File Copy

Plan of Work

October 1, 1979 – September 30, 1980

north carolina
AGRICULTURAL EXTENSION SERVICE

a&t and n.c. state universities

H C Blalock

Associate Dean and Director

TABLE OF CONTENTS

TABLE I. PLANNED ALLOCATION OF EXTENSION PROFESSIONAL STAFF YEARS
BY PROGRAM AREAS AND PROGRAM COMPONENTS 1/
1862 INSTITUTIONS
FY '80

PROGRAM COMPONENTS (See definitions in Section III)	PROGRAM AREAS									
	ANR		CRD		HE		4-H		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
1. Crop production	166.5	40.1	6.2	12.4			5.4	3.1	178.1	21.1
2. Livestock production	94.2	22.8					4.2	2.4	98.4	11.7
3. Bus. mgt. & economics	39.0	9.5							39.0	4.6
4. Agr. mkg. & farm supls.	24.0	5.8							24.0	2.9
5. Ecol.,nat.res.& envirn.	65.4	15.8			1.6	.8			67.0	8.0
6. Mech.sc.,tech.&engnr.	22.8	5.5							22.8	2.7
7. Safety	2.1	.5			2.4	1.2	2.1	1.2	6.6	.8
8. EFNEP-Fed. funded 2/ EFNEP-Non-fed. funded					29.7	14.7	6.0	3.4	35.7	4.3
9. Food and nutrition					37.6	18.6	.9	.5	38.5	4.6
10. Pers.&faly.res.mgt.					24.6	12.2	.5	.3	25.1	3.0
11. Family life, etc.					21.9	10.8	1.2	.7	23.1	2.8
12. Textiles and clothing					26.9	13.3	2.8	1.6	29.7	3.5
13. Human health					3.4	1.7	.7	.4	4.1	.5
14. Housing & home env.					43.0	21.3	.5	.3	43.5	5.2
15. Leadership development			13.2	26.4	7.7	3.8	90.5	52.0	111.4	13.2
16. Org. devel. & maintce.			3.0	5.9	3.2	1.6	59.2	34.1	65.4	7.8
17. Comp. comm. planning			21.0	42.1					21.0	2.5
18. Comm. ser. & faclts.			5.3	10.8					5.3	.6
19. Ec.,mpwr.&career dev.			1.3	2.4					1.3	.2
20. Govt. oper. & finan.										
21. Leisure & cult. educ.										
TOTAL BY PROGRAM AREA	414.0	100	50.0	100	202.0	100	174.0	100	840 3/	100
PERCENT BY PROGRAM AREA		49.3		6.0		24.0		20.7		100

1/ Staff year allocations are to account for total available FTE's. Calculations should be carried 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 buidelines.

3/ Grand total - professional staff years.

TABLE III. PLANNED ALLOCATION OF PARAPROFESSIONAL STAFF YEARS BY PROGRAM AREA 1/
1862 INSTITUTIONS

FY 80

PROGRAM AREA		PARAPROFESSIONAL STAFF	
		1862	
		No.	%
ANR			
CRD			
HE	EFNEP--Federally funded	131.6	60.6
	EFNEP--Non-federally funded OTHER	22.0	10.1
4-H	EFNEP--Federally funded	13.4	6.2
	EFNEP--Non-federally funded OTHER	50.0	23.0
	TOTAL	217.0	100.0

1/ Staff year allocations are to account for total available FTE's. 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.

PLANNED ADMINISTRATION OF CIVIL RIGHTS REQUIREMENTS

The North Carolina Agricultural Extension Service is a named defendant in a class action suit which alleges discrimination based on race. Because of this suit, our state Extension Service is exempt from many of the Civil Rights requirements. We were specifically excluded, by the Federal Administration, from having to fill out tables six thru thirteen. However, acting upon the advice of counsel, we are trying to implement many of the measures which will assure equal delivery of services and equal employment opportunities to all individuals and groups regardless of race, color, national origin, sex, religion, age or handicap.

The North Carolina Agricultural Extension service will continue to provide request data to civil rights authorities, provided such data is not prejudical to the class action suit. We will continue to administer the 1974 Civil Rights Initiatives, and administrative policy designed to assure non-discrimination. Employment complaints will be processed under the Grievance Procedures of the North Carolina Agricultural Extension Service. Training for County and District personnel in Civil Rights will be a featured part of the program at many staff meetings. During FY 80, Civil Rights Compliance Reviews will be conducted by state-level personnel in each county scheduled for a comprehensive program review.

STATEMENT OF RATIONAL FOR SHIFTS IN RESOURCE ALLOCATION

There are no major shifts in resources planned for FY 80. North Carolina is cooperating in the weather program. This will necessitate some existing personnel to change their priorities slightly. Two new specialist positions are being created to work in the weather project. These positions will be on soft money since they are being funded through other agencies.

Agents with responsibilities in two or more program areas may shift some of their time from one program area to another based upon the priority placed upon clientele problems.

INNOVATIVE APPROACHES TO REACHING EXTENSION CLIENTELE

North Carolina Extension Service will continue to use programmable calculators as an aid in conducting their Extension programs.

A pilot study in using Micro-Computers in Extension programming will be conducted. Five micro-computers will be used in the pilot study. A portable micro-computer will be used by the Extension Family Resource Management section as a learning center in shopping malls and other places. Two stationary computers will be placed in selected counties to be used by the county staff. One will be used for developmental purposes. The other one will be used as a back-up unit and to run programs that may be too large for the county units. The county units and the back-up unit will be connected by phone.

The objective of this effort is to determine if micro-computers can be used as an aid in Extension programming as well as to assist clientele with micro-computers in solving their soft ware and hard ware problems.

AGRICULTURE AND NATURAL RESOURCES
NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE

FY 80

Major Problems, Primary Approaches and Expected Results

A. Program Component 1 - Crop Production

CROP SCIENCE

The primary responsibility of the Crop Science Extension Program is education, training and up-dating of county agriculture agents and agri-business personnel concerning the latest technical information on crop production. Major field crops, not including forage and turf, account for 52% of farm income in North Carolina. Tobacco makes up close to 57% of crops income followed by corn at 15%; soybeans, 12%, and peanuts at 5%. Hay and forages make up 8% of the value of crops.

The potential outlook for agriculture in North Carolina is favorable for crops. The grain markets are strong indicating favorable prices for corn, soybeans andsmall grains. Tobacco, peanuts and cotton also have a strong demand and favorable prices. Two new crops will be expanded slightly. Sunflowers are increasing in acreage slightly with the response to an increase in price. They also fit in with certain cropping systems and particularly with areas where there is a drought problem. Kenaf is being planted in Hyde County and adjacent areas in a limited quantity.

Agromonically, North Carolina is in a favorable position through a strong education program and technically trained farmers. Many of our fields are adequately fertilized and reasonable good weed control is being used as well as good crop varieties. Many farmers are following recommended practices and are working to produce crops at a lower cost in order to increase their net profits. Farmers are concerned about the energy crisis and are following conservation practices and tillage practices that tend to reduce the need for energy.

The Crop Science Extension Program is designed to assist farmers in increasing their net profits. Sound agronomic practices will be promoted along with a good management program utilizing on-farm tests, in-service training, tours, agent conferences and mass media techniques to get our message across. Specialists will concentrate on keeping the agents up to date on technical information through training schools, conferences, literature and other means.

A systems approach to crop production will be evaluated in the north-east area of North Carolina to increase efficiency of crop production and to conserve energy. Irrigation is also becoming more important as we strive to increase net profit.

Integrated Pest Management is becoming a strong teaching tool for use in most of the field crops. It has had its strongest use in tobacco followed by soybeans and to a lesser extent in corn and peanuts. Increased emphasis will be placed on this with more counties becoming interested in Pest Management. Extensive training is underway for agents to qualify them to develop and promote Pest Management Programs in their respective counties.

Several problem areas are common to our commodities; soil testing, lime and fertility must improve if agriculture is to meet the growing demand for food and feed. Pest Management Programs must be designed for control of target species at minimum costs and with emphasis on individual and environmental safety. Total farm management expertise must be developed so that each commercial producer, including the small family farm, can efficiently use each production input and then market wisely. Producers must be able to economically substitute production inputs based on availability, cost, effectiveness and expected returns particularly with the energy crunch that we are currently in.

The fully staffed program should enable us to better serve our total clientele. Emphasis will be given to training agents and helping them to more effectively work with farmers and agri-business personnel. With the conservation of energy requirements, it will be mandatory that specialists do a more effective job in relaying information to agents for their use with clientele.

Since the Crop Science area is made up of a number of different commodities and subject matter areas, each of these will be discussed briefly.

Corn

With the increased awareness of the need for energy conservation and the Federal emphasis on clean and fishable waters, minimum and no-tillage corn production is drawing major attention. In some instances no-tillage is being recommended by non-extension professionals where it will not work. Extension will be conducting an educational program teaching where no-tillage can be used and will help in energy conservation and reducing pollution as well as explaining when and where no-tillage should not be used. We expect more farmers to try no-till and some will begin planting no-till into legume cover crops to supply some nitrogen for corn and therefore, reduce nitrogen use and therefore energy use.

Work on proper fertilization and liming, nematicides, aflatoxin, insecticides, etc. will be continued. Field agent training sessions will be held to help more agents become aware of some of the field results. Production meetings will be held highlighting the results on the on-farm test program as well as emphasizing some of the problems observed in localized areas.

Cotton

Cotton acreage in 1979 failed to increase substantially over the record low acreage of 1978. Profit prospects as compared to other crops and continued production problems probably account for the continuing decline in acreage. An increased emphasis must be placed on improved management to reduce production costs and handle certain production problems if cotton is to return a reasonable profit and maintain acreage. It is hoped that through the combined efforts of personnel in the Department of Crop Science, Entomology, and Soil Science, the cotton extension program can be revitalized.

Variety testing will continue as in the past except that increased emphasis will be placed on ranking varieties for relative maturity. Standard varieties and promising new lines will be evaluated. In addition, the tests will be designed to also evaluate varietal response to a new growth regulator expected to be commercially available in 1980. On-farm tests will also be conducted to evaluate two new defoliants and several harvest aids.

Testing of nitrogen stabilizers will continue in cooperation with the Department of Soil Science. Much of the cotton in North Carolina is grown on soils subject to extensive nitrogen leaching. This not only increases production costs, but also has the potential to contribute to water pollution. Efforts will be made to determine if such products are economically beneficial and under what edaphic conditions a benefit can be expected.

Results of in-depth management studies conducted in 1979 by the Crop Science Department and the Department of Entomology will be summarized and pertinent results will be incorporated into a "short season" management demonstion for 1980. Efforts will be made to demonstrate the best management practices available.

If laboratory analytical procedures are available through the North Carolina Department of Agriculture, an in-depth study will be started to develop a nitrate monitoring system for cotton in North Carolina. Such a monitoring system has the potential to reduce excessive nitrogen applications, avoid maturity delays and thus increase late season insect pressure and to reduce production costs.

Timely newsletters, radio tapes, television programs, county tours, and winter grower meetings will be part of the extension educational program. In addition, approximately 10% of the coming year will be devoted to 4-H activities. The 4-H plans include developing new material for 4-H demonstrations. Hopefully this will help to increase interest and participation in the field crops phase of the 4-H program.

Forages

Beef and dairy farmers rely heavily on forage crops in their feeding program. The production of quality pasture, hay, and silage crops is essential to an efficient ruminant livestock program.

Considerable progress has been made in the upper Piedmont in increasing alfalfa acreage among dairymen, however, many dairymen continue to produce other kinds of less desirable hay. Special emphasis will be placed on increasing alfalfa acreage among dairymen in eastern North Carolina. This acreage should be doubled in the next two to three years. Two fertility studies, one in the Piedmont and one in the Coastal Plain, will deal with identifying yield limiting factors.

Educational programs designed to assist farmers in improving forage production practices will include on-farm tests, demonstrations, field tours, and production meetings. Other educational efforts include forage variety tests and agent training sessions.

Major emphasis will be palced on the following:

1) Use of legumes in forage systems.

   a. Alfalfa for hay and low-moisture silage.

   b. Ladino and red clover as pasture components. The sod-seeding of these legumes in tall fescue swards.

2) Expanding the acreage of a new winter-hardy hybrid bermudagrass, Tifton 44. This will aid pasture systems based on fescue by providing a high producing pasture grass for the warm season.

Since cattle prices are expected to remain relatively high for at least another year, an increased effort will be made in promoting the renovation of pastures while income from cattle remains high.

Peanuts

Peanut growers were pleased that virtually all of the 1978 production sold at or near full support price. Many were not pleased at the way the immediate buy-back of additional peanuts was handled. This will likely result in a higher percentage of the additional peanuts being contracted. Under a short supply situation this could cause undue stress in the market as all contracted peanuts must be exported or crushed. Efforts will be made to keep growers fully informed on their options and the possible effects of each option.

Demand for Virginia type peanuts continues at a level where almost all the production in a normal year will be needed for domestic use. Foreign demand is such that surplus production is not expected.

Recent surveys have revealed that part of our acreage is being grown under low pH conditions. Tests will be conducted to show agents and growers the effects of a good liming and gypsum application program. This applies not only to commercial production but especially seed production where high levels of seed calcium are necessary to insure high germination levels.

Efforts will continue to help growere produce peanuts as economically as possible. Cost of production tests which were initiated last year will continue to get a better understanding of those practices which are costly but contribute little to yield. Educational efforts will include on-farm tests, demonstrations, producer meetings, tours, field days and mass media in subject matter areas where improvements can be made. Major emphasis will be placed on: 1) Management practices; 2) disease and insect control; 3) introduction of new varieties; 4) effect of harvest date on yield and quality; 5) effect of calcium on yield and quality; 6) effect of growth regulators; 7) weed control where specific weeds are posing problems, and 8) improving seed quality by various management practices.

Small Grain

Small grain production remains at its highest level (16 million bushels) in several years. Factors contributing to this high level of production are improved varieties, execution of good cultural practice, higher prices, an increased interest in double-cropping, soil conservation, and livestock feed.

However, some problems still need solutions. There are inadequate fertility levels (low pH and N management), poor weed control (ryegrass), no overal IPM program and inadequate marketing. These problems need to be solved and practices demonstrated in order to save growers millions of dollars in time, energy, and profits.

The primary avenues used to solve these problems will include traditional extension methods such as mass media, development, revision and updating of educational materials, (including an IPM manual), conducting production meetings and field days and continuing the on-farm testing program.

As a result of these efforts, 80% of the growers are expected to coose the best varieties available for their specific needs, execute good cultural practices, understand the importance of weed control, soil fertility and follow recommended suggestions and make better use of market strategies and alternatives. If these practices are followed, the growers should save time, energy and realize an increase in profits. Safety precautions are expected to be used at all times.

Soybeans

With a record soybean acreage, profitable contract prices and optimism for profitable harvest-time prices, growers are more interested that ever in increasing yields to capitalize on the current profit opportunity. Many growers are just starting to seriously consider soybeans as a cash crop and are asking for help with basic production decisions. Other growers, who are producing soybeans at a higher management level (and who have generally been more accessible to Extension), are asking for more help on integrating production decisions, basing decisions on economics and on marketing. Since these are the areas that we agree growers need help with, that growers are asking for help with, and that Extension has useful information available on, these are the areas Extension plans to concentrate on in 1979-80.

Emphasis will be placed on liming and fertility, pest management, varieties, and refinement in precision of execution of decisions made to help raise yield levels and profits. Profit-motivated decisions, harvesting efficiency, wise marketing, pest management and integration of decisions into a total management package will be emphasized to further increase the profitability of soybeans, especially with the better than average producers.

Tobacco (Burley)

Loose leaf marketing in bales was permitted for 5% of the 1978 crop. Growers were required to sign up at local ASCS offices for approval. Over a 16 county area, 275 growers were approved for marketing 769,000 pounds in bales. Demonstrational meetings on correct baling procedure were conducted over the 16 county area for agents and growers. Baling saves about 7 man days labor per acre as compared to conventional hand tying. Limited looseleaf sales will be permitted in 1979.

A special project directed toward increased planting of available acreage continued for the second year. Paraprofessionals have been hired in nine of the major producing counties to work directly with burley producers in an attempt to increase total production. Growers have been producing only 80% of the effective quota over the past several years. A secondary objective of the program is to prevent loss of quota by leasing or preservation.

Sucker control continues to be the most popular of the on-farm burley tests. Growers are interested in brands, rates, and sequential treatments. Nearly all of the acreage is now treated.

On-farm tests with herbicides are being expanded. Producers are showing an increased interest in chemical weed control.

Agent training is being continued. A one-day comprehensive training session will bring agents up to date with current practices. The practice of spending extra time in counties with newer agents will continue.

Tobacco (Flue-Cured)

It's estimated North Carolina tobacco growers are using about three times as much phosphorus and twice as much potassium as is required for the production of high yields of good quality tobacco. They are also applying more nitrogen than needed. As a result of the excessive rates of N, P and K, cost of production is estimated to be about 10 million dollars higher than necessary.

The Extension Service will continue an active education program to encourage nutrient use based on nutrient needs through the use of on-farm tests, grower meetings, field meetings and mass media. Growers will be encouraged to have more soil analyses made of tobacco fields and then follow the suggested rates of phosphorus and potassium. Much basic work is needed with growers to help them learn how to determine how much basic fertilizer materials are needed to give specific acre rates of phosphorus and potassium. For the first time the zero rate of phosphorus will be suggested where soil test indicates high residual levels.

It is hoped that the tobacco growers can be encouraged to reduce the wasteful use of phosphorus and potassium at the rate of about $1,000,000 per year until they reach or approach the use of optimum rates.

Tobacco growers appear to be applying more maleic hydrazide (MH) than suggested as indicated by the MH residues being found on the cured leaf. These residues may jeopardize certain foreign markets and a program is underway to teach farmers how to control tobacco suckers chemically without exceeding the suggested rate of MH.

The objective of the tobacco program is to have available for market cured leaf which has an acceptable level of MH. This should improve the demand for our tobacco.

On-farm tests will emphasize the agronomic-economic approach to aid farmers in increasing net profit.

Turf

Many homeowners and turf managers do not know which turfgrasses are best adapted to the climatic regions of North Carolina, or which turfgrasses perform best for the particular purpose peculiar to a specific turf installation. Further, North Carolina is still experiencing an influx of homeowners from other climatic areas who need complete information on what, when, why and how. On-site tests and/or demonstration plots will be established, or presently established sites will be upgraded, to accomplish the above objectives.

The regional turfgrass associations and the Turfgrass Council offer real opportunities to reach more turf managers and others who need and desire more, as well as in-depth, information relating to turf management. Revision of programs and initiation of new programs to do these jobs are required to reach this audience. Efforts will be intensified toward this end.

Agent and/or turf manager training is a continuing need. Educational efforts will be directed toward training and toward revising and devising publications and other training aids.

Seeds

The production of certified field crop seeds continues to expand in North Carolina. North Carolina is a major producer of certified soybean seed for the southeastern United States. Seed producers, particularly contract growers, need assistance in the details of seed production. Such training requires coordination among local Extension agents, seedmen and extension specialist.

Seed consumers lack confidence that seed are labeled properly or that seed will actually perform as labeled. The seed user must be trained to relate seed performance to the microenvironment in which it is planted.

Educational efforts will focus on planning and conducting a major seed workshop for professional seedsmen. Seedsmen will be encouraged to sponsor training workshops for their contract seed growers. Extension agents can provide the coordination and personal assistance needed to implement and evaluate seed training programs.

On-farm tests and laboratory evaluation of seeds continue to be important in training Extension workers and developing information for efficient use of seed resources. Such information increases confidence of the seed user and helps increase net profit.

Printed educational materials will be developed to provide seed producers with the information needed to develop seed production skills. The goal is to develop seed production guides for peanuts and soybeans and a general seed selection and use guide.

Assistance will be available to county Extension personnel for planning and implementation of training for seed producers. Coordination with the seed industry will be provided to promote "Good Seed Wéék" activities for the spring of 1980.

Weed Management

Specialists will continue to emphasize integrated weed management programs, encouraging agent, agri-business personnel and growers to plan these programs based on weeds present, cropping practices, soil texture and soil organic matter content. On-farm tests will emphasize integrated weed management programs for specific weeds in each crop. These on-farm tests will be used extensively in educating county Extension agents, chemical dealers and growers.

Weed specialists will participate in in-service training programs in the various commodity areas to further the knowledge of county personnel. Pesticide dealer education will play a major role in the winter-meeting season. We will assist in turf workshops for professional turf managers and garden stor operators.

Emphasis will also be given to developing weed management programs in alfalfa and pastures and the control of multiflora rose utilizing on-farm tests and demonstrations.

Northeastern North Carolina Area Program

Farmers operating in northeastern North Carolina are in need of information that lends itself to production decisions across crops. This is an area primarily of commercial agriculture with heavy emphasis on corn, soybeans and small grains. The implementation of multiple cropping systems dictates changes in the management of other crops in the rotation. Need for basic information pretaining to management of various cropping systems is strongly emphasized by grower inquiries.

Objectives of the area program on Agronomy are to evaluate various cropping systems with particular emphasis on small grains, soybeans and corn. Varietal choice, soil fertility, disease identification and control, tillage systems and pest management will be evaluated in comparing various cropping systems.

Utilizing corn, soybeans and small grains in a rotation system might be small grains followed in the same year with soybeans followed by corn, using no-till. There are many factors that need to be evaluated such as the adverse effects of moisture deficits and a shortened growing season on soybeans planted after small grains. No-till, narrow row soybeans may be wital in a cropping system. Most of the crops in the northeast area are planted on ridges which complicates the management system.

A cropping system utilizing no-till production, and planting soybeans in small grains followed by corn no-till receive emphasis during this fiscal year. Narrow row soybeans with a double cropping system should be more profitable to the grower providing that the methodology for such plantings is effectively demonstrated. On-farm tests in cooperation with agents will be utilized with the systems approach.

HORTICULTURAL SCIENCE

Production of horticultural crops in North Carolina has been steadily increasing. Many of the present recommended cultural practices have not been completely adopted by a good number of growers. Many opportunities exist for increasing the income of not only those growers presently growing horticultural crops, but by other clientele who are not growing these crops. Good overall planning and management is still the major problem with our horticultural industry. The industry is fairly well organized by Commodity groups but the groups are not as cohesive as they should be for best overall effectiveness.

Tree Fruits

The major needs of the fruit industry are: 1) guaranteed annual production; 2) quality to compete with other producing areas; 3) an economic method of fruit thinning for some apple varieties, especially Spur-type Red Delicious and most peach varieties; 4) control of apple scab. Production practices of little or no pruning, poor spray coverage with economy equipment and the desire to apply less and less chemicals, reduct quality below profitable standars.

