marketing through the weekly auction. However, cattle producers in the Northeastern district of North Carolina had to travel 60 to 200 miles (one way) in order to participate in a state graded sale. The location of a state graded sale in the Northeastern district would not only benefit the cattle producers in the 17 counties in the Northeast but also 5 counties in the Southeastern district.

Workshops were held with personnel from the Agricultural Extension Service, local auction market dealers and area cattlemen to organize and conduct a state graded stocker and feeder calf sale in Ayden, N.C. In the Spring of 1983, 787 cattle were sold at an average of \$32 more than if they had been sold at weekly market. This represented over \$25,000 more income for cattle producers in Northeastern North Carolina.

**\*CONTACT**

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**\*KEYWORDS**

Region: NC44  
State: North Carolina  
Year: 1983  
Program Area: Agriculture

Subject Matter Area: Beef Cattle

Language: Subject

Activities: Farmers, Bankers, Transportation

Media: Printed, Audio/Visual

**Measurable Impacts/Results**

Impact: Money Saved - Keywords

**\*QUANTIFIED IMPACTS**

Money Saved \$50/cattleman

Increased Profit \$32 per head

Cattlemen Participating 68

**\*TITLE**

NC45 Gain Testing of Bulls in Central Testing Stations in North Carolina

**\*TEXT**

Three central bull testing stations are currently in operation in North Carolina. This program is designed to evaluate postweaning performance of bulls housed and managed under standardized environmental conditions and to provide a market for completely performance tested bulls for both producers and buyers.

About 30 percent of an animal husbandry specialist's time is involved in supervising management, weighing of bulls, processing records and conducting sales. Producers consigning bulls to the tests pay for other costs.

Educational materials and presentations on methods of using central testing as a supplement to on-farm testing were provided. These tests are excellent demonstrations of the genetic improvement which is occurring in the breeds involved.

A total of 217 bulls went on test in the three stations this year. Of these, 127 met the eligibility requirements and were sold. The average price of 51 bulls at Rocky Mount was a record \$1626. At Salisbury, 48 bulls sold for an average of \$1620. The 28 bulls sold at Waynesville averaged \$1336.

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**\*KEYWORDS**

County Area NC45  
State North Carolina  
Year 1983  
Program Area Agriculture  
Sub-Program Area Animal Production  
Community Beef Cattle  
Audience Livestock Producers  
Methods

**Measurable Impacts/Results**

Enter Measurable Impacts/Results

**\*QUANTIFIED IMPACTS**

Attitudes changed	800
Income increased	375

**\*TITLE**

NC46 Marketing Feeder Cattle in North Carolina

**\*TEXT**

North Carolina is primarily a beef cattle feeder-producing state. Most of the feeder cattle are produced in small herds which creates a marketing problem. A series of special feeder cattle sales were developed whereby producers could pool their cattle to make a more attractive package for the buyers.

This program is planned and operated by the N. C. Agricultural Extension Service, the N. C. Cattlemen's Association, the N. C. Department of Agriculture and the operators of livestock markets in North Carolina. This program has been successful due to the work of county agents by informing producers of the requirements and advantages of this method of marketing.

Data from the past year shows there was approximately a \$6/cwt advantage for steer calves and a \$4/cwt advantage for heifer calves marketed by this method compared to marketing through the regular channels.

An average producer marketing 30 calves per year will have a net income earned of over \$1,000 above what he would receive marketing through normal weekly sales. The 59,901 head of feeder cattle marketed through the special sales during the past year resulted in an increase in income of \$2.2 million due to this method of marketing.

This represents only 20% of the feeders produced in North Carolina. However, these sales have their greatest impact as a price-setting effect on the other 80% which sell through other market channels.

**\*CONTACT**

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**\*KEYWORDS**

NC46  
North Carolina  
1983  
Agriculture

Subject Matter: Marketing feeder cattle

Commodity: Beef

Participants: Small farmers

Activities: Demonstration

**Measurable Impacts/Results****\*QUANTIFIED IMPACTS**

Income earned

\$30 per calf

**\*TITLE**

NC47 Ionophores for Cattle Grazing Accumulated Fescue in North Carolina

**\*TEXT**

The Ionophore Rumensin has been cleared for feedlot cattle for some time and more recently for grazing stockers. There has been little use of this product with grazing cattle in western North Carolina and little data is even available about its use with accumulated fescue.

A result-demonstration was conducted at the Mountain Research Station in the fall and winter of 1982, with two groups of stocker steers of 24 head each grazing accumulated fescue. One group received Rumensin in a grain carrier and the control group only received the grain.

The control group had an average daily gain of 1.07 pounds during the winter on accumulated fescue while the Rumensin group had an average daily gain of 1.26 pounds. The group receiving Rumensin gained 29.6 pounds, or 18% more weight, with an increased feed cost of only \$8.48 per head.

This demonstration has shown producers the benefits of increased weight gains and net return to be gained from feeding Rumensin to stockers on grass. It has also shown that better, more economical weight gains can be obtained from stockers on accumulated fescue than many producers realize.

Net returns on grazing stocker cattle can be increased by \$10/head for producers who accept this management practice.

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**\*KEYWORDS**

NC47  
North Carolina  
1983  
Agriculture

Stocker Cattle Production

Livestock

Farmers

Demonstrations

Measurable Impacts/Results

**\*QUANTIFIED IMPACTS:**

Productivity improved

18%

Income increased

\$10 per head

**\*TITLE**

NC48 Breeding, Management and Marketing of Equine in North Carolina

**\*TEXT**

Due to economic pressures, horsemen must minimize overhead costs while maximizing productivity to show a profit. A series of 70 conferences in 21 different counties were offered to educate both the skilled and inexperienced horseman on equine management. Conference varied in length depending on local clientele requests. Workshops concentrated on increasing productivity through improving horse selection procedures, nutrition, reproduction, financing and health management techniques and training and marketing methods. The target audience, consisting of 3741 equine owners; breeders; trainers; farm managers; 4-H members, leaders and parents; and local Extension personnel received 216 hours of instruction. Approximately 40% of the audience was actively involved in the horse industry as a business with the remainder expressing hobby interests.

Primary objectives of each workshop were predetermined by local Extension personnel, area horsemen and the Extension horse specialist. Workshops were tailored to meet the needs of local adult and youth clientele while emphasizing cost-saving management practices. Local Extension personnel and horsemen, veterinarians, feed manufacturers, tack shop owners and equipment manufacturers lectured on appropriate preorganized topics.

Slide presentations, movies, videotapes and written materials enabled conference participants to understand subject matter. Demonstrations incorporating live animals and actual management techniques provided clientele with hands-on experience. Audience participation was encouraged during designated evaluation periods. A total audience of approximately 1795 completed evaluation forms at the conclusion of the majority of the conferences and workshops. Feasibility of future conference sites, topics and speakers were derived from the questionnaires. Evaluation forms and verbal audience response indicated an overwhelming acceptance of the conferences with greater than 95% of the audience requesting future activities. A high percentage of the conference participants indicated that the information was educational, useful and would be implemented into their management program. Future conferences will be held.

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**\*KEYWORDS**

NC48  
North Carolina  
1983  
Agriculture

Equine production

Animal production, management, marketing

Adult and youth horsemen, 4-H volunteer leaders & members

Demonstrations, publications, slide tapes, videotapes,  
workshops

Measurable Impacts, Results —

**\*QUANTIFIED IMPACTS**

Horsemen, 4-H leaders & members	3,741
Practice adopted	40 percent
Skills learned	65 percent
Productivity improved	50 percent
Knowledge gained	80 percent
Income increased	70 percent

**\*TITLE**

NC49            On Line Computer Access to DHI Information by Dairymen,  
                 Extension Personnel and DHI Management Personnel in North  
                 Carolina and the Southern Region

**\*TEXT**

DART (Direct Access to Records by Telephone) is a program of on-line access to DHI records. Dairy men selecting this optional DHI service can use on-farm computer terminals or microcomputers to update status and health data of individual milking cows and replacement females and retrieve management reports for day-to-day management and evaluation. DART herd managers can design management reports to their individual specifications. This on-line approach allows users: (1) Rapid response to management needs, (2) Development of reports on "problem cow" groups, (3) Development of cow grouping systems tailored to the user's feeding and management system, (4) Reports for use with herd veterinarian giving health related notations and treatments, (5) Heifer vaccination listings and schedules, (6) Conception rates by technician, (7) Ration formulation, (8) A.I. sire selections aids.

On-line capabilities at DRPC are also used for applications involving Extension cooperators and DHI management personnel. These applications include: (1) Teleprocessing laboratory results, (2) Access to cow and herd records and summaries for all herds within a state for use in educational programs and individual herd analysis and trouble shooting, (3) Ration formulation by Extension cooperators.

Currently, the on-line system is being used by 100 DART dairy herds; 6 DHI testing laboratories; and approximately 30 DHI cooperators (Extension personnel, DHI management personnel, veterinarians, feed company representatives, dairy herd consultants, etc.). Rapid expansion of this program is expected since many dairy men and other DHI cooperators are purchasing personal computers.

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**\*KEYWORDS**

NC49  
North Carolina  
1983  
Agriculture

Computer, Animal Production

Dairy

Dairy Producers

Measurable Impacts/Results

Enter Measurable Impacts/Results Keywords

**\*QUANTIFIED IMPACTS**

Computer program created 4

DHI program improved 200

\*TITLE

NC50 Dairy Extension Program in Eastern North Carolina

\*TEXT

Current economic conditions within the dairy industry are placing unprecedented economic pressure on managers of Eastern North Carolina dairy farms. Rapidly changing market conditions and increasing costs have dictated that costs and returns be carefully studied and adjustments made where problems are identified. Many dairymen either do not have a measure of the various parameters of business performance or do not have meaningful standards for comparison.

During the past year, special emphasis has been placed on the business management aspects of dairy farming. Two area seminars under the title of "Strategies for Dairy Farm Survival" were conducted for Eastern North Carolina dairymen. Approximately 40% of the dairy farms in the combined areas were represented. In cooperation with G. A. Benson, Extension Economist, the material presented in the seminars was published in STRATEGIES FOR DAIRY FARM SURVIVAL, Economics Special Report No. 81, July 1983. A copy of this material was distributed to each dairyman in the Eastern region. Business analysis techniques and proven profitable management practices are reviewed in the publication.

The primary impact of these efforts has been to increase awareness of the economic factors which contribute to success or failure of the dairy farm business, as well as the tools and techniques which can be used to assist in business analysis and improvement of business performance.

Although margins of profits have diminished, Eastern Carolina dairymen have used available technology and placed themselves in a more competitive position through obtaining higher production as indicated by the following data for herds on DHI test.

YEAR	NO. HERDS	COW YEARS	LBS. MILK	LBS. FAT
1980	37	5084.2	14,180	513
1981	34	4596.0	14,847	536
1982	32	4514.9	14,993	561

The increase in milk and fat production in 1982 over 1981 resulted in a gross income increase of \$225,000 for the 32 herds on test.

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**\*KEYWORDS**

NC50  
North Carolina  
1983  
Agriculture

Financial Management and Business Survival

Dairy

Producers, Suppliers, Lenders

Seminars

Measurable Impacts: Results

**\*QUANTIFIED IMPACTS**

Production increased

\$225,000

Awareness increased

40% of dairymen

**\*TITLE**

NC51 North Carolina Extension Dairy Cattle Breeding Program

**\*TEXT**

The Extension dairy cattle breeding program is designed to teach both commercial dairy farmers and purebred breeders how to improve the inherited producing efficiency of dairy cattle. USDA DHI Sire and Cow Genetic Evaluations provide the most accurate estimates available of the genetic transmitting abilities of sires and cows. The Extension breeding program emphasizes the interpretation and use of this information.

The N. C. Agricultural Extension Service was one of the early innovators in distributing USDA DHI Sire Summaries in 1964. This practice was discontinued in 1983 because now this information is widely available through national dairy farm publications. However, the Extension Service continues to send USDA DHI Genetic Cow Evaluations to the owners of high index cows immediately after each USDA tabulation because this information is not otherwise readily available to them. These are the cows which should be used for special matings to breed future sires. Assistance is provided to the state breed organizations to encourage greater emphasis on production efficiency in their breed improvement programs.

Many dairymen do not fully understand how to interpret and use USDA Sire Summaries and Cow Evaluations. Many factors influence the price of bull semen in addition to the transmitting ability of the sire. Dairymen can reduce their annual semen bills by hundreds or even thousands of dollars through the proper selection of semen without any reduction in genetic improvement. Dairymen can increase average production by more than 100 pounds per cow per year through breeding.

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**\*KEYWORDS**

NC51  
North Carolina  
1983  
Agriculture

Animal Production (Dairy)

Dairy

County Agents, Dairy Producers

Newsletters, Publications

Measurable Impacts/Results

**\*QUANTIFIED IMPACTS**

Genetic Improvement

200 pounds of milk per cow  
per year

\*TITLE

NC52 Milk Quality Program in North Carolina

\*TEXT

For the past several years, Extension has provided an educational program directed at improving milk quality. The abundant supply of milk and changes that have taken place in the movement of milk have required that dairymen become more quality conscious.

During the year, educational efforts to assist producers in understanding and meeting milk quality standards were enhanced. Emphasis was placed on avoiding somatic cell count, residue, bacterial count and milk flavor problems.

Extension efforts were coordinated with the efforts of others (dairy plant fieldmen, sanitarians, veterinarians, etc.) who advise dairymen on producing quality milk. This effort included providing educational material to the above groups as well as directly to producers.

The DHI Somatic Cell Count option continues to be our best tool to help dairymen reduce bulk tank cell counts and recognize the economic significance of mastitis and control. During the year, 470 herds (approximately 54,000 cows), most on a monthly basis, took advantage of this program. This program is self-supporting, which allows Extension efforts to be directed primarily at the educational aspects of mastitis control rather than testing.

Even though some milk did not meet milk quality requirements and was discarded prior to processing, it is felt that the volume of milk would have been larger had there not been an educational program.

Although we feel these efforts have been at least partially successful, a continued educational effort will be necessary. Particular emphasis will be placed on avoiding antibiotic residues.

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**\*KEYWORDS**

NC52  
North Carolina  
1983  
Agriculture

Milk quality and mastitis control

Dairy, lactation, milk quality

Farmers, dairymen, other professionals

Newsletters, publications, meetings

Measurable Impacts Results

**\*QUANTIFIED IMPACTS**

Herds tested increased

10% increase over 1982 (DHIA  
herds)

**\*TITLE**

NC53 North Carolina Dairy Cattle Nutrition

**\*TEXT**

During FY 82-83 the N. C. Agricultural Extension Service continued to emphasize feed analyses and least-cost ration formulation for dairymen. Some goals of the program are feed cost control, improved productivity and economic improvement of dairymen and consumers.

Feed analysis is aimed at all farmers and is linked to ration balancing. The N. C. Department of Agriculture provides the laboratory facilities for feed analysis. Some samples are analyzed by the New York Dairy Herd Improvement Cooperative, Inc. Laboratory. The N. C. Dairy Herd Improvement Association and the Dairy Records Processing Center at Raleigh cooperate with Extension to provide some ration balancing services. Ration balancing is performed by both mainframe and microcomputer facilities.

In cooperation with Biological & Agricultural Engineering, microcomputer software for ration formulation was released in late FY 83. This software increased from 50% to 60% the proportion of the state's dairy herds which have ration balancing facilities in their county Extension offices (either a microcomputer or terminal). These agents were then trained to use this software. Number of rations formulated has increased to approximately 725 yearly from 400 in 1981-82 and 239 in 1980-81. The number of feed samples analyzed showed another dramatic increase of 67% to 5,655 total samples. This represents a 14-fold increase from the number of samples submitted during the 1970's.

In the future, ration balancing software will be installed in more county Extension offices with microcomputers. These agents will receive in-service training in software use and ration balancing-dairy cattle nutrition. The feed laboratory received additional funding for expansion in 1983-84. This will hopefully improve service and encourage greater utilization. Extension will continue to cooperate with NCDA and promote feed testing.

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**\*KEYWORDS**

NC53  
North Carolina  
1983  
Agriculture

Nutrition, Feeding Management

Dairy Cattle

Dairymen, Farmers, County Extension Agents

Computer, Newsletters, Publications, Workshops,  
Meetings, Individual Consultation

Measurable Impacts: Results

**\*QUANTIFIED IMPACTS:**

Feeds analyzed 5655 (67% yearly increase)

Rations balanced 725 (180% yearly increase)

\*TITLE

NC54 Awareness and Improvement of North Carolina Soybean Meal Quality

\*TEXT

Virtually every North Carolina poultry feed contains soybean meal. Thus, variations in soybean meal quality affect every poultry company in the state. While most poultry companies are aware of the quality received in individual shipments of soybean meal, companies are, in most cases, not aware of the overall quality of their soybean meal. Furthermore, no company is in a position to objectively evaluate soybean meal quality statewide. Data from the ingredient summary program provided Extension specialists with the unique opportunity to evaluate soybean meal quality statewide.

The evaluation showed that the moisture and fiber content of soybean meal had increased in almost linear fashion over the past seven years, while the fat content had significantly decreased over the same period. Poultry companies were made aware of these trends through several newsletters and through presentations at regional and statewide meetings. In addition, the research community has been made aware of the trends through a refereed journal publication so that research efforts can be focused on the problem. The progress in improving soybean meal quality has and will be traced by the feed ingredient summary which is published quarterly by Extension specialists.

A comparison of average soybean meal values from the second quarter of 1982 with those from the same period in 1983 revealed that some improvement has been made in urease, fat, and fiber values while moisture and protein values continue to decline. Thus, while progress has been made in improving soybean meal quality, much remains to be done.

The results of this program are difficult to measure in monetary terms. However, if (conservatively) the progress to date has saved the poultry industry .01% in feed costs, then the poultry industry saved over \$200,000 in feed costs last year.

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**\*KEYWORDS**

NC54  
North Carolina  
1983  
Agriculture

Poultry feeds

Poultry

Poultry companies

Newsletters, publications, meetings

Measurable Impacts, Results

Measurable Impacts, Results

**\*QUANTIFIED IMPACTS:**

Productivity improved

\$200,000 annually

\*TITLE

NC55            Avoiding Drug Residue Possibilities in North Carolina  
                 Poultry Products

\*TEXT

The last drug residue violation in North Carolina poultry products was in 1978. Thus, N.C. poultry companies have done a very effective job of controlling drug residues in the past few years. However, the potential for drug residues in poultry products is very real should poultry companies relax control measures. It is important, therefore, to periodically remind companies and company officials that drug residues are possible and indeed likely if avoidance measures are overlooked or terminated.

In order to remind officials of its continued importance, residue avoidance information was disseminated to poultry companies through newsletters, trade publications, and meetings. In addition, individual face-to-face conferences with officials from every major poultry producing company in North Carolina were conducted. These face-to-face conferences were designed to: (1) Survey current practices in residue avoidance by poultry companies; (2) suggest possible improvements in residue avoidance programs; and (3) heighten awareness of the continued importance of residue avoidance programs.

Past experience with residues in poultry products suggests that when residues occur, consumers reduce consumption and poultry products become "tainted" in the consumer's mind. Thus, residues in poultry products have enormous negative potential and may well be the Achilles' heel of the poultry industry. No drug residue violations have occurred in North Carolina poultry products in the past few years. The likelihood of residue violations in poultry products was probably reduced by this program.

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**\*TITLE**

NC56 North Carolina Feeding Program for Turkeys

**\*TEXT**

The turkey industry still continues to mix from 7 to 14 diets for growing turkeys throughout the life of the bird. The more feeds, the greater the loss in milling efficiency.

Educational efforts in this area have emphasized the merits of using fewer feeds and increasing milling efficiency. Educational methods used included: individual meetings, group meetings, nutritional conferences, newsletters, popular press, and field trials.

One company that changed their diet series to this method calculates that it has saved \$1.50/ton of finished feed on its 2,000 ton/week mill. This is an annual cost saving of \$150,000.

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**\*KEYWORDS**

NC56  
North Carolina  
1983  
Agriculture

Animal production - poultry

Turkeys

Producers

Newsletters, individual and group meetings

Measurable Impacts, Results - 1983/84

**\*QUANTIFIED IMPACTS**

Savings realized

\$150,000 annually--one feed mill

**\*TITLE**

NC57 North Carolina State Turkey Management Program

**\*TEXT**

Poor reproductive performance is a major cost factor in the turkey industry with a 50% average rate of egg production (80 eggs/hen housed), 85% fertility and 72-74% hatchability. The turkey industry has much room for improvement. An increase of two eggs/hen housed would add \$500,000 in gross income. An improvement of 2% in fertility and hatchability would add \$1,200,000 income to our turkey industry.

Educational efforts in this area included working with artificial insemination crews from individual companies to improve semen collection and insemination techniques, and to insure that adequate numbers of sperm cells were placed in the hen. As a result of these efforts, three of the largest turkey companies have employed personnel to continuously monitor these aspects of reproductive management.

The first International Symposium on Turkey Reproduction to be held in the United States was planned and conducted during the year. This two-day meeting was attended by turkey industry people from 15 turkey producing states and 7 foreign countries. Evaluation results of the Symposium indicated excellent information transfer and a desire to hold the conference on an every-other-year basis.

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**\*KEYWORDS**

NC57  
North Carolina  
1983  
Agriculture

Poultry

Turkey

Farmers, Service Personnel, Middle Management

Symposium, Demonstrations

**\*QUANTIFIED IMPACTS**  
Practice Adopted

Production of 36 million  
turkey hatching eggs

Attitudes changed

\*TITLE

NC58 Improved Phosphorus Nutrition of Commercial Layer Pullets

\*TEXT

Recent trends in layer pullet nutrition have shifted calcium and levels in pullet diets primarily as a cost-saving device. Many nutritional interrelationships exist between calcium and phosphorus but in most cases shifts in calcium levels were not accompanied by shifts in phosphorus.

This problem was made apparent by reports of lowered feed consumption and performance of pullets in North Carolina. Early investigation of dietary specifications revealed phosphorus as a possible problem.

A series of field trials showed a need for elevated phosphorus levels in pullet diets. In one field trial it was possible to examine the effects of the pullet diets on layer performance. In this case, layers which had received the improved pullet diets had produced approximately two more eggs per hen housed. This practice was adopted 100% by the company involved in the field trial. Within the company involved, the improved production resulted in an increase in the number of eggs produced of 4.0 million. This increased egg production resulted in a \$23,000 annual increase in contract payments to the farmers and approximately \$15,000 increase in marketable eggs.

More field trials and further research are both needed to further define the requirements for phosphorus of the commercial layer pullet.

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**\*KEYWORDS:**

Project No.	NC58
State	North Carolina
Year	1983
Project Area	Agriculture
Major Activity	Poultry
Subactivity	Egg Production
Participant	Poultrymen
Activity	Field Trials

**\*QUANTIFIED IMPACTS:**

Practice adopted	25% of commercial layer pullets in North Carolina
Productivity improved	\$38,000 for one company

**\*TITLE**

**NC59**            Mycoplasma Gallisepticum Control Program

**\*TEXT**

Progress continues with the Mycoplasma control program in North Carolina. Extension has provided information that has been utilized in developing a Mycoplasma gallisepticum (M.G.) identification and quarantine program which was approved by the North Carolina Department of Agriculture this year.

Small flock, poultry exhibitors, and other potential M.G. infection sources have been made aware of the identification and quarantine program and how it affects them. An informational publication on M.G. eradication is being developed to support the efforts to avoid M.G. breaks in commercial poultry flocks in North Carolina.

Serious outbreaks have subsided in the last year. Breaks that have occurred have been quickly identified, quarantined, and cleaned up with economic losses held in check.

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**\*KEYWORDS**

City: NC59  
State: North Carolina  
Year: 1983  
Activity: Agriculture  
Major Area: Poultry  
Subject: Poultry Disease  
Audience: Poultry Producers  
Type: Educational Meetings

Measurement Results: M...

Initial Measurement: I...

**\*QUANTIFIED IMPACTS**

Attitudes Changed

Disease Prevention

Practices Adopted

Program Initiated

**\*TITLE**

**NC60** Refining Light Stimulation and Feed Management of Broiler Breeders in North Carolina

**\*TEXT**

Initial results from paired broiler breeder flock comparisons of standard programs with light-sensitizing, short-day programs for off-season broiler breeder pullets confirmed the improved reproductive performance and feed utilization that had been predicted for the program. The economic magnitude of improved performance has attracted industry-wide attention to the program.

County Extension agents and Extension poultry specialists obtained field trial cooperation from several poultry companies. This data enabled Extension to develop sufficient information on costs of house modification and flock schedule modification as well as values of improved flock performance, feed savings, and fuel savings to be able to guide poultry hatching egg producers in utilizing the program to its maximum potential. Two areas of particular assistance were the development of efficient light traps and definition of the limits of season and program specifications that would yield economic improvement.

The educational program developed from those field trials has been shared with North Carolina poultrymen through regional and statewide meetings, newsletters, popular press, and individual assistance. The program information has been in great demand in the state and nation as well as a few international requests.

It is projected that the adoption of the light and feed management program in North Carolina's broiler breeder flocks will produce \$1.95 million more hatching eggs on \$3.38 million less feed at an amortized cost of \$108,000 annually for energy and house modifications. It is estimated that 40% of the off-season breeders are utilizing this program with an estimated 1983 return of \$2.08 million to the industry over previous production practices.

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**\*KEYWORDS**

NC60  
North Carolina  
1983  
Agriculture

Poultry Production

Broiler Breeders

Poultry Producers

Demonstrations and Meetings

Measurable Impacts, Benefits

**\*QUANTIFIED IMPACTS:**

Productivity Improved

750,000 more hatching eggs in  
North Carolina for 1983

Costs Reduced

\$1.35 less feed cost in 1983  
\$2.08 million for North Carolina  
in 1983

Net Income Increased

**\*TITLE**

NC61 North Carolina Farmland Use-Value Taxation

**\*TEXT**

A statewide program to inform local tax officials and owners of agricultural land about the Agricultural Land Tax Law of 1973 and its applications.

A survey of 1982 participation under the Act was made with 96 of the 100 counties responding and copies of the report distributed to tax supervisors, county agents, appraisers and landowners. Brochures and other materials were provided to county agents for conducting informational programs on revaluing counties.

County officials (tax supervisors and county managers) and boards of commissioners were involved in this study.

Seminars were presented by specialists to officials in two counties and production cost information provided to officials in three other counties initiating revaluation during the year. The main benefit of this program is the tax relief realized by informed landowners. According to the survey, over 40,000 tracts of agricultural or forest land in North Carolina were taxes on their use value in 1982 with an average reduction or deference of \$160 per tract.

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**\*KEYWORDS**

Project No. NC61  
State North Carolina  
Fiscal Year 1983  
Program Area Agriculture  
N. Carolina, Agriculture

Subject Matter Area Land Taxation

Community Subject

Activities Forest landowners, private landowners, public officials

Methods Publications, workshops

Measurable Impacts Results of the project

Enter Measurable Impacts Results in Section 4

**\*QUANTIFIED IMPACTS**

Tax supervisors 100

\*STAFF YRS. EXPENDED

Prof .1  
Para

\*EST. PROGRAM COSTS

\$3,000

**\*TITLE**

NC62           Income Tax Management for North Carolina Families

**\*TEXT**

A continuing education program in North Carolina to increase awareness among farmers, tax practitioners, small businesses, the elderly and young families about federal and state income tax laws and income tax management.

Programs were developed by Extension specialists to assist county agents and tax practitioners in conducting seminars on income tax law. These programs were developed with the cooperation of the N. C. Department of Revenue, the N. C. Society of Accountants, the Internal Revenue Service, and the N. C. Certified Public Accountants.

Ten regional seminars were conducted by the North Carolina Agricultural Extension Service for tax practitioners. Over 50 local/county programs were conducted for farmers, small businesses, the elderly and young families.

Over 1,150 tax practitioners received continuing education on federal and state income tax laws and regulations. These tax practitioners reported filing over 325,000 federal and state forms in 1981. Approximately 3,500 North Carolina farmers, small businesses and families participated in local tax seminars. Savings to taxpayers in reduced tax liability and, therefore, increased after-tax income is estimated to be several million dollars annually.

Local tax practitioners and county agents will be increasingly involved in assisting Extension specialists with continuing education programs on income tax management.

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**\*KEYWORDS\***

NC62  
North Carolina  
1983  
Agriculture

Income Tax Education

County Agents, Teachers, Small Businesses, Small Farmers,  
Private Landowners, Young Families, Tax Practitioners

Measurable Impacts, Results

Measurable Impacts, Results

**\*QUANTIFIED IMPACTS\***

Money Saved

Management Skills Improved

**\*TITLE**

NC63            Estate Planning for North Carolina Families

**\*TEXT**

A statewide field program for teaching North Carolinians about estate planning.

Educational materials were revised to account for changes in federal and state laws relating to estate planning.

Thirty agents participated in in-service training. Many agents now conduct their own estate planning seminars with assistance of local resource people. Specialists presented at county, regional and statewide meetings estate planning programs. Field observations indicate many individuals have prepared wills and families have revised their overall estate plans.

Extensive revision of educational materials is planned.

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**\*KEYWORDS:**

NC63  
North Carolina  
1983  
Agriculture

Subject Matter: Family Economics, Taxation

Business saved, money saved, awareness created,  
professionals trained, resource people involved  
County agents, adolescents, families

Measurable Impacts Result: *(Faint text)*

**\*QUANTIFIED IMPACTS:**

Professionals trained

30

**\*TITLE**

NC64            Agricultural Transportation

**\*TEXT**

Rural transportation planning procedures were distributed to county Extension and county planning personnel. Notification of rail line abandonment intentions were distributed to county Extension offices in counties affected by potential rail abandonments and several meetings were held to explain decision options for county governments and agribusiness shippers.

One TV spot and one newspaper story were prepared to explain the likely effects of an impending rail strike on agriculture. The strike did not materialize.

The ECOF Transportation Task Force developed a packet for county Extension personnel and a notebook for state specialists on the subject of ridesharing. Notebooks on agribusiness firm transportation management and rural transit system management are well on their way to completion, for use by state Extension specialists.

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**\*KEYWORDS**

NC64  
North Carolina  
1983  
Agriculture and CRD

Subject Matter Area: All Commodities; Transportation

Geographic Area:

Activities: State government, local elected officials, agribusiness

Types of Activities: Publications, meetings

Measurable Impacts Results: Affected

Keywords:

**\*QUANTIFIED IMPACTS**

Communities assisted

\*TITLE

NC65 Farm Management and Marketing Extension

\*TEXT

Farm Business Management programs were begun in 13 counties. In this program an economics specialist, a county agricultural agent and a group of farm families meet together several times to transfer basic farm management and marketing skills to farmers. In the process, county agents learn how to transmit these skills to still other farm families. County agents follow up with farm families monthly to encourage record keeping and decision analysis. Specialists follow up with county agents monthly to help answer special issues with farm visits and to train the agents.

About 10 specialist man-days were spent per county as well as 10-15 agent man-days. Several farm families began keeping records and others, already on records systems, began using records more effectively for financial performance evaluation.

This program will continue for the full year of 1983-84 in 14 counties.

Executive Farmer Seminars were held in six counties. Basic farm management and marketing decision tools are presented in a two-day workshop for farm families. About 100 families attended these workshops. About 48 specialist man-days and about 30 agent man-days were expended. Farmers are taught to make better management decisions.

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**\*KEYWORDS**

No NC65  
North Carolina  
1983  
Agriculture

Subject Matter Area Farm Management and Marketing

Keywords Farmers

Workshops

Measurable Impacts/Results

Enter Measurable Impacts/Results - Key words

**\*QUANTIFIED IMPACTS:**

Profits increased

\*TITLE

NC66            Agricultural Policy Education in North Carolina

\*TEXT

Changes in agricultural policy and commodity programs introduce greater uncertainty in farming. With growing pressure to do away with programs for tobacco and dairy products, movement toward freezing or reducing loan rates for feed and food grains, and increased lobbying for greater restrictions on international trade flows, farmers require up-to-date information regarding farm policy and commodity programs. One state conference and one multicounty conference for agricultural outlook and policy discussion were held. These conferences attracted leading farmers, agribusinessmen, and local public officials. The conferences allowed Extension specialists to provide policy analysis and outlook information to farm leaders throughout North Carolina. People attending these conferences learned about near and long term prospects for agriculture and participated in discussions about farm policy. Greater awareness and understanding of farm problems and policies designed to meet these problems will improve farmers' ability to make their farm enterprises work. Future conferences for economic and agricultural outlook and policy are being planned. The state conference attracted 100 people, and the multicounty conference attracted 50 participants. Future conferences will attract greater attendance as more people learn about them from previous participants.

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**\*KEYWORDS**

NC66  
North Carolina  
1983  
Agriculture

Policy Education, Agriculture

Farmers, agribusinessmen, public officials  
Conference

Measurable Impacts Row 2

1983 Measurable Impacts Row 2

**\*QUANTIFIED IMPACTS**

Understanding improved

150

**\*TITLE**

NC67 North Carolina Farm Management Information Systems

**\*TEXT**

Organizing and managing a farm business requires an information system. This aspect of production has become a high priority need due to narrow or negative cash margins, high interest cost and other financial risks. Many farmers are intently searching for good accounting systems, whether they be manual or computer-assisted.

Farm lenders are also searching for assistance in their advising effort on the types of information needed for both credit analysis and their clients' management needs. Numerous lenders admit openly that many farmers whom they have lent to in the past keep no records.

Credit agencies have in the past provided manual record books which satisfied only the tax filing needs of farmers. These simple record books lack flexibility and enterprise analyses.

The Extension Service provides a computer mail-in records program for N.C. farmers and has developed a comprehensive manual farm record book. The record book is available for statewide use by farmers. The available farm records program will be an important aid in management education work by state specialist staff. The nominal costs will be greatly outweighed by the value of management data provided.

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**\*KEYWORDS:**

NC67  
North Carolina  
1983  
Agriculture

Financial Management

Money Management, Crop Production, Animal Production

Farmers, Financial Institutions

Publications, Workshops, Newsletters

Measurable Impacts, Quantified Impacts

**\*QUANTIFIED IMPACTS:**

Farm management improved

1,850

Skills learned

**\*EST. PROGRAM COSTS**

\$20,000



**\*KEYWORDS**

NC68  
North Carolina  
1983  
Agriculture

Crop Drying

Grain

Farmers

Publications, Workshops

Measurable Impacts/Results

**\*QUANTIFIED IMPACTS**

Money saved

\$10 million

Persons trained

200 farmers

\*TITLE

NC69                    PIK Program in North Carolina

\*TEXT

An in-depth educational program was initiated upon the announcement of the PIK program in January 1983 to help N.C. farmers understand the program and to make better decisions regarding their alternatives. A newsletter containing details of the PIK program with the four options available and benefits of each together with a worksheet on how to evaluate the options was prepared and distributed to the Extension staff in 100 counties.

A Breakeven Price Analysis for PIK Programs was developed for the TRS-80 microcomputer, and about 10 county and area meetings were held to help producers understand and use the Breakeven Analysis. Agents were trained during these meetings to assist their producers in using the computer to evaluate their options. These meetings were well attended by growers, lenders, elevator managers and Extension agents. Additional newsletters were prepared, and outlook meetings were held to help farmers choose the best strategy in marketing their PIK grain.

As a result of the educational program on PIK options and benefits, over one-third of the corn base acreage and one-fourth of the wheat acreage in the state was idled. Growers were able to improve their net returns by reducing production costs on acres idled and getting higher prices for PIK grain which they received. As a result of participating in the PIK program, growers' net returns in North Carolina will be increased about \$250 million in 1983.

Helping farmers understand complex farm programs and providing them with a tool for analyzing their farm situation has helped them to improve their decision-making capability. Lenders have become more cautious in making loans to farmers who make seat-of-pants decisions rather than analyzing their alternatives. In the future, they will insist on more farmers analyzing their options and selecting courses of action in both the production and marketing of their products to reduce risk and insure their ability to survive.

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**\*KEYWORDS**

NC69  
North Carolina  
1983  
Agriculture

Corn

Farmers

Computers, Newsletters

**\*QUANTIFIED IMPACTS**

Income earned	\$250 million
Farm management improved	500 farmers
Agents trained	35

\*TITLE

NC70 Price Analysis and Outlook in North Carolina

\*TEXT

Knowing when, where and how to market their crops and livestock are important decisions for farmers. However, most farmers lack the knowledge and analytical skills to do price forecasting and evaluation of varying marketing strategies. To help farmers and county Extension agents to be better informed on the price outlook for major commodities produced in North Carolina, outlook materials are prepared and distributed through THE MARKET POINTER each month. In addition to these monthly statements, a more detailed solution and outlook report is prepared in December for the new crop year. This information is distributed to county Extension agents and the news media. Market update and outlook meetings are held in the county to help farmers develop their skills in analyzing short-term and longer-run factors influencing prices of their commodities.

This information helps growers to make better decisions regarding storage, forward pricing and crop production.

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**\*KEYWORDS**

NC70  
North Carolina  
1983  
Agriculture

Marketing of Corn, Wheat and Soybeans

Farmers

Newsletters, Workshops

**\*QUANTIFIED IMPACTS**

Income earned

||||| |||||

\*TITLE

NC71 North Carolina's Short Course in Modern Farming

\*TEXT

Young North Carolinians involved in agriculture lack an awareness of modern technology and management skills needed to keep pace in the changing agribusiness world. There is a need for community agricultural leaders to understand the information and services available through the NCSU School of Agriculture and Life Sciences--particularly Extension and Research.

Lectures, question-and-answer periods and field trips conducted by School of Agriculture and Life Sciences personnel introduced short course participants to the latest information on topics ranging from farm income tax to use of pesticides. Based on 1982 evaluations, selected topics were expanded to larger time slots.

Approximately 90 young farmers have a better understanding of important agribusiness topics and understand the information and sources available through the School of Agriculture and Life Sciences. Leadership, agribusiness knowledge and management skills were developed in current and future agricultural community leaders.

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**\*KEYWORDS**

NC71  
North Carolina  
1983  
Agriculture

Subject Matter Area

Animal and Crop Production, Decision-Making, Financial Management

Content Area

Forest Management, Horticulture, Irrigation, Solid Waste Systems, Watershed Management

Activities

Young Farmers

Methods

Demonstrations, Tours, Workshops

Measurable Impacts, Benefits, Values

**\*QUANTIFIED IMPACTS**

Decision Making Improved

90

\*TITLE

NC72            Agribusiness Management in North Carolina

\*TEXT

A statewide field program in teaching North Carolina agribusiness owners, managers, and employees the principles and techniques of business management, financial management, and feasibility studies.

A complete set of visuals, including slides, overheads, movies, etc., combined with lectures and group participation exercises and case studies has been prepared for use in educational programs in this area. Each program is tailor-made to suit the specific training requirements of the firm. Both managerial and supervisory skills programs have been developed. In addition, a small number of feasibility studies are conducted. Programs are conducted by the specialist.

Seminars were presented by the specialist and numerous meetings were held with individuals, agents, and groups on preliminary feasibility analysis studies.

Field observations have indicated that training greatly improved the skills of managers and supervisors in dealing with management problems. Feasibility studies have resulted in the postponement of several major projects in fruit and vegetable marketing until production reached feasible levels. Probably savings in the area of \$4.5 million.

This is a continuing effort with emerging clientele groups. Emphasis during 1984-85 will be on nursermen, fertilizer vendors, local development groups, and craft persons.

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**\*KEYWORDS**

NC72  
North Carolina  
1983  
Agriculture

Management, Financial management, Feasibility

All

Adults, Agents, Managers

Workshops and demonstrations

**\*QUANTIFIED IMPACTS**

Productivity improved

\$100,000

**\*STAFF YRS. EXPENDED**

Prof  
.2

\*TITLE

NC73 Education in Tobacco Policy in North Carolina

\*TEXT

A "No Net Cost Tobacco Program" was enacted which came into effect with the 1983 crop. Two major spin-offs occurred from this new legislation. First, many economic decisions of farmers were affected by the new terms of the tobacco program. Second, subsequent discussion indicated that further amendments were likely within the year.

Major efforts in Extension education in 1982-83 included:

- 1) Continued meeting with various farm groups and distribution of materials such as the leaflets entitled "Tobacco Marketing Policy Alternatives" to provide an understanding of the government program for tobacco.
- 2) A publication and follow-up meetings on techniques to determine the value of flue-cured quota, which became salable with the 1982 Act.
- 3) Testimony by an Extension Economist before the U.S. House Subcommittee on Tobacco and Peanuts as it considered legislation to freeze tobacco price supports.

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**\*KEYWORDS**

NC73  
North Carolina  
1983  
Agriculture

Farm Management and Policy

Tobacco

Farmers, Public Officials

Publications, Meetings

Measurable Impacts/Results

**\*QUANTIFIED IMPACTS**

Understanding Improved

\*TITLE

NC74 Direct Marketing of Horticultural Crops in North Carolina

\*TEXT

Current estimates indicate that 10% of all fruits and vegetables produced in North Carolina are sold via direct farmer-to-consumer marketing methods. Of particular concern to local growers and agents is the organization and operation of community farmers' markets. Ten two-hour seminars were conducted last year to assist county agents, produce growers, and community leaders in evaluating the type of direct marketing method best suited for their area. Discussion topics included harvesting and grading information, sources of funds for the construction of a facility, display techniques, pricing and selling strategies, and legal requirements for retail operators. During the 1982 fiscal year the state legislature appropriated approximately \$1 million for the construction of new community market facilities and construction is in progress for the establishment of a third state-operated Farmers' Market in Charlotte. More appropriations are expected in future years.

Potential benefits of direct farmer-to-consumer marketing include additional marketing and income opportunities for small acreage producers, fresher quality products bought by consumers, and an expansion of the economic resource base of a community.

While direct marketing will remain a small component within the produce marketing system, concerns for rising food prices and limited local marketing opportunities suggest that direct marketing assistance requests will continue to increase in the near future. Economic information disseminated via Extension publications and slide shows will emphasize the identification of factors which increase the probability of a successful direct marketing venture. Immediate future goals include an economic strengthening of viable on-going markets and the addition of five new community markets in the Coastal and Piedmont areas of North Carolina.

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**\*KEYWORDS**

NC74

North Carolina

1983

Agriculture

Marketing

Vegetables

Small Farmers

Seminars, Workshops, Publications

Measurable Impacts: Review of the Impact of the Program

Enter Measurable Impacts in the Results Section

**\*QUANTIFIED IMPACTS**

Facilities established

8 added facilities





**\*KEYWORDS**

NC75  
North Carolina  
1983  
Agriculture

Animal Production, Crop Production

Milk, Tobacco

County Extension Agents, Farmers

Measurable Impacts Results

**\*QUANTIFIED IMPACTS**

**\*TITLE**

NC76 North Carolina Area Vegetable Schools

**\*TEXT**

In previous years county-sponsored vegetable meetings were characterized by discussions of a wide range of topics in a limited amount of time, too few growers in attendance, and a lack of active participation by local horticultural agents. In addition, information delivery costs were high relative to the payoff received. A multi-county vegetable school concept was developed as an interdisciplinary response to reduce the total resource expenditure involved in conducting individual county meetings while at the same time improving the quality and attendance of vegetable meetings.

Seven one-day multi-county meetings were organized covering 86 counties in North Carolina with specific information to be presented at each meeting determined by a subcommittee of local horticultural agents and Extension specialists. Attendees were surveyed concerning the selection of future meeting topics and the quality of current presentations. Over 510 growers and 54 agents attended the 7 area vegetable schools held in 1982. When compared to 1981, results indicate that a 75% reduction in the number of specialist-attended meetings and a 60% increase in grower attendance was achieved.

Specific benefits of area vegetable meetings include higher quality meetings with fewer resources, extensive training of both agents and producers, the identification of area (not just county) problems, and increased attendance by growers. In selected instances, the information presented targeted future topics for county follow-up meetings.

This program will be expanded in 1983 to include all 100 counties in North Carolina and trade show exhibits will be added to each meeting.

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**\*KEYWORDS**

NC76  
 North Carolina  
 1983  
 Agriculture  
 Economics/Horticulture  
 Horticulture  
 Farmers, Agents  
 Workshops

Measurable Impacts/Results

Enter Measurable Impacts/Results

**\*QUANTIFIED IMPACTS**

Knowledge gained	10%
Marketing improved	10%

\*TITLE

NC77 Improved Post-Harvest Handling Practices for Vegetables in  
North Carolina

\*TEXT

Though the United States has one of the world's most efficient marketing and distribution systems for fresh vegetables, agricultural experts estimate that vegetable post-harvest losses conservatively total over 15% of annual production. Losses for selected crops such as tomatoes, sweet potatoes, peppers and cucumbers are thought to be much higher. A specific post-harvest handling extension program was designed to identify, describe, evaluate and inform county agents and grower-shippers about cost effective alternative quality maintenance practices and technologies. Twenty county agents attended a six-hour workshop on the proper preparation and handling of vegetables. Discussion topics included biological factors involved in fruit deterioration, ethylene production, environmental factors influencing quality loss, temperature management procedures, and cost effectiveness of alternative handling technologies.

Potential benefits from improved quality maintenance procedures include reduced marketing costs due to less product waste, increased prices paid to producers due to the value of increased shelf life recognized by buyers, and an ability to compete in more distant markets due to extended product life. If N.C. vegetable handling losses were reduced by the modest amount of 5% of vegetable farm value, consumers and handlers could realize savings of approximately \$10 million.

As a result of increased emphasis on proper handling, two large volume vegetable shippers in North Carolina have installed forced air cooling facilities (at a cost of \$75,000) in their operations. These growers report benefits of increased price premiums for products sold and increased buyer interest in their products.

The long-term effect of this educational program is an expansion of North Carolina's market share for selected vegetables which should result in additional producer income. A reduction in waste also has the concomitant effect of increasing available vegetable supplies for the same amount of production inputs utilized which benefits consumers in the form of lower prices.

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**\*KEYWORDS**

NC77  
North Carolina  
1983  
Agriculture  
  
Economics  
  
Vegetables  
  
Farmers, Packers  
  
Demonstrations, Workshops, Seminars

Measurable Impacts Results

**\*QUANTIFIED IMPACTS**

Facilities and services improved	3 facilities
Practice adopted	10% increase

\*TITLE

NC78 U. S. and North Carolina Dairy Policy Issues

\*TEXT

National dairy policy changes and proposed changes were described and evaluated in meetings and newsletters in order to dispel misconceptions and allow dairymen to plan based on reliable information. Decision making tools were described.

Informal feedback suggested that dairymen and agents were better informed, misconceptions were corrected, and decision-making procedures were understood.

Uncertainty about national policy continues, and this program will continue as long as necessary.

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**\*KEYWORDS:**

NC78  
North Carolina  
1983  
Agriculture

Dairy, public policy education

Dairy

Dairy farmers, public officials, Extension personnel

Workshops, newsletters

Measurable Impacts/Results

Measurable Impacts/Results

**\*QUANTIFIED IMPACTS:**

Decision-making improved

Knowledge gained

\*TITLE

NC79 Cooperative Educational Activities in North Carolina

\*TEXT

A statewide field program which involves cooperative boards, managers and members/potential members in an educational program concerning principles and methods of operation.

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.

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.

One hundred eighty managers and directors attend the annual Institute for Cooperatives and 30 couples have been sponsored to the Young Couples Conference annually. Twenty-nine vocational agriculture teachers received training in cooperative principles and curriculum materials during two workshops in the summer.

The University has established itself as the major statewide contact for information and assistance concerning cooperative formation, operation and development.

The 90 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.

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**\*KEYWORDS**

NC79  
North Carolina  
1983  
Agriculture

Cooperatives, financial management, public policy education

All

Adults, managers, members

Workshops, demonstrations

**\*QUANTIFIED IMPACTS**

Attitude changes	250
Productivity improved	200
Vo Ag teachers trained	29

**\*STAFF YRS. EXPENDED** .2

\*TITLE

NC80            Evaluating Life Insurance Policies in North Carolina

\*TEXT

Life insurance is a complicated product for most individuals to evaluate. Major issues exist concerning how life insurance policies are priced and how to compare policies. This program evaluated the pricing of life insurance policies and communicated the implications to consumers and regulators.

The North Carolina Insurance Education Foundation assisted in gathering and evaluating policy price information.

A major study was completed which explained differences in prices among life insurance policies, concluding that currently recommended price indices are invalid and misleading. The results and implications were communicated to consumers and regulators via:

- (a) a radio program heard on 131 stations,
- (b) an article released to over 500 media (newspaper, radio, TV) outlets in the state,
- (c) a presentation to the North Carolina Insurance Education Foundation,
- (d) three publications, of varying length and detail, sent to county agents, the media and state regulators.

The results will continue to be extended to consumers and regulators in the future.

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**\*KEYWORDS**

NC80  
North Carolina  
1983  
Agriculture

Consumer Economic Education

Citizens, Government officials

Radio, TV, newsletters, publications, newspapers

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Measurable Impacts: Poverty - 11

Measurable Impacts: Health - 10

Measurable Impacts: Education - 10

\*TITLE

NC81            Water Conservation and Food Loss Prevention in North Carolina  
                 Food Plants

\*TEXT

An on-going program on reducing water and minimizing food loss was continued in North Carolina food processing plants. These food plants probably exceed 100 million gallons of water use per day during maximum production periods. Increasing cost of water and wastewater treatment make this program not only timely but necessary. The average food plant uses more than 100 percent more water than it should because of untrained employees, lack of nozzles and improper design of food washing equipment. If all food plants could minimize their water use, about 5 billion gallons of water could be conserved annually. Several on-going demonstrations are being conducted with 50 percent reductions in food losses (10,000 pounds per day of food), with water use decreases exceeding 50 percent (75,000 gallons per day) and 75 percent (2,500 pounds per day) reductions in wastewater treatment loads. In-plant training sessions are used to help managers and employees understand and utilize the program. A number of bulletins have been prepared. Plants have been helped with sewer use ordinances and surcharges to eliminate unnecessary regulations and excessive costs. Several plants have achieved savings of \$100,000 per year. Several of the largest plants would have savings exceeding \$1,000,000 per year with full program implementation.

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**\*KEYWORDS**

NC81  
North Carolina  
1983  
Agriculture

Food processing

Dairy, seafood, fruits, vegetables, meat, poultry

Food processors

Workshops, demonstrations, publications

Measurable Impacts of ...

**\*QUANTIFIED IMPACTS**

Water saved

75,000 gallons/day/plant

Food saved

10,000 pounds/day/plant

\*TITLE

NC82            Improving Productivity of Pork Sausage Processors in North  
                  Carolina

\*TEXT

The profitability of a fresh pork sausage plant is related to the safe retail shelf-life of the finished product. Small independent food processing companies in North Carolina rely on Food Science Extension for resource information on new technological advances applicable to their operations. An educational program was developed incorporating new technology into the manufacturing and distribution of fresh pork sausage. The objectives were to maintain or improve product quality, to increase the safe retail shelf-life, and to increase production without added labor. A processor with regional sales was contacted to test the program. Their product had a shelf-life of approximately two weeks with static sales. Factors identified as affecting the product were plant sanitation, temperature of raw meat materials, heat build-up during processing, and storage conditions of the finished product. The practices adopted and their effects on the product were the following: changes were made in the sanitation programs resulting in less labor and lower chemical costs; a 10 degree (Fahrenheit) decrease in raw meat materials was achieved by skinning and slashing the carcass before going to the chill cooler; a 7 degree decrease in heat build-up during processing was achieved by going to a two-step size reduction and shortening the mixing time; a 5 degree temperature reduction before shipping was achieved by changing the method of palletizing to improve air flow during storage. These changes increased consumer sales which required installing new equipment to meet the demand. One grinder was added for the second size reduction step. A modern stuffer suitable for all products replaced two special stuffers. This reduced set-up time, as well as cleaning labor and supplies. A new link sausage system was purchased to decrease casing costs and labor. The client benefited from the program by increasing the product's retail shelf-life a minimum of one week and estimated annual gross sales of \$300,000 -- without added labor. Information gained on the program is being applied to other clients throughout the state.

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**\*KEYWORDS**

NC82  
North Carolina  
1983  
Agriculture

Food processing

Pork

Packers, processors

Demonstrations

Measurable Impact Results

**\*QUANTIFIED IMPACTS**

Facilities and services improved

\$50,000

Food preserved

Estimated value \$20,000

Income increased

Estimated gross sales \$300,000

Productivity improved

320,000 pounds/year

**\*KEYWORDS**

NC83  
North Carolina  
1983  
Agriculture

Food Processing, Food Quality, Food Storage,  
Poultry, Food Products  
Processors, Farmers, Blacks, American Indians  
Workshops, Demonstrations

**\*QUANTIFIED IMPACTS**

Skills learned	8 (260 people)
- Yields increased	to 1%
Food preserved:- Shelf life increased	to 3 days



\*TITLE

NC84            Production and Use of Yellow Poplar Framing Lumber in North Carolina

\*TEXT

In North Carolina less than one-third of the total growth of 508 million board feet of yellow poplar sawtimber is presently being utilized. New products and other wood species are now being used in the traditional markets once held by yellow poplar. The production and use of yellow poplar as a structural building material offers promise as a way to increase both its value and use for landowners and sawmill owners. The use of this commodity also has the potential for reducing the cost of building construction for home builders and should ultimately lower the cost for home buyers.

Extension Wood Products at North Carolina State University has initiated a program in cooperation with other state and federal agencies, the N. C. sawmill industry, lumber grading agencies, lumber trade associations, the N. C. Home Builders Association and the N. C. Building Code Inspectors to demonstrate the feasibility of producing, marketing and utilizing yellow poplar as a building material in construction. Case studies at three mills have demonstrated the economic and technical feasibility of producing yellow poplar framing. Two of these mills are now ready to supply poplar for home construction at a price 5 percent below the cost of competitive materials. A publication for builders and suppliers on using yellow poplar has been completed. Two builders are now preparing to build demonstration houses. It is anticipated that, if the housing market remains strong, several additional mills will produce poplar framing in the next 12 months as builder demand develops.

This project is partially funded with Renewable Resources Extension Act money.