Long range objectives have been accepted slowly, but positively on 1) increased yield per tree and per acre; 2) improved quality of fruit; 3) higher net returns.

Result demonstration spple plots incorporating varieties, root-stocks, pruning, thinning, weed control, irrigating and sucker control have been successful. These will be continued with an additional one planned in Haywood County.

The approved practice plan for peaches have been most successful and peach acreage is increasing. The recent ban on Nemagon may prompt a rapid decline in the Sandhill peach acreage. Plans are under way to overcome this handicap and if available mew methods will be added to the program.

Planting of apple trees has remained at nearly 100,000 trees per year. Removal of old trees and survival of new plantings is a sporadic problem. The expected ten million bushel annual production is possible any year now, with a possible future production of eleven or twelve million bushells.

Peach planting, because of the ban on Nemagon, may move downward in spits of the excellent new North Carolina varieties.

The pick and pay operations will continue to expand at a slow pace. Growers continue to be reluctant to admit the public on their property.

Family units with little or no paid outside labor, and units not subject to OSHA appear to be one answer to save energy, eliminate the middleman and as a result, provide an excellent labor income to all members of the family.

In locations where the crop is adapted and the consumers are available, the pick and pay idea will be pushed.

The fact that 80% of the North Carolina apple acreage is represented by at least 50% of the present apple growers and even a higher percentage of the Sandhill peach producers, by their attendance at the State Apple Meeting and the State Peach Meeting plus the Winter Apple Schools and the Pre-harvest Apple Tours is a good sign of grower acceptance of a good program. The proposed addition of peach culture to three of the five original pre-harvest apple tours and the five Winter Apple Schools is planned to better serve the tree fruit industry.

Blueberries

Although blueberry production has increased steadily over the past few years (5.6, 7.7 and approximately 8.5 million pounds in 1977, 1978 and 1979 respectively), average yields are still less than 2,500 pounds per acre. Plantings on marginal soils; inadequate control of insects, diseases and weeds; lack of irrigation systems to reduce frost damage and to provide supplemental water; fruit load not adequately adjusted to plant potential; all contribute to low yields. Prices have remained good on fruit packed for the fresh market, however, an excess of frozen fruit in storage depressed the processed fruit price in 1979. With high prices paid for processing berries in recent years, growers have become more dependent on this market. Growers can mechanically harvest the fruit for processing with fewer labor problems than hand picking for the fresh market. However, in the future, fresh fruit is almost certainly going to be easier to sell at a good price than fruit for processing. A majority of the blueberries produced in North Carolina must be sold fresh for the industry to remain strong. Extension personnel have the expertise to evaluate the growers' harvesting and cultural practices and can provide leadership in the development and adoption of an integrated cultivar-management- mechanical harvesting system that will allow mechanically harvested and sorted fruit to be sold fresh.

Our objectives are to improve yield and farm income through encouraging growers to devote more attention to proven cultural practices and the adoption of new techniques. These include selecting suitable land, providing adequate drainage, planting recommended cultivars, pruning as required, providing irrigation, fertilizing as needed and following the recommended insect, mite, disease and weed control programs.

As more of the large-fruited cultivars such as Harrison and Bluechip come into production, hand harvesting problems will be reduced. These cultivars can be hand picked almost twice as fast as older North Carolina cultivars. The adoption of these cultivars will help "bridge the gap" until the integrated system of cultivars, cultural practices, harvesters and sorting equipment is able to provide fruit suitable for fresh sales. Within two years, yields could be increased by 20% on existing plantings. In five years, a 50% increase in production per acre could be expected from a combination of old and new plantings.

1. Develop a better understanding of the environmental requirements of highbush and rabbiteye blueberries.
2. Develop a spacing and pruning system for highbush and rabbiteye cultivars that will fit into a production system based on mechanical pruning and harvesting.

3. Evaluate growth regulator treatments for shortening the harvest period in order to reduce the number of machine harvests required.
4. Develop more efficient techniques for grafting highbush scions onto rabbiteye rootstocks to take advantage of the wider range of soil and moisture tolerance of rabbiteye.
5. Determine the effects of evaporative-cooling irrigation on increasing winter chilling accumulation and bloom delay in order to promote more uniform flowering in highbush cultivars and reducing frost damage to rabbiteye cultivars.
6. Evaluate promising new selections in growers' fields in order to see if this material with interspecific parentage develops any unforeseen problems before release as cultivars.
7. Determine the effect of mycorrhizal infection of blueberry roots on plant growth.

Commercial Vegetables

Commercial vegetable production continues to assume an increasingly important role in North Carolina agriculture. The older grower who was satisfied to plant a few acreas of vegetables and harvest only if the market was good is rapidly becoming extinct. In his place is a new breed of grower who is willing to commit his full energies to producing and marketing vegetables. These new growers are aggressive, energetic and eager to incorporate new crops and ideas into their operation. Because of their fast paced efforts they are becoming difficult to service. Their future needs fall more in the area of information generation on new crops and techniques.

Even though the vegetable industry is healthy there are a number of problems that confront the growers. Alternatives to truck transportation, soaring production cost and labor are three very prominent ones. There appears to be some shifts developing from agronomic crops to vegetables. These will need to be evaluated in depth to avoid catastrophic over production.

The future well being of commercial vegetables in North Carolina is dependent on Extension's ability to provide continued technical leadership and the self interest on the part of the industry to constantly monitor their direction and to make adjustments when necessary.

Overall Objectives are:

A. To provide technical education leadership and training to the commercial vegetable industry through field work, training programs and printed material preparation.
B. Continue to evaluate new field techniques and new crops and provide same to the industry.
C. Cooperate with researchers in evaluating grower type problems.

Expected Results are:

A. Improved yields, more efficient production and handling of vegetables.
B. Increased early yields and greater income through establishment of better stands and early spring protection of vegetable seedlings.
C. Significant increases in overall income from vegetable crops.

Sweet Potatoes

Approximately 38,000 acres of sweet potatoes were grown in North Carolina last year with a farm value of over $50,000,000. Most of this production was sold outside the state. About 70% of North Carolina sweet potatoes are sold for fresh market with the remainder processed. There are over 1900 sweet potato producers scattered over the four eastern districts of the state, but mainly concentrated in eight counties. Less than 100 producers account for over 80% of the total production.

It is important for Extension to provide current recommendations and expertise in production and problem solving to these farmers to assist them in maximizing their profits and minimizing their losses. On-farm trials, grower meetings, publications, broadcasts and other methods of communication are utilized to teach county agents and their farmers. Specific projects include variety demonstrations, fertilization and weed control trials and storage experiments. Variety improvement is critically important and knowledge of promising selections must be obtained prior to release. Sweet potato fertilizer programs vary with farmers, seasons, etc.. The influence of amount and time of application of nitrogen are being studied in relation to yields, quality and storagability. Weed control research and demonstration work includes comparisons of herbicides, rates and timing of applications as related to growing conditions. The feasibility of harvesting and utilizing vines for livestock feed and producing gasohol from off-grade sweet potatoes will be investigated.

Irish Potatoes

There were over 20,000 acres of Irish potatoes grown in North Carolina last year with a farm value of over $17,000,000. Two-thirds were produced in the eastern counties by relatively few large growers. They produce a summer crop, approximately 80% of which is for potato chip production.

It is important for Extension to provide current information and expertise in problem solving to these farmers to assist them in maximizing their profits and minimizing their losses. Growers meetings, surveys, on-farm trials, broadcasts and other methods of communication are utilized to teach county agents and their farmers. Specific projects include the North Carolina Seed Source Survey, variety demonstrations and seed production and fertilizer trials. North Carolina growers buy their Irish potato seed from northern states. Identification of sources, growers, varieties, etc, in relation to performance in North Carolina is an important objective (accomplishment) of this survey. Promising potato selections need to be tested under North Carolina conditions (on-farm) for best results. Fertilizer efficiency is becoming more critical and our tests with modified formulations and applications are important to the future of this industry. Proposed all-practice demonstrations should help potato growers to decrease their losses and increase their yields. Potato seed produced in western North Carolina will be grown as a winter crop in South Florida. Some of this seed will be grown on eastern North Carolina farms in comparison with seed of the same variety from nothern states.

Greenhouse Vegetables

Production of greenhouse vegetables continues to expand. Many new growers continuously seek new sources of income. Greenhouse vegetables offer a good potential for growers who have the technical knowledge and managerial skills. County agents are not as knowledgeable in greenhouse vegetable production as we'd like to have them be.

Nursery Crops

A current survey indicates that there are 1,954 certified nurseries in North Carolina with a total of 3,861 acres of land devoted to the production of ornamentals. Acreage includes that utilized for container as well as field production. Income from ornamentals in 1978 was estimated at over 20 million dollars. Income from the industry has increased tremendously over the past ten years as the existing nurseries have expanded their production areas and as new nurseries have become established. Present indications are that the nursery industry will continue to expand in an effort to fill the void for plant materials that exists not only in North Carolina but across the nation.

The current demand for ornamental plant materials, as well as the projected increases, are indicative of the monumental educational task that lies ahead for Extension. Successful producers must be kept informed of the latest innovations concerning plant propagation and culture. Newcomers must be advised on site selection, location, production and marketing. Both groups need to be kept aware of new plant introductions as well as cultural information for these plants. In order to meet the rising quest for information, which cannot be satisfactorily met in a one-on-one situation, programs must be developed for agent training, workshops and field days. In addition, resource publications to cover the many facets of commercial ornamental plant production must be written and disseminated. Implimentation of these programs should result in increased operational efficiency for nurserymen. In addition, they should present the nursery industry as an appealing source of revenue for prospective clientele.

Floricultural Crops

The escalating fuel costs threatens to change the floricultural industry of North Carolina. Many existing greenhouse structures are inefficient to heat. Unless guidance is provided many North Carolina flower growers, a reduction in number of growers and income will occur.

Labor continues to be one of the major costs associated with greenhouse production. Basic training of greenhouse laborers is needed to provide necessary technological skills required to produce floral crops.

Many types of floral crops are available for production in North Carolina's greenhouses. A general knowledge of cost accounting is needed by most growers to determine which crops to grow. These production costs are necessary for correct pricing and to aid in making management decisions.

Area and state grower meetings will focus on three major problems: energy conservation, labor and cost accounting. This training will result in more efficient use of heating fuel; more productive use of labor and better knowledge of actual production costs. Accurate production costs will enable the grower to realistically price his floral crops.

Growers will be sent periodically a 'Hotline' publication that emphasizes pertinent cultural information. Attention will be focused on the following topics: 1) Combinations of floral crops to produce, 2) Methods to conserve energy, 3) New cultural techniques.

A training school will be provided for greenhouse workers. Many basic skills that are necessary to produce quality floral crops will be stressed.

As a result of North Carolina Extension Service, most flower growers will continue to stay in business. Energy use will be curtailed by alteration of greenhouse structure, selection of different species to grow, and changes in cultural practices. Profits should increase because of implementation of a cost analysis system. Greenhouse labor will be more productive as a result of training received in the basic greenhouse skills.

Applied studies:

1. The effects of several growth regulators will be studied to determine their affects on growth and flowering of several floral species.

2. New species and cultivars will be investigated to determine the feasibility for including them in a production program.

3. Assorted potted plant species will be grown in various commercial soilless media to determine their value as a substrate. Effective fertilization and water regimes will be determined for each medium.

Landscaping and Ornamentals

The interest expressed by North Carolinians continues to grow in the areas of landscaping and ornamental horticulture. In addition to homeowners and the landscape industry, several new clientele such as land developers and contractors express a desire for information concerning the selection and use of plant materials and construction materials. There are more outlets for plant materials being made available because of this rise in demand. Discount stores and variety stores are now offering plants, equipment, and chemicals - often with untrained personnel offering suggestions and advice in the areas of landscaping, horticulture, and pesticide applications. Because of the energy crisis, there are many questions concerning the proper choice and use of plant material and how it can relate to energy conservation.

Such an accelerated interest in landscaping and ornamental horticulture results in an overwhelming educational task for Extension. Efforts must be diverted from individual service and assistance to total educational programs to reach to multitudes. To supply educational

programs across North Carolina emphasis will be placed on agent training, professionalizing the landscape industry and developing the mass media processes. An extensive effort will be made to update the visual aids used by county agents. Several new slide sets will be developed and added to the "landscape package". These will include ones for the identification and use of Shrubs, Shade Trees, and Ground Covers. Special workshops and short courses, in addition to continuing the maintenance short courses, will be directed to businesses selling plants that formally have not worked with horticultural supplies and living plants. (i.e Belks, Penny's, K-Mart's, Sears, etc.)

These efforts should result in a more professional landscape industry. Homeowners will be able to attend short courses offered on a local level by county agents with the use of new slide sets. By implementing the recommended use of shade trees, wind breaks and foundation plantings energy consumption should be reduced in the residential, industrial and municipal environments.

Pesticide Education

The North Carolina Pesticide Law of 1971 and the Federal Environmental Pesticide Control Act of 1972 (FEPCA) collectively require that dealers who sell restricted pesticides, commercial applicators who apply any pesticide, public operators (city, county, state, federal government workers) who apply any pesticide, pesticide consultants and any farmer (private applicator) who uses a restricted-use pesticide be certified and/or licensed in North Carolina. Persons involved in structural pest control must also be certified to use restricted use pesticides under FEPCA and the North Carolina Structural Pest Control Law of 1955 as amended through 1975.

The North Carolina Agricultural Extension Service has been charged with providing educational opportunities for these persons needing help in meeting certification/licensing requirements. Extension Service committments (4-SIGHT) in Human Environment, Environmental Quality, Helath and Agricultural Production are highly dependent on our clientele being trained and constantly up-dated in the safe and proper use of pesticides.

Extension objectives in my "area of responsibility" involve 1) initial training of new county pesticides coordinators and 2) updating of old and new coordinators in each county. These coordinators are charged with training their farmers to use pesticides safely and correctly and involves reaching them via a 4 hour training program that is required for certification (farmers who use restricted use pesticides must be certified to buy and apply restricted use pesticides). The agent must also be constantly updated in changes in pesticide laws, regulations and procedures. A third area of responsibility involved (3) providing training for new dealers, commercial applicators, public operators and consultants via regional schools conducted jointly by state specialist and county pesticide coordinators and to update old dealers - applicators via regional meetings, newsletters, brochures, TV, radio and other mass media. A fourth area of responsibility invloves (4) providing an acceptable "state plan" for meeting the furture educational needs

involved in re-certifying our dealers, commercial and private applicators, public operators and consultants. Such a plan has already been submitted to the Pesticide Board for commercial applicators and involves a continuing education program of 3-12 hours during a five year re-certification period, depending on the specialty category, for these applicators.

We believe our concentrated efforts during the past 5 years in pesticide education - 48,000 farmers, 2200 dealers, 2300 ground applicators, 180 aerial applicators, 1700 public operators and 35 consultants trained - have provided essential information needed to use pesticides in a safe and proper manner. Continued training (certification) of new dealers - applicators and re-training (re-certification) of previously certified dealers - applicators is essential in maintaining viable pesticide use and pest management programs.

Evaluation of our private pesticide applicator program (by the Educational Testing Service for the Environmental Protection Agency) has shown our strengths and weaknesses in training. Our re-certification efforts will concentrate in areas where improvements in the safe and proper use of pesticides is most needed.

We believe our continuing education plans (initial training was one shot) for providing constant updating of our commercial applicators and public operators is a step in the right direction. Under this plan our applicators, for example in Ornamentals, will be afforded an opportunity to take selected short courses of 1-3 hours in duration annually or by-annually over a 5 year period designed to updata them in the latest technology of their specific ornamentals discipline (Greenhouse, Landscaping and Shade Trees or Nursery Crops). Similar programs have been proposed for the other pesticide specialty areas - Aerial, Agricultural Pests-Animal, Agricultural Pests - Plant, Aquatic, Demonstration and Research, Forest, Public Health, Regulatory, Right of Way, Seed and Turf.

Expected Results from Horticulture

1. Increase the Master Gardner program in two counties.
2. Increase pickling cucumber yields by 20%.
3. Increase acres of cantaloupe grown by 15%.
4. Increase income from woody ornamentals by 2 million dollars (from 20 million to 22 million).
5. Reduce the amount of fuel oil used by commercial flower growers by 25% (from 18,000,000 gallons to 13,500,000).
6. Increase the number of flowers growers belonging to the flower grower association from 15% to 30% (70 members to 150 members).
7. Produce 9.5 million bushels of apples.
8. Increase income from greenhouse vegetables by 20% (4.5 million x 25% = 500,000).

SOIL SCIENCE

The wise use of North Carolina soils requires a dedicated effort to help individuals, families, business groups, and governmental agencies better understand their potential use, as well as limitations for the purposes of which they are to be, or are being used. Soils are used to grow plants for food, fiber and pleasure; they are used to support housing, provide recreational sites, for disposal of wastes, and offer space for industrial and highway development.

With respect to land use, more than 50% of the state's area is in forests. Urban-surburan use is increasing throughout the state. Use for this purpose is greater in the Piedmont, approximately 10%. Recreation is a significant nonfarm use for the Mountain area.

The predominant portion of the Piedmont has potentially large percentages (70-80) of good to fair agricultural land (Class 2-4). Only in the Coastal Plain, however, is there a substantial area of prime agricultural land (Class 1). In contrast, more than 50% of the total land in the Mountain region is not well suited to agriculture (Class 5-8).

The primary objective of the N. C. State University Extension Soil Science program is to assist farmers, foresters and other publics with implementation of wise land use practices. Land use is determined by economic return, conservation principles, and governmental regulation. The educational opportunities to meet the above objective will be implemented by using educational techniques such as on-farm and on-site tests, in-service training, study tours, agent conferences and training, and mass media techniques to make people aware of sound soil use practices.

Soils and Land Use.

Frequently, the utilization of soil, one of North Carolina's most valuable resources, reflects a lack of understanding of its properties. National, state, and local guidelines are being developed regarding water management, sedimentation-pollution control, fertilizer use and loss, floodplain restrictions, etc. Soil properties need to be assessed through the development and use of various tools such as soil surveys, soil interpretations, soil tests, findings of research data and practical experience in order to more accurately develop and implement these guides.

Soil characteristics impose limitations in the competition between agricultural and non-agricultural land use. In crop and animal production improper fertility and lime practices are prevalent, along with poor land management and use in terms of cropping systems and waste utilization. Many non-farm uses reflect inadequate interpretation and evaluation of soil resources in planning the use of land. The development of waste disposal systems where the waste can be utilized as an economic, agricultural input, using the soil as a component, is dependent upon an understanding of soil characteristics.

During the current year, priority will be given to the following specific areas of work.

1. Emphasis will be given to coordinating and stressing the importance of understanding the value of soil test and plant analysis information in alleviating improper use of fertilizer ratios in crop production, its value in recognizing lime needs, and their value as diagnostic tools. Particular attention will be given to emphasizing more efficient use of nutrients during the current period of relative fertilizer abundance and moderately high costs and energy constraints. Agents will be alerted of supplemental sources of nutrients. The advantages and disadvantages of fertilizer application systems will also be emphasized. Changes in soil test report interpretations will be presented in agent training.

2. The evaluation and demonstration of various approaches to land preparation for the major groups of soils for corn, soybeans and other crops. This ranges from deep tillage such as chisel plowing and subsoiling to no-tillage, with emphasis on effects of these practices on yields, erosion concerns and production efficiency for specific soils and field conditions. This will be done in on-farm test plots in cooperation with county extension personnel and farmers.

3. Provide technical and educational support for an accelerated soil survey program in North Carolina. In-service training of recently employed soil survey personnel who are involved in the National Cooperative Soil Survey Program.

4. Intensify educational efforts for interpreting soil properties for agricultural and non-agricultural land use, with development of suitability ratings for various land uses such as waste disposal, transportation, urban and industrial development, recreation and agriculture. Develop a new soil potential system for land evaluation to provide more positive data for land use planners.

5. Provide technical and educational support to aid in the development and implementation of legislative programs for sedimentation-pollution control, land use policy and environmental regulations. Especially develop actions which must be taken if water quality is to be returned and maintained at a level that provides for the protection and propagation of fish, shellfish, and wildlife and for recreation in and on the water as prescribed in the 208 Agricultural Implementation Plan.

6. Extensive efforts will be continued in the development of interpretative guidelines for soil application and treatment of waste products from agricultural production and processing units, municipal and domestic treatment plants, and industrial sources. Provide technical and educational support in the demonstrational aspects of waste utilization as a supplemental fertilizer and soil conditioner to emchance crop production. Develop and demonstrate innovative systems for on-site treatment and disposal of home sewage wastes in problem soils.

7. Provide technical support and help in the development of materials for 4-H and other youth audiences concerned with soil management and with the study of soil resources, agriculture, biology, and ecology.

Blackland Soils

The high organic matter soils of eastern North Carolina have unique physical and chemical properties and require special management to be productive. These soils vary from dark surface mineral soils with few special needs through deep, woody colloidal mucks with severe hazards. Organic soils are inherently very acid and infertile and require large amounts of lime and appropriate nutrients for crop production. Buried wood can prevent lime incorporation and interferes with all tillage operations.

Blackland extension programs are directed toward both newly cleared land and older, more highly developed land. The management requirements of each are quite different.

During 1979-80 the following areas will be emphasized.

1. Liming: Promote liming as a total integrated program encompassing lime quality, distribution, and incorporation. Use economic comparisons to enhance agent a d grower awareness of lime value and cost. Encourage soil testing as the basis of a liming program.

2. Fertilization: Provide assistance to agents in interpreting the new soil test reporting system as it relates to high organic matter soils. Encourage efficient fertilizers use through uniform application, starter fertilizers on corn, and split nitrogen applications. Use on-farm tests, meetings, a d newsletters to promote fertilization by soil test on high organic matter soils. Provide agents with information on specialty products to prevent use of ineffective materials by growers.

3. Cultural practices: Provide current information on crop rotations, water management, tillage systems and alternative crops for the blacklands. Promote energy conservation through appropriate reduced tillage systems in on-farm tests and demonstrations. Promote animal waste utilization in cropping systems as a way to reduce the water pollution hazard.

ENTOMOLOGY

Apiculture

In spite of rapid growth during the past several years, interest in beekeeping does not seem to be declining or even leveling off at the present time. This interest can be measured by continuing increases in the membership of the North Carolina State Beekeepers Association (from 1200 members in 1978 to over 1500 members in 1979) and in the number of North Carolina counties with beekeeping associations (from 35 counties in 1978 to 52 counties in 1979). These developments, which are in part due to the Extension Entomology program in apiculture, have resulted in a situation where more sophisticated measures are now needed to effectively utilize the resources and personnel available to the apiculture program.

Ongoing applied research on honey bee pollination of such crops as apples, blueberries and cucumbers in a continuing effort to coordinate activities between growers and those beekeepers who furnish pollination services will be continued.

Beekeeping Short Course Program

This program has been in operation for over four years now and consists of both an introductory and an advanced beekeeping curricula. Each curriculum is offered over a three-session period of three hours per session. The courses are evaluated through the use of pretest and post-test examinations. To date, we have been attaining test improvements of approximately 35 points (on a scale of 100) in the introductory course and slightly lower scores in the advanced course.

Coastal Plain Beekeeping Program

This project is designed to improve beekeeping, particulary the commercial beekeeping industry in North Carolina's Coastal Plain region, and the project is funded by a grant from the U. S. Coastal Plains Regional Commission. The specific goals are to increase the volume and price of honey produced in that area. To accomplish this, a cooperative, "Coastal Carolina Honey Producers Coop," has been formed; and, during its first year of operation, it wholesaled over 50,000 pounds of honey with an increase of 12% or 5¢ per pound in the price of the honey. We plan to increase those sales to over 100,000 pounds of honey during the coming year. It is also predicted that an additional price increase of approximately 5 percent or 2¢ per pound will be obtained. All of the work with the Cooperative will be complemented by work with North Carolina businessmen to establish noney-processing facilities in the state. This will insure that the North Carolina honey producers have a steady market for their product and that the profits from the sale of this product will remain in North Carolina.

Master Beekeepers Program

This new program is designed to obtain three objectives:

a. to provide selected extension agents with a substantial basic knowledge of beekeeping practices and problems,
b. to provide selected North Carolina beekeepers with the necessary skills so that they may serve as resource people to the Agricultural Extension Service and the beekeeping industry in North Carolina,
c. to provide the employees of certain other government agencies (i.e, the North Carolina Department of Agriculture and the Agricultural Stabilization and Conservation Service) with the necessary knowledge so that they may more effectively work with the beekeepers of the state.

This program would be a series of three-day educational programs in which extension agents, beekeepers and personnel from other government agencies would receive in-depth training in beekeeping through classroom and hands-on training. The other agencies involved have voiced their support of this program, and the North Carolina State Beekeepers Association has offered to at least partially reimburse the travel expenses of those beekeepers who participate in the program.

Community Pest Control

American Dog Tick and Rocky Mountain Spotted Fever

For the last ten years, North Carolina has led the nation in reported cases of and deaths from Rocky Mountain spotted fever (RMSF). This disease is most prevalent among children and each year causes a large economic loss through medical costs for hospitalization and treatment.

To meet the needs of county sanitatians and extension agents, nurses and other medical professionals, a pilot program was initiated in FY 1978-79 to formulate an educational approach to the RMSF problem with an overall objective of developing educational programs and materials. This objective has been completed with the development of three slide-tape cassette programs, one filmstrip-tape cassette and supplemental teaching packet and several leaflets.

Next year, effort will be concentrated on making county agencies aware of these educational programs and materials and participation in disease prevention training workshops for county personnel.

Saltmarch Mosquitoes

The biting activity of mosquitoes, sandflies and other biting flies has a deleterious effect on outdoor recreation and causes a large dollar loss to North Carolina's tourist industry each year. To assist local agencies in the organization of insect control efforts, several training workshops and demonstrations of equipment and techniques will be held in 1980 at Coastal Marine Resources Centers. Further attempts will be made to secure grant funding for the development of a model integrated pest management program on mosquitoes.

COTTON

Population Monitoring

Population monitoring by means of trapping systems for two key cotton insect pests, the bollworn and boll weevil, provides producers with an "early warning system."

From July through mid-September, a network of black light traps provides producer spray group heads and agricultural agents with adult moth catches three times per week. Armed with a more accurate knowledge of the timing and relative intensity of major moth flights, growers can modify their scouting strategies accordingly. This light trapping service is popular with producers and agricultural agents and has expanded from an eight-trap network in 1976 to the present 20 traps. The major thrust in 1980, through greather agricultural agent involvement, will be to reach a higher percentage of cotton producers with a greater emphasis on interpretation of monitoring data.

Boll weevil pheromone traps are a valuable tool for monitoring spring populations of this pest well in advance of economically damaging levels. Outside of the BollWeevil Eradication Trial Zone, this agent-coordinated trapping program has enabled us to inform growers of the minor to non-existent pest status of the boll weevil, allowing them to concentrate on more economically important insects. These extremely effective, low-cost traps will be utilized for the foreseeable future.

A new tobacco budworm pheromone trap is presently being tested for potentially widespread use in 1980. The tobacco budworm is not readily attracted to black lights, and the ability to detect this species would greatly enhance the project's effectiveness.

Shorter Season Cotton Production; an Interdisciplinary Approach

Because of North Carolina's acreage decline, we do not have the luxury of a stable, economically profitable cotton system here in which to slowly test new (and often unrelated) production practices. An interdisciplinary short-season approach to cotton production in North Carolina would provide cotton producers with a potential economically viable alternative to their current practices.

The project is in its second year studying the phenological development and yields of selected new horter season cotton varieties and determining the potential impact of a shorter season for partial avoidance of economic insect injury. The cotton specialist is conducting tests throughout North Carolina in 1979, with an emphasis on early varieties, nitrogen management, growth regulation and plant density. With the results from these studies, information gained from extension and research scientists at North Carolina State University, and inputs from other states, we will be in a position to develop and implement integrated, interdisciplinary, short-season production systems in selected areas in North Carolina via large scale grower demonstrations.

Three test sites are planned of approximately 10-30 acres (large enough to lend themselves to evaluation as economic units), with management inputs adjusted to the particular soil type, weed and insect histroy, etc., of the particular locations: 1) the Northampton-Halifax-Edgecombe County area, 2) the Sampson-Cumberland County area and 3) the Robeson-Scotland County Area.

Boll Weevil Eradication Trial Support

A three-year Boll Weevil Eradication Trial Program was initiated in North Carolina and southern Virginia in 1978. The objective of this program is to demonstrate eradication of the boll weevil in the core or northern area of the program.

Although program personnel will be responsible for all scouting plus management of the boll weevil during 1979 and 1980, cotton producers will have responsibility for control of bollworms and other cotton insects. Sound insect management decisions are dependent upon accurate scouting information and the correct interpretation of that information. Therefore, an extra burden has been placed upon those persons entrusted with the responsibility of not only the scouting but also the coordination and interpretation of these scouting reports for individual growers and community groups.

North Carolina has gained recognition in other cotton-growing states for its community approach to cotton insect management. Community groups were dissolved in 1978 during the Trial Program's first year because program personnel made all insect management decisions. The reestablishment and revitalization of these groups in 1979 and 1980 will greatly enhance the effectiveness of the overall extension program.

A full-time temporary extension pecialist was hired via a grant from Cotton Incorporated to:

1. Coordinate and interpret APHIS scoting reports for growers and grower groups;
2. Assist growers in their bollworm management decisions;
3. Serve as liaison between USDA-APHIS, the North Carolina Department of Agriculture, The North Carolina Agricultural Extension Service and cotton producers; and
4. Provide an informational and educational package to cotton producers within the Trial area.

On-Farm Demonstrations

On-farm demonstrations continue to meet part of this project's educational responsibility and to supply hands-on experience in the latest production technology. Five of the 1979 replicated demonstrations investigate and illustrate selected aspects of short-season cotton production, while a sizth demonstrates the relative effectiveness of some of our standard and new bollworm compounds. Next year's demonstrations will likely concentrate on the large-scale, short-season cotton production studies mentioned earlier.

Ornamentals

The creation of 17 county plant clinics in the late spring of 1979 should help to relieve some of the burden of homeowner demands by allowing agents to condense homeowner calls into one afternoon. The clinics will also encourage homeowners to come to the agent rather than vice versa. Some of this year's emphasis will be evaluating the county clinics.

Applied research in the areas of ornamental greenhouse and nursery insect and mite control, mealybug survey and phytotoxicity of pesticides will be continued.

Alfalfa

Alfalfa acreage is expanding in North Carolina with impetus from 4-Sight. Due to a recent natural decline in alfalfa weevil populations across North Carolina, some gorwers are now able to reduce the number or eliminate all insecticidal control. A revised control program to better enable growers to accurately determine need to treat will be prepared. This should save insecticide, fuel, reduce environmental contamination and increase profits.

Structural Pest Control

Over 400 licensed pest control operators conduct pest control activities in North Carolina. Of these, approximately 25% are affiliated with national pest control firms, while the remainder operate independent businesses. While the national firms rely on their own technical staffs for entomological expertise, the independent companies look to North Carolina State University for much of their entomological assistance. Most of Entomology Extension efforts are aimed at the servicement of these companies to improve their competence in controlling household and wood-destroying pests.

Regional training schools in each of the five state regions as defined by the North Carolina Pest Control Association will be held this fall and winter. Five workshops will focus on wood-destroying organisms, while the other five will emphasize other household pests. These workshops will be held within reasonable driving distance of all pest control companies in North Carolina and will offer Continuing Education Units which participants may use to comply with recertification requirements required under state and federal regulations for their continued use of restricted-use pesticides.

While training for certification of structural pest control operators (PCO) under Category 7a of amended FIFRA will continue, greater emphasis will be placed upon the needs of food handlers, tobacco warehousemen, and other similar personnel not engaged in commercial pest control for the general public but needing certification for the use of restricted-use pesticides. Regional in-state training sessions will continue to be held in cooperation with the pesticide education specialist and the Structural Pest Control Division, NCDA.

Additional emphasis will also be placed upon suitable fumigation procedures in food handling establishments and tobacco warehouses. This need also has been amplified due to certification requirements, and additional training opportunities must be available to persons using fumigants in pest control since many of these materials are classified for restricted use. A portion of the annual Pest Control Technicians' School will be devoted to fumigant use and perhaps several regional activities will also be scheduled.

Food handers and pest control operators are finding it increasingly difficult to provide adequate fly control in their establishments or for their clients. Many have inquired concerning the effectiveness of electronic fly traps for control. Adequate information to answer these inquiries is not available, and it is hoped that several applied research demonstrations may be established to ascertain the effectiveness or ineffectiveness of these devices. It is hoped that through the cooperation of several pest control operators and several manufacturers of these devices that adequate data and recommendations may be generated.

On-Farm Grain Storage

Farm grain storage structures are being constructed at an increasing rate in an attempt by North Carolina farmers to hold and sell their grain at higher winter and spring prices. The Commodity Credit Corporation has also reduced its grain storage programs, thereby forcing more farmers to store grain. Many of these storage structures are being constructed by farmers not familiar with basic needs for pestfree storage. Consequently, much of this grain becomes badly infested with moths (caterpillars), beetles and rodents before being sold by the farmer. The farmer then loses in three primary ways: 1) he has the added capital expenditure for the storage facilities, 2) he must accept a lower price for the infested grain, and 3) he may not be able to sell the grain and must divert it to an alternative use, e.g., livestock feed rather than human food.

Expanded Food and Nutrition Education Program

Two hundred forty EFNEP program aides work statewide with 10,000 low-income families to assist the respective homemakers in providing well-balanced, nutritious meals for their families. Since 60 percent of these families have less than $300 a month to spend for total living expenses, food budgets must, out of necessity, be very limited. Unfortunately, due to severe pest infestations in many low-income households, much of the food is either consumed or contaminated by pests, thereby making it unsuitable for human consumption. The low-income family's food budget, therefore, is depressed to even lower levels by these pests. The effects of inflation affect low-income families to a great or greater extent than non-low-income families, thereby placing even further constraints on their food-buying dollar. To make their limited income buy more, many homemakers are becoming increasingly interested in home vegetable gardening. Once they realize that a $10-$15 expenditure can result in vegetables worth several hundred dollars, many of them become interested in this activity.

Based upon these needs, the programs in this area will emphasize household pest control and gardening. Area workshops will continue to be held for program aides and a new workshop emphasizing rodents, flies and pantry pests will be developed to further train program aides in problems experienced by their families.

Corn, Small Grains, Sorghum and Soybeans (Piedmont and Mountains)

Feed grain and soybean producers in the Piedmont and Mountains annually make decisions concerning insect management and insecticides on 1,100,000 acres. To date, approximately 10 percent of the growers seriously consider pest management techniques in their insect control decisions, and fewer apply these techniques properly. The decreasing interval between cost of production and gross return dictates more judicial use of insecticides. Insect pest management training via PM 405 and other in-service training have provided a basic understanding of pest management principles to 30 percent of the crop agents in the Piedmont and Mountain counties.

The Field Crop Insect Alert program will continue to provide information regarding pest population development and distribution to maintain the agents' competency in assisting their clientele to efficiently use scouting. Demonstration plots will be utilized in cooperation with agents and farmers where feasible to point out poor or proven insect management techniques. Through implementation of these objectives, increasing the number of Piedmont and Mountain growers considering some pest management practices in their insect control decisions from 10 percent to 20 percent is realizable in one year. A corresponding increase in the number of growers utilizing some aspects of pest management should also occur either as an individual or as part of an extension integrated pest management group.

Field Crop Pest Alert

During 1977, an estimated $64 million were lost to the cost of control and damage due to insect pests of field crops (Tobacco, corn,

soybeans, sorghum, small grain and cotton). Much of this loss could have been averted through the prudent use of tried pest management techniques. Insect pest populations change rapidly in both time and space. Therefore, it is important for crop managers to be aware of changes in pest conditions and accepted scouting practices. This knowledge will save valuable time which could be utilized to 1) properly time scouting, 2) inventory resources (chemical equipment, etc.) and 3) plan action should the forecast insect problem develop in his area. The Field Crop Insect Alert program was expanded in 1978 to facilitate the acquisition, interpretation and reporting of insect pest data. This information will continue to be available via Teletip and Insect Survey Notes to the public and pest managers at all levels. This program will continue to provide pertinent pest data collected from monitoring pheromone traps, light traps and field sampling. Major field crop insects will be monitored with the objective of predicting population pressures within the insects' host range. Special detection and delimiting surveys will be conducted when potential new pests have invaded or when a pest's biology appears to have changed. Data from routine and special surveys will be interpreted, coordinated and edited for reporting via Teletip and Insect Survey Notes. Requests for these reports are currently averaging 300 per week.

Estimating potential savings from this program to field crop producers in efficiently timing scouting, haveing equipment ready and solidifying a plan of action is impossible. However, utilization os this information coupled with a scouting approach to insect control would reduce insecticide use in field crops by 30-40 percent.

Wood-Destroying Insects

Considerable effort has been expended by extension specialists in the past to educate the pest control and building industries in North Carolina as to the hazards to structures presented by wood-destroying organisms and how to minimize them. There is still a great lack of concern on the part of the building industry in using good construction practices to prevent damage by wood-destroying insects and fungi and in cooperating fully with conscientious pest control technicians who are trying to provide good preconstruction treatments at a reasonable cost to the building purchases.

The USDA Forest Service has developed a public awareness program which is designed to educate the public on the hazards to wood presented by wood-destroying organisms and how to combat them. The premise involves the education of consumers to provide them with enough knowledge to allow them to demand and then recognize good building and maintenance practices which will reduce significantly the hazard to structural wood presented by wood-destroying insects and fungi. The Forest Service has agreed to provide their services and materials to aid M. P. Levi of Forest Resources Extension and H. B. Moore of Entomology Extension in presenting back-up for this program to county extension personnel so that they may use all of the USDA-provided printed and other public service media material effectively in their counties. This will involve conducting one-day workshops in each extension district to train county personnel and then follow-up with additional participation by the extension specialists in presenting some sub-districtwide educational programs to determine the effectiveness in reaching and changing the attitudes of the target audiences.

Turf, Peanuts, Home Gardens

A diverse clientele will be served bacause of the varied problems and situations within the assigned work area. Homeowner or backyard gardener cleintele associated with ornamentals, turf and vegetables will be served primarily by training agents and volunteer leaders to handle routine insect problems locally. This training will be supplemented with mass media presentations such as television, radio tapes, publications, news articles, slide sets and Teletip on current insect problems, their management and control.

With commercial turf and peanut insect management, clientele problems are quite different. In the area of commercial turf, a major effort will be made to better train commercial turf managers as well as selected agents on identification and control of insect problems. This will be done through six regional turf workshops, the statewide turf conference, meetings with five regional turfgrass associations, personal visits, demonstrations, publications and other meetings.

The major clientele program in peanut entomology is to train agents, growers and agribusiness leaders of the value of an overall peanut insect management program. Included will be demonstrations in cooperation with crop science and plant patholoby specialists and county agricultural agents on the value of insect-resistant varieties such as NC-6 in such a program, along with demonstrations on the interactions of certain fungicides and insecticides and their effect on certain pests.

The overall extension objectives of the project are to: 1) change grower and agribusiness attitudes on use of insecticides on peanuts from present "no damage tolerance" to acceptance of economic thresholds and spray-as-needed concept; 2) train volunteer leaders to recognize common homeowner insect problems on turf, ornamentals and vegetables where they can be handled on a local basis; 3) train commercial turf managers and agribusiness personnel to recognize and manage insect problems on commercial turf areas; 4) train turf managers and agribusiness personnel to handle and apply pesticides safely.

With the increased cost of living and gasoline shortages, more emphasis will be placed on at-home activities such as vegetable gardening and flower gardening.

The acceptance of NC-6 peanut variety and the use of economic thresholds for control of some insects and mites of peanuts could result in a savings of 10-25 percent of the total cost of insecticides on peanuts. This is an increase in efficiency, net profit and a reduction in the use of energy.

With better trained commercial turf managers, more efficient use of time, labor and money will be realized in managing North Carolina's vast amount of commercial turf.

Objectives of applied studies and demonstrations are to: 1) compare yield and quality of NC-6 peanut variety to other commercially grown varieties; 2) expand labels for currently registered insecticides on peanuts and turf; and 3) obtain labels for new insecticides on turf and peanuts.

Fruits and Vegetables

In the successful production of such high value per acre crops as fruits and vegetables, insect losses and/or the cost of their control demands sound management decisions. Anticipated growth in both fresh and processing markets as viable alternatives for tobacco growers and expanded outlets for Campbell Soup and Joan of Arc Plants place added emphasis to solutions of production problems, especially pest control. Increased environmental awareness, energy conservation, changing pesticide regulations and assurance against the rish of crop failure have necessitated the development and implementation of pest management programs on horticultural crops as well as the demonstration of approved insecticide recommendations.

Cooperative insect monitoring, assessment and daily reporting through the use of balck light traps, yellow pan traps and field scouting via "Pest Alert" on horticultural crops will again be operated to demonstrate the usefulness of a forcasting service (Teletip) on European corn borer, tomato fruitworm, pickleworm, aphids and other pests. A specialized program on insect and disease monitoring (4 sprays) versus preventative pesticide schedules (as many as 22 sprays) will be field evaluated in several tomato counties in western North Carolina. A similar program on Irish potatoes in eastern North Carolina is planned with emphasis on county field demonstrations. Fields void of corn borers will be compared to adjacent infested fields. Growers will then have a better understanding of the economics of corn borer control. Blueberry maggot and sharpnosed leafhopper forcasting with yellow sticky traps will continue to provide an essential service to blueberry growers in timing their pesticide applications for these troublesome insects. Other insect pests of fruits and vegetables will be identified, assessed and better understood as special needs arise.

Pest management programs on cucumbers, cabbage, Irish potatoes and tomatoes will be evaluated and implemented under grower conditions. County, multicounty and area programs in various stages of development will be utilized in demonstrating the value of these programs in farm operation. Farmer acceptance will be initiated with their inputs and active participation.

Loss of some insecticides and shor supply of others, coupled with increased production costs, the development of insect resistance to pesticides, traded pest resurgence and limited funding and support for minor-use registrations on horticultural crops continue to make sound insect control recommendations with insecticides increasingly difficult. Extensive use of field demonstrations with standard and new insecticides will provide additional efficacy, phutotoxicity and residue data so badly needed for sound insecticide recommendations and minor-use registrations. Such tests will instill confidence and continue to add impetus to the development of viable fruit and vegetable industries in North Carolina.

To assist agents in handling routine diagnosis of vegetable and fruit questions at the local level, 14 pilot county plant clinics have been initiated. Together with other training aids such as reference collections, video tapes, slide sets and displays, anyone involved in these learning centers should develop a greater understanding of insect

pests, their recognition and control. Such traditional extension activities as publications, timely circular letters, agent workshops, and grower meetings will be incorporated into a statewide educational program on insects, their biology, control and management on fruits and vegetables. Final acceptance of entomological programs by agents and fruit and vegetable growers should result in improved insect control, wise use of insecticides, and even greater economic returns with minimal adverse environmental impact and increased energy conservation.

Tobacco

North Carolina farmers often overuse, misapply or choose inappropriate pesticides to control pest insects. Such errors result in increases in production costs, unnecessary chemical pressure on the environment and reduced yield and quality. Growers are particularly reluctant to use pesticides formulated as baits (often the most effective control) due to the lack of mechanical application methods. The mass media, extension publications and on-farm demonstrations (approximately four) will be used to train growers and agents in the proper choice and application of insecticides. An effort will be made to develop appropriate application equipment to facilitate use of bait formulations. If such equipment can be developed, it will be tested and demonstrated through one or more on-farm demonstrations.

For many years, agriculture in the U.S. (and North Carolina) has embraced the use of chemical pesticides as an effective, simple solution to pest problems. Recently, however, the costs of this approach (energy use, adverse off-target effects, regulatory requirements, human hazards, etc.) have become apparent. Tobacco production in North Carolina is highly chemical dependent, and though some improvements have been made, unnecessary costs and problems are prevalent. In order to reduce these costs and adverse effects, a system of in tegrated pest management will be encouraged. This system will reduce disruption of natural systems, make maximum use of natural control mechanisms and encourage the prudent selection and integration of a variety of control strategies. Specific steps to be taken as as follows.

1. Assistance and leadership will continue to be given to already established pest management programs involving flue-cured tobacco (7). An effort will be made to increase the number of growers participating in these programs by 10% and to increase grower involvement in planning and program management. Additional programs in the flue-cured area will be encouraged (with a target of two new programs) and assistance provided.

2. Pest management programs suited to the needs of burley tobacco production (small, scattered fields; small acreage per grower; unique pest pressures) will be developed. Other specialists, researchers and county extension personnel will be encouraged to cooperate in the development of such programs and their implementation in one or two locations.

3. Training in pest management practices will be provided to farmers through mass media, extension publications, demonstrations and grower meetings. Two publications on tobacco pest management and operation of IPM programs (one aimed at farmers, one at agents) will be completed.

4. Treatment thresholds for insect pests will be demonstrated and refined through on-farm demonstrations (with a target of four). Special attention will be given to the green peach aphid in this regard.