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**\*KEYWORDS**

NC84  
North Carolina  
1983  
Natural Resources

Wood Utilization, Marketing

Yellow Poplar Framing

Sawmill operators, building material suppliers, builders

Demonstrations, workshops, publications, slide tapes,  
newspapers

**\*QUANTIFIED IMPACTS**

Facilities established

2

Lumber prices reduced

5 percent

**\*STAFF YRS. EXPANDED**

Prof  
1

**\*EST PROGRAM COSTS**

\$40,000

\*TITLE

NC85 North Carolina Forest Management Demonstration Program

\*TEXT

Demonstrations are an integral part of successful Extension programs. In North Carolina, Extension Forestry Specialists establish in cooperation with county agents an average of 30 short and long-term forestry and wildlife management demonstrations per year. Maintenance, evaluation and documentation of these demonstrations have suffered due to lack of a demonstration information retrieval system, higher priorities for specialist time, and no technician support. The Renewable Resources Extension Act has provided funding for the addition of a forest resources technician whose main responsibility is the establishment, documentation, and maintenance of demonstrations.

An initial project was the development of a microcomputer information retrieval system. "DEMO AREA" is designed to store data pertaining to demonstration areas and sort the data by county, species, demonstration type, treatment, date installed, date next check due, date demonstration ends, and plot number. A use guide for the program has been developed and is available. The technician has assisted in the establishment, maintenance and documentation of 35 demonstrations statewide.

The demonstrations are used by agents for landowner tours and other educational programs. They also provide data for use by the specialists. Impacts of the expanded demonstration program are higher visibility of sound forest management practices and increased awareness of those practices by private woodlot owners. Technician support has strengthened the demonstration program and given specialists additional time to develop other programs, publications and projects.

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**\*KEYWORDS**

NC85  
North Carolina  
1983  
Natural Resources

Forest Management

Timber, Wildlife Management

Private Landowners, Forest Landowners

Demonstrations, Microcomputers

Measurable Impacts

**\*QUANTIFIED IMPACTS**

Acres impacted

1 million

\*TITLE

NC86 Continuing Forestry Education in North Carolina

\*TEXT

Feedback from industrial, agency and private forester groups in North Carolina emphasize a need for Continuing Forestry Education (CFE) in the areas of forest resource management. CFE programs are non-college credit courses which update clientele on state of the art techniques and innovative ideas. Such a program has commenced through the coordination of the Extension Forest Resources Department. Clientele to date include the N. C. Division of Forest Resources, N. C. Society of Consultant Foresters, N. C. Wildlife Resources Commission, Soil Conservation Service, and industrial foresters. Program topics have included forest economics, taxation, pine and hardwood management, technical writing, microcomputer use, wildlife/multiple use management, erosion control and others. Program topics have been in response to clientele demand. Course instructors are drawn from numerous sources including but not limited to the various agencies, industries, School of Forest Resources, and Extension Forest Resources Department.

Expected impacts include better service to private nonindustrial woodlot owners and increased acreage under sound multiple use forest management. Application of best management practices will increase timber and dollar yield providing added incentive for timber management by woodlot owners.

The CFE program is a low cost/high benefit program and will continue. Future programs will continue to be based on clientele requests.

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**\*KEYWORDS**

NC86  
North Carolina  
1983  
Natural Resources

Forest Management, Wildlife Management

Timber, Wildlife

Organizations

Workshops, Tours, Computers, Demonstrations

**\*QUANTIFIED IMPACTS**

Acres Impacted 600,000

Professionals Trained 300

\*TITLE

NC87      Improving Christmas Tree Quality in North Carolina through  
            Multi-County Winter Meetings

\*TEXT

In the late 1970's, Christmas tree plantings in North Carolina expanded approximately four times, growers increased from 600 to 1200, and the number of counties involved went from 15 to 45. Production traditionally centered in a few western counties spread throughout the mountains and across the state. One state-level winter meeting organized by the specialist staff and the growers' association was only reaching approximately 10% of the growers. Agents discovered they had a new, highly technical and unfamiliar commodity to be grown in their county. Specialists could not support all 45 counties with individual meetings.

To cope with this dilemma, five areas throughout the state were picked and host county agents designated as meeting coordinators. They communicate with other agents in the areas as to program needs. Each county has grower input. The host county agents have a grower/agency/association planning committee which prioritizes problems and makes local meeting arrangements. The state specialist staff communicates ideas and resources available to meet program needs.

The net result is a series of winter meetings structured to meet local and area needs involving University Extension and Research, Forest Service, industry leadership and other appropriate agency personnel to convey the latest production and marketing information. Through "grass roots" planning and execution, the workshops have continued to improve relationships between old and new growers, growers and the university, and the total industry. Attendance in the last five years has increased from 330 to 650, which accounts for approximately 50% of the serious growers and 90% of the production. Growers are surveyed annually at these meetings to determine base data and practices being followed. Improved tree quality has occurred mainly through growers adopting graded seedlings, fertilization, pest management and weed control practices.

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**\*KEYWORDS**

NC87

North Carolina

1983

Agriculture & Natural Resources

Christmas trees

Fertilization use, harvesting management, marketing, pest management, weed control

Farmers

Workshops

**\*QUANTIFIED IMPACTS**

Practices changed 50 percent

Acres impacted 22,500

Farmers participated 650

Income increased \$6,300,000



\*TITLE

NC88            Minimizing Aquatic Weed Problems in North Carolina

\*TEXT

Discovery of hydrilla in North Carolina focused attention on aquatic weeds and the problems they cause for agriculture, industry, and recreation. The North Carolina Aquatic Plant Management Council (NCAPMC) was created in 1982 principally to respond to the hydrilla threat. This past year, on advice provided by Extension personnel and professional biologists in state government, the Council broadened its purview to include other aquatic plant problems adversely impacting North Carolina's economy.

Approximately 200 man-hours of Extension staff time was devoted to advising NCAPMC, design and lay-out of three posters on aquatic weed control, and the design of a hydrilla alert pamphlet which was sent to 2,000,000 Carolina Power and Light Company customers with their electric bills. Additional time was spent assembling aquatic weed educational materials and using them in farm pond seminars, weed control workshops, and 4-H field days.

The feared spread of hydrilla from infested sites in Wake County to two newly completed reservoirs did not occur in 1983. Hydrilla, other aquatic weed problems, and the means by which aquatic weeds are spread have become familiar to North Carolinians. Two-thirds of senior 4-H members quizzed at camp knew of hydrilla while fewer than 5% could name another submersed species. Increased public awareness and concern resulted this past year in a \$10,000 70/30 matching grant from the U. S. Army Corps of Engineers to the State of North Carolina for aquatic weed (hydrilla) control. That money was used to substantially reduce hydrilla infestation in three public lakes in Umstead State Park near Raleigh. The efficacy of the control measures used is being studied as a part of on-going research.

Growing awareness of aquatic plant impacts among professional water managers and the general public is providing early detection of problems. This allows intelligent planning of management strategies leading to efficient, economical and environmentally safe control. The reduction of hydrilla infestations in the Umstead Park system has reduced the likelihood that these lakes will act as a source of plants to infest nearby water bodies.

\*CONTACT

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**\*KEYWORDS**

NC88  
North Carolina  
1983  
Natural Resources

Water Management, Interagency Coordination, Aquatic Weed Management  
Fish Management, Recreation

State Government, County Agents, General Public

Meetings, Newspapers, Posters

Measures of Impacts Results

**\*QUANTIFIED IMPACTS**

Education Program Established

Dr. D. L. DeHoff, Director, Fisheries Research  
North Carolina  
N. C. State University  
Raleigh, NC 27607  
919-737-1111

\*TITLE

NC89 North Carolina Animal Damage Control Manual

\*TEXT

County Agents in North Carolina have received an increasing number of calls concerning animal damage control (ADC) problems in the past several years. This was reflected in the county plans of work. More than 30% of the counties mentioned the need for more information on ADC. A survey was conducted of selected county agents, N. C. Wildlife Resources Commission personnel, U. S. Fish and Wildlife State Supervisors, and Extension Wildlife specialists in the region to determine which animals were considered major problems in North Carolina and the surrounding states.

A list of 20 problem animals was compiled, and the available information on control of those animals was collected. It is being used to develop an ADC manual. This is a cooperative effort between the USFWS and the N. C. Agricultural Extension Service. The project is being funded through the Renewable Resources Fund.

We plan to provide a manual for every county office and will send copies to state wildlife agencies, Extension Wildlife Specialists, and to state supervisors with the USFWS in North Carolina and surrounding states. In addition we will print extra copies to use as individual handouts. The manual will be reviewed by county agents, NCWRC personnel, State Wildlife Specialists, and USFWS personnel.

The manual will be in loose leaf format, and each section will be illustrated and available for separate distribution. As new information sheets are developed, they will be sent to users of the manual. The expected completion date of this manual is June 1984.

\*CONTACT

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**\*KEYWORDS**

NC89  
North Carolina  
1983  
Natural Resources

Animal Damage Control

Wildlife Management, Animal Damage Control

County Agents, Landowners

Loose-leaf Manual

**\*QUANTIFIED IMPACTS**

Animal Damage Reduced

500 Manuals

Knowledge Gained

1000 Copies Printed

\*TITLE

NC90           Threatened and Endangered Species Conservation in North Carolina

\*TEXT

In response to a need for information concerning endangered and threatened wildlife species, the N. C. Agricultural Extension Service and the U. S. Fish and Wildlife Service in 1980 jointly published a book entitled ENDANGERED AND THREATENED WILDLIFE OF KENTUCKY, NORTH CAROLINA, SOUTH CAROLINA, AND TENNESSEE. The book was distributed to all county Extension offices, public school libraries and to many individuals who learned of it through news releases or in publications such as the N. C. Wildlife Resources Commission's magazine, WILDLIFE IN NORTH CAROLINA. The book proved to be so popular that it was reprinted in 1981. More than 7,000 copies have been distributed in North Carolina to date.

In an effort to evaluate the use and value of this publication, the USFWS requested that the N. C. Agricultural Extension Service conduct a survey of the users. The first portion of this survey, a questionnaire survey of people who called or wrote requesting the book, has been completed.

A 10% sample of persons requesting the book was randomly selected and asked to respond to a mailed questionnaire. Questionnaires were sent to 458 individuals and 225 usable returns were obtained, a 49% return. A summary of these returns indicated a very positive use of the publication. Of those responding, more than 50% reported that they used the book repeatedly. Close to 90% of the users shared the book with others and almost half indicated that they would be willing to pay up to \$2 for the publication. (It was distributed at no cost to the user.) The book was used at all educational levels and meets a definite user need.

Surveys of use of the book by Extension offices and school libraries in North Carolina are currently underway.

\*CONTACT

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\*TITLE

**\*KEYWORDS**

NC90  
 North Carolina  
 1983  
 Agriculture and Natural Resources

Wildlife Management

Adults, Adolescents, Teachers, Landowners

Publication and distribution of book, follow-up  
 questionnaire survey of users

**\*QUANTIFIED IMPACTS**

People informed Approximately 12,000

\*CONTACT

Robert D. Havel  
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 N. C. State University  
 Box 26081 Raleigh, NC 27610  
 919-737-1188

\*TITLE

NC91      Corn Harvesting, Drying and Storage in North Carolina

\*TEXT

Aflatoxin is a major problem in corn in the Southeast. Improper drying and storage have long been known to promote the development of aflatoxin. It can also occur in the field prior to harvest.

The second year of a three-year on-farm study was conducted to evaluate farm drying and storage conditions on the production of aflatoxin. Eighteen grain bins in five counties were involved in this second-year study.

The corn was sampled at harvest and once a month during the study period. The sample was drawn by inserting a vacuum tube through the entire depth of corn in the center of the bin and approximately 2 feet from the sidewall.

The cooperators agreed to follow Extension's drying and storage recommendations. No significant aflatoxin developed this year during drying and storage in the test bins. The on-going educational program to promote proper drying and storage was also carried out. A bulletin was reprinted on reducing aflatoxin during storage.

This study shows that corn can be stored on the farm if good management is carried out. The educational program needs to be continued to promote proper farm storage.

The on-farm test is to be continued for another year.

\*CONTACT

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\*TITLE

NC91

\*TEXT

**\*KEYWORDS**

NC91  
North Carolina  
1983  
Agriculture

Corn, harvesting, crop drying

Corn storage

Farmers

Demonstrations

**\*QUANTIFIED IMPACTS**

Marketing improved

Health status

Quality maintained

Animal health improved with  
quality corn

\*STAFF YRS. EXPENDED

Prof  
.4

Para  
.2

\*CONTACT

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\*TITLE

NC92 Nematode Control in Field Corn in North Carolina

\*TEXT

Since the late 1960's, growers in North Carolina have had access to a Nematode Advisory Service. As part of this service, thresholds for the various genera of plant-parasitic nematodes damaging to field corn have been devised. However, they are revised occasionally as new data become available. An on-farm testing program was begun in northeastern North Carolina in 1981 to further elucidate the importance of the lance nematode in corn production. The cooperating grower was following a soybean, wheat, corn rotation. The lance nematode population was very high (over 1,000/500 cc<sup>3</sup> of soil). The data obtained in 1981 and 1982 indicated that the nematicides (both fumigants and granular nematicides were used) were not contributing to a yield increase. Some of the materials used (Furadan and Counter) are also insecticides, but the control plots yielded as much as the treated plots, indicating that in such a rotational sequence insects were also not a serious problem. Thus, the cooperating grower eliminated insecticides and nematicides from his production program in 1983. This resulted in a savings of approximately \$20,000. The thresholds for the lance nematode were also revised upwards which will result in fewer growers treating for this nematode (3,323 samples were assayed for corn production in 1982 with approximately 10% infested with the lance nematode). Since each nematode sample represents five acres, this program could result in the growers treating approximately 2,000 acres less than they would normally treat with a savings of approximately \$50,000. There will also be less pesticides released into the environment.

\*CONTACT

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**\*KEYWORDS:**

NC92  
North Carolina  
1983  
Agriculture

Nematode Control

Field Corn

Corn Producers

On-Farm Tests; Assays

**Monetary Impacts Results**

**\*QUANTIFIED IMPACTS**

Money saved **\$50,000**

Pesticides saved **28,000 pounds**

Producers involved **3,323**

Dr. Harry E. Dunham, Nematologist in Charge  
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M. O. Box 2611  
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\*TITLE

NC93 Water Management in North Carolina

\*TEXT

Water management, either too much or too little water, affects most of North Carolina and the two extremes often occur on the same area in one year.

The water management program in North Carolina is directed mainly toward helping growers select and use systems that are well designed from the standpoint of crop production and are efficient from the standpoint of energy, water and labor consumption. The program includes training of county Extension agents and vendors of irrigation equipment, preparation of study materials, presentations at commodity meetings and consultations with individual growers.

During the past year visits were made to 36 counties, 22 talks on water management were presented to a total audience of 1290 people, and more than 80 individual growers were assisted. In addition, chapters were prepared for a textbook and for two commodity manuals, and articles were written for two newsletters. A detailed bulletin on trickle irrigation was written. A two-day irrigation conference was attended by more than 130 people. Three one-day water management workshops were presented to approximately 125 county Extension personnel and SCS personnel in eastern North Carolina, and involved both Research and Extension.

During the early part of the year the major interest was nursery and ornamental irrigation. Extended cold weather in the spring created interest in sprinkler irrigation for frost and freeze protection and application of pesticides. The driest summer in 30 years saw irrigation add 90 to 100 million dollars to the gross irrigation of N.C. growers.

The purchase and use of low pressure center pivots and linear machines and the use of drip irrigation is reducing energy consumption for operation by 50 to 60 percent and labor consumption by several man-hours per acre. Soil moisture measuring devices are refining irrigation scheduling practices and providing savings in water and also increasing net revenue. Sub-irrigation, which is in its infancy, offers the potential to reduce energy consumption for irrigation on several hundred thousand acres and also provide 25 to 30 percent better drainage on these same acres, thereby increasing net revenues.

The water management program is an on-going multi-faceted program with emphasis on total water management.

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**\*KEYWORDS**

NC93  
North Carolina  
1983  
Agriculture

Water management, irrigation

Crop production, crop protection, horticulture energy conservation, water conservation  
Distributors, farmers, organizations, county agricultural agents, state and federal agencies  
Publications, radio, workshops, personal contact, conferences

**\*QUANTIFIED IMPACTS**

Attitudes changed

100 growers using soil moisture meters

Irrigation improved

44,000 man-hours of labor saved

Knowledge gained

80 growers assisted, 1290 persons attended meetings

Productivity improved

Between 30 and 40 million dollar net income

1-800-777-2878  
V. M. Green University  
1-800-777-2878, Raleigh, NC 27608

**\*TITLE**

NC94            On-Farm Energy Audits for Tobacco, Swine and Poultry in North Carolina

**\*TEXT**

An energy audit program for tobacco, swine and poultry was started three years ago by the N. C. Agricultural Extension Service. Initiated from a North Carolina Energy Division Grant and later assisted by a North Carolina Alternative Energy Corporation Grant, the on-farm audit program has enjoyed tremendous success and popularity.

Basic audit procedures were developed and used to analyze potential energy savings for tobacco barns and swine and poultry structures. Information on most cost effective insulation retrofits, improved ventilation, and overall management strategies are given back to farmers with emphasis on no and low cost ideas. Maintaining or improving productivity while saving energy is stressed. The total client contract relating to this three-year grant totals over 700,000 people.

Over the last year 204 tobacco audits on 961 bulk barns were performed. This brings the total tobacco audits to 499 or 2,478 bulk barns. The average predicted savings has been around \$222 per barn per year, or a three-year total of about \$550,000 (based on one-year estimates per barn). This amounts to 675,000 gallons of LP gas equivalent. Fifty-two counties have received tobacco energy audits overall, with about 65 agents receiving training.

The swine audit format was completed this year and made available to counties. Thirty-five swine audits were done this year in 16 counties. The energy savings for swine facilities that need added insulation have been estimated at around \$1,400 per farm per year. The total predicted savings thus far is around \$16,000, or about 20,500 gallons of LP gas equivalent. Twenty swine agents have received training thus far.

The poultry audit is now being made available to counties. No predicted savings can be made at present.

**\*CONTACT**

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**\*KEYWORDS**

NC94  
North Carolina  
1983  
Agriculture

Energy in Agriculture

Tobacco, Poultry, Swine, Greenhouse, Grain

Farmers, Extension Professionals, Utilities, Government  
Organizations  
County Agent Training, Literature, County Meetings

**\*QUANTIFIED IMPACTS**

Fuel savings (3 years)	755,000 LP gas equivalent
Dollar savings (3 years)	\$566,000
Personal contacts (3 years)	15,000
Other client contacts	685,000
On-farm energy audits	534
Energy demonstrations	41

**\*STAFF YRS. EXPENDED**

Prof	Para
3	4

**\*EST PROGRAM COSTS**

\$165,000  
grant monies

\*TITLE

NC95 North Carolina Housing Cost Reduction: Construction and Energy

\*TEXT

Study of construction techniques and development of recommendations to reduce construction costs while maintaining the energy integrity of new home construction has been underway. This work has resulted in the addition of a publication to the "Home Energy" Series and a list of some 30 general recommendations for new residential construction.

A stronger cooperative link to the Housing and House Furnishing Department is enhancing consumer education as to what to expect from the home building industry and what is and is not beneficial in reducing energy consumption in a home.

During the year efforts to better equip county agents in the areas of residential construction and energy conservation were made. Over 50 agents were given a one-day program on construction techniques and/or energy conservation measures. Over 50 builders were taught cost and energy saving techniques at the Home Builders Institute. Seven construction related articles appeared in ROOF LINES, the state-wide newsletter of the N. C. Home Builders Association. Fifty people attended a one-day seminar on conserving home energy. Recommendations were made for energy conservation and renovation of one demonstration house and one county office building.

The goal is to hold the total home energy consumption in North Carolina to its present level of 29 trillion BTU's/year while providing affordable housing to meet the demand. This would result in a savings of the projected 8% increase by 1985 which is equivalent to annual savings of about 2 trillion BTU's/year at that point in time. This equates to 684 million kwh of electricity or \$41,000,000 saved if all the energy was electricity at 6¢/kwh.

\*CONTACT

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\*KEYWORDS

NC95  
North Carolina  
1983  
Agriculture

Family Housing, Construction and Energy Cost Conservation

Homeowners and Home Builders

Educational Programs

\*QUANTIFIED IMPACTS:  
Energy Conservation

2 trillion BTU's/year saved

Family Housing

Affordable

\*STAFF YRS. EXPENDED

Prof. Para  
1

\*CONTACT

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Biological and Agricultural Engineering  
Extension Specialist



\*TITLE

NC96 Energy Conservation and the Substitution of Wood for Petroleum Fuel in Tobacco Curing in North Carolina

\*TEXT

Energy costs, in producing flue-cured tobacco, have increased by about ten-fold in recent years. Curing fuel constitutes the major energy requirement in flue-cured production. Fuel costs which were about \$45 per acre 10 years ago amount to about \$345 per acre today. At this rate, N.C. farmers spend slightly more than \$100 million annually for curing fuel.

Engineers and other curing specialists have known for many years that customary curing procedures were wasteful of energy. Only after the drastic price increases of recent years were inroads made in improving curing efficiency on the farm. Energy efficient curing demonstrations conducted throughout the flue-cured area for maximum visibility showed a potential for reducing North Carolina's tobacco curing fuel usage by nearly one half.

Farm-scale energy efficient curing tests were conducted by a full time Extension specialist (with \$40,000 supplemental funding from the N. C. Energy Division). Demonstrations on 62 farms established the potential fuel savings. Extension's educational program on energy efficient curing, rooted in the highly visible on-farm tests, has been well received and utilized by North Carolina's tobacco farmers, resulting in an approximate 40% reduction in fuel use. Energy audits, heat loss calculations, and farmer reports in a comprehensive state-wide survey have verified the benefits of this program.

The improved curing procedures established by this program should benefit farmers as they switch to alternate fuels such as wood for curing. Smaller and less expensive equipment is required with the energy efficient curing technique.

\*CONTACT

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**\*KEYWORDS**

NC96  
 North Carolina  
 1983  
 Agriculture  
 Curing Fuel  
 Tobacco  
 Tobacco Producers

**\*QUANTIFIED IMPACTS**

Curing fuel reduction 40% of \$100 million/year

Prof Para

**\*STAFF YRS. EXPENDED**

.5 1

**\*EST. PROGRAM COSTS**

\$40,000 grant funds

**\*CONTACT**

Robert W. Wiggins, Biological and Agricultural Engineering Department, R. C. State University, Box 2200, Raleigh, NC 27602  
 754-777-1612

\*TITLE

NC97 Microcomputers in Production Agriculture in North Carolina

\*TEXT

Use of microcomputers in the N. C. Agricultural Extension Service increased dramatically during FY 83. Computers were placed in 26 counties by the end of the year and two additional computers have been purchased for county use. With these, 46 of North Carolina's counties now have microcomputers. Approximately 30 new software programs and spreadsheet files with subject matter applications were developed and numerous existing programs were updated with new data or program enhancements for increased user friendliness.

Increased availability of computer hardware and software in Extension has resulted in increased demands for computer training. Training has been provided to numerous Extension groups ranging from the Administrative Council to county staffs (23). Approximately 300 Extension personnel have received microcomputer training.

Parallel with increased Extension use of microcomputers is use and interest by clientele. During FY 83 presentations on microcomputers were made in 16 counties and to 3 clientele groups on campus, contacting approximately 800 persons.

The dramatic increase in Extension and clientele use of microcomputers will continue for several years. Clientele will look to Extension to provide leadership in the initial decisions related to use of microcomputers and to their continuing use as the technology rapidly changes. To meet these demands there will be a need for the involvement of more of the existing Extension personnel. This will require acquisition of more microcomputer hardware for use by specialists and county personnel, additional programmer resources to develop applications of software in more of the subject matter areas, and most importantly, personnel resources to train Extension personnel who will either directly or indirectly serve the clientele.

\*CONTACT

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**\*KEYWORDS:**

NC97  
North Carolina  
1983  
Agriculture, Home Economics, Human Nutrition

Electronic Data Processing

Farmers, Homemakers, Extension Professionals

**\*QUANTIFIED IMPACTS**

- Farmers 800
- Improved management capability 20%
- Extension Professionals 300
- Improvements in educational delivery systems 10%

**CONTACT**

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919-111-1773

\*TITLE

NC98 North Carolina Agricultural Nonpoint Source Pollution Control Program

\*TEXT

The N. C. Agricultural Nonpoint Source (NPS) educational program is creating greater awareness and understanding about agricultural 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.

One-time special Smith-Lever funding of \$28,871 supports a full-time Extension Specialist who coordinates the statewide educational program for the N. C. Agricultural Task Force. Funding totalling \$4,774 from the UNC Water Resources Research Institute also provides support to continue a pair of demonstration farms where quantification of BMP effectiveness in reducing NPS losses is being conducted.

Research results from the farms show annual per acre reductions of 50% for water runoff, 80% for nitrogen and phosphorus and 99% for sediment loss from the farm utilizing BMPs compared to a nearby farm without BMP's. In addition, production of grain at the farm utilizing BMP's ranges from two to three times greater than the county average while production costs have been reduced. For example, improved fertilizer and waste management reduced fertilizer costs by \$100 per acre during 1982 as compared to 1981.

An informative slide program on these results was presented to 1600 people during the last year. Groups ranged from soil and water districts to agribusiness groups. Mass media dissemination on the results was conducted with local newspaper articles, two regional and two national articles being written reaching over an estimated 250,000 individuals. TV news coverage of the farms during the last year was also viewed by an estimated audience of 600,000. A NPS display was prepared during the past year and was utilized at a number of meetings and the N. C. State Fair with an estimated 75,000 people being made aware of the NPS program.

Two demonstration farms were established during 1982 to enhance the educational program by increasing the available information on BMP cost effectiveness. Work is continuing on establishing additional demonstration farms across North Carolina.

\*CONTACT

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**\*KEYWORDS**

NC98  
North Carolina  
1983  
Agriculture

Fertilizer Use, Conservation, Soil Management, Livestock,  
Multiagency Cooperation, Minimum Tillage, Watershed Mgt.

State Government, County Agents, Crop Producers,  
Livestock Producers  
Demonstrations, Meetings, Mass Media, Displays

**\*QUANTIFIED IMPACTS:**

Awareness created  
Fertilizer use reduced  
Soil erosion reduced  
Multiagency cooperation

925,000 people  
\$100/acre  
99% over unprotected land  
Extension, SCS, SWCP

Water quality improved

80% reduction in pollutant loss  
Average 3 times higher than  
county average

Yields per acre increased

**\*STAFF YRS. EXPENDED**

Prof      Para  
1

**\*EST. PROGRAM COSTS**

\$33,645

\*TITLE

NC100 Expansion and Diversity of North Carolina Seafood Processing

\*TEXT

Most North Carolina seafoods are shipped out of North Carolina as fresh. The goal of this program is to increase the amount of seafood that is processed or further processed within the state prior to shipping out of the state. This program is concentrated in 20 coastal counties, but has included work in inland counties.

Planning and designing processing plants by using latest technologies that are available and will work into the operation size. Plant designs and layouts are developed by direct contact with the client so that the whole plan is worked into what will best suit his needs. The major thrust of this program is toward seafood dealers and processors with interest in expanding or diversifying.

In the past year ten plants were designated and processes developed. Three of these plans have been carried through to final stages and are operating presently. The processing expansions were at a cost of \$1,000,000 and has created new employment with annual wages of over \$300,000 and over 1,000,000 pounds of additional processing. These figures are estimated by using the capacity of the expansion, the number of employees added and contract cost.

This program is continuing and will work with six clients this year on new processing plant plans. These plans will be for further processing of North Carolina seafood.