INSECT IDENTIFICATION

Clientele Problems

The primary problem is the identification of insects, etc., affecting agriculture, forestry, homes and people in North Carolina, as submitted to Entomology Extension and the Plant Disease and Insect Clinic. Correct identifications are the basis for deciding whether or not control is warranted and what procedures to follow. Too often we (the Clinic) see cases of "spray first and ask questions later" with unsatisfactory results. The clientele could have saved time and money and vaoided risking personal and environmental injury by analyzing the problem before acting.

Objectives

Several objectives relate to the above problem, these being: 1) the provision of accurate identifications of samples as quickly as possible, 2) the maintenance of records on those samples, 3) preparation of specimens from the material submitted for the research, teaching, and extension collections; 4) designing identification guides and training programs for extension personnel; and 5) identification of collections resulting from research projects.

Expected Results

Following the objectives, several results are expected. Knowing the pest is a major part of controlling it. Often control is unnecessary or impractical; we needed, the proper chemicals and practices can be recommended with increased savings and reduced waste. As we accumulate information from the data accompanying each sample, we are better able to assess the status of the many species received, recommend accordingly, and provide information to concerned clientele. Specimens salvaged from the samples will enhance the NCSU Insect Collection as research and voucher material and aid in student and agent training in the classroom. Increased agent training in pest identification will mean more in-field diagnoses by agents, prompt recommendations, savings from damage that would have occurred while specimens were sent to NCSU for identidication, fewer samples for harried Clinic personnel, and increased reliance of the clientele on their agents.

Applied Studies, Etc.

The preparation of guides and manuals is a prime concern of extension specialists. In recent years, more of these publications have included taxonomic keys to aid identification of insects or groups of insects. These keys are designed to identify pests and to eliminate nonpests from consideration. The keys may be presented in conjunction with agent training to familiarize agents with both key use and included pests. As indicated above, the objectives of these efforts include increased reliance of clientele on their agents and of agents on their training and decreased dependence on the Clinic for diagnosing some common pest situations. Where practical, additional keys will be designed for agent use.

Approaches

Experience has shown that, ultimately, there is no substitute for a technical taxonomic approach to identification of Clinic specimens. Keys based on known host relationships, distributions or pest status, while satisfactory for most control purposes, are too unreliable for identifying the less common or nonpests. Resort to the better taxonomic literature is the only sure way to determine those species or pests occurring beyond their known parameters. Efforts to expand taxonomic expertise into "difficult" groups will continue as reliable references and experience increase. Ongoing collecting of associated reared series of immatures and adults will benefit basic taxonomic research in immatures, improve the collections and provide reliable comparative material for identifications.

Corn, Small Grains, Soybeans (Coastal Plain)

During the last several years, the Extension Entomology program located at the Tidewater Research Station has had as its objectives: 1) the development of insect management programs for corn, soybeans and other feed grains with special emphasis to problems on high organic soils; 2) the development and implementation of multicrop-interdisciplinary pest management technology and programs within the northeastern area of North Carolina; and 3) the training and assistance of county agricultural agents in understanding entomological and IPM programs and delivering these programs to their clientele.

Development of Entomology Programs

Southern corn billbug continues as the major corn insect pest in the Coastal Plain. Billbugs have greatly increased in both distribution and destructiveness over the last few years. Efforts are now underway to study the life history and habits of billbugs and to find additional management tactics. A preliminary integrated management program has been designed and refinement of this program will continue. Training of and assistance to agents concerning billbug management will intensify during 1979-80.

No-till culture of corn (particularly in soybean stubble) is gaining added attention as fuel costs increase and legal constraints affecting erosion have been adopted. No-till culture represents a major ecological change in the agroecosystem which implies increased problems with insects

(cutworms, armyworms, rootworms, aphids, etc.). Efforts will continue in identifying problem areas and seeking solutions. Most of these activities will be in conjunction with agent-oriented, demonstration-research field plots.

Attention will also continue in the area of European corn borer management (on corn, particularly in potato-growing coastal counties). New information will continue to be developed and blended into programs for agents.

The above-mentioned efforts on corn will help achieve the stated 4-Sight goals of identifying insect problems and solutions and of being more aware of potential and limitations of no-till.

The soybean insect management program is currently at a high level of development. Needs in this area are: 1) to further refine the program (particularly with bean leaf beetle and grape colaspis in blackland soybeans), and 2) improve the "presentation materials" for agent training and use. Of immediate concern is the updating of all extension entomology publications and revision of a slide-tape. Added emphasis on distribution of the soybean insect program will help satisfy the 4-Sight priority of emphasizing pest management.

IPM Programs

The Martin-Washington multicrop pest management pilot program will terminate at the end of September 1979. The overall objectives of this project was to develop and test available pest management technology and delivery systems. Major emphasis during 1979-80 will be placed upon finalizing this project and developing a terminal report which outlines the mechanisms of this program and its benefits. The intent is to develop a document to facilitate the implementation of pest management programs in North Carolina.

A second work area will be the continual improvement of the Chowan-Perquimans-Pasquotank pest management project. Of particular significance will be the development of IPM technology (especially on potatoes), improvement in the pest management cooperative (Farmer's Pest Management Services, Inc.) and detailed economic evaluation of the program.

These programs are assisting the Extension Service's overall commitment to IPM and helping area farmers with pest problems. IPM serves to satisfy many specific 4-Sight objectives as stated under most field crops and several horticultural crops.

Expected Results from Entomology

1. Increase the sale of Honey approximately 100,000 lbs.
2. Additional price increase of 2¢ per lb.
3. Reach 95% of the cotton producers through the interpertation of data on bollworm and boll weevil gathered from a network of black light traps.
4. Reestablish and revitalization of community groups in the cotton insect management program.

5. A savings of $8 per acre in fuel and insecticide cost on weevil treatment of alfalfa.
6. An increase in income from farm stored grain of 25¢ per bushel by using good insect and rodent control in grain bins.
7. Increase the number of farmers applying insect control techniques in small grain, corn, sorghum and soybeans by 25% (over 1 million acres grown).
8. Reduce the $64 million loss due to the cost of control and damage of insects on tobacco, corn, soybeans, sorghum, small grain and cotton by 25%.
9. Increase income from peanuts through efficient insect control measures and reduction in energy use by $25 per acre.

PLANT PATHOLOGY

No new Specialists were added to the Plant Pathology Extension program during 1979. However, the individuals added in 1978 to the turf and tree fruit programs now have a very active program and have made a definite positive impact in these areas. During the period of October 1, 1979 - September 30, 1980, we will have at least one retirement. Thus, we will have to devote some time to selecting the right individual for this key position.

Modern, commercial vegetable production (field and greenhouses) requires predictable harvests of quality (disease-free) vegetables prodiced efficiently. Because of the highly variable environmental conditions in North Carolina (climate, soil, topography), the risk of crop failure and low production efficiency due to diseases is high when compared to major vegetable producting areas in the nation. This high disease risk factor has hindered the growth of vegetable production in North Carolina. Losses due to diseases in 1976 were tentatively estimated at 46% of the crop value or over 57 million dollars. These high loss values do not include the losses incurred by crops that are not grown because of disease pressure. The risk factor can be substantially reduced by early detection of disease, prompt diagnosis, and immediate application of control practices.

Vegetable production is an important source of income for low-income farmers in the mountain counties of western North Carolina generating approximately 30 million dollars at the farm. Certain plant diseases reduce yields and thus reduce income. Trellised tomatoes have a number of serious disease problems, including Verticillium wilt, early blight and various bacterial diseases. Snap and pole bean yeilds are reduced by root rots and viruses. Cabbage is affected by black rot, and cucurbits and peppers by virus diseases. It is estimated that disease problems reduced vegetable yields by at least 25% annually.

There are two primary objectives in the Extension Plant Pathology program in western North Carolina, including 1) developing disease control strategies and 2) working toward having these strategies adopted on-the-farm. Specifically, strategies for tomato Verticillium wilt control, tomato early blight and bean root rot have been devised or are being refined. Implementation of these strategies is being accomplished through educational programs, including: grower production meetings, tours, agent training workshops and on-farm demonstrations. Expected results include: 1) improved control of tomato Verticillium wilt through use of fumigation and resistant varieties should increase yields and thus farm

income, 2) improvements in fungicide recommendations for early blight control should increase efficiency of production, and 3) better controls for bean root rot should also increase yields and farm income.

Research and on-farm tests have demonstrated the benefits of integrating both fumigation and resistant varieties for tomato Verticillium wilt control. However, fumigation is expensive and should be based on need as determined by soil assays for the disease organism. A pilot project to establish a system for determining need based on soil assays is being developed.

A pilot pest alert system for trellised tomatoes should be continued as well as work on the timing of insecticides and fungicides based on monitoring pest populations and environmental conditions. Dissemination of pest alert information via Extension Teletip service will be continued.

The development of strategies for bean root rot control are a high priority need. These studies will be continued for a fourth year.

Considerable effort will be expended in analyzing results from past tests on vegetable disease control and preparing this information for publication.

Estimates indicate there are over 550,000 acres of turfgrasses in North Carolina with a replacement value of about $475,000,000 and an annual maintenance cost of about $125,000,000. Additional value can be added to turfgrasses in North Carolina with income from the large tourist industry and recreation activities that use turf areas in the state. Disease losses and additional costs of maintenance from diseases on turfgrasses in North Carolina is estimated to be about $32,000,000 per year.

Types of turf in North Carolina can be divided into the following three categories with estimated replacement values of the turf as follows: golf courses ($30,000,000), residential and commercial lawns ($244,000,000), and other turf areas that include parks, airports, cemetaries, highways, etc. ($201,000,000). Estimates for disease losses that include increased cost of maintenance and percentage of value on these types of turf each year are: golf courses, $6,000,000 (13.5%); lawns, $16,000,000 (5%); and other turf areas, $10,000,000 (5%). Diseases caused by fungi such as species of Rhizoctonia, Pythium, Sclerotinia, and Helminthosporium are thought to cause most of these losses. Fairy rigns that are caused by several different basidiomycetes are often a problem in all types of turf. Losses from nematodes on turf have not been clearly established in North Carolina but appear to be limited to areas with sandy soil types. Diseases such as spring dead-spot of bermudagrass and centipede decline for which the causes are not known have become serious problems in recent years.

Effective and economical control practices are known for most of the diseases on golf courses that are caused by fungi except for fairy ring. In recent years strains of Sclerotinia have appeared throughout the State that are resistant to most systemis fungicides. Also problems with cool weather strains of Rhizoctonia and Pythium have occurred occasionally. Up-to-date information on these diseases is needed by golf course superintendents throughout the state. Several new chemicals are avaliable and

others are being developed that will give better control of these diseases. More research is needed on nematodes, spring deadspot and fairy rings before useful recommendations can be made for controlling these diseases. Certain management practices can be used to help control many of these diseases or prevent them from becoming a serious problem.

Disease control practices that can be used on lawns and other lower maintained types of turf are proper management practices and the selection of proper types and varieties of grasses. Fungicides can be used to control diseases in these types of turf, but it usually is not economical nor practical. This type of information is available for most diseases on different types of grasses and must be distributed to homeowners, lawn supply centers and professional turf managers throughout the state. More research is needed to determine the cause of centipede decline and the importance of nematodes in home lawns. Since DBCP is not readily available, nematicides are not available for use in home lawns. Other effective nematicides are not registered for use in home lawns and the manufacturers are not interested in developing recommendations for this use.

The apple crop in 1978 was 8.6 million bushels, worth more than $100 million with expectations for a larger crop in 1979. In the spring of 1979, weather conditions were optimal for three fruit disease development. This has resulted in severe apple scab in many orchards in the mountain apple growing counties. The growers that were able to follow a good disease control program suffered little if any loss from scab.

The 1979 peach crop has been one of the best in recent years with estimates of 1 million bushels, making the crop worth about $10 million. There were no spring frosts and a good crop was set on all varieties. In the Sandhills area, the peach-tree-short-life complex continues to be a problem; several orchards had as many as 50% of the trees injured or killed. Due to the above average rainfall during the spring and early summer peach scab, brown rot, and bacterial spot developed. Most growers had some fruit with scab but escaped major brown rot and bacterial spot damage because the weather became dry in mid-June just as the major part of the crop began to ripen.

During the last several years there has been a developing interest in small acreages of peaches for "road-side" and "you-pick" sales. Many of the persons developing this type of market have little or no experience in growing peaches. There has also been an interest in growing nectarines for local markets and in 1980 more nectarines will be coming into production. It will be necessary to work closely with and educate the extension agents and growers in these areas which extend from the Piedmont to the coast. There is also an increasing demand for disease control information by the backyard orchardist.

Diseases are a constant factor contributing to production losses in small fruits. Strawberry production was excellent in 1979. Red stele and Botrytis causes excessive losses. Plant production was excellent with very little or no anthracnose. A state label for Difolatan in plan production will help assure anthracnose - free plants for fruit growers. Stunt, stem blight, and Phomopsis twig blight continue to cause losses to commercial highbush blueberry growers. Fruit rots, particulary ripe rot, are

causing significant losses of muscadine grapes. Fungicides are giving only partial control. Research is needed to determine source of inoculum and time of infections.

Many diseases cause losses in the diverse plants and growing conditions encountered with ornamentals in North Carolina. Diseases, particularly root diseases, are much too common in nurseries in North Carolina. Much of this stems from lack of sanitation and trained middle management personnel. New wood ornamental specialists in Horticulture should help our communication with the Nurserymen's Association. The clinic is receiving more specimens every year and the time demand is heavy. The clinic is a very effective method to diagnose the root diseases. Information from the clinic is utilized to focus nursery visits where disease problems exist.

Phytophthora root rot on Fraser fir is the only serious disease. It is a limiting factor in the North Carolina State Forestry nursery at Crossnore, North Carolina. They not only sell diseased trees but also spread several species of Phytophthora.

Peanut diseases caused losses of 30 million dollars in North Carolina in 1978. This represents 30% of the crop value. The southern stem rot disease, caused by Sclerotium rolfsii, continues to cause the greatest loss of 10%. However, loss estimates for this disease dropped from 12% 1977 to 10% in 1978. In addition, in 1978, Cercospora leafspot losses dropped from 6% to 5%. However, losses from Rhizoctoni solani (pod rot) increased from 3 to 5%. Nematode damage remained the same at 4%. Cylindrocladium black rot remained at 2% and Sclerotinia blight increased from ½ to 3%. Freezing weather during the last three seasons has helped reduce the Cylindrocladium black rot mentioned in the 4-Sight program to a minor position in the disease syndrome. Moreover, reduction of some of the major diseases such as southern stem rot, and Cercospora leafspot have been due in part to new programs initiated as well as the flexibility of Extension to change program approaches to solve immediate problems and still maintaine major emphasis on long term goals. However, if the peanut disease control program is to remain viable and active, Extension must continue to take a major role in on-farm test programs aimed at the following target groups: 1) farmers 2) pesticide dealers 3) agricultural business 4) other extension personnel 5) cooperative agencies and 6) agricultural consultants. In addition, Extension must and has assumed the major role in the Cylindrocladium black rot survey and in the drive to use sanitation and sultural practices that could help reduce the spread of this problem. Extension must and has assumed the major role in conducting a pilot program in the soil assay project that will allow us to predict with incredible accuracy the fields heavily infested with this disease. Extension was also the leader in testing chemicals and helping to obtain emergency labels for the control of sclerotinia blight, a new disease which has recently appeared as a major threat to the peanut industry.

Annual losses from cotton diseases in the United States over a 29-year period have averages about 15% of the crop. In North Carolina it is estimated that all kinds of diseases cause a loss of 3 million dollars yearly. Nematode disease causes the greatest single loss of

11% in 1978. Extension has assumed the major role in programs to characterize the specific nematodes that are responsible for losses. In addition on-farm tests are being conducted to demonstrate results of chemicals now available as well as testing new chemicals that have nematicidal properties. Extension will cintinue a strong effort in educational programs for growers and agents involving seed treatment, crop rotation and pest management.

There are eleven disease-producing organisms affecting wheat in North Carolina. Seven of these are considered an annual threat unless control measures which include resistant varieties, seed treatment, crop rotation and sanitation are used. Consequently, since the proper use of these pesticides depend upon proper disease diagnosis, a new program to teach growere and agents correct disease identification will be initiated in 1979. Special emphasis will continue in applied research to find controls for the glume blotch disease which has continued to increase since the loss of mercury as seed treatment material.

In addition, additional efforts will be made to try to control the yellow dwarf disease through cultural practices and dates of planting.

Flue-cured tobacco diseases reduced crop value an estimated 4.02% and cost growers $42,435,120. Losses were reduced by 0.05% but cost growers $8,816,920 more due to increase in crop value. Five major diseases including mosaic, black shank, root-knot, Granville wilt and brown spot were responsible for 81% of the combined loss. Weather conditions, high participation in the R-9-P (stalk and root destruction) program, production of an abundant supply of healthy transplants and increase in number of growers following the system plan were significant factors in maintaining losses at a low level.

Burley tobacco diseases reduced the value of the crop 6.95% and cost growers an estimated $1,807,000. Losses were reduced by 0.78% and $100,005. Black root rot, vein mottling, etch and certain plant bed disease losses increased. The five major diseases including black root rot, vein mottling, brown spot, barn rot and etch reduced crop value 5.42% and cost growers $1,409,200 or 78% of the combined loss.

The tobacco disease situation on most farms is complicated and constantly changing. Diseases are numerous (about 19 altogether) and frequently several are found within the same field. Quite often, the presence of one disease affects both the development and severity of another. Disease control and production practices used by growers continue to change as a result of increase in size of operation and a more mechanized plan of production. These developments emphasize the need for development and grower acceptance of more effective control methods.

It will be necessary to expand educational activities in order to keep growers informed regarding the latest information on control methods. System Control, a plan of tobacco-disease-pest-management, will receive major attention.

Approximately 38.5 million bushels of soybeans were produced in North Carolina in 1978. If all diseases had been controlled to below threshold levels, another four and one-half million bushels of soybeans could have been produced. Nematodes accounted for 2/3 of the yield suppression. The majority of the remaining losses were due to pod and stem blight, and root and lower stem diseases, such as red crown rot, Phytophthora root and stem rot, and southern root and stem rot.

Many of these losses could be minimized if growers were aware of the currently effective control tactics. Growers need to be educated and encouraged to use all the assay procedures available for detection of soybean diseases, particularly those caused by nematodes and then to use the control tactics recommended in fields where threshold levels have been reached.

Corn producers continued to suffer losses due to diseases. The more serious diseases in 1978 were nematodes, aflatoxins, anthracnose, stalk rots, viruses (maize dwarf mosaic virus and maize chlorotic dwarf virus), gray leaf spot and northern and southern corn leaf blights. Nematodes reduced the expected yields of corn by about 20 bushels per acre on 500,000 acres, which amounted to approximately a 25 million dollar loss. Approximately one percent of the corn in North Carolina in 1978 was contaminated with aflatoxins. Although all of this corn was not destoryed, some of it was and some animal health problems did develop. Thus, Aflatoxins continued to be a major problem for the corn producer. Anthracnose continued to cause some losses, particularly in the coastal plains area and where the corn was not rotated with another crop. There still is no variety available to the corn producer that has resistance to anthracnose. Such a variety is needed. The major losses due to the viruses were confined to the piedmont area and were not as great as in past years because of the availability of hybrids highly resistant to the two main viruses. Very few corn producers will grow a variety in the piedmont area that is not at least tolerant to the viruses. Gray leaf spot caused serious losses in the mountain area, particularly in low lying areas, and the only recommended control measure is rotation. Much work needs to be done to more fully understand the gray leaf spot disease. The two Helminthosporium leaf spot diseases caused very little losses since so many of the hybrids currently being produced are resistant.

Youth and 4-H members in North Carolina should become aware of the social and economic impact plant diseases have on them and on the well being of the community. They should understand the basics for plant diseases.

Objectives

The overall objective of the Extension Plant Pathology Specialists will be to help the agents accurately identify plant diseases and keep the agents trained and up to data on the latest disease control tactics so the losses due to diseases will be held to a minimum. Some of the specific objectives are as follows:

1. Reduce disease losses in peanuts, cotton and small grain by 10 million dollars in the 1979-1980 growing season.

2. Help create a better understanding among growers on the need to use cultural techniques such as deep plowing to bury debris, flat cultivation and rotation in an effort to reduce the number of chemical appliecation necessary for crop production, thus reducing the cost of production and energy used.

3. Recommend chemicals for the control of southern stem rot and sclerotinia blight only on a demand basis. It will be necessary to encourage the grower to make close inspections of his fields to use this method.

4. Teach disease identification to growers, commercial representatives, agricultural consultants, and county agents to prevent wrong recommendations and the wrong chemicals from being used indiscriminately.

5. Encourage growers to use the soil assay program for nematode species present to determine the need for a nematicide and which nematicide to use.

6. Assist growers in the cylindrocladium infested area in determining which field to avoid for peanut production.

7. Develop compatibility charts for the major pesticides used on peanuts and cotton to reduce peanut interactions that might cause crop injury as well as personal injury.

8. Conduct demonstrations and educational meetings on the application of chemicals to increase the effectiveness of the chemical and also reduce environmental pollution.

9. Continue the on-farm applied research program to help develop new lavels for chemicals that are more effective and economical.

10. Study and develop threshold levels of peanut leafspot, southern stem rot and sclerotinia blight to assist the pest management programs.

11. Demonstrate the effects of resistant varieties, seed treatment, crop rotation and sanitation as related to disease control.

12. Enhance environmental quality by encouraging proper use of pesticides and disposal of pesticide containers.

13. Develop and continue to release through the press, radio and television all information avaliable that will assist the grower.

14 Work closely with research counterparts in plant pathology and other subject matter areas to present a unified program for growers and agricultural business that will help gain support for Agricultural Extension and N. C. State University.

15. The primary objectives of the soybean program are to provide educational material for agents to use in grower training programs, to develop on-farm tests that demonstrate effective control tactics of serious soybean diseases, and to develop programs that would illustrate uneconomical practices. The primary target of the latter objective would be aimed at foliar fungicides and seed treatment fungicides.

16. To help make the corn producer more aware of nematodes, the damage they can do to corn, how to determine whether or not a nematode exists on their farm, and how nematodes can be controlled so the losses due to nematodes can be reduced.

17. To make corn producers more aware of aflatoxins and some of the practices they can employ to reduce the amount of corn contaminated with aflatixins.

18. Continue to work closely with strawberry plant producers to insure 'disease free' plants, particularly anthracnose. Continue to stress the use of methyl bromide preplant fumigation and use of certified plants of adapted varieties of strawberries. A color folder on strawberry diseases will be submitted for publication this fall.

19. Obtain some improvements in the clinic. Cooperatie with other Specialists to develop several demonstration field days for nurserymen. Improve awareness among nurserymen of root diseases. Help develop workshops for professional landscape maintenance people.

20. To assist agents and growers in the identification of Christmass tree diseases and to help them choose sites for Christmas tree plantings that would be disease free.

Expected Results:

County Agents properly trained and equipped for diagnostic procedures will be able to rapidly and reliably identify the more common diseases and disorders of plants for their clientele. Growers will be able to implement immediate control practices. In the long run, grower clientele will increasingly look to the county agent for training of scouts and for accurate diagnoses for implementation of pest managment practices; production will become more efficient and profitable.

The Extension Service is in a good position to develop control programs and conduct educational programs for growers to assist them in disease reducing losses. The Plant Pathology Specialists can develop "disease control systems" (pest management) on specific crops, encourage and train agents to develop diagnostic skills and resources, assist in obtaining registrations for needed fungicides and nematicides and train agents, growers and scouts in pest management principles.

Objectives of any Applied Study or Pilot Effort:

We hope to develop a Cylindrocladium prediction system that will enable an individual to accurately detect the fungus in field soil, which will assist in an estimation of disease potential as well as assist in monitoring effects of rotation systems and freeze damage on the survival of the organism. This information could be used to assist growers on CBR infested farms in selecting fields that would produce a good crop without disease damage.

Extension Plant Pathology is the only group in the department of Plant Pathology involved in screening new chemicals to control diseases of peanuts such as Cercospora leafspot, southern stem rot, Sclerotinia

blight, nematodes and seedling diseases as well as nematicides in cotton. This program enables us to have a time jump on many new diseases and changes in old diseases. Moreover, it indicates the flexibility of the Extension program to deal with immediate problems.

Innovative Approaches:

The use of mobil, peanut-disease-identification displays of color photographs of major peanut diseases to assist agents in identifying diseases and attempting to create an interest with growers, pesticide dealers and agricultural consultants to become more efficient in this area.

A peanut disease identification contest is planned for the 1980 Peanut Field Day at Lewiston. Prizes will be furnished by commercial cooperators.

Preparation of a color peanut disease identification brochure which will be available through purchase for any group interested in peanut production.

Expected Results from Plant Pathology

1. Reduce disease losses on vegetables by $2,850,000.
2. Reduce disease losses on trellised tomatoes by 3%
3. Reduct disease losses on turfgrasses by $640,000.
4. Reduce disease losses on peanuts, small grains and cotton at total of 10 million dollars.
5. Reduce disease losses on tobacco by $256,260.
6. Reduce the loss in yield of soybeans due to diseases by 90,000 bushels.
7. Reduce the disease losses on corn by $375,000.

B. PROGRAM COMPONTNE 2 - LIVESTOCK PRODUCTION

ANIMAL HUSBANDRY

The major thrust of the Animal Husbandry Extension's work will be to continue stimulating the development of a sound commercial beef, horse and sheep program with an aggressive 4-H program to supplement each. In developing the true potential of North Carolina in these areas, major emphasis will be on the utilization of forage crops and crop residues. Additional emphasis will be on increasing the weaned calving percentage, weaning weights, number of light calves kept for stockers and the number of calves marketed through organizes special sales.

A 4-H program directed toward assisting in the total development of our youth through involvement in meat animals, horses and related projects will be maintained. The efforts in these areas will be feeding, management, fitting, showing, juging, meat selection, cookery, horse shows, public speacking and demonstrations.

Beef

The increased prices of beef cattle during the past twelve months have stimulated interest among beef producers in North Carolina. With these renewed interests, producers will again be willing to invest capital in improved facilities and purchase of breeding animals that will improve their programs. Management and nutrition must be improved in order to make the best use of improved genetics.

The efficiency and profitatility of beef cattle could be increased with the implementation of improved feeding programs. Many problems arise that are directly or indirectly related to nutritional programs, including: 1) the interaction of feeding programs, lactation and reproductive performance, 2) failure of producers to plan feeding systems that will maximize profitability, 3) effect of long-term animal or industrial waste feeding on animal performance and helthe, and 4) capability of some livestock agents to advise farmers regarding nutritional management.

Many immediate beneficial results could be realized with improved nutritional management of beef cattle. Immediate responses revolve around increased profitability as a result of the use of approved feeding, breeding and management practices. For instance, a North Carolina farmer who selects his breeding animals on above average performance records, castrates, dehorns, implants, worms and degrubs his cattle, feeds a balanced ration and sells his cattle on the state graded sales can potentially produce a stocker steer worth as much as $180 more per head (based on 75-cent stockers) than the producer who does not use these practices. In the long run, these changes will result in more efficient use of production resources such as land, forage, grain and capital.

Emphasis will be placed on a total herd health approach to beef cattle management schemes. A sound approach to the development of herd health programs to meet the needs of the cow-calf, winter stocker and finishing operations will receive particular attention. Included in this approach will be a strong emphasis on the reproductive aspects of a herd health program, including establishment of a breeding season, pregnancy examinations of the breeding herd and breeding soundness examination of bulls.

Horses

The economic conditions and energy supply continue to take their toll in the horse numbers but have not slowed the interest and enthusiasm of young 4-H girls and boys in horses. Many horsemen are experiencing nutritional problems related to compromises being made in economizing their feed costs. Due to these problems, special efforts will be directed

to make the horsemen aware of the specific nutrient requirements of horses and ways to meet these requirements. More emphasis will be made on having feeds tested and then supplemented according to the animal needs.

Parasites remain the number one health problem. Many new drugs are on the market which allow horsemen to worm their own horses economically at home. Educational efforts will be directed toward teaching the values of a sound parasits control program following recommended procedures.

In the youth work, horse activities which so not require horses (Horse Bowl, Public Speaking, Demonstrations and Judging) will be stressed this year. More counties will be encouraged to participate. Many areas of the state are increasing the formal 4-H recreational use of the horse by conducting pleasure trail rides and camping trips. This program will be expanded and promoted through out the state since a club member with a low price horse may compete and enjoy this project.

Sheep

For the first time in more than ten years, the interest in sheep has turned around. With higher prices for lamb and wool, the demand for breeding ewes is increasing. This interest will be cultivated with more information on feeding and management furnished to the livestock agents. Sound management and feeding practices will be stressed with emphasis on early lambs and a high percentage lamb crop along with proper marketing through lamb and wool pools.

Four-H lamb projects will be encouraged, and 4-H sheep shearing schools will be used to train sheep shearers for the industry.

Livestock Pest Management

A livestock pest management pilot program will be initiated in two counties in 1979-80. These counties, Duplin in the Coastal Plain and Chatham in the central Piedmont, have significant numbers of poultry and swine producers following confined production practices. External insect parasites, filth flies, mosquitoes, rodents and birds have all been identified as common and significant pests in the varied confinement schemes in use. The program will provide a continuous flow of pest status data to the producer and will be delivered with written recommendations for action.

The program has been designed to operate for a pilot period of three years with cooperating producers providing 100% of the cost of operation at the end of year three. In addition to the traditional scouting recommendations service, this program will explore cooperative use of control services to take advantage of the unique producer-integrator relationship that exists in these two counties. The program will target 25-30 producers in each county the first year and 50-60 producers by year three.

Ectoparasites of livestock and insect pests associated with confined livestock and poultry operations cause significant economic loss and create a less favorable environment for man.

The face fly-pink eye complex has been identified as a high priority concern of North Carolina cattlemen. A survey of face fly distribution and abundance is planned in conjunction with a collaborative effort in the pink-eye epidemiological studies of the Veterinary Science Department. An evaluation of chemical ear tage for control will be conducted. These efforts will help delineate the role of the face fly in pink-eye transmission and assist agents in developing specific county control programs.

Nuisance complaints associated with poultry and livestock operations have been identified in the 4-Sight long-range plan as a problem of increasing concern. Flies, odor, noise and dust may be involved singly or in combination. To bring about a clearer understanding of filth fly habits and control among the public, livestock and poultry producers, public health and other government agencies, it is planned to assist extension agents in at least one county of each district to develop a consolidated county plan to reduce and minimize nuisance complaints, particularly as they involve flies.

Expected Results:

1. To increase the use of approved cultural practice in 5% of the 1200 herd of stocker cattle which will mean an average of increase income per head of $180. This will man an increased income of $108,000 from stocker cattle.

2. Increase income from stocker cattle through stocker cattle sales in the amount of $343,503.

3. Approximately half of the beef cattle income is generated by using waste products that are not marketable in their current form. Examples of these waste products are crop residues, vegetable residues, poultry manure, etc. This not only generates approximately $75,000,000 of income, but it improves the environment as well.

4. Feeder calf sold on special sales average 5 cents per lb. more than those marketed on regular sales. This will result in an increase income from feeder calves of $1,069,900.

5. Reduce the death losses from 2% to 1% with improved herd health program.

6. Expect to reduce the sale time for feeder calf sales by one day by using a micro-computer to handle the bookkeeping chores of the sales. We expect this practice to reduce the death loss from approximately 3% that we now have to approximately 1.5%.

DAIRY HUSBANDRY

GradeA milk purchases from producers by North Carolina distributors during 1978 were 1,375,398,000 pounds, 3.1 percent or 43,778,000 pounds below 1977. Purchased were below that of 1977 in all months and 1978 was the first year since 1973 that production has shown a decline. The drop in milk production was due to the 1977 drought which left producers short of silage and hay during the first part of 1978 and as beef prices rose, selling out the herd became a very attractive proposition.

Slaes of fluid milk and cream to consumers by North Carolina distributors totaled 1,116,653,000 pounds (including military) in 1978, a decrease of one percent from 1977. Sales were below a year ago in nine of the twelve months. The one percent drop in sales follows a 1.7 % drop in 1977.

Income increased more than costs for North Carolina dairy farmers during 1978. Dairymen benefited from higher beef prices and good crop yields. The net costs of producing 100 pounds of milk increased two percent in 1978 to $11.06. Actual expenses increased ten percent but higher prices for cull cows and calves and larger feed stocks on hand at the end of the year offset most of this increase.

Dairymen received an average price of $11.41 for their milk in 1978, up five percent from 1977. The dairymen's margin was 35 cents per 100 pounds in 1978, an improvement over the six cents loss reported for 1977.

The number of producers continued to decline steadily throughout the year and into the first half of 1979. In May, 1979, there were 1,328 grade A producers in the state. Eighty-eight diarymen went out of business in 1978. However, we did have a few new producers go into the dairy business during the past year. The gross income to North Carolina grade A dairy farmers was $178,761,000 in 1978.

Total milk cow numbers continue to decline slightly each year even though grade A dairy herds continue to get larger.

Milk production per cow will probably expand to a more typical pace in 1979 as feed prices are expected to be quite favorable to heavier concentrate feed utilization.

The 75 cents increase in the Class I price of milk granted by the Milk Commission last January encourages producers to stay in business.

Educational programs in dairy production will put major emphasis on herd management practices that will eliminate losses for dairy farmers. Feeding the milking herd is a major cost of milk production. Profitable milk production depends on an efficient feeding program to minimize costs while providing a nutritionally balanced and acceptable ration. Costs related to feeding include feedstuffs and ingredients, harvesting, processing, mixing, storing, hauling, equipment, labor and others. Returns above feed costs depend on the efficient utilization of nutrients for milk production over an extended period. Improtant qualities of the

ration include palatability, variety, bulk, laxativeness, digestibility, and also its influence on milk composition, milk flavor and animal health. Feeding must be performed within the constraints, preferences and acceptable alternatives of the individual dairyman. Feeding programs are thus unique for each dairyman and reqùire constant re-evaluation and change. Despite differences, good feeding programs depend on economical sources of high quality roughage and other feed ingredients fed in amounts which meet the animal's nutritional requirements and support normal milk production and good animal health.

The forage and grain analysis program coupled with computer formulation of least cost, nutritionally balanced rations should be of great benefit to diarymen in formulating good feeding programs. The use of programmable calculators in the field will help in analysis of the overall feeding program. Preparing and providing dairy animal feeding and nutrition information will support and encourage our overall goal of a good feeding program for each dairy producer.

Major emphasis will be placed on reorganizing and improving the forage and grain analysis program. This will allow an improved basis for ration formulation. Emphasis will be placed on implementing a computer ration formulation system to provide dairymen better guidelines for feeding nutritionally balanced rations. Emphasis will also be placed on preparing and providing producers with recent and accurate information on feeds, feeding and nutrition. Through these major emphases dairymen should become more efficient in producing milk through the use of higher quality forages and balanced rations to lower feed costs and to lower feed wastage. Dairymen should also realize higher milk production per cow and greater income over feed costs.

Mastitis continues to be one of the most expensive herd management problems. Dairymen do not recognize this loss in milk production, however, unless special tests are used to detect subclinical mastitis. The DHI Somatic Cell Count program (established in 1977 with the purchase of a Fossomatic by the state DHI) has created a greater awareness of the mastitis problem. During May of 1979, the Dairy Records Processing Center began to report individual cow cell counts to the dairyman on the monthly report. When provided this information on their herd, dairymen are more easily motivated to adopt effective, proven herd mastitis control programs.

Thus, a renewed effort will be undertaken during the year to provide veterinarians, sanitarians, fieldmen, milking machine dealers and dairymen with the information needed to minimize mastitis losses.

In an effort to increase the shelf-life in their products, several cooperatives and processors are developing more stringent producer bacterial standards. Most of these programs are based on the use of pre-incubated samples for plate counts. Since producers are not familiar with these tests, an increased educational effort willbe necessary to assist producers in understanding and meeting these standards.

As energy becomes more expensive, it is necessary to find ways to conserve energy on the farm. Probably the best place to conserve substantial amounts of energy on a diary farm is in the milkroom. USDA

estimates indicate that over one-fourth of the energy used on the average dairy is used to cool milk and heat water. It is now economically feasible to use heat exchangers to reuse heat from the milk cooling process, thus eliminating approximately one-half the cost of these two processes.

As our North Carolina diary herds have gotten large, major remodeling or new parlor construction has become a necessity for many dairymen. Sound financing requires that the parlor investment (primarily determined by parlor size and degree of automation) be compatible with the planned herd size. During the year emphasis at milking management meetings will be directed at this area as well as publications relating to the installation of milking equipment must be updated to include requirements for larger milking parlors.

Emphasis will be placed on a total herd health approach to diary herd management with a special emphasis on reproduction. A sound approach to increase productivity in the dairy herd is the use of a competent veterinarian in a total herd health program. A program should include regular herd visits and an adequate vaccination program. Some emphasis will be put on the training of veterinarians to equip them to handle herd health situations in North Carolina diary herds. Emphasis on educational programs to orient producers, agents, and veterinarians to this type of program will receive the main thrust of the herd health program.

An applied reserach project, "Effects of the Use of an Anthelmintic (Thibenzole in Dairy Cattle at Calving," was started in 1976 by I. D. Porterfield. The objectives were to determine if there is a difference in milk production, length of lactation and culling rate between treated and non-treated cows, and to compare the relationship of treatment and non-treatment responses to the level of nutrition and management systems.

Preliminary data from a field trial just being completed indicates that within herds cows and heifers treated at calving produce approximately 400 pounds more milk than their untreated herdmates. The question has been raised as to the influence of treating cows with an anthelmintic at both drying off and at calving. A field trial is being initiated by I. D. Porterfield.

The objectives are 1) to determine if there is a difference in milk production, length of lactation and culling rate between treatments, and 2) to compare the relationship of treatments to reproduction, nutrition and management.

Recent survey information suggests that calf losses in North Carolina dairy herds approach 20 percent of the potential calf crop. This constitutes a substantial and unnecessary financial drain on the diary industry. The main thrust of Extension Dairy Husbandry programs in herd replacement will be towards reducing this loss to less than five percent.

Emphasis will be placed this year on the North Carolina Dairy Heifer Calf Program under the leadership of I. D. Porterfield. The objectives are 1) to develop a system of record keeping that will help dairymen improve the health and management of dairy calves under six

accelerated. The same survey also indicated that the majority of dairymen use bulls for natural service to a limited extent and that much genetic improvement could be realized through the proper selection of natural service bulls.

The objectives for the Genetic Improvement of Dairy Cattle project are 1) increase the proportion of dairy cattle, especially heifers, which are bred and AI, and 2) improve the average genetic transmitting ability of the bulls in use for natural service in those instances in which dairymen cannot or will not use AI.

With the trend to larger herd size, many dairymen will be making admustments in existing facilities and constructing new facilities this year. The goals of work simplification and economical construction should be blended together in planning dairy facilities. Labor-saving systems will be encouraged. Free-stall systems with drive-through fenceline feeding can be economical and labor saving for large herds.

Working with dairy farm management specialists, emphasis will be placed in the area of housing systems for dairy cattle relative to efficiency, cost and debt load for various size herds. Area seminars across the state will be held.

Confined handling of dairy cattle and more rigid waste control regulations have created problems with manure handling and disposal on dairy farms.

Planning for economical and suitable dairy waste disposal systems will be provided to producers, as well as research on waste management. Emphasis will be placed on workable waste handling and pollution abatement systems on producer farms in various areas of the state which can be demonstrated to surrounding producers. Dairy specialist will work with agricultural engineering specialist.

Dairy farming in eastern North Carolina and elsewhere has become a very specialized enterprise which requires specialized educational assistance. The density of dairy farms in eastern counties does not dictate an extensive dairy program effort at the county level. No county has as many as ten dairy farms and most have five or less. The area under consideration involves all of the Northeastern and Southeastern Extension Districts and five of the most eastern counties of the South Central District.

Total participation in the 4-H Dairy Program in 1978 held steady with 1977 which reflected a 15 percent increase. County extension agents reported 2,032 boys and girls involved in some phase of the program. The dairy poster activity accounted for 872 of the total.

There was only a modest increase in the number involved in the 4-H Dairy Bowl. This program continues to need greater participation to remain viable.

The primary emphasis of the 4-H Dairy program will continue to be in the area of production principles. There is a definite trend for production-oriented 4-H programs to have their greatest strength in those counties where there are subject-matter agents who give direct assistance to the county 4-H program. Added emphasis will be given to further involve subject-matter with 4-H programs.

State dairy breed associations continue to provide one of our best sources of adult leadership for 4-H dairy programs. Continued emphasis will be given to coordinating breed association programs with the 4-H dairy youth program.

Expected Results for Dairying

1. 250 additional dairymen will improve or install a suitable waste disposal system.
2. 175 dairymen will make adjustment in existing facilities or construct new facilities which will reduce the labor required by one man at a savings of 10,000 - 14,000 dollars.
3. Reduce the calf loss in dairy herds from 20% to 5% which will save the dairymen 1½ million dollars.
4. 12 percent of the dairymen will utilize the computer ration balancing program and forage analysis program. This could increase the income over fuel cost by $840,000.
5. Reduce the Somatic cell count of 360 dairy herds by 5% which will result in an increased income of $180,000. Decrease mastitis loss another $20,000 by adding 50 new herds to the DHIA Somatic cell count program.
6. Increase the number of herds on DHIA from 51% to 60%.
7. Ten percent increase in the number of heifers being bred by artificial insemination.
8. Make 200 lb. increase in the pedigree index in the bulls being used in dairy herds.

Poultry

Profitable has been the trademark of North Carolina's poultry industry for the last two years. As a result, many firms are in a cash rich position. Producers and businesses are modernizing facilities and resplacing equipment in order to improve performance. Larger and more energy efficient houses are being added to the production base. Production of broilers and turkeys is continuing to expand. Hatching egg production is expanding to keep pace with broiler production. Commercial egg production has begun to get new life following an upswing in egg consumption. New units are being built. In fact, the poultry industry has been operating in somewhat of a "boom" psychological atmosphere.

Feed prices, fuel prices, building and equipment prices are substantially higher than last year and probably will continue to escalate. Prices have begun to decline for broilers and turkeys. Combined with increased costs, the break-even point is at hand, and by the fourth quarter prices received probably will not cover production costs. This may slow expansion to some degree. There appears to be little possibility of avoiding a burdensome surplus of hatching eggs during the next year.

Concord Ducks, North Carolina's first commercial duck venture, processed its first ducks in July 1979. Current production capacity is 500,000 ducks annually. This integrator is beginning to secure contract producers interested in growing ducks. This new venture brings additional economic opportunity to North Carolina farmers and new educational challenges to Extension.

Poultry diseases account for the largest single reduction in profits of poultry companies. The results of poultry diseases, including morbidity, mortality, high production costs from drugs and condemnations, based on a recent survey by the North Carolina State University Department of Poultry Science, showed it to be the number one problem. Old and emerging poultry diseases require continuous surveillance to determine their presence and to devise methods of prevention. With the new developments within the FDA, certain drugs will eventually be eliminated from animal feeds thus making it mandatory to seek alternate methods of disease control. It then becomes necessary to determine the existence and extent of certain diseases and to develop preventative measures to control them.

Inadequate housing continues to plague our industry. Insufficient insulation and incorrect ventilation rates are two examples that will receive much attention in order to improve bird performance and to conserve energy.

Light regimes need improving as one way to conserve energy. In many instances, less light intensity will produce results just as good as higher light intensities currently in use.

Reducing energy costs for both feed and power is the primary opportunity for improving the competitive position of commercial egg enterprises. Energy expenditure for bird interaction under crowded conditions increases as cool-season energy retention is increased by higher housing densities of the birds. Data from applied research has shown cage shape to be an additional factor contributing to the energy balance relationship. An additional factor in this relationship is the difference between strains of layers in the response of appetite to environment and in the effect of nutritional and housing environment upon egg quality. Insufficient combinations of these factors have been tested to predict the optimum combination of housing, nutrition, and strain for specific market requirements.

As poultry businesses get larger and more comples, and as market price depressions become more severe, it becomes more important for poultry businesses to become better business managers. Liquidity and cash flow problems take on added significance as one contemplates additional capital investment. Long-range manpower needs for growing firms are an important consideration for improved business management. Training to improve management capability is desirable for most people within the poultry industry.

The growth of the game bird industry in the state since the restrictions on selling the product to consumers has been liberalized indicates a need for expanded effort in providing technical information to present and future producers. There are two processing plants in the state and processors in the neighboring states provide a market for many of the producers. An organization of game bird producers to facilitate educational programs and to provide a coordinated expansion may be desirable.

The North Carolina Crop and Livestock Reporting Service reports 12,550,000 layers on hand in April 1978 and 13,050,000 in April of 1979. One integrated firm has started construction of a third egg processing plant with a goal of contracting for one million additional layers. Producing started pullets for out-of-state shipment continues to increase with growing interest in pullets for layer flocks in the northeast. These growth factors have generated unique Extension educational opportunities.