\*CONTACT

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**\*KEYWORDS**

Number: NC100  
Title: North Carolina  
Year: 1983  
Project: Seafood Processing - CRD  
Subject: Further Processing of NC Seafood-Economic Development  
Community Impact: Food processing, food storage, food safety, seafood processing  
Audience: Seafood processors  
Methods: Teleconferences, demonstrations, publications

**\*QUANTIFIED IMPACTS**

Facilities established	12 plants
Facilities and services improved	25% to 100%



\*TITLE

NC101 Business Management for North Carolina Fishermen

\*TEXT

The continuing business management program for fishermen and seafood handlers has, since the early 1980's, emphasized financial and tax management principles, issues, and agent training. This past year, informal agent delivery of tax materials and ideas was tried in an effort to reach more fishermen. As meetings are difficult for fisherman to attend, the change in delivery technique represented an attempt to meet with fishermen when and where convenient for them. Many topics were also discussed in agent newsletters which have commercial fisherman as a major audience.

Agents were pleased with these delivery techniques and will continue them this year. In addition, supporting materials are being prepared on seasonality, quantities, etc., of major N.C. fish species. These are to help agents meet demand for the information from potential investors in seafood processing as well as public meetings in which the fishing industry is discussed.

Future work will include a national cataloging of financial management programs for fishermen. Plans are to make program packages available to marine agents nationwide. This assembling and packaging of programs will make more materials available to agents and reduce time involved by agents and specialists in developing programs independently around the country. Alternatives for sharing in-service training materials (and personnel) will also be discussed by the national committee charged with this task.

\*CONTACT

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(919) 737-2885



\*TITLE

NC102 North Carolina Food Service Manager's Training

\*TEXT

The food service industry is the fourth largest in the United States comprising over half a million establishments. In North Carolina alone, it is estimated that over a quarter million handlers are employed in these establishments. This industry and many regulatory agencies have intensified efforts in recent years to improve food protection through sanitation training programs.

Despite considerable progress in training, foodborne illness continues to be a public health problem. Food Science Extension has initiated a cooperative program through county CRD agents with the State Department of Human Resources and the County Health Department to train managers of the 25,000 food service establishments. The program follows guidelines for the uniform training recommended by FDA and accepted for reciprocal certification nationwide. The course, designed for management personnel, provides managers with proper background, access to training aids and instructions for instituting protection training and programs in their own facilities. Groups of 25 managers are trained on a county by county basis.

Future plans are to provide county extension and county health personnel with instruction training aids and materials so the programs can be semi-annual events conducted fully with county resources.

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**\*KEYWORDS**

NC102  
North Carolina  
1983  
Community and Rural Development  
Leadership development  
Food safety  
Foodservice  
Workshops

**\*QUANTIFIED IMPACTS**

Facilities and services improved	50 facilities
Leadership skills improved	150

**\*VOLUNTEER HOURS**

**\*VOLUNTEER DOLLAR VALUE**

**\*STAFF YRS. EXPENDED**

Prof	Para
.2	

**\*EST. PROGRAM COSTS**

\$6,000

\*TITLE

NC103

The North Carolina National Evaluation of Agricultural  
Nonpoint Source Control Projects

\*TEXT

This joint USDA-EPA project is part of the experimental Rural Clean Water Program. Its objective is to evaluate targeted voluntary programs to reduce agricultural nonpoint source (ANS) pollution.

The North Carolina project concentrates on evaluating the water quality impact of Best Management Practices (BMP) implementation and examines the efficacy of targeting financial incentive, technical assistance, and information and education programs to critical water quality areas.

Resources for this study include data from 21 RCWP projects located in 12 major land resource regions of the country. Five of these RCWP projects have intensive monitoring efforts to identify cause-effect ANS relationships. Data from related EPA and USDA projects are also available for use toward project objectives. These related projects include EPA-208 and 108 studies, the EPA-Chesapeake Bay Program, and the USDA ACP-Special Water Quality projects and Model Implementation Program (MIP).

Agricultural practices and BMPs considered in this study are representative of farming nationwide. Water pollutants include bacteria, plant nutrients, sediment, and pesticides. Project outputs consist of information and analytic procedures for comparing water quality between projects, evaluating land management programs and alternative BMPs. Information for proper analysis of cost and benefits will be developed in this project.

Outputs to date include: a Conceptual Framework for assessing projects, Guidelines for water quality monitoring, State-of-the-Art reviews of BMPs and RCWP has been examined in light of recommendations for completed water quality projects.

This work is supported by Cooperative Agreement involving EPA, ASCS, SCS, and CES. Support is provided to the extent of \$530,000 for the period 6/30/83 to 9/30/87. Effort involves four Extension Specialists, an SCS detail, and a secretary.

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IV. 23 Accomplishment Report

Keywords are a list of words or phrases that describe the project. They are used to help find the project in the database. In addition, they are used to help find related projects. The keywords should be listed in the order of importance.

**\*KEYWORDS:**

Contract No. NC103  
 State North Carolina  
 Fiscal Year 1983  
 Program Number Natural Resources  
 Subject Matter Area Watershed management, fertilizer use, soil management  
 Community Subject Rural clean water program, water resource impairment, critical area, targeting  
 Audience USDA officials, extension specialists, farmers  
 Method Publications, newsletters, workshops, computers

**\*QUANTIFIED IMPACTS**

Water quality improved 40 percent reduction in primary NPS pollutants from agriculture

**\*VOLUNTEER HOURS**

**\*VOLUNTEER DOLLAR VALUE**

<b>*STAFF YRS. EXPENDED</b>	PROF	PARA
	4.2	

**\*EST. PROGRAM COSTS**

\*TITLE

NC104 Utilizing Soil Survey Information - North Carolina

\*TEXT

Promoting the understanding and proper use of soil survey information in land planning and management is a major part of Extension's role in the Cooperative Soil Survey Program. Proper knowledge of soil resource limitations and capabilities affect environmental quality as well as land productivity. Workshops and preparation of educational materials to increase the use of soil information in cooperation with the Soil Conservation Service and other agencies is continuing program effort. This program is directed to both rural and urban clientele and involves a variety of land uses.

The major emphasis this year was on utilizing soil survey information in evaluating land for application of sludge and wastewater. A series of workshops were presented for treatment plant operators, regulatory personnel and engineers on land application of wastes. As part of this effort the role of soil characteristics was stressed and the utility of soil survey data was emphasized. This effort involved the cooperation of three university departments as well as state and county agencies.

Major benefits should include improved efficiency and utilization of the nutrient value of wastes on agricultural land and greater protection of water quality through proper waste disposal. Utilization of residuals as resources rather than wastes has the potential for benefiting not only the generator but those who can utilize the resource and all who benefit from improved environmental quality.

Proper design of land application systems through the use of soil survey data will continue. As the amounts and diversity of waste materials increase the importance of soil knowledge in evaluating lands for application will also increase.

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**\*KEYWORDS**

NC104  
North Carolina  
1983  
Natural Resources Community and Rural Development

Soil, Land Use

Waste Disposal

Landowners, public officials, industries

Publications, workshops

**\*QUANTIFIED IMPACTS:**

Facilities improved	15
Water quality improved	15% improved quality
Public officials trained	150



\*TITLE

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

\*TEXT

The North Carolina Agricultural Extension Service's Waste Management Program provided training in design, site evaluation, and plan review of on-site waste disposal systems. Training is available for state regulatory personnel and for sanitarians, home builders, and other professional audiences. Training program content included soil evaluation and design criteria related to municipal, agricultural, industrial, and individual on-site waste systems.

The program has involved four specialists with a total professional staff time of one man year. Experiment Station personnel from the Soil Science Department were involved in the design and evaluation of demonstration projects used in workshops. The local and/or state agencies provided sites and facilities for conducting the program. Within the past 16 months the program has been without specialist leadership.

Recently, 11 workshops of classroom and hands-on work were conducted, drawing 250 persons from 66 counties and eight state and federal agencies. Most of the state's health departments have now accepted and use guidelines permitting use of alternative technologies. The State of North Carolina adopted new regulations in July 1983. Last year, millions of dollars worth of development has occurred through the use of this technology.

Demand has increased such that private consulting firms are now established dealing with all phases of the work. All Atlantic Coast states have inquired or sent personnel to view work.

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**\*KEYWORDS**

NC105  
North Carolina  
1983  
Community and Rural Development

On-site waste disposal system development  
Improved environment, reduction in failing systems

Home owners, developers

Workshops, demonstrations

**Measurable Impacts/Results**

**\*QUANTIFIED IMPACTS**

Improved environment      250 development officials  
trained

\*TITLE

NC106 Leadership Development in North Carolina

\*TEXT

Solving organizational and community problems requires citizens who are skilled in human relations and group dynamics and knowledgeable about organizational management. During FY83 the North Carolina Agricultural Extension Service continued its efforts, initiated in FY82, to provide interested citizens with knowledge and skills that would enhance their leadership roles in organizations and communities.

A series of workshops were held in 10 counties. Each workshop involved 6-8 contact hours with the target audience over a three-week period. The workshop focused on leadership styles, communication skills, group skills and meeting management skills. Teaching techniques included slide/tape presentations, discussions and exercises to practice newly acquired skills.

Each workshop involved local Extension personnel in planning and coordination. State subject matter specialists were involved in development of program materials and instruction. Local leaders in some counties also provided instructional support.

A total of 265 citizens representing Extension-sponsored organizations, community service organizations, agencies and local governments improved their leadership skills through participation in the workshops.

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**\*KEYWORDS**

NC106  
North Carolina  
1983  
Community and Rural Development

Citizenship

Citizen participation

Community and organizational leaders

Workshops

**\*QUANTIFIED IMPACTS**

Leadership skills improved

265 participants

\*TITLE

NC107 Land-Use Planning in North Carolina

\*TEXT

Land-use planning is a major public policy issue in North Carolina and continues to be of interest and concern. There is great need for information whereby citizens can evaluate the issues involved. The program is conducted statewide and emphasizes educational awareness of land-use planning problems and alternative solutions. The focus is on rural areas, especially right-to-farm issues, land conversion, farmland preservation and the land market generally.

Slide-tape sets and publications have been made available and were revised to reflect recent trends, current results of studies, such as the National Agricultural Lands Study, and the 1980 Census of Population.

Consultation with county Extension personnel was practiced upon request, and workshops and public meetings were held. There was extensive cooperation among economists, soil scientists and sociologists.

Land-use educational programs were advanced in several counties through working with county-elected officials, appointed officials and local interest groups. Citizens have become more aware of the problems and issues related to land-use planning. New groups have become involved in Extension education programs and Extension serves in many capacities to further discussion of land-use problems and alternative solutions. Use of prepared educational materials is extensive. Statewide there is increased appreciation for the need to involve the public when land-use is discussed.

Land-use planning is a controversial topic and, in some areas, cannot be discussed without raising emotional responses. Preliminary educational work is reducing the number of these occurrences, thus allowing for more open discussion of the issues in counties which have not had such programs in the past.

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**\*KEYWORDS**

NC107  
North Carolina  
1983  
Agriculture, CRD

Land-Use Planning

Land Use

Farmers, Leaders, Elected and Appointed Officials

Slide Tapes, Newsletters, Publications, Workshops

**\*QUANTIFIED IMPACTS**

Increased understanding 900  
Increased involvement in decision-making 30 counties  
Improved decision-making 30 counties

\*TITLE

NC108 North Carolina Farmland Market

\*TEXT

The focus of the program during the reporting period was to continue disseminating information regarding the farmland market and to further analyze and explain the causal factors associated with the price level of farmland sold. Results were incorporated in publications and presentations related to land-use planning and land development.

Computerization and analysis of sales data was supported by the North Carolina Agricultural Research Service.

There is a better understanding of the North Carolina farmland market and the development factors that cause farmland prices to rise.

Results expected in the near future will provide estimates of the demand for characteristics of farmland such as location, soil productivity and nearness to housing or water and sewer facilities.

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**\*KEYWORDS**

NC108  
North Carolina  
1983  
Agriculture, CRD

Land Market

Land Use

Farmers, Leaders, Officials, Planners

Newsletters, Publications, Workshops

**\*QUANTIFIED IMPACTS**

Improved understanding

900



\*TITLE

NC109 Social and Demographic Data for Program Development and Evaluation in North Carolina

\*TEXT

Most urban, rural and small-town organizations in North Carolina, as well as county Extension Services, have little or no easily-accessible demographic information on which to base necessary program decisions, nor do they have the skills to utilize these data.

Extension and other program planners and evaluators need information of this kind to better focus program efforts and gauge results.

A computerized model for storing these data, rapidly generating appropriate tables, and providing for data updates and changes has been developed for use by all 100 counties in North Carolina. Counties that do not have suitable hardware will be provided printouts from the state level. Although these models have not yet been distributed there have been some applications.

In the coming program year publications and other supporting materials will be developed along with appropriate in-service training for Extension agents and other relevant clientele groups.

\*CONTACT

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TITLE

NC109

TEXT

**\*KEYWORDS**

NC109  
North Carolina  
1983  
Community and Rural Development

Decisionmaking

Data use

Organizations, leaders

Computers, publications, newsletters

**\*QUANTIFIED IMPACTS**

Decisionmaking improved

100 counties provided data

32 counties provided additional  
information

Expanded use of data in county

POW's

CONTACT

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\*TITLE

NC110      Agricultural Drainage in Coastal North Carolina

\*TEXT

Land in coastal North Carolina often requires drainage to grow agricultural crops or to improve yields. However, the drainage project may not be economically feasible. Furthermore, there may be unmeasured environmental costs associated with removal of excess fresh water. This project attempts to estimate the economic incentive to drain poorly drained soils in the 20-county coastal region as a function of soil type, agricultural input and output 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), (2) the opportunity cost of foregoing drainage because of environmental regulations, and (3) the potential of environmental problems.

In cooperation with the SCS, techniques are being developed to utilize detailed soil surveys and the 1982 National Resource Inventory data as a means of analyzing drainage trends and drainage potential. Soils data are regrouped by soil productivity group rather than soil series which facilitates assessment of (1) the economics of wet soil drainage and (2) the potential for conversion of land from forests to agriculture. This information will be useful to farmers and resource managers in North Carolina's coastal region where large acreages are available for possible conversion.

Cooperators include the Soil Conservation Service and the N. C. Agricultural Research Service, the latter providing supplemental funding.

Research is underway. Data are computerized and undergoing analysis. Acreage by soil type/productivity/drainage potential group will be available for the entire coastal region. Improved resource use in the fragile and sensitive coastal region will result.

Analysis continues. Drainage costs and return data will be generated for each of the soil productivity group classes. Information will be disseminated to landowners, resource planners and others as it becomes available. Better decisions regarding the benefits and costs of draining poorly drained soils will result.

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**\*KEYWORDS**

NC110  
North Carolina  
1983  
Agriculture, Natural Resources, CRD  
Watershed Management, Crop Production, Land Reclamation  
Wetlands, Blacklands, Water Management, Land Use  
State Government, Crop Producers, Forest Landowners,  
private Landowners, County Agents, Farmers

**\*QUANTIFIED IMPACTS**

Information generated two publications  
Improved decision-making 75

\*TITLE

NC111 "Waterwatch" Water Conservation Program in North Carolina

\*TEXT

The Extension Water Conservation Program called "Waterwatch" is at the stage of providing continuous program support to those individual agents and communities throughout the state who have identified water conservation and wasteflow reduction as an area of program interest. Water conservation programs have been conducted throughout the state of North Carolina. The goal of the program continues to be the retrofit of high volume plumbing fixtures with lower volume fixtures and an awareness of the benefits of water conservation. The program does have statewide appeal and the primary clientele served has been the general adult population as well as the Extension 4-H clients.

The "Waterwatch" program continues to be popular throughout the state. Several agencies of state government including the water supply branch in the NCDNRCD and the NCDHR have addressed water conservation efforts.

This program is supported through the general extension budget. Additional support from the North Carolina Rural Water Association and the American Water Works Association in promoting water conservation has been very helpful. The implications of "Waterwatch" are far reaching. Substantial savings in both water and energy are easily realizable. The participants in the "Waterwatch" activities have saved between 12 and 20 dollars per month in their average utility bills. Recently a large metropolitan county has adopted a special water conservation effort for low income residents in the county. Water bills in several of the low income areas in the county ranged between 20 and 30 dollars per month. The projected savings which these individuals can achieve through "Waterwatch" range between 30 and 50 percent and this should extend the financial base of these low income residents substantially.

The "Waterwatch" program was developed by cooperative effort of Extension Specialists. Substantial input to the program derived from the Department of Biological & Agricultural Engineering, Housing and House Furnishings, and the Community Development Section at North Carolina State University.

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**\*KEYWORDS**

NC111  
North Carolina  
1983  
Community Development

Water Conservation

Awareness created, technology adopted, costs minimized

State and local government, county extension staff,  
general extension audience

**\*QUANTIFIED IMPACTS**

Awareness created	80 counties presented "Waterwatch" program
Technology adopted	Plumbing code modified statewide
Costs minimized	Potential \$180 savings per household per year

Prof      Para

\*STAFF YRS. EXPENDED      .5

\*TITLE

NC112 Mosquito Surveillance in the Coastal Plain of North Carolina

\*TEXT

The biting activity of mosquitoes has a detrimental effect on the quality of life for people who live in the Coastal Plain of North Carolina. Over 50 communities have formed mosquito control agencies to abate nuisance mosquitoes through chemical control and water management activities. These agencies are currently hampered by federal and state permit requirements for water management projects and a lack of resource personnel to provide training for mosquito control workers. In cooperation with and financial support from the N. C. Division of Health Services and the Duplin County Mosquito Control Office, the Extension Service initiated a 5-year demonstration project to collect information relevant to federal and state requirements so that a blanket permit can be issued for statewide water management activities. The project will also be used as a base for training activities. In two comprehensive training sessions, 70 community mosquito control workers received training in mosquito identification and hands-on experience in mosquito surveillance and maintenance of insecticidal spray equipment.

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**\*KEYWORDS**

NC112  
North Carolina  
1983  
Community and Rural Development

Pest management, facilities and service

Facilities and services improved

Public officials

Demonstrations, workshops

**\*QUANTIFIED IMPACTS**

Persons trained

70

\*TITLE

NC112

\*TEXT

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\*TITLE

NC113

Wastewater Treatment for Individuals in Small Communities  
in North Carolina

\*TEXT

The NCAES has been promoting the development of appropriate wastewater treatment technologies for individuals and small rural communities through the implementation of both educational and demonstration efforts throughout the state. Two major areas of concern of this program are water conservation as a first step in wastewater treatment and the development of innovative alternatives to conventional wastewater treatment technologies. The number of innovative and alternative (I&A) wastewater treatment systems which have been installed throughout North Carolina continues to increase annually. An extensive training program for over 200 operators of these systems has been conducted by representatives of the Agricultural Extension Service. The major goal of the program continues to be providing the training necessary to the operators of these (I&A) Systems and to encourage the implementation of alternative wastewater collection and treatment technologies where they are cost effective.

The budget support for this program now derives from the general extension budget.

The training efforts conducted under the auspices of this program include soil and site evaluation workshops, land treatment training seminars, and engineering principles courses. These educational programs have been conducted throughout the entire state and several state agencies are cooperating. Approximately 80 counties and all of the regional field offices of the NCDNRCD and the NCDHR have been involved. Representatives of the U. S. Environmental Protection Agency have funded a program to evaluate selected wastewater treatment alternatives for use in the mountainous areas of the southeast. The N. C. Agricultural Extension Service will play a major role in this EPA project.

Innovative and alternative wastewater management options are being utilized to satisfy the public health and environmental requirements of wastewater treatment and also satisfy the economic constraints of the individual, community, or industry which is generating the waste and all have benefitted from this program.

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**\*KEYWORDS**

NC113  
North Carolina  
1983  
Community Development

Residuals Utilization

Awareness created, technology adopted, costs minimized

State and local government, county extension staff,  
industrial developers and industrial clients

**\*QUANTIFIED IMPACTS**

Awareness created 500 officials

Technology adopted 150

Costs minimized 2.6 million saved on four  
municipal projects and  
industrial projects

**\*VOLUNTEER HOURS**

**\*VOLUNTEER DOLLAR VALUE**

Prof Para

\*STAFF YRS. EXPENDED .5

\*TITLE

NC114 Farm Safety Program in North Carolina

\*TEXT

Farming occupation has surpassed mining as the most dangerous profession in recent years.

Educational programs emphasizing safe operation and handling procedures with agricultural equipment are needed to help farmers, families and others develop safe operational skills and behavior.

Emergency medical service personnel respond to a number of rescue calls involving farm machinery. These people need to also be trained to operate farm machinery safely.

Youth also are finding part-time jobs on farms operating production equipment, as well as utilizing small riding tractors and power tools that pose potential dangers to beginners.

Programs were conducted in 40 counties on home safety topics, farm machinery victim extrication, and youth topics on safety involving around 2,500 people.

Local emergency rescue units have received training in safe tractor operation during a rescue operation.

These programs will continue to be offered to the remaining counties to help reduce accidents on farms, in the home and recreational areas.

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**\*KEYWORDS**

NC114  
North Carolina  
1983  
Agriculture, Home Economics, CRD, 4-H

Farming, Housing, Youth Activities

Knowledge Gained, Improved Safety Skills - Practices  
Adopted

Farmers, Extension Agents, Other Professionals

Meetings, Training Sessions, Workshops, Seminars,  
Volunteer Rescue Service Personnel

**\*QUANTIFIED IMPACTS**

Knowledge Gained	100 emergency medical personnel
Practices Adopted	25 farmers
Improved Safety Skills	

**\*VOLUNTEER HOURS**

**\*VOLUNTEER DOLLAR VALUE**

	PROF	PARA
*STAFF YRS. EXPENDED	1.0	

\*TITLE

NC115 Economic and Total Resource Development (North Carolina)

\*TEXT

Teach local and state leaders principles and concepts on essentials for, alternative strategies and programs to stimulate rural economic growth, understand planning concepts and components of total resource development program and improve educational and technical skills of the labor force.

Worked with state and local leaders, agencies and groups (Chamber of Commerce, Economic Development Commission, Planning Boards) in delineating problems, resources and alternative strategies for economic and total resource development in small towns and rural areas. Served on State Community Employment and Training Council and participated in review of nonmetropolitan area manpower plans with emphasis on technical and occupational training in accordance with expected future employment opportunities.

Prepared, reprinted and distributed 800 copies of Econ. Inf. Report on "Economic Growth in North Carolina's Future" to local and state leaders. County and community discussions involving hundreds of local leaders were held throughout the state to identify problems, programs and alternative strategies for economic and total resource development during the next four years. County and state Plans of Work and Program Statements were prepared. Local discussions have been held and plans being formulated for a series of rural economic development workshops for local leaders in 30 counties. Counsel was provided in reviewing area manpower plans and training programs needed.

Anticipate increasing employment and income opportunities for citizens in small towns and rural areas, improved community services and improved training and manpower development programs.

Plan and conduct rural economic development workshops for local leaders, prepare and distribute publications on "Planing a County Economic Development Program," and work with local and state agencies and groups in formulating and implementing programs to foster rural economic growth, improve community services and resource efficiency and attain more effective manpower development programs.

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**\*KEYWORDS**

NC115  
North Carolina  
1983  
Community and Rural Development

Business and Industrial Development, Public Policy,  
Community Facilities, Manpower Development  
Improved income, increased employment, jobs skills  
increased, planning skills increased, citizen participation  
Local leaders, local and state agencies, groups and planners  
Community and county meetings, prepare and distribute  
publication, counsel with local and state agencies and  
groups

**\*QUANTIFIED IMPACTS**

Improved income

Increased employment:

Local leader discussion

400

\*TITLE

NC116 Community Economic Growth Impact Analysis (North Carolina)

\*TEXT

Help local policy makers and other local leaders better understand the differential impacts of economic growth in various sectors on the local economy (private businesses, household income and employment and local government fiscal affairs), economic interrelationships among sectors, and better plan economic growth strategies.

Local economic development committees and local government officials and staff in the two pilot counties under study: Wilkes and Robeson Completed analysis of short-run and long-run effects of construction, developed procedure and completed analysis for local government sector, and prepared draft of manuscript for an Economics Information Report of study on analysis of impact of economic growth on Wilkes County economy to be published in the Fall of 1983. Involved local leaders in discussions to identify problems, potential Extension programs and alternative strategies during next four years. County and state Plans of Work and Program Statements were prepared. Estimates of impact of agriculture on total local economy were made for two counties.

Publish, distribute and use for future consultation and training local leaders the Economics Information Report on the Wilkes County Economic Growth Impact Study. Complete Robeson County study during FY '84. Conduct sensitivity analysis to evaluate transferability and applicability of this model and results from the two pilot counties to other nonmetropolitan counties in the state.

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**\*KEYWORDS**

NC116  
North Carolina  
1983

Community and Rural Development

Economic Development, Community Services

Business and Industrial Development, Public Policy

Local government officials, County Agents, local development  
leaders and groups

Prepare and distribute publication, counsel with local  
government officials and development leaders.

**\*QUANTIFIED IMPACTS**

Economic growth impact

Analysis for one pilot county  
completed



**\*TITLE**

Program Title

NC117

North Carolina Clothing Storage Programs

**\*TEXT**

Rapidly rising construction and energy costs have contributed to a decrease in the average size of North Carolina homes/apartments. Smaller living space requires better planning and utilization of available areas for clothing storage, laundering, and home sewing. Target audiences for Home Economics Extension Agents state-wide included young families, apartment residents, and youth.

On a state-wide basis, one in-service training module incorporating clothing storage was conducted with more than 80 agents participating. Additionally, two teaching kits illustrating ways to maximize clothing storage space were made available for agent use. Articles were written for the "Women in the World of Work" newsletter series, and demonstrations were presented on North Carolina Public Television.

On a county basis, Home Economics Extension Agents in 26 counties presented Special Interest lessons, Extension Homemaker lessons, demonstrations and lessons for youth, and utilized mass media in programming specifically related to clothing storage. Other agents incorporated training received in overall space utilization programming. It is estimated that 7,800 families made changes to improve/maximize space utilization for clothing, and that 1,200 youth improved their closet space utilization.

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Keywords are words and phrases that others will use when searching the database. The keywords list can be used as a guide for selecting words. In addition, words not appearing on the keyword list may also be used. Separate each distinct word or phrase with a comma. Do not abbreviate keywords.

**\*KEYWORDS**

Control No. . . . . NC117

State . . . . . North Carolina

Fiscal Year(s) . . . . . 1983

Program Area(s) . . . . . Home Economics  
*(List as many as apply)*

Subject Matter Area . . . . . Consumer Education

Commodity/Subject . . . . . Storage improved

Audience . . . . . Adolescents, young families, homemaker clubs

Methods . . . . . Demonstrations, newsletters, newspapers,  
television

**Measurable Impacts/Results - Measurable social or economic consequences**

Enter Measurable Impacts/Results - Keywords	Enter quantity - (economic or social)
<b>*QUANTIFIED IMPACTS</b>	
Storage improved	7,800 families made improvements 1,200 youth made improvements

<b>VOLUNTEER TIME (Optional)</b> - Average local hourly wage multiplied by hours equals dollar value		
*VOLUNTEER HOURS		
*VOLUNTEER DOLLAR VALUE		
<b>ESTIMATED PROGRAM COSTS (Optional)</b> - Multiply number of staff years expended by cost of one FTE		
	Prof      Para	
*STAFF YRS. EXPENDED		
*EST. PROGRAM COSTS		

\*TITLE

NC118 North Carolina Modified Tailoring Clothing Programs

\*TEXT

Modified Tailoring workshops, special interest lessons, demonstrations, and mass media were used by Home Economics Extension Agents state-wide to help home seamstresses learn or improve tailoring skills, and learn time-saving modified tailoring techniques. Use of these skills as a means of stretching the family clothing budget can produce savings of \$90 per garment tailored.