Layer and pullet production facilities being constructed have more birds per farm and are housed at higher density and in some cases on small acreage. Many of these new facilities are being operated by producers not familiar with managing animal wastes. This has had a tendency to aggravate odor, fly, and manure disposal problems. Consequently, the need for educational efforts in the area of manure management and fly control continues.

Energy prices and availability is of concern to all segments of the commercial egg industry. There are complex energy efficiency relationships such as size of production unit, distance from feed mill and processing plants, and housing type that should be considered in each situation. Since North Carolina is a surplus egg production state, it is imperative that energy issued be addressed if production costs are to remain competitive with products being produced closer to the market.

The opportunity to produce more pullets for out-of-state buyers is a positive development for North Carolina producers. However, potential problems do surface upon closer analysis. Spiralling inflation and energy costs make it difficult to accurately predict production and delivery costs so that an equitable price arrangement can be negotiated. The industry needs assistance with production economics and alternatives to take full advantage of this new market development.

Servicement who supervise contract growers have the biggest impact on day-to-day production practices in the field. Educational efforts designed specifically to place pertinent information in the hands of the serviceman is an efficient Extension approach.

Effective Extension programs are based on data collected from meaningful experiments and/or field surveys. Effective quality assurance programs are considered crucial to the economical production of poultry products. Yet, field data concerning the benefits of feed quality assurance programs are basically non-existent.

Many North Carolina poultry feed mills have feed quality assurance programs of some type, but a few mills have no program at all. It is these that are in most need of Extension help.

The needs of North Carolina poultry feed mills which have feed quality assurance programs are quite diverse and in some cases unique. Hence, it is virtually impossible to organize an Extension program which will be applicable to every feed quality assurance program in the state. However, many poultry feed mills appear to be plagued with problems and questions concerning fat application and pelleting. A survey of these problems will be conducted this year. In the short term, this survey will provide the poultry industry with information and steps toward the solution of two very bothersome problems. In the long term, this survey will provide our industry with the capacity to evaluate these problems and their cost to their own operations.

A comprehensive stock, management, equipment, and nutritional testing program is ongoing. Although egg production is expanding at a moderate two to three percent, the producer faces the stress of reduced purchasing power and increased feed costs that make the need for knowledge of the relative merit of the above factors particularly pressing. One egg per bird average increase in North Carolina's commercial laying flock would provide one egg per day for a year for 74,000 people or would increase at farm value of egg output by about $540,000 in North Carolina. Updating research facilities to accommodate current levels of commercial bird density and energy conservation is particularly essential for production economics research--a practice that reduces daily feed requirements per bird by as much as 0.0067 pounds can save 1,620 tons of feed per year in North Carolina, a saving of $285,400. Funds have been provided for updating the layer and pullet research facilities..

Purchases of housing and equipment are major, long-term investments and should be made prudently. Recently, uncertainties of future production costs and even the availability of certain production inputs have raised new issues to be answered in the housing and equipment areas. Poultry Extension has developed new house plans to answer some of these problems.

Participation in the traditional management type poultry programs for 4-H has declined in recent years; however, with the tremendous economic impact of the poultry industry, there is a need to interest and train young people in this area. A number of science-oriented projects such as incubation, embryology, etc. for use by 4-H and other youth have been developed in addition to the traditional projects.

One problem accentuated by the expansion of both turkey and broiler chicken production is the reduced supply and, in some areas, non-existent supplies of wood shavings or bedding materials necessary for brooding and finishing houses. In many areas, the turkey industry is competing with various manufacturers of wood products for available supplies of wood shavings.

A second problem created by expanded production is the tremendous concentration of all classes of poultry in relatively small areas. Duplin, Sampson, and Union Counties are examples of such concentration. Some of these counties may have an annual production in excess of 50 million birds representing all classes of poultry. This is resulting in a sharp increase in disease outbreaks and subsequent costs of controlling and preventing these diseases. An example of this problem is the possible spread of MG

from commercial layers to turkeys. Commercial layers routinely receive a MG vaccine, which, if spread to nearby turkey flocks, can result in high mortality and condemnations at processing.

A third problem which the turkey industry has largely ignored is the increasing energy costs for producing turkeys. Fuel costs for brooding 0-8 weeks may approach 15 cents per bird during the winter season. The chicken broiler industry has adopted "partial house" brooding which has resulted in a 40 percent reduction in fuel costs as compared to "total house" brooding. To date, the turkey industry has shown little interest in the "partial house" brooding concept.

In North Carolina there is a growing interest in "independent" production as opposed to "contract" production of turkeys. This interest has been spurred by the large profits experienced in recent years. The growers who switch from "contract" to "independent" status have never made a decision related to disease prevention, nutrition, and marketing of turkeys. These producers will need every available resource if they are to survive as "independents." They will require constant help and supervision by Extension Poultry personnel.

With ever-increasing feed ingredient costs, there is a need for applied research in the areas of nutrition and use of unidentified growth factors as a means of maintaining or reducing current feed costs.

SWINE PRODUCTION

As we near the end of the fiscal year 1978-79, the supply of pork is beginning to exceed the demand at the price level that we have enjoyed for the past four years. Therefore, market price of hogs and feeder pigs are being depressed. Feeder pigs became unprofitable by mid-July and market hogs are expected to be near breakeven by August. Along with the downward trend of the hog market is the rising price of feed with corn prices to the buyer at $3.40 per bushel or higher by mid-summer. The combination of these two trends has resulted in a slowdown of new production units being constructed. However, the pressure for survival will be great on the "new" producers that have been in the business only a short time. They have not had opportunity to sell profitable hogs and probably will not for the first year or more, Extension programs must be organized to provide maximum support for efficient management for these producers. This will be a difficult time for those producers with total commitment to hogs as the only source of income. Areas of major concern and emphasis for Extension programs are as follows:

(1) Total program concept with major emphasis on reproductive efficiency. The number of pigs per sow per year is too low for profitable production. Most farms can increase profitability by being more efficient in the reproductive phase.

(2) Energy conservation will receive special attention. Since much of the supplemental energy used in pork production is used in the young pig phase, efforts will be made to utilize animal heat as well as concentration of supplemental year in the pig area.

(3) Building designs will be used to reduce the requirement for forced air and supplemental heat.

(4) Inadequate nutrition and feed waste contribute to poor utilization of high cost inputs. The use of analytical labs to monitor nutrient levels and ration quality will be emphasized.

(5) Herd health educational programs will emphasize sanitation, immunization (natural and acquired) and environmental management. The use of effective feed additives that are not in conflict with established regulations for food production. A special atrophic rhinitis immunized sale will be developed.

(6) Transportation of hogs and pigs to market is a problem area. Suggestions on handling pigs to prevent stress and resulting health problems will be developed.

(7) The performance testing program will be expanded as a means of identifying superior breeding stock. With the advancing costs of feed and facilities, efficiency in these two areas are very critical.

(8) Waste management continues to be a definite factor as to what will happen to the swine industry in the future. This is the first question that must be satisfactorily answered for a potential producer. The recycling of this product as a source of fertilizer has great potential.

Expected Results:

1. Increase of .5 pigs per litter or 1 pig per sow per year.
2. Reduce energy required during the young pig phase by 20%.
3. Reduce the feed required to produce a pound of pork by .2 lbs.
4. Reduce weight loss by 1/2 lb. per pig on 2.6 million pigs at 49¢ per lb. = a savings of $637,000.
5. Add twelve farmers to the swine performance testing program.

C. Program Component 3 - Business Management and Economics

D. Program Component 4 - Agriculture Marketing and Farm Supply

ECONOMICS AND BUSINESS

Recent events such as the OPEC oil price increase, double digit inflation and the possibility of a recession have intensified the public's interest in economics because these and similar events have had an effect upon individual life styles and the nation's standard of living. The amenities of a modern society have been accompanied by increasingly complex local, national and world relationships which require tradeoffs and render decision-making increasingly difficult. As a result individuals have become increasingly concerned about their economic environment and how to function within it.

The performance of North Carolina's food and fiber industry plays a vital role in the state's economy and provides jobs to thousands of citizens. Adverse weather conditions, rising production costs, volatile commodity prices and a myriad of complex and often contradictory rules and regulations have complicated decision-making for farmers and the agribusiness industry in general.

In the drive to increase efficiency, a continuum of new and expensive technology must be evaluated. This evaluation requires a thorough understanding and use of economic and financial principles if sound decisions are to be made. External factors such as tax, labor, safety and environmental regulations must be understood and incorporated into the decision-making process. Developing the managerial capability of decision-makers within the agricultural sector, sufficient to operate in an increasingly complex business environment, continues to be a major challenge of the extension education program in Economics and Business.

In the marketing area, producers and processors of food and fiber have an opportunity to solve some of their marketing problems through individual or collective action. Many producers currently lack information about alternative marketing methods, how they operate and the potential benefits they offer. Field observation suggests that those individuals and firms with an understanding of economic and business principles have been able to operate efficiently and profitably in the current economic climate. But there are many other individuals and firms who must sharpen their business skills and bolster their economic literacy if they are to survive as viable firms.

Operators of marketing firms must be able to keep pace with the rapidly changing business world, constantly adjusting to the requirements of new technologies, changing demands, and increasing governmental rules and regulations in order to provide the vital services linking producers to consumers in the food and fiber industry. The agribusiness sector of the state's economy must remain competitive with their respective counterparts in other states and throughout the world.

Although North Carolina still maintains its rural character, the move back to the country has led to land-use problems in the urban fringes and in more outlying rural areas as well. In rural areas there is a special need for educational programs relating to the loss of prime farmland, the drainage of poorly drained soils, the threat of nuisance suits against producers and the passage of legislation fostering and requiring the development of land-use planning.

Many small towns and rural areas of the state are characterized by low incomes and inadequate employment opportunities. Citizens and local government officials often have inadequate knowledge of the essentials necessary for economic growth or the activities in which local citizens and groups can engage to stimulate economic growth. Responsible use of tax dollars requires that policy makers, other government officials as well as the general public understand the impact of economic growth on land-use and the cost of community services.

An informed public can more effectively participate in the formulation of economic policy if they have a better understanding of the structure of the nation's economy and its subsets and the effects various environmental, labor, tax, health and safety regulations have on the price of goods and services. In the inflation, energy and housing area, consumers need to better understand the costs and returns associated with alternative policies and regulations.

Today's youth are receiving more economics education than their parents but still lack a basic understanding and perspective of the free enterprise system. The quality of their personal financial decisions and their effectiveness as voters are dependent upon improved understanding of economic principles.

The Extension Economics and Business staff is committed to providing a comprehensive economics educational program in 1979-1980 to the citizens of North Carolina. Major program emphasis will focus on:

1. Assisting producers and agribusiness firms in evaluating new production techniques and inputs.

2. Assisting individuals and groups in determining the feasibility of establishing new enterprises or agribusiness firms.

3. Evaluating changes in tax laws, environmental and other governmental policies and regulations which affect producers, businesses and consumers.

4. Training consumers, producers and agribusiness firm managers in decision-making techniques in order to improve their individual and collective welfare.

5. Increasing the effectiveness of producer marketing.

6. Improving the marketing and distribution system.

7. Increasing consumer understanding of how the economic system functions and evaluating policies that determine consumer prices, goods and services.

8. Disseminating information and improving decision-making relative to land-use planning and environmental management.

9. Increasing understanding of the impact of economic growth on local income, employment, costs of community services and local revenue.

10. Increasing youth's understanding and appreciation of business and economic concepts.

11. Providing in-service training to county staff to better enable them to assist their clientele in decision-making.

Expected Results

The educational program conducted by the Extension Economics and Business staff is expected to improve the ability of producers, processors, agri-business firms and consumers to make more profitable management decisions based upon knowledge gained from a better understanding of economic principles. Individuals and firms using sound management and marketing techniques will obtain lower unit production costs and/or higher product prices thus improving the net returns of their business. With the competitive nature of the agricultural sector, these gains should pass through the production-marketing system to consumers and result in lower consumer prices, improved product quality and greater product availability. In addition, increased knowledge on the operation of economic principles will aid producers, marketing firms and agribusinesses in improving their competitive position in the national and international environment. Information relating to resource use, governmental policy, and government regulations affecting the economy, will enhance the general public's understanding of the complexities of its economic environment. Analysis of government policies and regulations will help decision-makers to participate more fully in the political process, to choose among alternatives and maintain or improve their incomes and level of living.

The education effort in economic development is expected to improve knowledge of the essentials for economic growth and result in increased income and employment, better community services and more orderly community growth.

Applied Studies and Pilot Efforts

1. The Rocky Mount Extension Swine Operation - Extension personnel are managing and keeping records on a 90-sow operation, which provides cost and return information, and serves as a demonstration for existing and potential swine producers. Up-to-date practical information is rapidly transmitted into an effective educational program on the economic and technical aspects of swine production.

2. Coastal Plains Integrated Pest Management Project - A cooperative effort between Extension Economics, Extension Entomology and other departments. A pest scouting program with cost and return analysis and establishment of an Integrated Pest Management Cooperative.

3. Programmable Calculators - This is a relatively new management tool to assist producers in decision-making. Educational effort involves developing calculator programs "soft ware" and workshops to train producers and county agents on the use of selected calculator programs and how to use information derived in decision-making.

4. Swine Waste Management - Continue applied research in production economics to define efficient waste management systems for producers under alternative resource situations. Extension training guides and producer guides will be developed from research results.

5. N. C. Milk Commission - Extension Economics and Business in cooperation with county personnel conducts a cost of production study for the Commission. Assistance is provided the Commission in evaluating and adjusting the economic formula used to establish farm-level milk prices.

6. Beef-Forage Systems for N. C. Cattlemen - Determination of most profitable beef-forage systems given alternative land, labor and capital resources available.

7. Beach Erosion - The state of North Carolina currently does not have a policy(ies) dealing with inlet and beach erosion maintenance. This study seeks to identify and evaluate policy options including alternative financing schemes such as user charges.

8. Eel Culture Study - Applied research to compare grow-out rates and associated costs. Provide potential investors with relevant information.

9. Feasibility of Seafood Processing and Business Management for Commercial Fishermen - Develop and conduct workshops on investment analysis for seafood processors and dealers. Investment analysis will be taught using the case study approach. Develop and conduct a "hands on" program for fishermen in basic record keeping, business management principles, tax management and estate planning. The program will be tested in three locations this year.

10. Outlook Information - Utilize computer information systems and teletip to provide the state's farmers with timely information on supply and demand situation, and short-term price outlook.

11. Egg Breakage Study - Applied research to determine changes needed to reduce egg breakage and to develop benefit-cost information to determine which changes are economically justified.

12. Broiler Cut-Up Study - To help firms evaluate the type of cut-up procedure (hand cut, saw, machines) and product flow set-up to use. Data will be obtained from firms with established cutting operations.

13. Expanding Out-of-State Markets for N. C. Eggs - To determine the potential for N. C. producers to form joint arrangements with out-of-state packers or distributors in order to improve the service function and thereby increasing potential for expanding out-of-state markets for N. C. eggs.

14. UHT Milk Study - To measure consumer acceptance and evaluate the economic feasibility of marketing ultra high-temperature milk through selected channels such as schools, cafeterias and vending machines.

15. Wilkes County Study - A pilot effort in North Carolina using a comprehensive computer program to analyze the monetary benefits and costs of economic growth in Wilkes County.

16. Nuisance Suits - Conduct county surveys to determine the extent and nature of nuisance suits and complaints against farm operations. Develop materials on nuisance suit legislation passed in 1979.

17. Economics of Clearing and Draining Poorly Drained Soils - Applied research to obtain data on clearing and draining trends in N. C., the drainage incentive structure facing landowners, public costs of drainage, and the possible impact of alternative public policies affecting land clearing and drainage.

18. Consumer Cooperative Development - Formalized training of county extension agents, development of printed materials, and meetings with the general public and potential clientele regarding organization of a consumer cooperative under the provisions of the National Consumer Cooperative Bank Act.

19. Determining the Cost of Capital in An Agricultural Cooperative - Assessment of alternative sources of capital and costs associated with financing cooperative growth and operation.

20. Agricultural and Rural Passenger Transportation - Develop and demonstrate procedures to evaluate regional transportation plans for agricultural commodities and rural residents. A 20-county area in N.E. North Carolina is being used as the study area.

21. Farm Decision Making in the 80's - A pilot effort to bring young farm couples to a central meeting point for a multi-day farm decision-making conference.

22. Tobacco Policy - Analysis of government programs for tobacco and likely consequences if current programs were modified or abolished.

FOOD SCIENCE EXTENSION

The Food Science Extension specialists are involved primarily with the food processing industry and closely related fields. There are many facets of the food processing industry that need programs to improve over-all operations. There are those programs that extend across commodities and programs peculiar to individual commodities.

1. The most pressing problem that confronts the food processing industry is the impact of regulatory agencies on processing, waste and water management, food additives, Sanitation, food safety, nutritional labeling, open dating, noise control and many others. All specialists are involved with industry and regulatory agencies to educate both parties on means of implementation and interpretation of various programs. Plans are to work with commodity organization where practical, on an individual basis when needed. Meeting of processors and regulatory personnel will be held to discuss implementation of various program. Informational newsletters will be used along with slide presentations. Specialists will work with other departments such as Agricultural Engineering, Economics, production departments and private industry to seek solutions to problems facing the food processing industry. Specialists will also serve as liaison between regulatory agencies and processors.

2. Quality assurance programs are of utmost importance to survival of the food processors. Specialists plan to work with industry on setting up quality control laboratories in individual processing plants and encouraging plants to operate these facilities and keep the necessary records to continue to improve quality and sanitation within the plant. Programs are planned for commodity meetings and food processing programs. Newsletters, slide presentations and individual contacts will be used to get the information where needed.

3. Merchandising of food products are necessary to meet the expanding market. Plans are to work with industry to analyze the nature of their business and to have industry do some advanced planning on the future of market conditions for various products. Specialist will help industry to determine what technological advances they can use and what will be the impact on their industry. Helping industry project market potential, effects of inflation and needed expansion programs to continue growth of the food industry is important. This information will be taken to the processors on an individual basis where commodity organization do not come in contact with these processors.

4. Consumer information programs are important for some commodities such as meats, poultry, fruits and vegetable and seafoods.

Specialists will work with County Home Economics groups either as county or area meetings to make consumers aware of new developments in the food industry. Printed information such as bulletins and folders supplied by commodity organizations will be used along with printed information from specialists. Specialists will also coordinate programs with promotional groups to get needed information to consumers.

5. Rising energy and utility costs are forcing food processing plants to consider alternative fuel sources and processing techniques to improve efficiencies. Specialists will hold a conference for food processors to obtain information on the specific of the problem and prepare information on reclaiming of now lost energy. Information will be obtained from research programs and private sources on new developments in energy saving for the food processing industry.

6. Specialists will continue to work with their research counterpart and bring problems to the research team and distribute research findings to industry.

Individual commodities have programs that are peculiar for that commodity. Food Science Specialist is working with county ham processing plants to establish procedures for portion control programs. As a result of this effort, country ham sales will increase approximately thirty-five percent due to additional markets available in the fast food industry.

Poultry product specialists are working with poultry processing plants involved in further processing of poultry. Products include turkey and chicken meat, "Hot Dogs" sausage items, dehydrated items, spreadables and many other items. As a result of the specialist efforts the volume of business for these plants has increased approximately fifteen percent. Poultry products specialist also worked with the egg industry on pasteurization and greezing of broken eggs. Egg breaking operations provide the egg processor an advantage by use of shell eggs (3 to 7 % of plant volume) that would otherwise be lost in the market channel. Up to 100% of plant volume may be directed through the egg breaking facilities to maintain reasonable returns when shell egg prices are depressed. Overall the poultry products specialists have contributed a 20 to 30 percent saving in egg products and enhance the market value of egg products by 10-15 percent.

The fruit and vegetable specialist has a program in training personnel in community canneries. Through his efforts we now have several successful community canneries. With renewed interest in commercial food preparation for families, five new canneries will be in operation during the next year.

The dairy products specialists are working with several plants to get the new NCSU process on using acid whey as a source of solids for frozen desserts.

Food Science Extension Specialists will work with a new process for new market outlets. Shelled hard cooked eggs are now coming on the market. Most of the problems on shelf life have been completed.

The number of eggs sold through this market should double during the next year.

Through this new process and increase in volume of approximately five percent in the egg breaking, there should be a 7 to 8 percent increase in egg marketing in North Carolina during the coming year.

The Dairy Products Specialist is working with several plants to get the new NCSU process on using acid whey as a source of solids for frozen desserts. This new source of milk solids can replace up to 25 percent of the present solids in frozen desserts. If the frozen dessert industry can work out the legal restrictions, this could mean a savings of over $125,000.00 per year.

E. Program Component 5 - Ecology, Natural Resources and Environment

FORESTRY

Forest Resources (Wood Products)

Demand for lumber, furniture, pulp and paper, and other wood products is currently strong. A general leveling off or decrease in demand id expected for FY 1980, but most analysts are hesitant to give firm predictions for individual segments of the industry. The general sense of optimism within the wood products industry over the last year is reflected by several recent announcements of new plants and plant expansion in North Carolina and other parts of the Southeastern United States.

Despite the existence of good markets for manufactured products there are still many problems at all levels of the industry. The Piedmont and Mountain regions of North Carolina currently contain large amounts of unmarketable timber, particularly hardwoods. In those same regions it is generally uneconomic to thin pine stands. Thus, there is no economic incentive for many landowners to practice sound forest management on their land.

Rapidly increasing energy costs have made many wood products and other industries, and institutions reevaluate their fuel use and look at the economic feasibility of burning mill and forest residues. This offers a tremendous potential for increasing revenue to the landowner and other involved in supplying the fuel as well as to those burning wood. Within the last year many wood products companies have taken steps to become self sufficient. In addition, several brick companies and textile plants in North Carolina have announced plans or started to burn wood as a fuel.

Finally, inflation, increased costs, etc. are forcing all wood users from managers of sawmills and furniture plants to builders and homeowners to look more closely at the efficiency with which they use wood. Proper selection, protection, storage, drying, cutting, and finishing of wood are all areas of concern.

Extension has the responsibility and capability to address these problems using combinations of case studies, demonstrations, workshops, other meetings, publications, and mass media. Educational objectives can be met through the N. C. County Extension organization, and by cooperation with U. S. and N. C. Forest Services, TVA, extension services in other states, other subject matter departments at N. C. State University, and other state agencies.

Overall Extension Objectives

The overall objective of the Section is to improve the efficiency with which wood products are produced, marketed, or utilized by landowners, harvesting firms, the wood products industry, and consumers. Specific objectives include:

Informing loggers on all aspects of sound business management, particularly government regulations and improved harvesting techniques.

Developing markets for unmarketable timbers.

Encouraging industry, commerce, and homeowners to use wood as a fuel when economically feasible.