Six two-day in-service training workshops were conducted (one per Extension District) with a total of 60 agents participating. The publication, "Modified Tailoring," and a set of construction samples were developed for agent use. Supporting materials also included a 45 minute teaching video-tape and printed information. Agents adapted the training for use in workshop settings where seamstresses completed tailored blazers, for special interest audiences, youth audiences, newsletter, newspaper, and television demonstrations. As a result, it is estimated that over 25,000 tailored garments have been constructed using these techniques.

Home seamstresses throughout North Carolina learned and practiced modified tailoring skills to extend family wardrobes. Estimates of savings realized through modified tailoring procedures range from \$175,000 to \$225,000.

The impact of modified tailoring programs should expand in the near future as Home Economics Extension Agents incorporate the training received during FY 83 in subsequent program planning.

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Keywords are words and phrases that others will use when searching the data base. The keywords list can be used as a guide for selecting words. In addition, words not appearing on the keyword list may also be used. Separate each distinct word or phrase with a comma. Do not abbreviate keywords.

<b>*KEYWORDS</b>		
Control No.	NC118	
State	North Carolina	
Fiscal Year(s)	1983	
Program Area(s) (List as many as apply)	Home Economics	
Subject Matter Area	Home Sewing	
Commodity/Subject		
Audience	Adults, Youth	
Methods	Workshops, seminars, demonstrations, mass media	
<b>Measurable Impacts/Results - Measurable social or economic consequences</b>		
Enter Measurable Impacts/Results - Keywords		Enter quantity - (economic or social)
<b>*QUANTIFIED IMPACTS</b>		
Savings gained		\$225,000
<b>VOLUNTEER TIME (Optional)</b> - Average local hourly wage multiplied by hours equals dollar value		
*VOLUNTEER HOURS		
*VOLUNTEER DOLLAR VALUE		
<b>ESTIMATED PROGRAM COSTS (Optional)</b> Multiply number of staff years expended by cost of one FTE		
	Prof      Para	
*STAFF YRS. EXPENDED		
*EST. PROGRAM COSTS		

\*TITLE

NC119 Home Laundering Technology in North Carolina

\*TEXT

The continual rising cost of energy calls for a reduction in the consumption of energy. With respect to appliances, the hot water heater is a major user of energy. For this reason, energy saving laundry practices that result in optimum cleaning was a program emphasis in forty-two counties. The employment of these prescribed laundry procedures assisted 22,790 families in using less energy in addition to less water while maintaining acceptable cleaning standards. Laundering seminars were given to special interest audiences, and Extension Homemaker groups. Newspaper articles and radio programs were other delivery systems used. The content bases for these programs were two slide sets, "Laundry Problems of the 80's" and "Laundry Know How" plus a new publication, "Laundering the Right Way". ("Laundering the Right Way" has been reprinted twice within the 1982-83 year).

Water quality as a regional problem emerged as a public awareness issue that has implication on laundering procedures, i.e. phosphate versus non-phosphate detergent ban. To help home agents and clientele understand this water quality issue, a position paper was supplied to each home agent concerning the attributes and liabilities of phosphates as a nutrient and a detergent sequestering agent.

Water quality as a public issue has the potential for affecting the statewide population. Since forty-nine percent of North Carolina families use well water (moderately hard to hard water) a research study needs to be designed and implemented to assess the cleanability of phosphate/non-phosphate detergents using varying degrees of water hardness in well water.

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<b>*KEYWORDS</b>	
Control No. . . . .	NC119
State . . . . .	North Carolina
Fiscal Year(s) . . . . .	1983
Program Area(s) . . . . . <i>(List as many as apply)</i>	Home Economics
Subject Matter Area . . . . .	Care & Maintenance, Water Conservation
Commodity/Subject . . . . .	Kilowatt hours reduced, knowledge gained, water saved
Audience . . . . .	Adult
Methods . . . . .	Seminars, Newsletters, Newspapers, Radio
<i>Measurable Impacts/Results - Measurable social or economic consequences</i>	
Enter Measurable Impacts/Results - Keywords	Enter quantity - (economic or social)
<b>*QUANTIFIED IMPACTS</b>	
Kilowatt hours reduced	N/A
Knowledge gained	22,790
Water saved	5,925,400 water saved for 1982-83
<b>VOLUNTEER TIME (Optional)</b> <i>Average local hourly wage multiplied by hours equals dollar value</i>	[Hatched Area]
<b>*VOLUNTEER HOURS</b>	
<b>*VOLUNTEER DOLLAR VALUE</b>	
<b>ESTIMATED PROGRAM COSTS (Optional)</b> <i>Multiply number of staff years expended by cost of one FTE</i>	
Prof      Para	
<b>*STAFF YRS. EXPENDED</b>	
<b>*EST. PROGRAM COSTS</b>	

**\*TITLE**

Program Title

NC120

Home Sewing Program in North Carolina

**\*TEXT**

As a means of extending the families' clothing budgets, clothing construction (encompassing pattern fitting/alterations, fabric selection, sewing skills/techniques suited to specific fabrications), can help a family save 40-65 percent on their clothing allowance. To help families realize the 40-65 percent estimated savings, sixty home agents held clothing construction workshops, special interest seminars, demonstrations and fitting classes. The objectives for planning and implementing these teaching strategies were to help adult and youth clientele: 1) decide when to sew and not to sew a particular garment; and 2) develop skills in pattern alterations and sewing techniques suited to fabrication.

Approximately 30,000 adults have gained/improved home sewing and fitting skills with a conservative estimated savings of \$180,000 through 1) attending workshops and seminars; 2) tips from newsletters, newspaper articles, television programs, and publications.

Three counties have piloted a master's volunteer leaders' pattern fitting training program with fifteen volunteer leaders being trained. Five of these county volunteer leaders have given twenty hours each to help other adult women develop skills in pattern alterations.

The youth segment of the program has provided 9,200 boys and girls with knowledge/skills in sewing construction, alterations and fitting and personal development. Additionally, twenty-two counties have enlisted the help of forty-four 4-H clothing project leaders.

Evaluation of the financial benefits through home sewing were measured by the number of garments clientele reported they had constructed and added to their wardrobes.

With limited clothing allowances of families, the need for additional information on pattern alteration and clothing construction (i.e. children's clothing, specialty garments) are anticipated to rise.

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**\*KEYWORDS**

Control No. . . . . NC120  
 State . . . . . North Carolina  
 Fiscal Year(s) . . . . . 1983  
 Program Area(s) . . . . . Home Economics  
 (List as many as apply)

Subject Matter Area . . . . . Home Sewing

Commodity/Subject . . . . .

Audience . . . . . Adults/Youth

Methods . . . . . Workshops, seminars, mass-media, demonstrations

**Measurable Impacts/Results - Measurable social or economic consequences**

Enter Measurable Impacts/Results Keywords

Enter quantity -- (economic or social)

**\*QUANTIFIED IMPACTS**

Garments constructed

N/A

Knowledge/skills gained

39,200

Income extended

40-65% of clothing allowance

Savings gained

\$180,000.00

**VOLUNTEER TIME (Optional) - Average local hourly wage multiplied by hours**  
 equals dollar value

\*VOLUNTEER HOURS

5 leaders @ 20 hrs.  
 at \$3.50 per hour.

\*VOLUNTEER DOLLAR VALUE

\$350.00

**ESTIMATED PROGRAM COSTS (Optional)** Multiply number of full years expended by cost of one FTE

Prof Para

\*STAFF YRS. EXPENDED

\*EST. PROGRAM COSTS



**\*TITLE**

Program Title: Family Stress in North Carolina

NC121

Family Stress in North Carolina

**\*TEXT**

The emphasis on family stress in North Carolina was designed to help family members use appropriate skills to deal with family related stress and to take deliberate action to prevent unnecessary stress. For six years specific programs were conducted in 20 to 40 counties each year, with 25 counties during 1983. Seminars and classes involved Extension Homemakers Clubs and area meetings, luncheon groups for urban people, married couples, one department staff of a large hospital, young farmers and their wives, women's leadership conference, staff members of a government agency, and workshops for adult audiences. A reported 9,230 individuals took part in these experiences during 1983.

In a mail sample of 234 participants over 16 counties, approximately two months after participation, there was a 25 percent response. For coping with family stress 50% reported getting new ideas, 83% reported adopting some type of exercise, 41% reported having a quiet time daily, 43% joined some support group, and 57% changed some economic expectations. In summary, a majority reported adopting some skill or technique that would help to deal with stress in households and families.

Family stress will continue to be a priority area for at least four years. Reports of county committees in North Carolina during 1983 placed stress among the five most important concerns to be addressed in a new four-year plan of work.

**\*CONTACT**

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**\*KEYWORDS**

Control No. . . . . NC121  
 State . . . . . North Carolina  
 Fiscal Year(s) . . . . . 1983  
 Program Area(s) . . . . . Home Economics  
 (List as many as apply)

Subject Matter Area . . . . . Coping Skills

Commodity/Subject . . . . . Stress, crisis management, family stress

Audience . . . . . Homemaker Clubs, Young Farmers, couples, paraprofessionals,  
 public agencies, organizations

Methods . . . . . Workshops, group meetings

**Measurable Impacts/Results - Measurable social or economic consequences**

Enter Measurable Impacts/Results - Keywords

Enter quantity - (economic or social)

**\*QUANTIFIED IMPACTS**

**Participants**

**9,230**

**Skills learned**

**83% of sample (49)**

**Attitudes (expectations) changed**

**57% of sample (35)**

**VOLUNTEER TIME (Optional) - Average local hourly wage multiplied by hours equals dollar value**

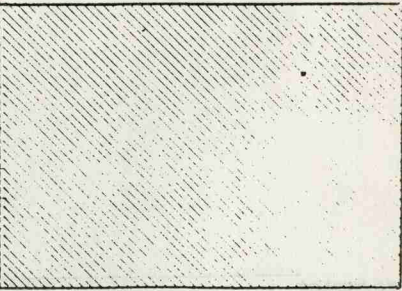
**\*VOLUNTEER HOURS**

**\*VOLUNTEER DOLLAR VALUE**

**ESTIMATED PROGRAM COSTS (Optional) Multiply number of staff years expended by cost of one FTE**

<b>*STAFF YRS. EXPENDED</b>	Prof	Para

**\*EST. PROGRAM COSTS**



**\*TITLE**

Program Title

NC122

Family Strengths in North Carolina

**\*TEXT**

The family strengths emphasis in North Carolina has involved:

- a. A six-year program on family communication in which an average per year of 3,000 newlywed couples, 40 other couples, and 3,000 individual family members learn to use recommended family communication skills.
- b. A three-year program of cooperation with the Governor's Advocacy Council on Children and Youth in which the services to teen-age mothers have been improved in 40 counties and 12,000 youth per year have attended classes or seminars designed to help them make wise decisions about future parenthood.
- c. A mass media program in cooperation with the State Division of Health Services in which 65 radio stations and 7 TV stations reached an estimated 250,000 people with material on wise decisions about alcohol. Related seminars reached 13,902 teen-agers and 1,811 adults.
- d. Special seminars on "Self-Esteem," "Family Strengths", and "Non-Nuclear Families" reached another 2000 adults.
- e. Support groups for single adults were organized in four counties with monthly meetings of 325 single adults - learning coping skills for single adults.

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**\*KEYWORDS**

Control No. NC122  
 State North Carolina  
 Fiscal Year(s) 1983  
 Program Area(s) Home Economics  
 (List as many as apply)

Subject Matter Area Family Relations

Commodity/Subject Communications, policy decisions, family strengths, self-concept  
 Audience Newlywed couples, family members, adolescents, single adults  
 Methods

**Measurable Impacts/Results - Measurable social or economic consequences**

Enter Measurable Impacts/Results - Keywords

Enter quantity - (economic or social)

**\*QUANTIFIED IMPACTS**

Participants (1983)	38,551
Skills learned	325 single adults
Decision making improved	12,000 youth
Facilities improved	40 services/teen mothers
Knowledge gained	660 adults
Mass media participants by TV and radio	250,000

**VOLUNTEER TIME (Optional)** Average local hourly wage multiplied by hours equals dollar value

\*VOLUNTEER HOURS

\*VOLUNTEER DOLLAR VALUE

**ESTIMATED PROGRAM COSTS (Optional)** Multiply number of staff years expended by cost of one FTE

Prof Para

\*STAFF YRS. EXPENDED

\*EST. PROGRAM COSTS

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**\*\*TITLE** Program Title: *Family Strengths and Social Environment*

NC123 **Family Strengths and Social Environment  
Child Care in North Carolina**

**\*\*TEXT**  
At the request of other agencies, Extension Home Economists in two counties coordinated a child care needs survey to determine what additional services were needed throughout the county.

Agencies participating included United Way, Council on the Status of Women, and Health and Social Services Departments.

A total of 557 parents responded. The survey made parents more aware of the decisions involved in child care and helped agencies determine the needs in order to make better decisions for improving the situation.

Questionnaires were distributed through newspapers, schools, a United Way brochure and direct mail.

The survey helped to identify the Extension Service as a resource in day care matters and as an agency interested in solving local problems.

A computer program is being developed which will make it easier for other counties to conduct similar surveys.

**\*CONTACT**

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**\*KEYWORDS**

Control No. NC123  
 State North Carolina  
 Fiscal Year(s) 1983  
 Program Area(s) Home Economics  
 (List as many as apply)

Subject Matter Area Child Care  
 Commodity Subject Selection, Use, Improvement of  
 Audience Parents  
 Methods Newspapers, publications, surveys

Measurable Impacts/Results - Measurable social or economic consequences

Enter Measurable Impacts/Results - Keywords

Enter quantity - (economic or social)

**\*QUANTIFIED IMPACTS**

Parents Participated

557

**VOLUNTEER TIME (Optional)** - Average local hourly wage multiplied by hours  
 equals dollar value

\*VOLUNTEER HOURS

\*VOLUNTEER DOLLAR VALUE

**ESTIMATED PROGRAM COSTS (Optional)** Multiply number of staff years  
 expended by cost of one FTE

\*STAFF YRS. EXPENDED

\*EST. PROGRAM COSTS

Prof Para

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**\*TITLE**

Program Title: Family Strengths and Social Environment

NC124

Family Strengths and Social Environment  
Parenting Education Through Baby Talk - North Carolina**\*TEXT**

Baby Talk, a series of 12 newsletters for first-time parents, has been in use for about four years. To date, 93 of 101 counties have conducted the program. During February, 1983, 25 participating counties mailed an evaluation questionnaire to all 578 families who had completed the series in the past six months. A total of 251 (43.4 percent) responded with the following results:

Reinforced belief that they were doing things right (71%).

More aware of infant safety (65%).

Gained personal confidence (65%).

Questions answered (63%).

New ideas to try (59%).

Better understanding of child development, growth and change (56%).

Respondents were primarily from rural areas (56%); majority (61%) were aged 21 to 30 years and 29% were 31 and 40 years old. Only 7% had less than high school education and 53% were employed outside the home.

Evaluation revealed that a number of the respondents had other children, indicating a need for better screening. First-time parents rated the benefits higher than others. Since 73% of the recipients shared the series with the spouse, the contents should be revised to include topics of special interest to fathers. A number of parents requested information about development during the second year of life, indicating a need to extend the first-year series. Those parents with few other informational resources considered the series very valuable.

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FY 83 Accomplishment Report - NARS

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<b>*KEYWORDS</b>	
Control No	NC124
State	North Carolina
Fiscal Year(s)	1983
Program Area(s) <i>(List as many as apply)</i>	Home Economics
Subject Matter Area	Parenting
Commodity/Subject	Infant, mother-child, father-child, child development
Audience	Parents
Methods	Group meetings, newsletters
<b>Measurable Impacts/Results - Measurable social or economic consequences</b>	
Enter Measurable Impacts/Results - Keywords	Enter quantity - (economic or social)
<b>*QUANTIFIED IMPACTS</b>	
Participants, families with infants	251 (respondents)
Knowledge gained	163 (65%)
<b>VOLUNTEER TIME (Optional) - Average local hourly wage multiplied by hours equals dollar value</b>	
*VOLUNTEER HOURS	
*VOLUNTEER DOLLAR VALUE	
<b>ESTIMATED PROGRAM COSTS (Optional) - Multiply number of staff years expended by cost of FTE</b>	
*STAFF YRS. EXPENDED	Prof      Para
*EST. PROGRAM COSTS	

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 Raleigh, NC 27690 (919) 275-2770



**\*TITLE**

Program Title

NC125

Money Control in North Carolina

**\*TEXT**

Programs in money control aimed toward teaching skills for effective use of money over time and building financial security. The programs placed emphasis on analysis of situation; long-range planning; controlled saving, spending and borrowing; and record keeping. The programs consisted of a home study course and special classes and were available for Extension Agents' use in all counties. Professionals in areas of finance were used to assist agents with some of the programs.

Evaluation responses from 7 counties revealed that: (a) 98% learned ways to improve their finances and 84% are using the techniques learned; (b) behavior changes adopted were: plan and shop more carefully (100%); set goals and plan money use (83%); and eliminate wasteful habits, keep more accurate records, and maintain a positive cash flow (50%). More than one-third responded they had saved more than \$100. A majority of the respondents stated the rewards were improved decisionmaking, planning, management and skills; increased thinking; and greater confidence and personal satisfaction.

The programs are meaningful and needed. There are still many citizens who could profit from them. Consequently, they will continue to be offered.

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FY 83 Accomplishment Report -- NARS

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<b>*KEYWORDS</b>		
Control No. . . . .	NC125	
State . . . . .	North Carolina	
Fiscal Year(s) . . . . .	1983	
Program Area(s) . . . . .	Home Economics	
<i>(List as many as apply)</i>		
Subject Matter Area . . . . .	Family Resource Management	
Commodity/Subject . . . . .	Financial Security	
Audience . . . . .	Couples/Adults	
Methods . . . . .	Home Study Courses; Classes	
<b>Measurable Impacts/Results -- Measurable social or economic consequences</b>		
Enter Measurable Impacts/Results -- Keywords		Enter quantity - (economic or social)
<b>*QUANTIFIED IMPACTS</b>		
Increased savings		\$100 plus per participant
Practices adopted		
<b>VOLUNTEER TIME (Optional) -- Average local hourly wage multiplied by hours equals dollar value</b>		
*VOLUNTEER HOURS		
*VOLUNTEER DOLLAR VALUE		
<b>ESTIMATED PROGRAM COSTS (Optional) Multiply number of staff years expended by cost of one FTE</b>		
*STAFF YRS. EXPENDED	Prof .5      Para	
*EST. PROGRAM COSTS		

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**\*TITLE** Program Title: Teach Children About Money

**CONTROL NO.** NC126  
**Teach Children About Money**  
**North Carolina**

**\*TEXT**  
 "Teach Children About Money" is a home study course program available to North Carolina citizens. The major program goal is for children to learn skills for managing money successfully. The course is designed for children who are toddlers through teen-agers. A majority of children participating were less than eight years old, and more than one-half were from rural families. More than one-half of the parents participating had some college education.

Parents served as teachers for the program and supervised the money management activities of their children.

Evaluation responses from four counties revealed the following behavioral changes:

- (a) 100% of the participants:
  - . made and followed a spending plan,
  - . shopped more carefully,
  - . increased savings (1/3 saving \$5-10), and
  - . changed habits that wasted money.
- (b) 50% or more of the participants:
  - . received personal satisfaction,
  - . improved money use plans, and
  - . took advantage of opportunities to earn money.
- (c) 100% of the parents eliminated impulse shopping and 70% made and followed money use plans.

This was the first year the program was offered, consequently participation was very limited relative to need. The program will be offered another year.

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<b>*KEYWORDS</b>		
Control No. . . . .	NC126	
State . . . . .	North Carolina	
Fiscal Year(s) . . . . .	1983	
Program Area(s) (List as many as apply)	Home Economics	
Subject Matter Area . . . . .	Family Resource Management	
Commodity/Subject . . . . .	Money Management	
Audience . . . . .	Parents and children	
Methods . . . . .	Home Study Courses	
<b>Measurable Impacts/Results - Measurable social or economic consequences</b>		
Enter Measurable Impacts/Results - Keywords		Enter quantity - (economic or social)
<b>*QUANTIFIED IMPACTS</b>		
Money Saves		\$5-10 per participant
Skills Learned		
<b>VOLUNTEER TIME (Optional)</b> Average local hourly wage multiplied by hours equals dollar value		
<b>*VOLUNTEER HOURS</b>		
<b>*VOLUNTEER DOLLAR VALUE</b>		
<b>ESTIMATED PROGRAM COSTS (Optional)</b> Multiply number of staff years expended by cost of one FTE		
	Prof      Para	
<b>*STAFF YRS. EXPENDED</b>	.2	
<b>*EST. PROGRAM COSTS</b>		

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**\*TITLE**Program Title *Include State Name in Title*

NC127

Master Food Preserver in North Carolina

**\*TEXT**

The Master Food Preserver Program involved training volunteers who then help their communities by providing safe and reliable home food preservation information. Master Food Preserver volunteers were trained by Agricultural Extension Home Economics Agents in a series of seven, four-hour food preservation and safety classes.

The Master Food Preserver Volunteer training program was piloted in three counties in Spring of 1983. Twenty-seven people signed up for the program. Seventeen participants completed a pretest during the first class. None of the participants scored above 80% on the pretest which is a passing score.

The same test was given as a post test following the seven classes. Twenty-five participants scored 80% or above on the post test. Twenty-five of the original twenty-seven participants (93%) completed the program successfully and became Master Food Preserver Volunteers. Most volunteers have already contributed in excess of their required 20 hours volunteer time. They have responded to telephone calls, presented food preservation demonstrations and programs, handled questions at food preservation exhibits at farmer's markets and fairs, and helped newcomers to home food preservation on a one-to-one basis.

A \$25 fee covered part of the cost of the reference notebook, class demonstration supplies and graduation certificate and apron. The notebook of seven units contains over 20 reference bulletins and over 150 fact-filled pages.

Notebook materials are being revised and prepared for statewide distribution in Spring, 1984.

**\*CONTACT**

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**\*KEYWORDS**

Control No. . . . . NC127  
 State . . . . . North Carolina  
 Fiscal Year(s) . . . . . 1983  
 Program Area(s) . . . . . Home Economics and Human Nutrition  
*(List as many as apply)*

Subject Matter Area . . . . . Food Preservation

Commodity/Subject . . . . .

Audience . . . . . Volunteers

Methods . . . . . Demonstrations, workshops

Measurable Impacts/Results - Measurable social or economic consequences

Enter Measurable Impacts/Results - Keywords

Enter quantity - (economic or social)

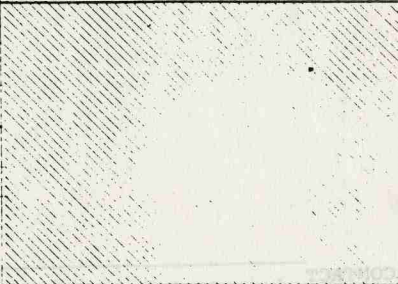
**\*QUANTIFIED IMPACTS**

Services improved 500 hours/\$4 hr. - \$2,000

Volunteers trained 25

**VOLUNTEER TIME (Optional)** - Average local hourly wage multiplied by hours equals dollar value

*VOLUNTEER HOURS	500/\$4 hr.
*VOLUNTEER DOLLAR VALUE	\$2,000
*ESTIMATED PROGRAM COSTS (Optional) <i>Multiply number of staff years expended by cost of one FTE</i>	
*STAFF YRS. EXPENDED	Prof Para
*NET PROGRAM COSTS	



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**\*TITLE** Program Title (Use Exact State Name in Title)

NC128 Meat Buying in North Carolina

**\*\*TEXT**

Meat takes 25-35 percent of the total food bill, therefore, money saved in buying meat will mean a substantial savings for families. A major thrust has been to teach agents, leaders and Extension clientele not only how to get the most meat for dollars spent, but how to prepare meat for maximum flavor and tenderness.

Thirty programs have been given in nineteen counties as special interest meetings, reaching over 1,200 persons living in both rural and urban areas.

Evaluation forms returned indicated, after six months, that information received had helped in making supermarket decisions, given personal satisfaction and confidence, new ideas to try, read more meat labels, increased meat cutting skills and reinforcement for those who were already doing a good job in meat selection and preparation.

Of those reporting, the mean savings was \$21-\$30. Six percent indicated they needed more help in knowing the location on the animal after reading the label. Future training and programs will center on this weakness as well as help in making the right decisions when buying boneless meat.

**\*\*CONTACT**

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FY 83 Accomplishment Report - NARS

Keywords are words and phrases that others will use when searching the data base. The keywords list can be used as a guide for selecting words. In addition, words not appearing on the keyword list may also be used. Separate each distinct word or phrase with a comma - do not abbreviate keywords.

**\*KEYWORDS**

Control No. . . . . NC128

State . . . . . North Carolina

Fiscal Year(s) . . . . . 1983

Program Area(s) . . . . . Home Economics and Human Nutrition  
*(List as many as apply)*

Subject Matter Area . . . . . Food Buying

Commodity/Subject

Audience . . . . . Families

Methods . . . . . Teletip, demonstrations, workshops

Measurable Impacts/Results - Measurable social or economic consequences

Enter Measurable Impacts/Results - Keywords	Enter quantity - (economic or social)
<b>*QUANTIFIED IMPACTS</b>	
Decision making improved	85%
Skills learned	78%
Dollars saved	\$12,000 (\$10/week per family)

VOLUNTEER TIME (Optional) - Average local hourly wage multiplied by hours equals dollar value		
*VOLUNTEER HOURS		
*VOLUNTEER DOLLAR VALUE		
ESTIMATED PROGRAM COSTS (Optional) <i>Multiply number of staff years extended by rate of pay etc. ETC.</i>		
	Prof.      Para	
*STAFF YRS. EXPENDED		
*EST. PROGRAM COSTS		

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**\*TITLE**

Program Title (include State Name in Title)

NC129

Food Preservation & Safety in North Carolina

**\*TEXT**

Food Preservation programming in North Carolina continues to be a major area in Food and Nutrition. Clientele are reached through meetings, demonstrations, radio, television, news media and newsletters. In 1983 a sample of people attending Food Preservation and Safety programs were contacted by mailed questionnaire. The majority of attendees (43%) were from rural areas with only 12% from towns over 50,000 in population. Most of the respondents had completed high school (84%) with 55% of those having some college education or completed college. Females were in the majority (97%) with the greatest percentage being between the ages of 51-64 years (43%) and 26% being below age 40. An even distribution between employed and nonemployed females was noted.

Respondents reported the greatest gains were in answers to their questions (68%), receiving useful resource material (68%), learning new ideas (61%) and knowledge that they were already following correct procedures (51%).

Respondents were asked to note the value of the programs and resource materials. Seventy-eight percent (78%) rated the program 4 or above on a 1 to 5 scale (5 high). Sixty-two (62%) had already used information received. In addition to learning skills (53%), personal satisfaction (61%) and personal confidence (89%) ranked high as benefits from participating in the Food Preservation Programs. When asked if they could foresee a monetary benefit from participating in programs, 88% replied yes with 46% of those indicating a savings of \$50 or more.

In comparison to other sources of information, 80% of the respondents said the Extension program was more informative and 14% said it was the same.

**\*CONTACT**

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FY 83 Accomplishment Report - NARS

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<b>*KEYWORDS</b>		
Control No.	NC129	
State	North Carolina	
Fiscal Year(s)	1983	
Program Area(s) <i>(List as many as apply)</i>	Home Economics and Human Nutrition	
Subject Matter Area	Food Preservation, Food Safety	
Commodity/Subject		
Audience	Families	
Methods	Demonstrations, workshops	
<b>Measurable Impacts/Results - Measurable social or economic consequences</b>		
Enter Measurable Impacts/Results - Keywords		
Enter quantity -- (economic or social)		
<b>*QUANTIFIED IMPACTS</b>		
<b>*QUANTIFIED IMPACTS</b>		
Knowledge Gained	68%	
Skills Learned	53%	
Dollars Saved	88% replied yes	
<b>VOLUNTEER TIME (Optional)</b> <i>Average local hourly wage multiplied by hours equals dollar value</i>		
<b>*VOLUNTEER HOURS</b>		
<b>*VOLUNTEER DOLLAR VALUE</b>		
<b>ESTIMATED PROGRAM COSTS (Optional)</b> <i>Multiply number of staff years expended by cost of FTE</i>		
		Prof      Para
<b>*STAFF YEARS EXPENDED</b>		
<b>*EST. PROGRAM COSTS</b>		

**\*TITLE** Program Title (Include State Name in Title)

NC130 Preventive Nutrition in North Carolina

**\*\*TEXT**

Preventive nutrition education programs were conducted throughout 101 North Carolina Extension units. Emphasis was on the Dietary Guidelines, particularly weight control and reduction of sugar, salt and fat in the diet. Workshops, health fairs, seminars and mass media were used to disseminate information on diet and health. A special program called Calorie Countdown, designed as a series of weight control classes, was conducted by agents, often with cooperation from local dietitians and nutritionists.

A randomly selected sample of participants from 5 counties who had completed Calorie Countdown shows the following results:

Ninety-eight percent understand the relationship between diet and health, 63% use less salt, 46% use less fat, 54% use less sugar, 33% eat a greater variety of foods, 30% eat more fiber and 74% reduce total calories.

Sixty percent have had a decrease in weight (while only 4% noted an increase in weight) and 21% report a change in clothing size. As a result of the program, 61% of participants have increased their exercise.

Other results reported include: 65% have gained personal satisfaction from their experience, 61% have improved their meal planning, 40% gained personal confidence and 26% have improved personal relations as a result of their weight loss.

Estimates of dollar value to individual participants ranges from less than \$5.00 to \$400.00 with a median value of \$28.00 per person; however, no standard guidelines were used by participants to determine dollar value.

Calorie Countdown and other preventive nutrition programs will continue to be emphasized in the next four years.

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<b>*KEYWORDS</b>	
Control No. . . . .	NC130
State . . . . .	North Carolina
Fiscal Year(s) . . . . .	1983
Program Area(s) . . . . .	Home Economics and Human Nutrition
<i>(List as many as apply)</i>	
Subject Matter Area . . . . .	Diet and health, weight control
Commodity/Subject . . . . .	Weight control
Audience . . . . .	Families, homemakers
Methods . . . . .	Workshops
<b>Measurable Impacts/Results - Measurable social or economic consequences</b>	
Enter Measurable Impacts/Results - Keywords	Enter quantity - (economic or social)
<b>*QUANTIFIED IMPACTS</b>	
<b>*QUANTIFIED IMPACTS</b>	
Dietary Practices Improved	75%
Weight Loss	60%
Knowledge Gained	98%
<b>VOLUNTEER TIME (Optional) - Average local hourly wage multiplied by hours equals dollar value</b>	
<b>*VOLUNTEER HOURS</b>	
<b>*VOLUNTEER DOLLAR VALUE</b>	
<b>ESTIMATED PROGRAM COSTS (Optional) - Multiplies number of staff years expended by cost of one FTE</b>	
<b>*STAFF YRS. EXPENDED</b>	Prof      Para
<b>*EST. PROGRAM COSTS</b>	\$15,000

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**\*TITLE** Program Title (Use the State Line as Title)

**CONTROL NO**  
 NC131 Participation in 4-H Foods and Nutrition Projects and Demonstration in North Carolina

**\*\*TEXT**  
 Numerous 4-H projects that incorporate a variety of "learn by doing" activities have been developed to teach food preparation skills, sound eating habits and the importance of good nutrition as it relates to health and fitness. The foods and nutrition demonstration program also provides an opportunity for youth to develop poise and self-confidence while gaining expertise in foods and nutrition. Research has shown that 4-H youth enrolled in foods and nutrition projects and demonstrations score significantly higher on tests of nutrition knowledge and consume more adequate intakes of kilocalories, protein, iron, vitamin A, thiamin, riboflavin and niacin than non-4-H youth.

In 1983, approximately 10,491 youth were enrolled in 4-H foods and nutrition projects and activities in North Carolina in addition to those enrolled in the Expanded Food and Nutrition Education Program. There are 8 structured categories of foods and nutrition demonstrations for competition in North Carolina, namely: Junior Dairy Foods, Senior Dairy Foods, Junior Fruit and Vegetable Use, Senior Fruit and Vegetable Use, Junior Breads, Senior Breads, Junior Peanut Foods and Senior Peanut Foods.

At the county level, in 1983, there were a total of 474 boys and girls competing in one or more foods and nutrition demonstration categories. This represents only a small percentage of boys and girls presenting foods and nutrition demonstrations at the local club level.

**\*CONTACT**  
**\*CONTACT**

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**\*KEYWORDS**

Control No. NC131  
 State North Carolina  
 Fiscal Year(s) 1983  
 Program Area(s) Home Economics and Human Nutrition, 4-H and youth  
*(List as many as apply)*

Subject Matter Area Food preparation  
 Commodity/Subject Food preparation  
 Audience Adolescents  
 Methods Demonstrations

**Measurable Impacts/Results - Measurable social or economic consequences**

Enter Measurable Impacts/Results - Keywords		Enter quantity (economic or social)
<b>*QUANTIFIED IMPACTS</b>		
Dietary Practices Improved		100%
Nutrition Improved		100%
Knowledge Gained		100%
<b>VOLUNTEER TIME (Optional) - Average local hourly wage multiplied by hours equals dollar value</b>		CONTACT
*VOLUNTEER HOURS		
*VOLUNTEER DOLLAR VALUE		
<b>ESTIMATED PROGRAM COSTS (Optional) - Multiply number of staff years expended by unit cost on FTL</b>		
	Prof      Para	
*STAFF YRS. EXPENDED		
*EST. PROGRAM COSTS		

Mary Ann Spradlin, Ph.D., R.D.  
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**\*\*TITLE**

Program Title (include state name in title)

CONTROL NO

NC132

4-H Calorie Countdown Program in North Carolina

**\*\*TEXT**

4-H Calorie Countdown is a nutrition education and weight control project designed to help overweight youth set a realistic goal for weight loss based on body type, plan a well-balanced diet that will permit a weight loss of one or two pounds per week and develop proper eating habits throughout life. In the past year 2178 youth in 53 counties completed the project.

The 4-H Calorie Countdown Project was piloted by Sharon Carter, Home Economics Extension Agent in Madison County, North Carolina. The purpose of the study was to evaluate the effectiveness of the Calorie Countdown program on increasing nutrition knowledge and affecting weight loss of 116 freshman girls, 14 to 15 years of age enrolled at Madison High School.

The girls were divided into a control and experimental group. A nutrition knowledge pre and post-test consisting of questions on nutrition, previous dieting experiences, and food habits was administered to both groups. For six weeks, the nutrition lessons from Calorie Countdown were presented to the experimental group, during which time they were weighed and measured weekly.

Results of the study showed there was a significant increase in nutrition knowledge in the experimental group due to exposure to Calorie Countdown. Analysis of covariance was used to compare weight loss and nutrition knowledge between experimental and control groups. Members of the experimental group desiring to lose weight lost 2 pounds compared to .367 pounds in the control group. Thus, Calorie Countdown was shown to have a positive influence on adolescents' weight and level of nutrition knowledge.

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**\*KEYWORDS**

Control No. NC132  
 State North Carolina  
 Fiscal Year(s) 1983  
 Program Area(s) Home Economics and Human Nutrition, 4-H Youth  
*(List as many as apply)*

Subject Matter Area Food and Nutrition  
 Commodity/Subject Weight control, diet and health, food habits  
 Audience Adolescents  
 Methods Workshops, publications

**Measurable Impacts/Results - Measurable social or economic consequences**

Enter Measurable Impacts/Results - Keywords	Enter quantity - (economic or social)
<b>*QUANTIFIED IMPACTS</b>	
Dietary practices improved	100%
Knowledge gained	100%
Nutrition improved	100%

<b>VOLUNTEER TIME (Optional)</b> <i>Average local hourly wage multiplied by hours equals dollar value</i>		(This area is shaded out in the original document)	
*VOLUNTEER HOURS			
*VOLUNTEER DOLLAR VALUE			
<b>ESTIMATED PROGRAM COSTS (Optional)</b> <i>Multiply number of staff years expended by cost of one FTE</i>			
*STAFF YRS. EXPENDED	Prof		Para
*EST. BUDGET COSTS			



**\*TITLE**

Program Title (Use State Name in Title)

NC133

Expanded Food and Nutrition Education Program  
in North Carolina

**\*TEXT**

During the reporting period 273 paraprofessional program aides in 96 units worked with 12,537 EFNEP homemakers and 11,338 youth between the ages 6-19. Fifty-seven percent of enrolled families were food stamp recipients, 23% participated in WIC, and 83% had incomes below \$7,452.

Program Aides were trained by 7 area agents and supervised by local county extension agents. Aides were assisted by 3,495 volunteers who contributed a total of 36,594 volunteer hours. Seventy-eight percent of volunteer time was spent working with 4-H EFNEP youth in small groups (averaging 12 per group), day and overnight camps, and other special activities.

Major teaching efforts focused on basic nutrition, meal planning, food budgeting, gardening, and food conservation. A well documented example of increased food supply are 147 families who benefited from a Western North Carolina Green Garden Demonstration Program funded by Tennessee Valley Authority and conducted by 30 program aides in 14 units. The participating families grew and conserved food valued at \$45,793.90 or \$329.45 per family.

1983 EFNEP 24-hour food recall data indicates that after an 18 month enrollment period, homemakers show an increase in their consumption of the recommended servings from each of the four food groups. There was a 157% increase in those consuming 2 or more servings of milk, a 24% increase in those getting 2 or more servings of meat, a 132% increase in homemakers consuming 4 or more servings of fruits and vegetables and a 55% increase in those getting 4 or more servings of breads and cereals.

In January 1983, program aides were reduced from 5/8 time to work on a half-time basis. At the end of this reporting period, 221 aides are working in 88 units. Six county EFNEP reviews were conducted as a pilot effort. As the result of an indepth study committee's recommendations, counties are submitting proposals to cover a 4-year period concurrent with the 4-year plan. To concentrate efforts, 175 3/4 time positions of which 35 will be 4-H EFNEP positions will be filled in approximately 45 units. Major efforts will then focus on training professionals in supervision and management of the program use of advisory committees and cooperative agency referral systems.

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**\*KEYWORDS**

Contract No. NC133  
 State North Carolina  
 Fiscal Year(s) 1983  
 Program Area(s) Home Economics and Human Nutrition  
 (List as many as apply) EFNEP  
 Subject Matter Area Nutrition, food budgeting, gardening, food preservation  
 Commodity/Subject  
 Audience Low income homemakers and youth, volunteers, paraprofessionals  
 Methods One to one, group

**Measurable Impacts/Results - Measurable social or economic consequences**

Enter Measurable Impacts/Results - Keywords	Enter quantity - (economic or social)
<b>*QUANTIFIED IMPACTS</b>	
<b>Participants</b>	12,537 homemakers 11,338 youth
<b>Dietary practices improved</b>	After 18 months, 157% increase in 2 servings milk, 24% increase in 2 servings meat, 132% increase in four fruits and vegetables, 55% increase in four servings bread & cereals.

<b>VOLUNTEER TIME (Optional) - Average local hourly wage multiplied by hours equals dollar value</b>		
*VOLUNTEER HOURS	36,594; adults -	
*VOLUNTEER HOURS	8,049; youth 28,545	
*VOLUNTEER DOLLAR VALUE	36,594 x 3.35 =	
*VOLUNTEER DOLLAR VALUE	\$122,589	
<b>ESTIMATED PROGRAM COSTS (Optional) Multiply number of staff years</b>		
	Prof	Para
*STAFF YRS. EXPENDED		
*EST. PROGRAM COSTS		

**\*TITLE**

Program Title (Include State Name in Title)

CONTROL NO

NC134 North Carolina "Water Watch"

**\*TEXT**

Certain areas in North Carolina periodically face drought situations. In order to help state residents learn how to conserve on water supplies, a statewide educational program, "Water Watch", was initiated in 1981-82. Agents in 95 counties were trained by specialists from Biological and Agricultural Engineering, Community and Rural Development, and Housing and House Furnishings on water saving measures. Educational materials provided for use in the programs included resource packet, slide/tape sets, and demonstration boards. The program was designed to be used with both rural and urban groups.

The program has been utilized in various ways by county agents: special interest programs for civic organizations, with water suppliers, mall displays, youth programs, in factory settings, and with many groups reached by Extension.

In the past two years, over one-half of North Carolina counties have conducted "Water Watch" programs. Impact results are being measured by follow-up, random sampling. Preliminary results from three counties indicated that participants benefited both economically and educationally from the programs. Eighty-four percent listed as a major benefit the exposure to new ideas; 85% have actually applied or used the information; 90% rated the program from moderate to high in value; while one-fourth to one-half said the information improved their planning ability, skills or decision-making. Participants also indicated dollar and water savings. Over 60% have reduced water consumption of up to 60 gallons/month by using at least one of five behavioral conservation techniques or by using water saving devices (major one was low-volume shower heads). The dollar savings varied from \$5 to as much as \$100.

The program will continue to be monitored and impact results measured.

**\*CONTACT**

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**\*KEYWORDS**

Control No. . . . . NC134  
 State . . . . . North Carolina  
 Fiscal Year(s) . . . . . 1983  
 Program Area(s) . . . . . Home Economics  
 (List as many as apply)

Subject Matter Area . . . . . Water Conservation/Management

Commodity/Subject . . . . . Water Conservation/Water Management

Audience . . . . . Homeowners, families, public officials, plant

Methods . . . . . Demonstrations, mall displays, newspapers, club meetings

**Measurable Impacts/Results - Measurable social or economic consequences**

Enter Measurable Impacts/Results - Keywords		Enter quantity - (economic or social)
<b>*QUANTIFIED IMPACTS</b>		
Attitudes changed		85% applied/used information; 90% rated value moderate-high
Decisionmaking improved		1/2-3/4 improved planning ability, skills and decisionmaking
Knowledge gained		84% gained new ideas
Water/dollars saved		60% reduced water consumption 60 gal/month; saved \$5 - \$100
<b>VOLUNTEER TIME (Optional) - Average local hourly wage multiplied by hours equals dollar value</b>		(This area is intentionally left blank for reporting purposes.)
*VOLUNTEER HOURS		
*VOLUNTEER DOLLAR VALUE		
<b>ESTIMATED PROGRAM COSTS (Optional) Multiply number of staff years expended by cost of one FTE</b>		
	Prof      Para	
*STAFF YRS. EXPENDED		
*EST. PROGRAM COSTS		

**\*TITLE** Program Title (include State Name in Title)

NC135 Energy-Efficient Window Treatments in North Carolina

**\*TEXT**

In 1982, agents in four districts of the state were trained in a one-day session on window treatments. Emphasis included new ideas for decorative treatments, management, design for energy-efficiency and six to eight construction techniques for window treatments. Since the training session, 42 programs and workshops have been held in 38 counties.

Seven counties conducted surveys six months afterwards to evaluate the impact of their programs and/or workshops. Approximately 1225 people attended the programs or workshops in the counties. A total of 115 responded to the sample survey. Seventy-three percent of the respondents indicated that they gained new ideas to try from the program. Over 37% have already used a new or different treatment while almost 48% plan to use a new treatment in the near future. More than 56% have added or installed some type of insulated window treatment at their windows. Fifty-one (44.3%) have improved their management of window treatments by opening and closing them for maximum energy savings. Seventy-six of the clients indicated they extended their family income from \$5,940 to \$9,662 with an average per family range of \$78 to \$127.

**\*CONTACT**

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**\*KEYWORDS**

Control No. NC135  
 State North Carolina  
 Fiscal Year(s) 1983  
 Program Area(s) Home Economics  
 (List as many as apply)

Subject Matter Area Home Furnishings

Commodity/Subject Energy-Efficient Window Treatments

Audience Adults, homemakers, working women

Methods Workshops, special interest meetings

**Measurable Impacts/Results -- Measurable social or economic consequences**

Enter Measurable Impacts/Results - Keywords

Enter quantity -- (economic or social)

**\*QUANTIFIED IMPACTS**

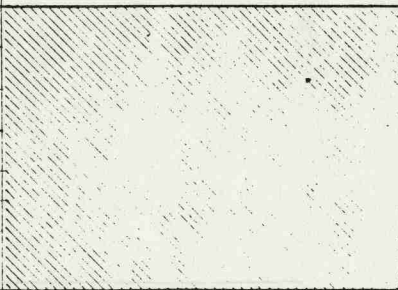
Insulated treatment installed	56% clients
Improved window treatment management	51 clients (44.3%)
Dollar Value	\$5940 - \$9662

**VOLUNTEER TIME (Optional)** - Average local hourly wage multiplied by hours equals dollar value

\*VOLUNTEER HOURS  
 \*VOLUNTEER DOLLAR VALUE

**ESTIMATED PROGRAM COSTS (Optional)** Multiply number of staff years expended by cost of one FTE

*STAFF YRS. EXPENDED	Prof	Para
*EST. PROGRAM COSTS		



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**\*TITLE** Program Title (Include State Name in Title)

NC136 Furniture Refinishing in North Carolina

**\*TEXT**

Refinishing furniture workshops teach clients "hands-on" skills to give old furniture new life. Workshops include two or three work sessions to remove old finish, repair and prepare for new finish, and stain and finish. Clients go home with a "new" old piece of furniture for their home. Refinishing furniture projects extend furniture life and family income.

Twenty-seven furniture refinishing workshops were held in 23 counties in 1982-83. Approximately 270 people participated in the workshops and actually refinished a piece of furniture. Six counties in the state conducted surveys six months after the workshops to evaluate the results of their teaching efforts. Sixty-four clients responded to the survey. Most indicated they had benefited from the workshops through increased confidence (65.5%), skills (73.4%), and personal satisfaction (78.1%). About 64% of the clients had refinished more than one piece of furniture including 26 clients (41%) who had refinished more than three items. A total of 141 items have been refinished since the county workshops and almost 90% of the clients are using these refinished items in their homes. The income of those participating in the workshops in the six counties were extended \$6,541 to \$8,755 for an average of \$112 to \$151 per family. Almost 19% of the families had extended their income over \$200.

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<b>*KEYWORDS</b>	
Control No . . . . .	NC136
State . . . . .	North Carolina
Fiscal Year(s) . . . . .	1983
Program Area(s) . . . . . (List as many as apply)	Home Economics
Subject Matter Area . . . . .	Home Furnishings
Commodity/Subject . . . . .	Refinishing Furniture
Audience . . . . .	Adults, homemakers, working women
Methods . . . . .	Workshops
<b>Measurable Impacts/Results - Measurable social or economic consequences</b>	
Enter Measurable Impacts/Results - Keywords	
Enter quantity - (economic or social)	
<b>*QUANTIFIED IMPACTS</b>	
Income extended	\$6,541 - \$8,755
Furniture refurbished	141 items
Confidence	increased
Skills	increased
Satisfaction	increased
Furniture used in home	90%
<b>VOLUNTEER TIME (Optional) - Average local hourly wage multiplied by hours equals dollar value</b>	
*VOLUNTEER HOURS	
*VOLUNTEER DOLLAR VALUE	
<b>ESTIMATED PROGRAM COSTS (Optional) Multiply number of staff years by applicable rate per FTE</b>	
*STAFF YRS. EXPENDED	Prof
	Para
*EST. PROGRAM COSTS	

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**\*TITLE**

Program Title (Include State Name in Title)

NC137 Marketing Skills Improved As A Result of Craft Marketing and Business Management Seminars in North Carolina

**\*\*TEXT**

Improving marketing skills was the main objective of the Craft Marketing-Business Management Seminars conducted in the six North Carolina Extension districts during 1982-83 FY.

Participation included members of Extension Homemaker Clubs, craft organizations, guilds, fairs, co-ops, craft shop owners/managers.

Subject matter included: Standards, Display, Packaging, Marketing, Pricing, Managing Your Craft Business, Legal Aspects and Tax Management.

Resources involved: Area Specialized Agent-Crafts, Home Economics Agents, Home Economics and Housing and House Furnishings Departments, Economics and Business Department, Agriculture Marketing Service, USDA, and Southern Highland Handicraft Guild.

Educational packets were provided which included subject matter information. A special flyer distributed via newsletters, news columns, radio and special mailings advertised the seminars.

Impact results were measured by post-evaluation questionnaires. Percentages given are based on two of the questions answered by respondents.

**CRAFT MARKETING SEMINARS**

District	No. of Counties	No. of Participants	% Using Infor.		% Needing Further Information
			Impr.	Mk. Skl.	
NW	15	160	(99)	62%	(105) 66%
SW	17	110	(74)	67%	(78) 71%
W	18	177	(108)	61%	(130) 73%
<b>Total</b>	<b>50</b>	<b>447</b>	<b>(281)</b>	<b>63%</b>	<b>(313) 70%</b>

**CRAFT BUSINESS MANAGEMENT WORKSHOPS**

NC	17	75	59%		44%
NE	17	83	Percentages are based on 119 respondents to evaluation		
SE	17	86			
<b>Total</b>	<b>51</b>	<b>245</b>			

A craft co-op, organized in 1983 is a result of one member's participation in the C.M.S., is unique because 13 members produce and market through private home showings. Implications indicate that 692 persons participated in the six seminars. Of these, 400 persons responded, indicating that more than half will use information to improve marketing skills; over two-thirds need further information on Business Management of Crafts. The four-year plan of work provides for additional programs and the development of educational materials in these areas.

**\*CONTACT**  
**\*CONTACT**

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Keywords are words and phrases that others will use when searching the data base. The keywords list can be used as a guide for selecting words. In addition, words not appearing on the keyword list may also be used. Separate each distinct word or phrase with a comma. Do not abbreviate keywords.

**\*KEYWORDS**

Control No. . . . . NC137

State . . . . . North Carolina

Fiscal Year(s) . . . . . 1983

Program Area(s) . . . . . Home Economics and Human Nutrition  
*(List as many as apply)*

Subject Matter Area . . . . . Arts and Crafts

Commodity/Subject . . . . . Marketing, Management

Audience . . . . . Homemakers, leaders, teachers, volunteers, families

Methods . . . . . Seminars, workshops, demonstrations, newsletter, newspaper, slide tapes

**Measurable Impacts/Results - Measurable social or economic consequences**

Enter Measurable Impacts/Results - Keywords		Enter quantity - (economic or social)
<b>*QUANTIFIED IMPACTS</b>		
Persons trained		692
Marketing improved		400
Knowledge gained		400
<b>VOLUNTEER TIME (Optional) - Average local hourly usage multiplied by hours equals dollar value</b>		
<b>*VOLUNTEER HOURS</b>		
<b>*VOLUNTEER DOLLAR VALUE</b>		
<b>ESTIMATED PROGRAM COSTS (Optional) - Multiply number of staff years expended by cost of one FTE</b>		
<b>*STAFF YRS. EXPENDED</b>		
<b>*NET PROGRAM COSTS</b>		

CONTACT  
 Freida M. Farris, Area Specialist, Crafts  
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**\*TITLE** Program Title (include State Name in Title)

CONTROL NO

**NC138** Craft Business Management Workshops in North Carolina

**\*TEXT**

In five of the seven Extension regions of North Carolina, one-day workshops on craft business management and marketing were conducted. Special materials on patents, copyrights and trademarks were developed for this group as well as tailored information on business management and taxation.

Workshops presented at seven locations by specialists during the year.

Crafts persons evaluated the program and were very impressed with the content. Most requested additional material and workshops in the future.

Continued emphasis will be placed on creating materials for this group and on conducting additional workshops in 1983-1984.

**\*CONTACT** Name and title • Address (include Zip code) • Telephone (include area code & extension) • Extension ID (when appropriate)

**Robert D. Dahle, Extension Economist**  
**Business Management**  
**N. C. Agricultural Extension Service**  
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Keywords are words and phrases that others will use when searching the data base. The keywords list can be used as a guide for selecting words. In addition, words not appearing on the keyword list may also be used. Separate each distinct word or phrase with a comma. Do not abbreviate keywords.

**\*KEYWORDS**

Control No. NC138  
 State North Carolina  
 Fiscal Year(s) 1983  
 Program Area(s) Agriculture, Community and Rural Development,  
 (List as many as apply) Home Economics  
 Subject Matter Area Cooperatives, Management  
 Commodity/Subject All  
 Audience Adults, members, board of directors  
 Methods Workshops, demonstrations

Measurable Impacts/Results - Measurable social or economic consequences

Enter Measurable Impacts/Results - Keywords		Enter quantity - (economic or social)
<b>*QUANTIFIED IMPACTS</b>		
Crafts persons trained		685
VOLUNTEER TIME (Optional) - Average local hourly wage multiplied by hours equals dollar value		
*VOLUNTEER HOURS		
*VOLUNTEER DOLLAR VALUE		
ESTIMATED PROGRAM COSTS (Optional) Multiply number of staff years expended by cost of one FTE		
*STAFF YRS. EXPENDED	Prof	Para
	.3	
*EST. PROGRAM COSTS		

Robert D. Debie, Extension Economist  
 Business Management  
 U. S. Agricultural Extension Service  
 Raleigh, NC 27650-5275 (919) 757-2882

**\*TITLE**

Program Title (Include State Name in Title)

CONTROL NO

NC139

Consumer Economics Education in North Carolina

**\*TEXT**

Education regarding both the macroeconomy and individual consumer decisions was provided to citizens and extension agents of North Carolina in order to assist consumers make more informed decisions about economic matters.

The program involved a major use of the mass media, including radio, TV, and newspapers, as well as county meetings, agent training, and newsletters.

The mainstay of the program was the weekly radio series, "The Economic Perspective," now carried by 131 stations in five states. The program can be heard by the total population of North Carolina. Fifty-two weekly programs were aired in the past year. Complementary programs (12 in number) were aired statewide on an Extension TV program. In addition, 35 other programs and interviews were aired on commercial radio and TV, twenty county programs were conducted, and eight informational publications were prepared for agents and newspapers. Two agent training sessions were conducted and two economic outlook conferences were planned and held.

These efforts will be continued next year. New emphasis will be placed on developing micro-computer programs for county offices to assist citizens in making various consumer decisions, such as when to convert a mortgage, how to evaluate discount points, calculating life insurance requirements and calculating how much of a retirement fund to develop.