Improving lumber yields at secondary wood products manufacturers through better quality control, machining, and drying procedures.

Informing builders, building inspectors, and homeowners about the proper selection and use of wood products.

Expected Results

The general result expected from the program for FY80 is increased efficiency in the marketing and utilization of wood products. Specific results include:

Development of a marketing model which will assist in the identification of potential sites for all types of wood products companies.

Completion and implementation of marketing studies for currently unmarketable timber in the Northern Piedmont and Western Counties of North Carolina.

Announcement of at least six more non-wood products companies or institutions using wood as a fuel.

Quantifiable increase in the lumber yield in at least three furniture plants.

Better enforcement of existing building codes by building inspectors in North Carolina.

Forest Resources (Forestry Section)

The long-range trends of increasing consumer demand for all timber products, habitat for wildlife, outdoor recreation opportunities and conservation of water and soil resources have increased in all sectors. While these trends are indicative of many short- and long-run opportunities for the 240,000 North Carolina forest landowners, most have

taken less than aggressive action in practicing sound forest management. Private nonindustrial-owned forest lands are, collectively, North Carolina's largest single class of ownership. Yet, there still persists a widespread philosophy of mining rather than managing their forest resources. The need for increasing wood fiber productivity to meet consumed demands in the next thirty years and further allocate sufficient land for multiple use, such as recreation and wildlife management in a perspective that is sound economics, becomes a focal point and challenge for professional forestry and extension educational programs.

Overall Extension Objectives

Fortunately, the goals of increased fiber production, efficient multiple land use and increased farm income are complementary. Aggressive leadership in educational programs can assist all landowners in answering the questions:

Why should I, and what can I do, to practice sound forestry conservation?

Forestry extension programs at the county level will be further strengthened with additional result demonstrations, publications, and visual aids depicting plantation establishment, silvicultural practices, and economics. In-depth training will be offered to county personnel in forestry practices and assistance in organizing county forestry interagency committees and landowner associations.

A continued effort to bridge the gap between available research information and unanswered questions pertaining to variety and species selection, nutritional requirements, insect and weed control methods and record-keeping practices will be conducted through result demonstrations.

Emphasis on outdoor forest recreation will focus on the forest user audience, campground facility planning, the determination of resources and services the various agencies and organizations provide the forest user.

Wildlife and game management aspects of forest resources will be disseminated through 4-H youth camps and the development of demonstrations which will maximize the multiple use of resources associated with the forest-land use.

Effort will also be devoted to maintaining communications with public agencies responsible for regulatory measures effecting the small woodland owner to assist them in the solution of specific problems relating to timber and general forest-resource land base.

These tasks are designed to collectively provide a recognizable impact on the major problem of increasing forest-land productivity and income to the small woodland owner in both the short and long-run.

Expected Results

Significant improvements in Forest Management by small woodland owners are expected. Some measures of progress are:

a. Increased site preparation and planting on private woodlands 30% annually.

b. Organize at least eight new county forestry associations bringing the total to thirty.

c. Increase the acreage of private nonindustrial woodlands under intensive management by 30% annually.

d. Increase total income to Christmas tree growers by 20% annually.

e. Make available to Christmas tree growers 4 million Fraser Fir transplants by 1981 (1/2 million available 1976).

f. Increase availability of recommended species of trees to urban homeowners.

g. Increased acreages of forest lands will be under multiple product land management criteria.

F. Program Component 6 - Mechanical Science, Technology and Engineering

Biological and Agricultural Engineering

Technology development and dissemination for more cost-effective agricultural production are the major thrusts of the engineering plan of work. Energy conservation, more effective mechanization, and overall production system optimization represent major activity components within the departmental program areas of horticultural crops, field crops, livestock housing, residential housing, water and waste management, safety and 4-H. Enhanced production reliability and quality by the development and utilization of more advanced scientific practices that comply with regulatory constraints are overall program goals. Opportunities for information feedback and technology transfer will be emphasized.

Modern agricultural productivity is squarely on the extension use of machines and energy. The selection, operation, adjustment and maintenance of specialized and sophisticated equipment has become one of the major components of successful farm management. Not only must the farmer be concerned with the functional aspects of machinery needed for particular operations, but he must also be able to wisely select the size of each component to match the capacity requirements of his operation and the power units available.

Superimposed on the increasingly complex mechanization management requirement for optimum productivity and profit is the turbulent situation with respect to the avalability and cost of petroleum fuels, on which virtually all crop production mechanication is totally dependent. Thus a new and distrubing dimension is added to a problem which already taxes the capability of many farmers to cope with adequately. Assistance is urgently needed to provide the information base on which rational decisions can be made to maintain productivity and profitability in the face of these new constraints.

Mechnication of tobacco production has accelerated the consolidation of acreages into larger units and made it more difficult for the traditionally small North Carolina farmer to compete in this enterprise. Many are seeking alternative crops which can be grown to maintain adequate income on small and medium acreages. Various horticultural crops offer attractive possibilities, provided that marketing options can be exploited and made increasingly available. The increased cost of transportion is moving North Carolina into a more favorable position for fruit and vegetable production, both for fresh and processed use. Lack of experience with these crops, lack of well-developed production technology adapted to North Carolina conditions and limited mechanization availability tend to slow the expansion of horticultural crops production.. An aggressive applied research and demonstration

program to pull together and make available to potential growers the technology and equipment currently available and to stimulate the development of new technology would provide expanded income opportunities.

Fertilizer, pesticides and other agricultural chemicals account for 35% of the energy used in agricultural production. Increased cost and decreased availability of the energy sources from which these vital inputs are derived make it mandatory that their use be made as efficient as possible. Proper selection, calibration and adjustment of the equipment with which these materials are applied to the crops and soil is essential to their efficient and effective use. Continued and expanded educational efforts toward this end must be emphasized. Enfironmental concerns add an element of urgency to this area of work.

Erosion of precious topsoil and the accompanying pollution of streams and water ways is a matter of increasing seriousness as traditional conservation practices fall victim to larger and less flexible equipment which is not compatible with them. New approaches need to be developed which will provide for the individual productivity required and preserve vital natural resources.

Efficient Use of Electrical Energy and Fuel Conservation

More than 50% of North Carolina's crop production energy is used in curing tobacco. Energy efficient curing demonstrations on 40 farms in 1978 proved that at least one-third of this energy can be conserved by proper facility maintenance and prudent curing procedures. Farm demonstrations of energy efficient curing practices are planned for 48 strategic farms in 26 counties of the tobacco area of North Carolina for FY 79.

Curing problems associated with the swift adoption of machine harvesting of tobacco will be studied as a basis for educational programs on equipment selection and use.

The limited reserve of fossil fuels and the prevailing attitude toward tobacco products pose a question as to the availability of fuel for tobacco curing in the event of a serious energy shortage. Extension effort will be directed toward farm testing of curing tobacco with alternate fuels.

Grain Drying and Storage Procedure and Techniques

In addition to more efficient energy use, an educational program is planned for better farm drying and storage equipment and facilities planning, selection, and use. The lack of planning has caused many problems as the growers expand their operation and enlarge their facilities. Improper use results in problems ranging from overdried grain to spoiled and/or moldy grain. A grain drying bulletin is planned covering these items.

Peanut Curing Techniques

The harvesting period for peanuts is very short as compared to most crops and covers only about a three-week period. Because of the short harvest period, peanut curing has been a very rush job and some fuel is probably wasted. An educational effort on efficient operation to save fuel and preserve peanut quality is planned.

We expect a savings of 2,250,000 gallons of LP gas use in crop drying and curing. A 2 million gallon savings in tobacco, 200,000 in corn drying and 50,000 in peanut drying.

Water Management

In the last several years, due to the extremes of rainfall, there has been greatly increased interest in water management. An expanded variety of irrigation equipment has been introduced in the last year, and farm magazines, irrigation success stories, and grower visits to areas such as Georgia where the irrigated acreage is growing very rapidly is adding to this interest. While most of the water management interest has been directed toward irrigation, there is also increased interest in drainage.

Much of the interest in irrigation has developed from fairly large producers of corn, peanuts, and soybeans; but there is also interest from vegetable growers, small and large fruit producer, tobacco growers and forage crop producers. Most of the interest has been in the selection of the proper sprinkler irrigation equipment, but there is interest in trickle irrigation and subsurface irrigation.

The one problem that just be addressed is to select the irrigation system that will be most efficient from the standpoint of crop production, energy required, water consumed and that can be operated with the minimum labor input. All of these objectives are not compatible and when one considers that each irrigation system is site specific, it means that much of the irrigation work will be conducted on a one-on-one basis.

Water management is an important production tool; however, the grower must realize that if he has a drainage problem, it must be solved before he installs an irrigation system. Also the irrigation system must return a profit. These concepts along with selecting the proper irrigation system will be addressed.

The objectives of the program are to train county extension personnel so that they can properly advise farmers on the correct system to install, to work with manufacturers, suppliers and installers of equipment in upgrading their assistance to growers and to prepare materials that can be used by growers, county staffs, and suppliers.

The results expected are that growers will purchace systems that will best fit their particular needs, Hopefully, growers will have a better appreciation of water management and will integrate irrigation, drainage and erosion control as a part of their total farming operation.

Two applied studies will be conducted. One will be to work with several growers on irrigation scheduling and the other will be to use irrigation as a medium for application of herbicides.

Livestock and Poultry Production Systems

Interest in swine production facilities and the corresponding workload remains high. Thus, emphasis will continue in this subject area, particularly as it relates to the animal environment, labor reduction and waste management practices. Information gathered from previous studies and programs will provide a foundation on which to continue an active swine housing program. Energy conservation and usage will be stressed through better construction practices, selection and operation of equipment and alternatives to present sources as techn-logy develops.

Swine and poultry production constitute large on-farm energy users. Monitoring of electric prower and LP gas consumption on commercial farms will provide a solid base for production costs analysis and the magnitude of these energy sources in relation to feed energy and animal performance.

Waste disposal, an integral component in livestock and poultry production systems, cannot be separated from the design of housing systems. Therefore, concerted efforts will continue in this subject matter area in coordination with the waste management specialist. Flushing as a means of improving the in-house environment will receive further study so that appropriate design criteria can be developed.

Buidling plans for housing and related facilities will be the major tool used in keeping extension agents aware of new technology. Additionally, other printed subject matter, personal assistance and in-service training will be used to keep extension agents professionally competent and fully apprised of new and changing technology.

The Farm Building Plans Service will continually be updated because this service is one of the most effective teaching tools available through Extension. Approximately 15,000 to 18,000 copies of plans for all types of farm buildings and equipment will be distributed to residents of North Carolina.

Animal Waste

With the current trend accelerating toward even larger, more specialized, and totally confined livestock and poultry production facilities, the complexity of handling, treating and ultimate utilization of the associated wastes is increasing dramatically. Competition for land which has been, and will continue to be, the prime receiver of agricultural wastes and wastewaters is also sharply increasing. Energy demands which are impacted by initial planning and design of waste handling a-d disposal systems will become more critical. Waste management and pollution abatement are generally nonproduction, non-income producing topics which do not receive the same kind of producer consideration as herd performance or crop production. Therefore, educational activities and technical services in conjunction with regulatory programs will be necessary to affect continued producer compliance with the environmental regulations.

Continued emphasis will be placed on developing, refining and implementing the rational design of flushing system technology for waste removal from livestock and poultry confinement housing for environmental quality improvement both in-house and around the outer vacinity of the building, reduced herd health problems and improved animal performance. More basic thought will be given to systems which emphasize or facilitate waste utilization processes such as methane generation, biomass recovery and refeeding. A reduction in energy requirements will be an inherent part of these materials-handling systems.

In-service training sessions will be conducted in each district to update extension agents and other appropriate agency representatives on current state-of-the-are technology for waste management and pollution abatement and recommended practices for odor control. A major objective of these workshops will be to encourage producer implementation of available technology. Land-use planning specialists will also participate in these workshops.

Efforts will also be made to enhance education-technical service-regulatory interagency working relationships especially in view of regulatory interpretation inconsistencies and agency internal shifts in priorities. Technical assistance will continue to be provided for resolution of livestock or poultry odor-nuisance conflicts and for individual pollution abatement systems where required. Efforts will be made to st-mulate interest for larger producers to seek qualified consultant services to relieve some of the workload created by individual designs for pollution abatement systems, Intensive stream monitoring studies for assessing the environmental impact of runoff from mountain diaries will be continued to better understand what type of pollution abatement systems are necessary to satisfy environmental regulations.

The expected results of these efforts are to prevent waste handling and environmental concerns from hindering the kind of long-range growth projected for confinement production of livestock and poultry.

Nonpoint Sources

The agricultural portion of North Carolina statewide 208 water quality plan has been completed. This plan presents a three-point program to achieve voluntary compliance for controlling nonpoint source impacts from agriculture on receiving water quality consisting of 1) technical assistance, 2) cost-sharing incentives, and 3) an educational program.

Work under the continuing 208 planning program will evaluate relationships between agricultural practices, conservation techniques and water quality to set a basis for the technical assistance and cost-sharing incentive elements of the agricultural 208 plan. Conjunctive activities supportive of the continuing planning process will be to evaluate and update state water quality monitoring programs by personal contacts, committee activities and cooperative data analysis. Additionally, special studies will be conducted on small watersheds to evaluate relationships between agricultural practices, conservation techniques, and water quality so that the cost-effectiveness of proposed management practices and potential sucess of a voluntary compliance program can be better evaluated on the basis of actual data. Another goal of these special studies will be to document background or natural water quality and the impact of various agricultural non-poing sources on receiving water quality. This information will be collected and analyzed in a manner that relative impact pf various activities in a watershed can be determined and the cost effectiveness of alternative management practices or conservation techniques be evaluated.

The North Carolina Agricultural Extension Service will conduct the statewide 208 educational program in conjunction with other agricultural agencies. The major components of this educational program are to 1) create awareness among citizens and particularly among farmers of water quality problems, goals and programs; 2) encourage the implementation of currently available state-of-the-art management practices for abating nonpoint pollution; and 3) identify research and development needs from which subsequent educational programs can be developed. Methods which will be used to achieve 208 educational programs objectives are mass media information dissemination, field demonstration of management practices to reduce nonpoint source impacts, and utilization of the research-extension-clientele limk for motivating implementation and identifying research and extension needs.

The educational program will have a primary focus in the Chowan River Basin because of the high public awareness and concern in this area and thereafter support 208 planning activities across the state.

Water and Wastewater Management

Water resources continue to be a valuable natural resource and better management or our water supplies is becoming a necessity. The Agricultural Extension Service can intervene effectively in three areas concerning water resource management. These areas are 1) water supply, 2) water use, and 3) wastewater treatment. Each of these areas of water management is important to both urban and rural residents and during the upcoming year an intensive research, demonstration, and educational effort is planned to help rural families 1) ensure they have an adequate supply of potable water; 2) conserve existing water and energy resources; and 3) treat household, farm and commercial wastewaters in environmentally sound and economically attractive manners.

More and more individuals, industries and businesses are locating in the rural areas of our state. Once located, each becomes a consumer of both water and energy resources. The supply of water in many rural areas of the state is fixed and often very low; and as the population in these rural areas increases, the available supply of water is depleted. Existing water supplies in some of the rural areas of our state have been tested by water supply labs around the state and appear to be extremely high in bacteriological contamination. Hence, new water supply wells are required. Here, through Extension intervention and state cooperation, new water supplies are being located in these priority areas.

One often overlooked alternative to growing water supply problems in North Carolina is water conservation. The average household can easily reduce water concumption by 25% and realize numerous tangential benefits. Paramount among these is decreased energy consumption. One pilot program in the Raleigh area has demonstrated that a 25% reduction in water consumption is possible and a concomitant 15% reduction in energy consumption is possible. This research-demonstration effort has been ongoing since December 1978 and monitoring will continue for approximately 6 more months.

Many rural areas of this state face severe restrictions because of inadequate wastewater treatment facilities and poor poils. An alternative to costly municipal wastewater facilities is on-site wastewater treatment. A vital component of the water and wastewater management program is wastewater management in rural areas. In this regard the program will examine various alternatives to conventional wastewater treatment facilities including on-site wastewater treatment systems, cluster wastewater treatment systems and wastewater treatment systems for small communities. Here the Extension Service is intervening in several counties throughout the State to assist with the formation of sanitary districts which are eligible for both federal and state assistance. This assistance is in the form of 201 grant monies and several small, unicorporated communities in the State are now taking advantage of

these federal programs for innovative and alternative systems. To further this effort, the Extension Service is providing some assistance in the design, installation, or monitoring of these alternatives systems and this will continue to be an important work activity of this program.

Residential Housing

Close coordination will be maintained with the House and House Furnishings Department in providing this engineering input to the overall housing program and the updating of existing house plans. Major new program goals will be to encourage adoption of alternative energy conserving techniques that are well proven and can be of immediate benefit for typical residential dwellings. The feasibility of passive solar systems will be investigated and, as appropriate, the adoption of such techniques will be encouraged by incorporation into building plans and statewide educational efforts which will emphasize information dissemination and technical assistance. The potential and feasibility of alternative energy sources for rural dwellings will be monitored to keep this engineering-based housing program in pace with developing technologies and associated implementable recommendations as they become cost effective for residential housing units in North Carolina.

G. Program Component 7 - Safety

Preventive measures will continue to be the main approach to farm and home safety programs. However, because of the growing sophistication of farm machinery, accidents and rescue techniques have become more complex. For this reason programs dealing with farm machinery operation, rescue and extrication will be developed and tested in selected counties. Training will be offered to rescue swuad personnel, machinery operators and spouses of machinery operators. This approach will enable counties to utilize local resources and select content that is applicable to their needs. Home safety will continue to be emphasized with programs being developed that address themselves to concerns of rural populations. These programs will emphasize the procedures necessary to ensure a safe rural home environment as well as information necessary to efficiently handle emergencies.

COMMUNITY RESOURCE DEVELOPMENT
NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE
FY 80

Community Resource Development

Extension's community development programs give emphasis to group action through various voluntary development organizations. These organizations are problem oriented and conduct programs and activities built around community, county and multicounty problems and needs. The need for these grass roots efforts continues to grow in importance. Further, as new national policies madnate citizen participation in governmental programs, it is important that an informed and skilled citizenry be available who have the ability to work through viable, broadbased citizen organizations at various levels. Extension as an educational agency has the opportunity to expand its leadership in this area.

While programs will continue to respond to the needs identified at the local level, the planned community development program for FY 80 will concentrate on organization, leadership and citizen participation as related to the problem areas identified in 4-Sight. These areas are 1) Land Use Planning, 2) Economic and Manpower Development, 3) Health, 4) Housing, 5) Community Services and Facilities, 6) Community Recreation, 7) Environmental Quality, and 8) Crime Prevention. The mid-point assessment of 4-Sight resulted in adding energy as a major concern.

A. Program Component 5 - Ecology, Natural Resources and Environment

Erosion

a. Clientele Problems

The loss of thousands of tons of soil by erosion each year continues to ba a major problem in North Carolina. Highway construction, redidential and business development and other land-disturbing activities are a major source of soil loss and sedimentation of streams and lakes. Municipalities and counties have adopted sedimentation regulations that are in various stages of enforcement.

b. Extension Objectives

Extension's educational program in erosion and sedimentation will assist clientele involved in land-disturbing activities understand the regulations and practices necessary to control run-off and reduce subsequent erosion and sedimentation. Extension will attempt to acquaint the general public with the issue and procedures established for control.

c. Expected Results

1) Thirty counties will conduct educational programs on prevention of erosion and sedimentation. It is expected that 6,500 leaders will be involved in workshops related to this topic to help them better understand the overall problem and be knowledgeable in the methods of preventing loss of soil resources.

2) Governmental leaders in 20 counties will be assisted in determining procedures for reducing sedimentation and in means of improving the enforcement of the regulations adopted.

3) The general public in 10 counties will develop a better appreciation for the need to conserve soil and resources and maintain vegetative cover.

Energy

a. Clientele Problems

Availability and cost of energy resources is increasingly a major concern of communities throughout North Carolina. This factor is affecting the organization of institutions and may in fact dictate the structure of communities of the future. Cost to individuals for energy is substantial. The cost to communities is equally important and affect decisions such as where people live and work, transportation and policy decisions.

b. Extension Objectives

Increase awareness, knowledge and understanding of homeowners, managers of private and public facilities and governmental officials of certain practices for the conservation and management of energy resources.

c. Expected Results

Education programs on energy conservation and management will reach 25,000 leaders and 400,000 citizens in North Carolina which could result in a 7% reduction of energy resources.

Visual

a. Clientele Problems

Throughout the state it is evident that numerous citizens and businesses are not aware of the need to improve the visual beauty of the state. Although a solid waste management plan has been adopted throughout North Carolina residents continue to abuse the landscape with improper

disposal of trash, garbage and junk. Private and public property such as buildings, fences, vacant lots, curbways and other areas are not cared for adequately. Some of these practices represent a health hazard and others are unsightly and all affect quality of community life.

b. Extension Objectives

Assist the leadership of 48 counties in developing a program to improve the visual beauty by the development of specific plans for beautification of homes, businesses, and the landscape. Extension will help communities select targets for the efforts such as public places, businesses and home sites. The involvement of many interested organizations in technical resources will be a part of the program in these counties.

c. Expected Results

1) Leadership of 40 counties will conduct an intensive campaign that will effectively reach 350,000 people resulting in an improvement of the visual environment.

2) Long-range plans on beautification will be developed in ten counties which will include plantings according to an overall landscape design to insure lasting beauty.

3) Solid waste disposal systems will be more adequately utilized in 14 counties as people learn to adjust their attitudes towards the disposal of trash, garbage, and junk.

Housing and Home Environment

a. Clientele Problems

Housing is perhaps the most expensive single investment made by individuals and families in their lifetime. Currently, costs are very high, interest rates are soaring, and adequate housing is difficult to locate in many communities. Until recently building codes adoption and enforcement affected few rural counties. Often builders were not aware of the safety standards in building codes and very little inspection, other than electricity, of residential construction was conducted. Legislation now provides that codes be adopted and enforced throughout North Carolina according to a procedure specified in the legislation. There is a need for builders, developers, and homeowners to become knowledgeable of the code and the protection it provides in residential housing.

b. Extension Objectives

1) To assist developers, builders, and homeowners to become aware of the building code and of the inspection procedures required by state legislation

2.) To provide information to the potential homeowner on proper site selection and development for homes.

c. Expected Results

Understanding of building code provisions will be improved in 20 counties in North Carolina. Developers, builders, and potential homeowners will improve their knowledge of safety and insulation standards specified in the code.