**\*CONTACT**

• Name and title • Address • Phone • Zip code • Telephone language (English & Spanish) • Extension, pager ID list

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**\*TITLE**

Program Title *(include State, National, Title)*

CONTROL NO

NC140

North Carolina Extension Homemakers Association, Inc.  
Leadership Development

**\*TEXT**

There are young homemakers, middle-aged and working homemaker groups, who have not been reached by either the home economics agent or a volunteer. To help reach these areas and individuals, the Extension Homemakers' Board of Directors must determine new types of local groups or individuals who can become a part of this volunteer educational Association to receive knowledge and skills to improve the lives and situation of their families and communities.

The N. C. Extension Homemakers Association identified new audiences, reached young homemakers, and trained leaders on organizational management as well as subject matter.

Home Economics Agents who were liaison to the Extension Homemakers Association conducted district meetings and training sessions for volunteers to carry out the program of work in the N. C. Extension Homemakers Association. 1150 volunteers helped to plan and carry out the program of work efforts.

Volunteers helped to plan and implement the Legislative Day Program which was attended by 1200 Extension Homemakers.

State program of work chairmen held statewide program of work workshops for district chairmen to implement plan of work.

25,000 volunteers help extend the Extension Home Economics program through the Extension Homemakers Association. Through these efforts, North Carolina Extension Homemakers are helping to improve the quality of life of North Carolina.

**\*CONTACT**

*Name and title • unit • (include Zip code) • Telephone (include area code & extension) • E-mail • Fax • Other information*

Dr. Linda Flowers McCutcheon  
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Raleigh, NC 27650 (919)737-2782





\*TITLE

NC141 Estate Planning in North Carolina

\*TEXT

Most adults in North Carolina die intestate, i.e., without a will. Dying intestate usually results in unnecessary stress and cost to the survivors because of poor tax planning, increased administration costs and increased likelihood of lawsuits among beneficiaries. Moreover, routine operation of family businesses such as the family farm are often immobilized because equipment or capital is needlessly tied up in probate.

To educate North Carolinians to the benefits of planning for estate distribution and to identify the Extension Service as an agency offering unbiased information in this area, in-depth workshops were held on a county-wide basis in 18 counties. An additional six seminars were held for special interest groups such as R. J. Reynolds Executive Farm Wives, young Cooperative Couples, and Senior Citizens retreats. About 1,350 people attended the county and special interest workshops. In addition, newspaper articles and radio spots were used to educate the public.

Agents were trained in in-service training sessions and through newsletter articles. A series of ten fact sheet-style publications are in the publication process. Each fact sheet deals in detail with specific topics such as probate, taxation, and wills. Available to agents will be corresponding visuals for use in presenting estate planning sessions.

A recent personnel shift temporarily interrupted this program; however, the demand for estate planning information mandates continued effort in this area.

\*CONTACT

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FY 83 Accomplishment Report - NAR

Keywords are words and phrases that others will use to find your data. In addition, words that appear on the keyword list may also be used to describe your project. Use the text above as a keyword.

**\*KEYWORDS**

Control No. **NC141**

State **North Carolina**

Fiscal Year(s) **1983**

Program Area(s) **Home Economics**  
(If it is more than one, list them all.)

Subject Matter Area **Legal Concerns**

Commodity Subject **Estate Planning**

Audience **Adults**

Methods **Workshops, newspapers, newsletters, publications**

**Measurable Impacts/Results - Measurable social or economic consequences**

Enter Measurable Impacts/Results - Keywords	Enter quantity - (economic or social)
<b>*QUANTIFIED IMPACTS</b>	
Knowledge gained	1,350 adults

**\*VOLUNTEER TIME (Optional)**

* VOLUNTEER HOURS	
* VOLUNTEER DOLLAR VALUE	

**\*ESTIMATED PROGRAM COSTS (Optional)**

* TOTAL EXPENDED	
* TOTAL INCOME	

\*TITLE

NC142 Needs Assessment in 4-H in North Carolina

\*TEXT

The focus of the needs assessment program has been to integrate subject matter information with youth and life skills development. This is accomplished through 4-H projects that are done in group situations and using activities that supplement and enrich project work. This past year extensive needs assessment activities were conducted to undergo the four year plan of work.

Volunteers in counties who served on 4-H youth committees were actively engaged in an in-depth needs assessment. The chairman of County 4-H and Youth Committees received training to improve their needs assessment skills. Volunteers representing other youth serving agencies were involved in seven Roundtable Discussions to assist in developing a statement of needs of North Carolina youth. Over 30 agencies and 21 counties were involved in the Roundtable Discussions. Results of these efforts were the state level plan of work and 100 county plans of work.

Youth needs were met as follows: 34,673 youth belong to community clubs where they learn life skills and subject matter skills; 66,501 youth participated in special interest groups where they gained subject matter information. This makes a total of 101,174 youth who participated in 4-H. Enriching experience away from the home environment include the following:

1. 4,187 youth who attended 4-H camps.
2. 1,000 youth participated in 4-H Congress in a variety of workshops focused on developing life skills and subject matter.
3. District Activity Day participation, 1,172.

This is consistent with the past three years participation. Youth acquire numerous life skills in all of these activities.

Project work continues to be an emphasis of the 4-H program and the number of youth completing 4-H projects has been holding steady over the past several years. However, the percentage of projects returned completed (10%) continues to be of concern. This will continue to be of emphasis in the 4-H program over the next four years.

\*CONTACT

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**\*KEYWORDS**

NC142  
North Carolina  
1983  
4-H

Needs assessment

Youth

Conferences, camps, projects

**\*QUANTIFIED IMPACTS**

Educational experiences

90,930

4-H projects

144,650

Learning groups organized

4,081

**VOLUNTEER TIME** (Optional)

**VOLUNTEER HOURS**

**VOLUNTEER DOLLAR VALUE**

**ESTIMATED PROGRAM COSTS (OPTIONAL)**

**PROGRAM EVALUATION**

**PROGRAM EVALUATION**

\*CONTACT  
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Raleigh, NC 27690

TITLE

NC143

Insect Oriented Youth Activities in North Carolina

TEXT

Of the approximate 100,000 4-H members in North Carolina, only a few hundred are involved in entomology activities at any one time. While many youngsters have an innate interest in insects, many do not have an opportunity to develop a meaningful relationship due to inavailability of printed materials and a lack of trained leaders. As resources permit, the entomology 4-H program will be continually upgraded to involve more youth and perhaps more importantly, reduce the teenager dropout rate so prevalent in this and many other 4-H programs.

In conjunction with the state 4-H office, training in collecting, pinning, and identifying insects was offered in all six extension districts for 4-H and subject matter extension agents. Similar training for county volunteer leaders and youth was also offered in Johnston County at three workshops organized by the extension 4-H agents. Two daycamp activities in Warren County included outdoor collecting as well as indoor study. In conjunction with the Wake County school system, entomology training was offered to elementary school youth as part of the magnet school program.

To develop poise, improve oral expression, and enhance communication skills, the statewide 4-H demonstration program affords youngsters an unique opportunity to "show and tell" about various facets of insect life and study. Twenty-one junior division (age 9-13) and six senior division (age 14-19) contestants competed at the district level for the opportunity to compete at state 4-H congress. The final state senior winner presented an excellent demonstration on residential termite protection which the 13-year-old junior winner presented a very entertaining demonstration on collection and study. Added effort must be expended to enlarge the senior division participation in 4-H demonstration activities.

CONTACT

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KEYWORDS

NC143  
NC  
1983  
4-H Youth

Entomology

Insect study

Youth, Leaders, Agents

Demonstrations, Workshops

QUANTIFIED IMPACTS

Knowledge gained

Attitudes changed

Youth

Leaders/Agents

347

51 / 183

2

\$6,000

EDARHO  
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**TITLE**

NC145            N. C. 4-H CROP SCIENCE PROGRAM

**TEXT**

The world demand for food will continue to be a problem of magnitude in the future. Loss of prime agricultural land, conversion of marginal tracts to crop-land, decreasing farm numbers are major concerns. There is a need to stimulate and encourage awareness, understanding, and appreciation of modern agricultural practices related to crop sciences.

Decreasing participation in crop science related projects has led to a greater focus on developing new curriculum. Efforts were made to review existing materials and to stimulate new strategies for delivery.

One North Carolina county piloted a school awareness program with classroom and individual plant science related projects being developed. A county wide fair of the projects focused attention on both 4-H and crop science concerns. Additionally, an inter departmental curriculum development committee has been created and is in process of review and development of new printed and/or computerized materials. Presently the pilot effort is being expanded to 10 other counties for development.

Other efforts were made in horticultural projects such as special EFNEP aides' training on gardening which resulted in increases in greater participation in demonstrations, county projects and NJHA activities.

**CONTACT**

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**KEYWORDS**

NC145  
NC  
1983  
4-H Youth

Crop Science

Plant Science, Gardening

Agents, Volunteers, Youth

Project work, workshops, demonstrations

**QUANTIFIED IMPACTS**

Volunteers reached	150
Youth reached	1000



TITLE

NC146 N.C. 4-H Soil Science

TEXT

Soil is one of our most valuable natural resources but continues to be little valued by the general public. Coastal erosion, sedimentation, pollution and general land use, peat mining and ridge development are varied but real problems across the state. Yet few youth are being made aware of the problems facing their future. Participation and development of 4-H project materials has been decreasing significantly.

Efforts were planned over the past year to renew interest, develop new strategies, and increase participation in soil related projects. Special efforts were planned to establish linkages with some volunteer base of support.

A major school 4-H awareness effort centering around soil sciences was piloted in one county of North Carolina. In-class materials were developed for teacher/volunteer use and special home projects were prepared and returned. Efforts culminated with a county wide 4-H exhibit fair of the classroom and individual projects. Over 1000 youth were involved and public awareness of 4-H and soil related projects was increased significantly.

Additionally North Carolina received a grant during 1983-84 from USDA to survey soil and water related materials nationally for new material development. Simultaneously N.C. 4-H received a grant from the state NRCD department to focus on development of soil and water materials centered on urban and commercial development. As a result a developmental curriculum committee has been created with representatives from university departments of crop sciences, soil sciences and the state departments of NCRCD and Soil Conservation Service.

CONTACT

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**KEYWORDS**

NC146

NC

1983

4-H Youth

Soil Science

Conservation

Youth, leaders, agents

Project work, workshops, demonstrations

**QUANTIFIED IMPACTS**

Project material developed

(in progress)

CONTACT

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1125 Williams Hall, NC State University  
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\*TITLE

NC147

North Carolina 4-H Livestock Production

\*TEXT

Livestock production projects (including poultry and fish) teach not only subject matter and skills related to efficient production in utilization but also life skills that contribute to the satisfaction of youth basic needs. While many livestock production projects necessitate ownership of an animal, there are many livestock activities within the program that enable a youth that does not own an animal to participate. The livestock program incorporates horse, lamb, beef, dairy, poultry and fish programs.

Program objectives in all livestock areas that focus on adult volunteers were accomplished through numerous clinics and volunteer forums that involve County Extension Agents, volunteer leaders and Extension Specialists.

Horse program participation totaled 5,399 which represented a 10% decrease from the previous year. While aspects of the horse program that required ownership of a horse declined, those activities that did not require a horse showed a consistent increase. Future activities of the horse program will emphasize regional activities to minimize 4-H'er expenses and will expand the horseless program activities.

Livestock activities in beef, sheep, and swine are holding steady or showing an increase. The sheep program is probably showing the most rapid increase. Livestock activities involve projects, shows, judging contests, demonstrations, clinics, sells and recordkeeping. Total youth participation includes 829 in beef related activities, a 188 in sheep activities, 782 in swine related activities and 444 in livestock judging activities. It is expected that livestock activities and related projects will continue to expand.

The Dairy program introduced a new dairy industry project that does not require ownership of an animal. Another dairy activity that teaches production and dairy husbandry but does not require ownership is the 4-H dairy bowl. Participation in this program continues to increase with approximately 80 youth participating statewide each year.

Participation in the poultry program remains steady and a new rabbit project has gained much participation in the past year.

\*CONTACT

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**\*KEYWORDS**

NC147  
North Carolina  
1983  
Agriculture

Sheep, Beef, Swine, Poultry

Livestock, Poultry

Youth, parents

Workshops, shows, judging

**\*QUANTIFIED IMPACTS**

Skills learned

10,467 youth

**\*TITLE**

NC148

Economics In Action in North Carolina

**\*TEXT**

Economic education efforts consist of the 4-H Economics in Action program (special interest format), the American Business System 4-H demonstration program, and agricultural field days.

Extension Economics Specialists and Extension 4-H Agents assisted volunteer business and community leaders with the planning, implementation, and evaluation of 10 4-H Economics in Action programs which reached 373 high school students. Through interaction with 105 volunteer business persons representing 90 private businesses, the young people learned about economics at work in their communities.

The 4-H Economics In Action program continues to be an effective economic education program. Development of 4-H program-business community relationships and recruitment of 4-H teens and two additional objectives that the 4-H Economics In Action program fulfills. Emphasis will be placed on expanding the 4-H Economics In Action program into additional counties.

The agricultural field days for primary school students are relatively new programs. The economics component of these programs is very important. The use of volunteer students presenters during the field days is essential to the expansion of this program into other counties.

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**\*KEYWORDS**

NC148  
North Carolina  
1983  
4-H

Economic Education

Youth

Awareness created, knowledge gained, resource people involved

**\*QUANTIFIED IMPACTS**

Youth

1,488

**\*TITLE**

NC149

American Business System in North Carolina

**\*TEXT**

The American Business System 4-H demonstration program reached 45 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. Volunteer District Contact Persons continued to manage the operation of the American Business System 4-H demonstration at the district level. In 1983 the Cooperative Council of North Carolina contributed approximately \$2,200 to support the American Business System 4-H demonstration program.

Agricultural field days in four counties reached 1,070 primary school students. The field days include presentations on agricultural crops, soils, wildlife, economics and forestry. When possible, volunteer college students were recruited to present the economics session.

The American Business System 4-H District Contact Persons release up to six man-days of specialist time. Efforts will be made to further train District Contact Persons and to expand their interaction with 4-H agents and volunteer leaders.

**\*CONTACT**

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**\*KEYWORDS**

NC149  
North Carolina  
1983  
4-H

**Economic Education**

**Youth**

**Awareness created, knowledge gained, resource people involved**

**\*QUANTIFIED IMPACTS**

**Youth**

**1,488**

\*CONTACT  
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**TITLE**

NC150

N.C. 4-H Natural Resources

**TEXT**

North Carolina possesses natural resources which are invaluable to both the economy of the state and future generations. Over the past decade a growing exploitation through commercialization, tourism, and mining has occurred. The constantly increasing needs for effective utilization and preservation of the state's natural resources demand an educated and alert public. Real needs exist to prepare the next generation of youth to be capable managers of their natural resources and environment.

Increasing individual and county participation in natural resource projects has been emphasized with special focus on volunteer leadership, development. Establishing a state wide conference for fur, fish and game education, increasing participation in marine science projects, developing a western regional natural resources/heritage camp, and development of alternative energy projects were projected. Improved linkages with groups and agencies with related concerns was also targeted.

Participation by both counties and individuals have increased significantly over the past year. A fur, fish and game rendezvous conference was held with active volunteer and financial support from wildlife associations, hunt clubs, and other related groups. Eighty six campers from 40 counties took part. Marine Science projects have increased significantly with a 100% increase in demonstrations at activity days and 50% increase in number of counties reporting programs. Some counties even implemented their own marine science camps. The Carolina Notebook, a new natural resources publication for teachers and students K-12, has a circulation of 5000 issues and 98% of the users have found it satisfactory and interesting when surveyed. A regional camp was conducted, one resident camp was devoted.

**CONTACT**

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**KEYWORDS**

NC150  
NC  
1983  
4-H Youth

**Natural Resources**

**Forestry, Wildlife**

**Youth, volunteers**

**Camps, demonstrations, workshops**

**QUANTIFIED IMPACTS**

**Increased awareness by youth 1500**

**Increased awareness by volunteers 150**

**\*TITLE**

NC151 Mechanical Science, Technology and Engineering in  
North Carolina

**\*TEXT**

The objectives for the mechanical science projects are for youth to accept responsibility for utilizing and promoting energy conservation measures in the home, on the farm and in the community, to learn safe and efficient operation and maintenance of farm and home equipment, machines and appliances, youth to learn basic concepts related to electric power and how it can be used effectively, and for volunteer leaders to become skilled in teaching about small engines.

Participation in the areas of electric, small engines, and safety totaled 4,817 for 1982-83. Youth participated in Electric Projects I-V, Statewide 4-H Electric Congress, sponsored by the four major power utilities, District Activity Days and in community clubs with the supervision of adult volunteer leaders. Other projects which were selected by youth were automotive, bicycle and aerospace that totaled 5,761 participation for 1982-83.

The mechanical science program will continue to offer activities that will help youth to learn to conserve energy and learn safe techniques to use while handling petroleum projects. More emphasis will be placed on establishing a stronger educational bicycle program.

**\*CONTACT**

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**\*KEYWORDS**

NC151  
North Carolina  
1983  
Mechanical Science, 4-H

Electric, small engines

Youth development

Youth

Conferences, projects

**\*QUANTIFIED IMPACTS**

Youth involved

\*CONTACT  
Robert L. McPherson, 4-H Safety Specialist  
P.O. Box 3908, WYOMING  
Raleigh, NC 27620  
(919)737-2520

**\*TITLE**

NC152

North Carolina 4-H Safety Program

**\*TEXT**

The objectives of the 4-H Safety program are for youth to learn how to respond appropriately in formal or emergency situations and for youth to be aware of the causes across several department lines through its various related projects.

The largest participation area is the Fire Safety program. With the Fire Safety program, counties link the volunteer fire departments who recruit youth and teach the subject matter. Major emphasis was given to the State 4-H Council Safety project which involved 4-H youth in exhibits, demonstrations, displays, workshops and seminars on various safety topics. Over 75 counties participated in the outlined activities decided upon by the council.

Youth participation in safety reached 11,983. 4-H'ers have benefited directly from the safety programs. Over 375 4-H'ers were recognized for leadership activities conducted in their communities on fire safety, first aid, pesticide safety and home safety. A safety notebook was organized as a helping tool to give suggestions on specific ideas 4-H'ers could follow in their safety programs.

The safety notebook will be updated as information is developed to help youth continue to learn and share more about safety. This thrust will be made in areas of fire safety, recreational, first aid and home safety.

**\*CONTACT**

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**\*KEYWORDS**

NC152  
North Carolina  
1983  
4-H Safety

Fire Safety, First Aid

Youth, Volunteer Firemen

Safety Interest

**\*QUANTIFIED IMPACTS**

Safety Skills Learned

11,983

TITLE

NC153 NC 4-H Expanded Food and Nutrition Education Program

TEXT

Limited resource families face a dilemma in providing adequate diets for themselves and their children. In the 706 EFNEP units conducting a youth program, opportunities for targeted youth involvement supported by indigenous and/or interested volunteers are limited. Utilizing area training, paraprofessionals gave leadership in the development of group projects intended to promote ownership and vested interest in the activities. Experiences planned around normal nutrition needs and preparation skills were designed to afford participants, youth and adults an environment supportive of nutrition learning and personal successes. The 11,291 enrolled youth also participated in day camps, overnight camps, special interest and field trips through the leadership of 28,460 volunteer hours, county EFNEP staff's and support from interested businesses, civic and government agencies. Such involvement has encouraged and made possible the progression of some 4-H EFNEP youth and groups into the on-going Extension youth program.

Lack of volunteers, willing and capable to assume responsible leadership, is recognized as the challenge for greater impact; thus, volunteer recruitment, training and utilization surfaces as the crucial element for a progressable 4-H EFNEP endeavor.

CONTACT

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**KEYWORDS**

NC153  
NC  
1983  
4-H Youth, Human Nutrition

Food Habits, Personal Development, Life Skills

Personal development, mainstreaming

EFNEP youth, volunteers

Workshops, group meetings, demonstrations

**QUANTIFIED IMPACTS**

4-H EFNEP paraprofessionals trained	55
Youth involved	11,291
Volunteer hours	28,460



\*TITLE

NC154

Teach Children About Money in North Carolina

\*TEXT

"Teach Children About Money" is a home study course program available to North Carolina citizens. The major program goal is for children to learn skills for managing money successfully. The course is designed for children who are toddlers through teenagers. A majority of children participating were less than eight years old, and more than one-half were from rural families. More than one-half of the parents participating had some college education.

Parents served as teachers for the program and supervised the money management activities of their children.

Evaluation responses from four counties revealed the following behavioral changes:

1. 100 percent of the participants:
  - made and followed a spending plan,
  - shopped more carefully
  - increased savings (one-third saving \$5-10), and
  - changed habits that wasted money.
2. 50 percent or more of the participants:
  - received personal satisfaction,
  - improved money use plans, and
  - took advantage of opportunities to earn money.
3. 100 percent of the parents eliminated impulse shopping and 70 percent made and followed money use plans.

This was the first year the program was offered, consequently participation was very limited relative to need. The program will be offered another year.

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**\*KEYWORDS:**

NC154  
North Carolina  
1983  
Home Economics

Family Resource Management

Money Management

Parents, Children

Home Study Course

**\*QUANTIFIED IMPACTS**

**Money Saves**

**\$5-10 per participant**

**Skills Learned**

VOLUNTEER TIME

TEACHING MATERIALS

PERMANENT RECORDS

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**\*TITLE**

NC155

Child Care, Growth and Development in North Carolina

**\*TEXT**

4-H and other youth participated in a 4-H babysitting project and group meetings provided through the statewide 4-H program.

Personnel from local health, police and fire departments assisted in babysitting training meetings. 203 boys and 2,001 girls were enrolled in the babysitting project and 686 youth participated in group sessions on babysitting.

Revised project manual and leader's guide are expected to create renewed interest in the program.

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**\*KEYWORDS**

NC155  
North Carolina  
1983  
4-H Youth

Child Care, Early Childhood

Improvement of participated youth

Youth

Group meetings, projects

**\*QUANTIFIED IMPACTS**

Participants - Youth

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\*TITLE

NC156

Participation in 4-H Clothing and Personal Appearance  
Projects in North Carolina

\*TEXT

Several 4-H projects and activities, incorporating a variety of "learn by doing" activities have been devised to teach clothing selection, buymanship, aesthetics, modeling, care/maintenance and sewing skills. The Sewing Demonstration Program serves to help youth develop self-confidence and poise in addition to gaining knowledge and expertise focused on a specific sewing technique.

In 1983, approximately 9,200 youth were enrolled in clothing fashion revue, personal appearance projects and related activities. These related activities include a weekend clothing camp and Back-To-School contest. The Back-To-School contest relied on the recruitment of sixteen youth volunteers to run the competition sewing activities and fashion revue. As a result of training given in 1982 to 80 county clothing agents, and clothing subject matter volunteers assisted in 1983 with implementing county clothing programs. These programs primarily focused on teaching sewing classes and personal appearance classes.

The rough draft of Personal Appearance Project manual I, is presently being evaluated by 4-H coordinators clothing agents, volunteer leaders and youth. Plans are to edit the project based upon the clientele's input so that the project can be published for fall 1984.

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**\*KEYWORDS:**

NC156  
North Carolina  
1983  
4-H and Youth, Clothing and Personal Appearance  
Textiles and Clothing  
Decision-making, Consumer Education, Personal  
Development  
Adolescents, Volunteers  
Demonstrations, workshops

**\*QUANTIFIED IMPACTS**

Knowledge gained	9,200 persons
Skills learned	9,200 persons
Leadership skills	58 persons
Improved	

**\*VOLUNTEER HOURS** 525  
**\*VOLUNTEER DOLLAR VALUE** \$1,706.25

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**\*TITLE**

NC157

Participation in 4-H Foods and Nutrition Projects  
and Demonstrations in North Carolina

**\*TEXT**

Numerous 4-H projects that incorporate a variety of "learn by doing" activities have been developed to teach food preparation skills, sound eating habits and the importance of good nutrition as it relates to health and fitness. The foods and nutrition demonstration program also provides an opportunity for youth to develop poise and self confidence while gaining expertise in foods and nutrition. Research has shown that 4-H youth enrolled in foods and nutrition projects and demonstrations score significantly higher on tests of nutrition knowledge and consume more adequate intakes of kilocalories, protein, iron, vitamin A, thiamin, riboflavin and niacin than non-4-H youth.

In 1983, approximately 10,491 youth were enrolled in 4-H foods and nutrition projects and activities in North Carolina in addition to those enrolled in the Expanded Food and Nutrition Education Program. There are eight structured categories of foods and nutrition demonstrations for competition in North Carolina, namely: Junior Dairy Foods, Senior Dairy Foods, Junior Fruit and Vegetable Use, Senior Fruit and Vegetable Use, Junior Breads, Senior Breads, Junior Peanut Foods and Senior Peanut Foods.

At the county level, in 1983, there were a total of 474 boys and girls competing in one or more foods and nutrition demonstration categories. This represents only a small percentage of boys and girls presenting foods and nutrition demonstrations at the local club level.

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\*TITLE

NC158

4-H Calorie Countdown Program in North Carolina

\*TEXT

4-H Calorie Countdown is a nutrition education and weight control project designed to help overweight youth set a realistic goal for weight loss based on a body type, plan a well-balanced diet that will permit a weight loss of one or two pounds per week and develop proper eating habits throughout life. In the past year 2,178 youth in 53 counties completed the project.

The 4-H Calorie Countdown Project was piloted by Sharon Carter, Home Economics Extension Agent in Madison County, North Carolina. The purpose of the study was to evaluate the effectiveness of the Calorie Countdown program on increasing nutrition knowledge and affecting weight loss of 116 freshman girls, 14 to 15 years of age enrolled at Madison High School.

The girls were divided into a control and experimental group. A nutrition knowledge pre and post-test consisting of questions on nutrition, previous dieting experiences, and food habits was administered to both groups. For six weeks, the nutrition lessons from Calorie Countdown were presented to the experimental group, during which time they were weighed and measured weekly.

Results of the study showed there was a significant increase in nutrition knowledge in the experimental group due to exposure to Calorie Countdown. Analysis of covariance was used to compare weight loss and nutrition knowledge between experimental and control groups. Members of the experimental group desiring to lose weight lost two pounds compared to .367 pounds in the control group. Thus, Calorie Countdown was shown to have a positive influence on adolescent's weight and level of nutrition knowledge.

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**\*KEYWORDS**

NC158  
North Carolina  
1983  
4-H Youth, Home Economics and Human Nutrition  
Food and Nutrition  
Weight Control, Diet and Health, Food Habits  
Adolescents  
Workshops, publications

**\*QUANTIFIED IMPACTS**

Dietary practices improved	100 percent
Knowledge gained	100 percent
Nutrition improved	100 percent

\*TITLE

NC159

Food Science Activities in North Carolina

\*TEXT

A 4-H Fish and Seafood Utilization Demonstration Project was initiated with competition for both junior (9-13) and senior (14-19) age groups. Interest and participation appeared to be very good with 15 counties registered for junior and nine counties for senior competition at district activity days. Three districts were represented at state competition for the 9-13 age group and four were represented in the 14-19 group.

A special interest topic was made available to 4-H Club members at State Congress this year on "Send Your Tastebuds OFF to School". It involved organoleptic texture, taste and flavor. Approximately 75 4-H Club members, adult leaders and Extension agents were involved in this special interest course.

A display was presented at all district activity days indicating career opportunities available in food science. This was available for 4,380 participants which included 4-H members, leaders, Extension agents and other individuals.

Participants in the Fish and Seafood Utilization Demonstration increased their knowledge on nutrition, food preparation, food processing and food quality. Those were able to increase their knowledge about food quality.

Information will be made available to any individual (4-H member, leader or Extension agent) who has an interest in fish and seafood utilization. Efforts will be made to increase the participation in this demonstration.

\*CONTACT

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**\*KEYWORDS**

NC159  
North Carolina  
1983  
4-H Youth, Agriculture

Food and Nutrition  
Food Science, 4-H  
Food Processing, Food Quality

Adolescents, leaders  
Demonstrations, workshops

**\*QUANTIFIED IMPACTS**

Knowledge gained	75 club members leaders
Attitudes changes	15 counties, 9 counties
Dietary practices improved	15 counties, 9 counties

\*TITLE

NC160

4-H Housing and Home Environment in North Carolina

\*TEXT

Housing size has decreased by nine percent between 1978 and 1980. This "downsizing" increases the importance of functional, efficient and attractive interiors.

In addition to effective use of limited space, another housing concern of North Carolina families is that of increasing energy costs, up 288.88 percent from 1970 to 1982.

Families and youth need to become more proficient in investigating, evaluating and implementing energy and space management strategies that are compatible with family lifestyles.

A total of 23 home environment/home energy demonstrations were conducted in the six districts throughout the state, with district winners competing in the demonstration finals, during the week of the State 4-H Congress.

During the FY 1983, 1,019 4-H youth participated in activities in the home environment project.

New home environment and home energy activities will be planned and implemented to maintain and increase 4-H youth participation in these events.

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**\*KEYWORDS**

NC160  
North Carolina  
1983  
4-H

Housing and Home Environment

4-H youth

Projects and demonstrations

**\*QUANTIFIED IMPACTS**

Youth enrolled in home environment project	1,019
Youth who participate in the home environment/ home energy demonstration	23

\*TITLE

NC161

North Carolina 4-H Leadership Development

\*TEXT

The departmental objective to improve the quality of 4-H programming by strengthening the structure and function of district level program development groups was attacked by the development of program development guidelines and agent advisor job descriptions for district volunteer leaders' associations. The six district associations were further strengthened by changing the constitution of the state association to provide more direct structural communication through shared board of directors and officer representation between the six district associations and the state association.

The development of learning experiences, program guidelines and delivery systems responding to the needs and interests of youth was operationally integrated with the leadership and volunteer staff development design through inclusion of "My 4-H Plan" and the related "Plan-Do-Review" process into the basic volunteer orientation and job/goal description, volunteer staff development package. This concept was paired with the "life skills" concept in an initial design for a state level program in leadership and volunteer staff development entitled, "Life Skills for 4-H Leadership Development." Scheduled for initial utilization for personal and group empowerment through job and goal specific individual and group development. The model remains anchored to a management design based on the "ISOTURE" process of volunteer staff development: identification, selection, orientation, training, utilization, recognition, and evaluation through utilization of the principles of role theory and situational leadership.

Support materials include a "Leadership Project Planning Guide," "Agents Guide to Life Skills for Leadership Development," and a series of goal and job descriptions in the required format.

The materials design relates directly to the needs to identify, train, and support individuals and groups performing specific duties and moving toward specific objectives consistent with "The 4-H Mission in North Carolina." It initiates and incorporates the concept of "youth leadership" as a natural outcome of "leadership project" involvement.

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**\*KEYWORDS**

NC161  
North Carolina  
1983  
4-H

**Leadership and Volunteer Staff Development**

**Salaried and Volunteer Staff**

**Overall Program Design/Development**

**\*QUANTIFIED IMPACTS**

**Volunteers used**

**20,339**

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\*TITLE

NC162

4-H Organization and Development and Maintenance  
in North Carolina

\*TEXT

The 4-H program is dependent upon organized groups for delivery of educational subject matter. The volunteers who lead these groups need skills in identifying needs and delivering programs to meet those needs. The focus of the organizational development program has been to build volunteer leader skills in program planning, officer development and involving people.

The leader training function has been primarily accomplished through activities of the county, district, and state leaders' associations. It is estimated that 750 volunteers participated in the State Leaders' Convention. The focus of these meetings have been on improved organizational leadership with emphasis on finding and fulfilling youth needs. A quality 4-H club assessment tool was developed and pilot tested. This tool will be incorporated into the club maintenance program. It has application for training new leaders as well as highlighting skill deficiencies of other leaders.

Youth leaders in the county council receive in depth training to improve their leadership development skills at a weekend retreat. 93 youth participated and learned how to strengthen their county council through better planned meetings, improved needs assessment and more attention to the needs of members representing community clubs.

Expansion has been a thrust in North Carolina and two pilot expansion programs in counties were established. Both counties participating mapped the county in-depth and utilized volunteer committees to conduct community needs assessment, set up area activities for creating awareness, and subsequently organized local units. Over 350 youth were reached through their efforts.

The upcoming four year plan of work continues to stress organization development and maintenance. This will become an even bigger and more important part of the 4-H program.

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UNIT\*

**\*KEYWORDS**

NC162  
North Carolina  
1983  
4-H

Youth development

Volunteers, youth

Clubs

**\*QUANTIFIED IMPACTS:**

Units organized

4,018

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\*TITLE

NC163

Community Service and Facilities for North Carolina  
4-H Members

\*TEXT

4-H members continue to develop their skills in how to bring about positive change in their communities through 4-H/CD programs and activities. However, it was recognized that these experiences could be even more positive if there were more opportunities for young people to acquire the knowledge and experience that would help them to be effective organization members and leaders. Whether youth or adult, an informed and skilled membership is the backbone of any effective and successful community organization. To support this need in the 4-H/CD program thrust, materials have been developed covering basic organization and leadership skills. These materials were field tested in nine counties with 220 participants. While the participants were enthusiastic in their response to the materials and the workshops in which they were presented, certain revisions were required to make it possible for Extension field staff and volunteers to use these materials in an effective manner. These revisions are being made and during the upcoming program year selected Extension Agents (from at least 25 counties) will be trained in the use of these materials for youth and adult audiences. It is anticipated that each of these Extension Agents will conduct at least one workshop in their counties that will involve at least 25 youth and/or adult participants during the program year.

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**\*KEYWORDS**

NC163  
North Carolina  
1983  
4-H youth

**Life Skills**

**Adolescents, leaders, organizations**

**Workshops**

**\*QUANTIFIED IMPACTS**

**Skills learned**

220 youth/adults improved  
their group skills

**Leadership skills improved**

220 youth/adults improved  
their organizational  
leadership skills

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\*TITLE

NC164                    4-H Economic Development, Manpower and Careers in  
North Carolina

\*TEXT

The North Carolina 4-H Careers program was identified in 1978 by Extension staff and volunteers from the public and private sectors and since then has been developed into statewide program. The emphasis of the careers program has been on developing materials for club level program activities. A concurrent thrust has been to train professional and volunteer staff on how to utilize the materials in the on-going program. Another emphasis of the program has been to develop donor relationships that would enhance career awareness opportunities of young people.

The careers program has been fully developed by a state level volunteer leadership team. This team has been trained at the National Leader Forum on careers in consecutive years and the activities of this program have helped create awareness for the 4-H careers program in all 100 counties.

Specific activities of the careers committee during the past year have been to hold a special leader training during the North Carolina Leaders' Convention. The emphasis of this training program was for volunteers to become trainers in their county situation. 43 county volunteers participated. A second activity of the committee was to conduct two workshops during North Carolina 4-H Congress. These workshops focused on interviewing skills and awareness of how to prepare oneself for a career. 125 youth participated in these workshops. A career newsletter has been initiated and is being distributed to volunteers in all 100 counties through county 4-H staff.

The volunteer team serving as the state careers committee is a viable group that continues to plan and build support for the careers program. It is anticipated that the careers program will strengthen over the next several years through continued emphasis on networking the volunteers who are county career leaders.

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**\*KEYWORDS:**

NC164  
North Carolina  
1983  
4-H

Careers

Youth, volunteers

Leadership workshops, seminars

**\*QUANTIFIED IMPACTS:**

Improved career choices

955

UNTEER TIME

UNTEER

UNTEER

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TIME EXPENDED BY AREA OF EMPHASIS - PROGRAM COMPONENT  
 BY 1862 PROFESSIONALS DURING FY 83  
 NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE

<u>Area of Emphasis/ Program Component</u>	<u>Mandays Expended</u>	<u>% of Area of Emphasis Time</u>	<u>% of Total Time</u>
AGRICULTURE	64948	100.0	47.2
Beef	4715	7.3	3.4
Dairy	3250	5.0	2.4
Horses	396	.6	.3
Swine	4542	7.0	3.3
Poultry	2137	3.3	1.6
Seafood	437	.7	.3
Wildlife	434	.7	.3
Other animals	376	.6	.3
Tobacco	5815	9.0	4.2
Corn	2309	3.6	1.7
Cotton	618	.9	.4
Forage crops	1589	2.5	1.2
Peanuts	1001	1.5	.7
Soybeans	2172	3.4	1.6
Grain crops	1099	1.7	.8
Turf	632	1.0	.5
Other crops	83	.1	.1
Forestry	1988	3.1	1.4
Fruit and nuts	2544	3.9	1.8
Vegetables	3938	6.1	2.9
Ornamentals, flowers & landscaping	3564	5.5	2.6
Other horticultural crops	590	.9	.4
General agriculture	12732	19.6	9.3
Food and nutrition	72	.1	.1
Clothing	2	-	-



<u>Area of Emphasis/ Program Component</u>	<u>Mandays Expended</u>	<u>% of Area of Emphasis Time</u>	<u>% of Total Time</u>
Housing	316	.5	.2
Human development	71	.1	.1
Family resource management	23	-	-
General Home Economics	28	-	-
General 4-H	307	.5	.2
General CRD	185	.3	.1
General Extension	3817	5.9	2.8
Staff development	899	1.4	.7
Beekeeping and pollination	300	.5	.2
Christmas trees	965	1.5	.7
Urban forestry	241	.4	.2
Forestry residue	70	.1	.1
Fisheries	23	-	-
Outdoor recreation	33	-	-
Forest products	635	1.0	.5
CRD	6252	100.0	4.5
Beef	2	-	-
Dairy	12	.3	-
Horses	1	-	-
Swine	97	1.5	.1
Seafood	4	.1	-
Wildlife	3	-	-
Tobacco	10	.1	-
Corn	3	-	-
Forage crops	1	-	-
Soybeans	1	-	-
Turf	2	-	-
Forestry	98	1.5	.1

	<u>Area of Emphasis/ Program Component</u>	<u>Mandays Expended</u>	<u>% of Area of Emphasis Time</u>	<u>% of Total Time</u>
	Fruit and nuts	32	.5	-
	Vegetables	27	.4	-
	Ornamentals, flowers & landscaping	175	2.8	.1
	Other horticultural crops	4	.1	-
	General agriculture	138	2.2	.1
	Food and nutrition	62	1.0	-
	Housing	84	1.4	.1
	Human development	137	2.2	.1
	Family resource management	38	.6	-
	Aging	5	.1	-
	General Home Economics	99	1.5	.1
	General 4-H	12	.3	-
	General CRD	4588	73.4	3.3
	General Extension	484	7.8	.4
	Staff development	82	1.3	.1
	Beekeeping and pollination	9	.1	-
	Christmas trees	8	.1	-
	Urban forestry	5	.1	-
	Forestry residue	1	-	-
	Fisheries	1	-	-
	Outdoor recreation	24	.4	-
	Forest products	5	.1	-
	<b>HOME ECONOMICS</b>	<b>31633</b>	<b>100.0</b>	<b>23.0</b>
	Dairy	1	-	-
	Swine	1	-	-
	Poultry	1	-	-
	Seafood	15	-	-
	Wildlife	2	-	-

Area of Emphasis/ Program Component	Mandays Expended	% of Area of Emphasis Time	% of Total Time
Tobacco	2	-	-
Corn	10	-	-
Peanuts	9	-	-
Turf	10	-	-
Forestry	13	-	-
Fruit and nuts	12	-	-
Vegetables	61	2	-
Ornamentals, flowers & landscaping	129	4	.1
Other horticultural crops	16	-	-
General agriculture	65	.2	-
Nutrition	5543	17.5	4.0
Clothing	2808	8.9	2.0
Housing	5064	16.0	3.7
Human development	2400	7.6	1.7
Family resource management	2791	8.8	2.0
Aging	811	2.6	.6
General Home Economics	9583	30.3	7.0
General 4-H	114	.4	.1
General CRD	121	.4	.1
General Extension	1519	4.8	1.1
Staff development	503	1.6	.4
Beekeeping & pollination	6	-	-
Christmas trees	1	-	-
Urban forestry	1	-	-
Fisheries	6	-	-
Outdoor recreation	4	-	-
Forest products	2	-	-

<u>Area of Emphasis/ Program Component</u>	<u>Mandays Expended</u>	<u>% of Area of Emphasis Time</u>	<u>% of Total Time</u>
4-H	26532	100.0	19.3
Beef	263	1.0	.2
Dairy	109	.4	.1
Horses	175	.7	.1
Swine	216	.8	.2
Poultry	25	.1	-
Wildlife	43	.2	-
Other animals	50	.2	-
Tobacco	4	-	-
Corn	9	-	-
Soybeans	3	-	-
Forestry	35	.1	-
Fruit and nuts	7	-	-
Vegetables	59	.2	-
Ornamentals, flowers & landscaping	30	.1	-
General agriculture	53	.2	-
Nutrition	219	.8	.2
Clothing	318	1.2	.2
Housing	43	.2	-
Human development	75	.3	.1
Family resource management	30	.1	-
Aging	7	-	-
General Economics	65	.2	-
General 4-H	23233	87.5	16.9
General CRD	32	.1	-
General Extension	906	3.4	.7
Staff development	492	1.9	.4
Beekeeping and pollination	6	-	-

<u>Area of Emphasis/ Program Component</u>	<u>Mandays Expended</u>	<u>% of Area of Emphasis Time</u>	<u>% of Total Time</u>
Christmas trees	7	-	-
Forestry residue	1	-	-
Fisheries	1	-	-
Outdoor recreation	17	.1	-
ADMINISTRATION	8207	100.0	6.0
Beef	4	-	-
Dairy	2	-	-
Poultry	1	-	-
Tobacco	21	.3	-
Corn	1	-	-
Forage crops	2	-	-
Soybeans	1	-	-
Grain crops	4	-	-
Fruit and nuts	29	.4	-
Vegetables	1	-	-
Ornamentals, flowers & landscaping	2	-	-
Other horticultural crops	34	.4	-
General agriculture	370	4.5	.3
Foods and nutrition	14	.2	-
Clothing	16	.2	-
Human development	56	.7	-
Family resource management	1	-	-
General Home Economics	180	2.2	.1
General 4-H	184	2.2	.1
General CRD	72	.9	.1
General Extension	5883	71.6	4.3
Staff development	1326	18.6	1.0

<u>Area of Emphasis/ Program Component</u>	<u>Mandays Expended</u>	<u>% of Area of Emphasis Time</u>	<u>% of Total Time</u>
Christmas trees	1	-	-
Urban forestry	1	-	-
TOTAL	137567		100.0
State development	137567		100.0
General Extension	137567		100.0
General 4-H	137567		100.0
General Home Economics	137567		100.0
Family resource management	137567		100.0
Rural development	137567		100.0
Clothing	137567		100.0
Food and nutrition	137567		100.0
General agriculture	137567		100.0
Other horticultural crops	137567		100.0
Ornamentals, flowers & landscaping	137567		100.0
Vegetables	137567		100.0
Fruit and nuts	137567		100.0
Cash crops	137567		100.0
Cotton	137567		100.0
Forage crops	137567		100.0
Corn	137567		100.0
Tobacco	137567		100.0
Poultry	137567		100.0
Dairy	137567		100.0
Swine	137567		100.0
Administration	137567		100.0

TIME EXPENDED BY SUBJECTS BY 1862 PROFESSIONALS  
DURING FY 83  
NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE

<u>Subjects</u>	<u>Mandays Expended</u>	<u>Percent of Total Time</u>
Animal and plant nutrition	5429	3.9
Animal and plant diseases	4616	3.4
Buildings, structures, & facilities	1363	1.0
Cultural practices	13715	10.0
Entomology	1992	1.4
Forest management	1579	1.1
Farm management	5638	4.1
Irrigation and drainage	391	.3
Machinery and equipment	583	.4
Marine science	61	-
Marketing	3335	2.4
Pest management	3479	2.5
Processing	1234	.9
Selection and breeding	3639	2.6
Soils	978	.7
Water	161	.1
Weeds	1691	1.2
Clothing	3198	2.3
Cultural arts	222	.2
Creative crafts	1814	1.3
Human nutrition	4023	2.9
Food supply	1341	1.0
Gerontology	768	.6
Family resource management	2499	1.8
Health	649	.5
Home furnishings	2104	1.5

<u>Subjects</u>	<u>Mandays Expended</u>	<u>Percent of Total Time</u>
Home grounds	1071	.8
Housing	1626	1.2
Human relations	1191	.9
Child care	777	.6
Selection and buying	781	.6
Business & industrial development	214	.2
Community facilities and services	497	.4
CRD concepts	1172	.9
Comprehensive community planning	410	.3
Land use	196	.1
Manpower & economic development	112	.1
Natural resources	450	.3
Natural beauty	218	.2
Occupational experiences	134	.1
Taxation and local government	28	-
Waste disposal and management	558	.4
Business	60	-
Citizenship	168	.1
Civil Rights and EEO	181	.1
Communication skills	422	.3
Economics	1291	.9
Energy	1463	1.1
Environment	962	.7
Exchange programs	155	.1
Extension organization and planning	979	.7
Leadership development	7944	5.8
Organization development and maintenance	7880	5.7
Other administrative functions	1500	1.1



<u>Subjects</u>	<u>Mandays Expended</u>	<u>Percent of Total Time</u>
Personnel	1223	.9
Personal growth and development	5847	4.3
Program planning and implementation	14723	10.7
Program support and development	5681	4.1
Recreation	291	.2
Report preparation	2119	1.5
Safety	644	.5
In-service training	2759	2.0
Formal training	2175	1.6
Other training	744	.5
Orientation training	364	.3
Forest products	613	.4
Forest product harvesting	136	.1
Meteorology	203	.1
Public policy	210	.2
Tourism	46	-.
Electronic data processing	519	.4
Time management	41	-.
Legal affairs	166	.1
Alcohol & drug abuse	24	-.
TOTAL	137567	100.0

TIME EXPENDED BY AUDIENCE TYPES BY 1862 PROFESSIONALS  
DURING FY 83  
NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE

<u>Audience Types</u>	<u>Mandays Expended</u>	<u>Percent of Total Time</u>
Agri-business firms	3768	2.7
Farmer	35492	25.8
Family members	8050	5.9
Homemakers	4856	3.5
Extension homemakers	5274	3.8
Senior citizens	928	.7
Handicapped	113	.1
Volunteer leaders (Adult)	4305	3.1
Volunteer leaders (Junior/teen)	340	.2
Volunteer leaders (adult/teen)	2318	1.7
Extension citizens committees	3565	2.6
Extension professionals	31192	22.7
Non-Extension professionals	4075	3.0
Extension paraprofessionals	886	.6
4-H members	3841	2.8
EFNEP Youth	67	-
Other youth and adults	4169	3.0
4-H members and adults	8104	5.9
Adults	8558	6.2
Associations	1254	.9
Government agencies	1850	1.3
Accountability groups	886	.6
Legitimizing groups	1792	1.3
Young homemakers	743	.5
Working homemaker	691	.5

Audience Types	Mandays Expended	Percent of Total Time
Step families	136	.1
Young farmer	317	.2
TOTAL	137567	100.0

MONTHLY AGRICULTURAL EXTENSION SERVICES  
 DURING FY 63  
 TIME EXPENDED IN SERVICE BY AUDIENCE TYPE

Audience Types	Mandays Expended	Percent of Total Time
Agri-business firms	14	-
Women	127	.9
Local members	1192	7.2
Nonmembers	13928	74.2
Extension homeholders	62	.4
Senior citizens	16	.1
Volunteer leaders (adult)	322	1.1
Volunteer leaders (18-25)	22	.1
Volunteer leaders (adult/teen)	104	.8
Extension citizens associations	39	.3
Extension professionals	186	1.3
Non-extension professionals	79	.6
Extension paraprofessionals	4028	13.8
4-H members	12	-
4-H youth	4184	14.3
Other youth and adults	30	.1
4-H members and adults	82	.6
Adults	226	1.6
Associations	12	.1
Government agencies	22	.1
Accountability groups	7	-
Legislative groups	2	-
Young homeholders	118	.8
Working homeholders	78	.6
Step families	11	.1
TOTAL	52207	100.0

TIME EXPENDED IN EFNEP BY AREA OF EMPHASIS  
DURING FY 83  
NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE

<u>Area of Emphasis</u>	<u>Mandays Expended</u>	<u>Percent of Total Time</u>
Agriculture	268	.9
CRD	40	.1
Home Economics	23453	80.3
4-H	5284	18.1
Administration	155	.5
TOTAL	29201	100.0

TIME EXPENDED IN EFNEP BY AUDIENCE TYPES  
DURING FY 83  
NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE

<u>Audience Types</u>	<u>Mandays Expended</u>	<u>Percent of Total Time</u>
Agri-business firms	14	-
Farmer	157	.5
Family members	2196	7.5
Homemakers	15926	54.5
Extension homemakers	62	.2
Senior citizens	16	.1
Volunteer leaders (adult)	329	1.1
Volunteer leaders (Jr./teen)	22	.1
Volunteer leaders (adult/teen)	104	.4
Extension citizens committees	39	.1
Extension professionals	796	2.7
Non-Extension professionals	79	.3
Extension paraprofessionals	4038	13.8
4-H members	15	-
EFNEP Youth	4169	14.3
Other youth and adults	30	.1
4-H members and adults	82	.3
Adults	256	.9
Associations	15	.1
Government agencies	22	.1
Accountability groups	7	-
Legitimizing groups	3	-
Young homemakers	716	2.5
Working homemakers	78	.3
Step families	32	.1
TOTAL	29201	100.0

TIME EXPENDED BY EFNEP BY THE TOP TEN SUBJECTS  
DURING FY 83  
NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE

<u>Subjects</u>	<u>Mandays Expended</u>	<u>% of Total EFNEP Time</u>
Human nutrition	22782	78.0
Food supply	1815	6.2
Family resource management	174	.6
Selection and buying	726	2.5
Leadership development	357	1.2
Organization development	567	1.9
Program planning	890	3.0
Report preparation	753	2.6
Safety	153	.5
In-service training	149	.5
<b>Total time for ten subjects</b>	<b>28366</b>	<b>97.1</b>
<b>Total EFNEP time</b>	<b>29201</b>	<b>100.0</b>

-	2	Volunteer adult leaders
1	21	Family resource management
2	46	Home management
3	33	Extension home management
4	16	Extension home management
5	1	Home management
6	22	Home management
7	1877	Volunteer adult leaders
8	107	Volunteer adult/coop leaders
9	681	Volunteer adult/coop leaders
10	21	Extension citizens committees
11	328	Extension professionals
12	110	Non-Extension professionals
13	440	Extension professionals
14	261	4-H members
15	48	4-H members
16	1239	Other youth and adults
17	2087	4-H members and adults
18	973	Adults
19	8	Associations
20	28	Government agencies
21	1	Accountability groups
22	30	Legislative groups
23	1	Youth members
24	1	Working members
25	1000	TOTAL

TIME EXPENDED BY 4-H PROGRAM ASSISTANTS BY AREA OF EMPHASIS  
DURING FY 83  
NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE

<u>Area of Emphasis</u>	<u>Mandays Expended</u>	<u>Percent of Total Time</u>
Agriculture	27	.3
Community Resource Development	3	-
Home Economics	72	.9
4-H	8126	98.5
Administration	17	.2
TOTAL	8246	100.0

TIME EXPENDED BY 4-H PROGRAM ASSISTANTS BY AUDIENCE TYPES  
DURING FY 83  
NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE

<u>Audience Types</u>	<u>Mandays Expended</u>	<u>Percent of Total Time</u>
Agri-business firms	4	-
Farmer	21	.3
Family members	46	.6
Homemakers	21	.3
Extension homemakers	16	.2
Senior citizens	1	-
Handicapped	25	.3
Volunteer adult leaders	1377	16.7
Volunteer junior/teen leaders	103	1.2
Volunteer adult/teen leaders	681	8.3
Extension citizens committees	91	1.1
Extension professionals	456	5.5
Non-Extension professionals	110	1.3
Extension paraprofessionals	440	5.3
4-H members	261	3.2
EFNEP Youth	48	.6
Other youth and adults	1459	17.7
4-H members and adults	2097	25.4
Adults	915	11.1
Associations	6	.1
Government agencies	26	.3
Accountability groups	-	-
Legitimizing groups	30	.4
Young homemakers	1	-
Working homemakers	-	-
TOTAL	8246	100.0

TIME EXPENDED BY 4-H PROGRAM ASSISTANTS BY TEN TOP SUBJECTS  
 DURING FY 83  
 NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE

Subjects	Mandays Expended	Percent of Total Time
Clothing	67	.8
Creative crafts	82	1.0
CRD concepts	226	2.7
Leadership development	1627	19.7
Organization development	2751	33.4
Personal development	1098	13.3
Program planning	1079	13.1
Program support	487	5.9
Report preparation	225	2.7
Other administrative functions	102	1.2
<b>Total for Top Ten Subjects</b>	<b>7744</b>	<b>93.9</b>
<b>Total 4-H Program Assistants Time</b>	<b>8246</b>	<b>100.0</b>

TIME EXPENDED IN SMALL FARMER PROJECT BY AUDIENCE TYPES  
DURING FY 83  
NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE

<u>Audience Types</u>	<u>Mandays Expended</u>	<u>Percent of Total Time</u>
Agri-business firms	66	1.5
Farmer	3450	80.7
Family members	53	1.2
Homemakers	5	.1
Extension homemakers	1	-
Senior citizens	3	.1
Volunteer adult leaders	34	.8
Volunteer junior leaders	2	-
Volunteer adult/teen leaders	39	.9
Extension citizens committees	18	.4
Extension professionals	126	2.9
Non-Extension professionals	27	.6
Extension paraprofessionals	21	.5
4-H members	50	1.2
EFNEP Youth	5	.1
Other youth and adults	36	.8
4-H members and adults	37	.9
Adults	74	1.7
Associations	16	.4
Government agencies	23	.5
Accountability groups	6	.1
Legitimizing groups	14	.3
Young homemakers	12	.3
Young farmer	156	3.7
TOTAL	4274	100.0



TIME EXPENDED IN SMALL FARMER PROJECT ON TOP TEN SUBJECTS  
DURING FY 83  
NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE

<u>Subjects</u>	<u>Mandays Expended</u>	<u>Percent of Total Time</u>
Animal and plant nutrition	349	8.2
Animal and plant diseases	224	5.2
Cultural practices	1817	42.5
Entomology	54	1.3
Forest management	163	3.8
Farm management	419	9.8
Marketing	288	6.7
Selection and breeding	212	5.0
Organization development and maintenance	120	2.8
Program planning	93	2.2
Total for Ten Top Subjects	3739	87.5
TOTAL	4273	100.0