Other Programs and Expected Results include:

a. Conduct, in cooperation with leaders, a state-wide Farm-City week program with emphasis on participation at the county level to enhance understanding by rural and urban people of their interdependence. About 700 different projects will be conducted which will involve 45,000 people directly. Media coverage will reach thousands of additional people.

b. Interagency cooperation at the state, area and county level will improve as Extension collaborates with other resources to solve individual and community problems.

c. Continue to provide socio-economic data to a host of decision makers and planners to improve plans and action.

d. 4-H Community Development opportunities for youth will be continued and supplemented with additional material resources. This thrust is expected to provide learning experiences about community for 1500 youth and leaders.

B. Program Components 15 & 16 - Leadership, Organization & Citizens Participation

a. Clientele Problems

There are a number of obstacles apparent as individuals and groups attempt to deal with community problems and opportunities. These problems include:

1) The limited ability of many individuals to respond to opportunities or deal with issues in an organized manner.

2) A substantial number of citizens have not had the opportunity to develop their leadership potential.

3) Limited knowledge on the part of individuals and groups on how to establish and develop need based organizations.

4) How to obtain adequate citizen input in the problem-solving process, particularly as it relates to groups.

Extension's Community Development program will give emphasis to the development of leadership and organization through which issues can be approached on a community basis and will improve the individual's ability to cope with the challenges and make decisions necessary to function effectively in today's society.

b. Extension Objectives

Extension will assist in the establishment and maintenance of a variety of organizations at the local and state level to improve citizens input in group processes to enhance group decisions. Specifically, emphasis will be placed on improveing the individual's leadership skills and the group's ability to deal effectively with community issues. Training will occur for the most part in the context of problem-solving.

Extension will assist leaders of established organizations to improve and adjust the organization to fit current needs. Consultation will be provided to certain key leaders and advisory groups.

c. Expected Results

1) Approximately 2,000 members of the Extension Advisory Leadership System will receive in-depth assistance in Extension programming.

2) In-depth assistance in a variety of leadership skills will be provided through 3,000 leaders.

3) An additional 16,000 leaders will be assisted in task-oriented processes and skill training.

4) Sixty ad hoc committees will be organized for assisting a variety of group purposes on short-range projects. Programs in 29 counties will be assisted in developing additional organizations to deal with a variety of content areas and will be important to the citizenry.

C. Program Compent 17 - Comprehensive Planning

a. Clientele Problems

Traditionally, North Carolina has experienced out-migration. The trend began to shift during the late sixties and during the decade of the seventies has been reversed, resulting in real growth in many North Carolina counties. Shif-s in population in the state continue to be a major factor as people move to seek employment or other amenities. This population growth and shift has generated demands for services, facilities, and placed substantial demand on some land, especially in or near metropolitan areas and in rapidly growing rural communities throughout the state.

The situation is further complicated by scarce energy resources and a continuing shortage of available quality water for development and lack of capacity to deal with these changes in an orderly and systematic manner. Government is also faced with inflation and limited funds to accommodate needs.

Land utilization focuses on the spatial aspects of growth and development is concerned with the general use of land resources. Local officials and planners are encouraged to consider all aspects of the community when making plans for its future. These include public buildings, the economy, the capacity and location of water and sewer facilities, transportation systems, land-use control, and facilities which will promote economic success, comfort and convenience and the general welfare of the citizenery.

b. Extension Objectives

Extension's educational efforts will be interdisciplinary in nature involving the cooperative assistance of state and local leaders, policy-making bodies and representatives from other agencies and the general citizenry.

1) Develop and provide information to leaders on land use, in general, the land use planning process and the more technical aspects on soil capability potential and soil classification.

2) Seek to bring about an understanding of the social and economic forces affecting land utilization, the role of government and citizen participation in land utilization and the importance of citizenry attitudes and opinions on land use planning or alternatives.

3) Improve understanding of the impact of rural nonfarm growth and the issues and alternatives related to the protection of agricultural land.

c. Expected Results

1) Leaders in 51 counties will improve their knowledge and understanding of the land use planning process and some will get involved in the process.

2) There will be an increase in the use of technical data in land use planning which will lead to the development of sounder and more functional plans for land utilization (i.e., use of soil surveys and soil capabilities and the natural aesthetic qualities of land and topography).

3) Extension's land utilization educational program will contribute directly to:

a) 12 counties adopting county-wide land use plan
b) 17 counties re-evaluating land use plans in view of rural growth

c) 15 counties adapting regulatory or enforcement measures such as sub-division regulations, zoning ordinances and enforcement of building codes.

D. Program Component 18 - Community Services & Facilities

a. Clientele Problems

Given the population growth and shifts in North Carolina adequate community services and facilities is a primary concern for many communities. Perhaps the most limiting is the availability of water for residential, business and industrial growth and development. Many soils are not suitable for adequate on-site sewage disposal. As a result demand for community sewer systems is increasing.

Although some progress is evident, some counties still have four or five different telephone systems in a county. Long distance toll charges are incurred by citizens as they communicate with the county government or other entities within the county they reside.

The Board of Health has approved for most counties a solid waste disposal system which normally includes the land fill and in some a collection system. However, these systems are improperly utilized throughout the state due to lack of citizen understanding and attitudes of citizens toward the disposal of waste materials.

Other services of concern to areas throughout the state involve protective services (i.e., fire, ambulatory, policy), rural public transportation systems, extended care nursing home facilities and recreation.

b. Extension Objectives

1) Conduct educational programs in 22 counties related to community facilities and services, through organization of appropriate citizen groups and informing them of the situation and alternatives available.

2) Improve the utilization of solid waste disposal systems in 46 counties,by making citizens aware of the disposal system available in their locality and the proper use of this system.

3) Improve inter-agency cooperation in general throughout the state as it relates to the solving of community issues or community needs dealing with community facilities and services.

HOME ECONOMICS

NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE

FY 1980

Situation Statement:

Individuals and families are confronted with inflation, dwindling energy resources, and personal and family stress. Helping people cope with these problems becomes the challenge of Extension Home Economists planning and implementing the family living educational programs at the beginning of the decade of the eighties. Effects of inflation and the shortage of petrochemical fuels have resulted in insufficient income for maintaining present life styles, increasing unpaid bills, excessive use of credit, shopping problems, inadequate medical care, increased stress and dissatisfaction with the quality of life, and a growing feeling of helplessness in coping with the problems.

The Bureau of Labor Statistics finds that a family of four living in Durham, N. C., Autumn 1978, needed an annual budget of $11,172, up from $9,600 in 1976, to maintain a "lower" level of living and $18,084, as compared with $15,525 in 1976, for an "intermediate" level of living. This increase of 16.4% in effective income illustrates the inflation rate. The impact of inflation and energy resource shortages in creating financial problems for N. C. households is indicated by the following data from a sample of 69 North Carolina households with annual take-home income ranging from $2,040 to $24,000 (median $10,800; average $11,016). An average of 63.4% (range 80.7% to 46.6%) of this income was used for three items of consumption -- food, housing, and transportation. Households with incomes less than $20,000 used 13% of this income to maintain monthly consumer debt (excluding

home mortgages). Households with take-home income less than $15,000 were overspending, maintaining a 13% debt load and had no or low savings (less than 5%).

In North Carolina where over half of the women are employed outside the home, where the highest percentage of husband-wife workers of any state are employed, while family income ranks among the lowest, where one of every five babies is born out-of-wedlock, where 350 cases of child abuse and/or neglect are confirmed monthly, where thare are 42,000 youth "at risk" as potential status offenders, and where at the other end of the life continuum 15% of the population is over 60 years of age, and 37% of these are over 75 year, evidence of family stress is not difficult to discern.

The FY 1980 Plan of Work is based on priorities related to the current situation in the state.

Volunteers and paraprofessionals will continue to extend Extension's professional out-reach. Assistance and training will be provided for their continued effectiveness.

Tele-tip will be revised and expanded as a service to provide families with current information related to many of the concerns of homemaking and family living.

Objectives Related to Staff Development

A. To develop the competence of agents for the process of delivery of educational programs.

1. Hold district training classes in February for 200+ agents with emphasis on skills of audience identification, organization maintenance, effective use of volunteers, program delivery and evaluation, and professional development.

2. Establish a competency profile for each home economics agent with accompanying commitment to continuing professional development.

B. Evaluate, revise and expand the Home Economics Accountability Factors Report as a tool for program evaluation.

C. To provide a forum to help agents and other professionals understand social, political, and economic issues impacting on individuals and families The Annual Family Living Seminar for Spring 1980 will be one phase of this objective. Other public policy issues related to the family as Women and the Law, and Family Impact Issues, will be dealt with through county forums, special interest meetings, Extension Homemakers Area Meetings or home study courses.

I. Program Component II - Family Life Education

A. Parent Education

1. Problem Situation

As identified in 4-Sight, parent education needs a major emphasis. In North Carolina:

One of every five babies is born out of wedlock.

About 350 cases of child abuse and/or neglect are confirmed monthly.

Two of every three children under six years of age live in poor families.

Two of every five poor children under six years of age live with a working mother

There are about 42,000 youth "at risk" as potential status offenders.

About 12,000 children are in foster care.

The infant mortality rate is fourth highest in the nation.

These and other facts point to the need for massive efforts in parent education.

Progress made thus far is encouraging and existing programs should be continued. New innovative methods for reaching and teaching parents will be explored.

2. Objective:

To provide education for parents regarding child rearing from prenatal through the school age years.

3. Strategies:

Agents will be encouraged to work cooperative with other local personnel in offering prenatal classes,

Agents will be provided training, and program materials and specialist support to offer home study courses,

Agents will be encouraged to offer special interest meetings,

Agents will be provided parent education information to be distributed through mass media use.

4. Innovative Approach:

As a pilot project, one concept posters and other visual means of parent education will be displayed in public places in 10 counties.

5. Plans for Measuring Impact:

If funds become available, two of the home study courses will be evaluated definitively.

Other parent education efforts will be evaluated in terms of numbers of persons served and informal surveys.

6. Expected Results:

15 counties to offer expectant parent classes.

50 counties to offer one or more home study courses for parents of children under six.

15 counties to offer one or more special interest meetings on parent education

75 counties to offer a newsletter for parents or to provide other mass media information in parent education.

B. Child Care

1. Problem Situation

In North Carolina one of every two women is working outside the home. About two of every five poor children under six years of age have a working mother. North Carolina also has the highest percentage of husband-wife workers of any state in the nation. On the other hand, in family income the state ranks among the lowest. The data indicate why families who need child care services cannot afford to pay the cost. At the present time, there is a need for 64,000 more subsidized child care arrangements than are being provided. The state now has 1963 licensed day care facilities and more than 4000 day care homes.

Another factor contributing to the lack of sufficient quality child care arrangements is the attitude of people toward caring for children outside the home. People, including the working mothers themselves, have conflicting values. While they recognize that women want and need to work, they also think women should care for their children at home. People also erroneously think child care does not require skills and training, therefore is not worth much monetarily.

People need to be made aware of their conflicting values and the effect of their attitude on the provision of quality care outside the home. People need to consider day care homes as a compromise arrangement for out-of-the-home care of young children. Child care takers in day care homes need training in group care of young children.

2. Objectives

To provide awareness education for the public regarding conflicting attitudes towards care of children outside the home that effect the provision facilities.

To provide education for day care home child care takers.

3. Strategies

Counties will be offered educational materials to use with organized adult groups and through mass media.

Counties will be encouraged to support the efforts of state groups to offer mass media education for day care home child care takers.

4. Innovative Approaches

Two state agencies are considering the possibility of offering a newsletter to day care home child care takers. If it materializes, agents will participate in the distribution.

5. Plans for Measuring Impact

Counties will report number of persons reached through organized groups and number of times information was offered through mass media.

Counties will report number of day care home child care takers who were reached with educational information.

6. Expected Results

10 counties to teach the need for quality child care through meetings of organized clubs or mass media.

15 counties to provide training for day care home child care takers through mass media.

C. Changing Roles of Men and Women

1. Problem Situation

Living in the most rural state in the nation, many North Carolinians still hold traditional views of the roles of men and women in the home and society. However, the high incidence of single parent families and dual-income married couples shows that men and women are, in fact, assuming nontraditional tasks in home and community. Men, women and children are confused by the

differences between values held and actual practices in daily living. They need educational experiences to help them bring closer together what is said and what is done.

2. Objective

To provide education for men, women and children concerning changing roles.

3. Strategies

Counties will be provided with educational materials on roles of men and women to be used with adult and youth groups and through mass media.

4. Innovative Approaches

Counties will be encouraged to offer special sessions for men and boys on changing roles of men and women.

Counties will be encouraged to offer sessions for displaced homemakers.

5. Plans for Measuring Impact

Those persons receiving information in groups will be asked to evaluate the learning experience.

6. Expected Results

25 counties to provide educational experience in changing roles to organized groups of men, women or children.

25 counties to provide educational information about changing roles through mass media.

D. Marriage and Family Communication

1. Problem Situation

The marriage rate has been dropping slightly for the past few years in North Carolina while the divorce rate is still rising but at a much slower rate than a few years ago. Marriage has changed from a one-vote system of a past generation to a two-vote system, giving women a voice in decisions.

Families are now expected to provide an atmosphere in which all members, regardless of age and sex, can continually grow toward more maturity. Members of present-day families must learn the skills of interpersonal communication or many expectations will not be met.

2. Objectives

Extension programs in family communication will seek to promote nurturing families through teaching the following communication skills: a) Expressing personal feelings, b) Listening, c) Checking, and d) Handling conflict.

3. Strategies

a) Agents will be taught how to use a communication resource notebook, "Family Communication".

b) Agents or specialists will teach groups in area meetings, special interest meetings, and church groups.

c) Marriage enrichment training will be provided through special interest meetings, weekly growth groups, or weekend retreats.

4. Unique or Innovative Approach

One innovative approach to marriage enrichment that is planned is a "mini-retreat" at which the couples meet all day Saturday or Friday evening and Saturday. This way the couples may stay at home and cut subsistence costs and baby-sitting costs.

5. Evaluation

a) Evaluation of response will be done at special interest meetings.

b) After marriage enrichment experiences, the agent will be asked to contact the couples for more evaluation of skils learned.

c) Eighteen counties have planned programs in this subject and can be expected to reach 60 couples and 400 individuals.

6. Expected Results

Marriages and families are expected to develop toward a more

nurturing style of living through improved communication skills.

E. Middle Years

1. Problem situation

Population estimates for North Carolina project a total of 5,495,363 people in 1980. Of this total, approximately 1,455,000 will be between the ages of 40 and 65, making about 27 percent.

While most public concern deals with young children, teenagers, and senior citizens, these citizens on their midlife journey are often facing:

- Peak years of responsibility in an occupation or profession.
- Declining strength and physical attractiveness.
- Financial and emotional strain of aging parents.
- Financial and emotional strain of teenage and college age children.
- Personal and family development that calls for regular changes in one's values and goals.

2. Objectives

a) To provide midlife citizens the opportunity to reflect on the experience of middle age.

b) To help midlife citizens relate their experience of middle age to developmental periods and tasks of adults.

3. Strategies

a) A packet of background material and programs will be provided for leaders and groups.

b) Club programs, a local series of seminars, and help for a midlife journey weekend retreat will be the major strategies.

4. Innovative Approach

The "Midlife Journey Retreat" is a pilot program that has been conducted in other states and once in this state. The participants considered the retreat to be very helpful and worth offering to other midlife citizens in

North Carolina.

5. Evaluation.

a. Each packet will contain evaluation forms.

b. Agents or leaders will be asked to keep names and addressed in order to contact participants at a later date for reported impact.

c. Five counties have planned specific programs in this area. 150 people can be expected to enroll in retreats and special programs with 2000 persons attending organized club programs.

6. Expected Results

Adults who participate in the programs, seminars, and retreats are expected to deal more effectively with the many concerns and responsibilities of the middle years.

D. Mental Health

a. Problem Situation

Dr. Murry Straus, an authority on family violence, has said that "At least 90% of violence which takes place in American families grows out of the very nature of the family and the larger society..." He discusses "the high level of stress experienced as part of membership in a family. Families are expected to rear intelligent and successful children while many factors that make the task very difficult are beyond the family's control.

A few indicators of stress in families are:

State mental hospital admissions 1978. 14,849

Youth 1,248

Persons served by mental health centers

Admissions for Depressions 1,942

Youth 150

An encouraging note is that 1978 total admissions are about 8% lower than those of 1977

2. Objectives

a. To help family members learn more about the nature of stress within the family.

b. To help family members accept the stressful factors they cannot change and change the stressful factors they can change.

3. Strategies

a. Background material and teaching suggestions will be prepared for use by organized groups and special interest groups.

b. An adaptation of materials related to family stress will be prepared for use with young people, parents, and youth leaders.

4. Evaluation

Agents and group leaders will be asked to use an evaluation form and keep names and addresses of participants. Forms will include instructions for calling or contacting a certain percentage of the participants at a later date to report any specific benefits.

5. Expected Results

Participants will be expected to better understand family and personal stress and to deal with stress in useful ways. Fifteen counties are expected to reach 550 people with information on how to grow with stress.

G. Youth

1. Problem Situation

Even though the birth rate is dropping and the percentage of youth in the population will decrease slightly, it is still true that in 1980 North Carolina will have approximately 10 percent of its population between ages of 13 and 19. Several indicators lead to the conclusion that these young people will have a lot of difficulty making the transition into mature adulthood:

a. A 1975 study of HEW placed the number of youth runaways at 733,000 - 53% boys. Other estimates have ranged to a million and more per year.

b. During the five years of 1973-77 births to teenagers have gone down due to abortions, but the total number of pregnancies has not changed. The percent of out-of-wedlock births to teenage mothers has risen from 7643 in 1973 to 7753 in 1977. Such births were more likely to be related to low birthweight and happen to a mother with inadequate prenatal care.

c. The most notable increases in suicide were those recorded in 15-24 age group, up 90% from 1963. A 1974 study indicates that among males age 15-34 suicide was second only to accidents as a cause of death.

2. Objectives

Educational efforts in the area of youth will be designed to:

a. Help parents and adult youth leaders learn how to remove some of the barriers to the healthy development of adolescent youth.

b. Help young people grow toward adulthood by self awareness, participation in groups, and appropriate "try outs" for adult roles.

3. Strategies

a. A series of four lessons and leader's guide will be used as part of the 4-H Health Curriculum.

b. Help will be given to planning groups who teach young people in such areas as preparation for marriage and parenthood.

4. Evaluation

Evaluation forms will be used to gain participant reactions in both 4-H and special interest groups.

5. Expected Results

Participants are expected to grow toward adulthood with confidence and with fewer difficult problems to hold them back. Twenty counties have planned to have specific educational programs about the healthy development of youth, reaching 600 young people.

H. The Impact of Policy Decisions on Families

1. Problem Situation

An analysis by the Family Impact Seminar of the 1044 federal programs in the Catalogue on Federal Domestic Assistance revealed 268 existing programs that have potential direct impact on families. This analysis did not include tax policies. HEW has 119 programs that directly affect families, but the analysis shows that 149 programs are administered outside of HEW and are not limited exclusively to poor families.

Business and industry as well as government often develop policies without careful consideration of how these policies of government, business and industry affect all types of families.

2. Objectives

Educational efforts related to policies are designed to help participants:

a. Become aware of how public and private policies affect families.

b. Become aware of some policy recommendations being made by enlightened legislators and educators.

c. Become aware of how some local and state and national policies can be changed in such a way as to strengthen families.

3. Strategies

a. The Human Development Department will continue to cooperate with local and state organizations and agencies in conducting seminars related to family policies.

b. By means of the booklet, The Impact of Policy Decisions on Families; A Guidebook for Extension Agents, the Human development Department will promote new efforts in rural areas, especially areas with limited recources or university centers.

4. Unique or Innovative Approach

This effort is unique in that no other organization has attempted to reach out to lay citizens and involve them in learning what is involved in knowing about family policies and attempting to influence family policies.

5. Evaluation

Specialists will attempt to monitor policy changes on the state level by helping to report legal changes that help or hinder families. An attempt will also be made to assess increased public awareness of family policies as the 1981 White Conference on Families comes nearer.

Five counties have planned to have some educational conference about family policies and twenty others are expected to conduct seminars in cooperation with the 1981 White House Conference on Families.

6. Expected Results

As public awareness increases our state and counties can have more intelligent family policies and lawa related to foster children, family income maintenance, health insurance, family life education, child care regulations, divorce laws, and others. (Child abuse legislation was greatly improved in the 1979 General Assembly.)

II. Aging

A. Problem Situation

One third of the 750,000 older North Carolinians exist on very inadequate income making "inflation coping" more difficult for them. The largest group of one person households is in this age group, adding to the economic, social and physical problems of the aging.

Problems of the aged are worsened by lack of understanding about aging in the community and in the family; negative attitudes toward aging; lack of involvement of the elder ones in the community; lack of retirement prepration among the succeeding decades of retirees, all together resulting in lack of self acceptance among the aged themselves.

B. Objectives

1. To help family and community members of all ages understand the aging process so they may cope more positively with the problems related to normal aging.

2. To help in the development of supportive community services that will aid older adults in maintaining a maximum degree of independence.

3. To help older adults, especially the "young-old" to develop and maintain coping skills for self reliance and inflation coping.

4. To help the family improve communications between generations to cope with wise decision making, exchange of services and to improve relationships

5. To help older adults, both active and fragile, to find self acceptance and to participate in satisfying educational and cultural experiences.

6. To help adults plan for retirement to prevent or minimize problems in future later years.

C. Strategy:

Agent training

Develop new background material on inflation coping techniques, coping with fraud, quackery and rip-off.

Develop a newsletter on generic drugs.

Involve senior citizens in energy conservation methods.

Promote Set-a-Spell Project

Promote a retirement self-study packet

D. Expected Results

42 counties to carry projects in understanding aging and attitudes toward aging.

35 counties are planning to inventory educational and community resources to promote independent living for senior citizens.

25 counties are planning to have study groups on adapting to changes in aging and problems relative to aging.

22 counties plan programs, with special interest groups or Extension Homemakers on coping with loneliness.

9 counties plan to study age related sensory changes and their adjustment.

10 counties will have educational programs on nutrition and aging.

5 counties will have programs on safety.

2 counties plan to study death and dying.

20 counties are planning programs on planning for retirement.

11 counties are planning to study living arrangements for aged.

16 counties will promote Youth Looks at Aging.

38 counties are programming in the area of self-esteem, ego therapy, use of leisure for education and culture, and involvement as volunteers.

7 counties plan to involve senior citizens in energy conservation programs.

E. Evaluation

1. Estimate individuals involved as result of program.

2. Survey impact in selected areas.

III. Program Component 9 - Foods and Nutrition

A. Situational Statement

Growing concern over the cost of living is reflected in innumerable ways. As North Carolina citizens struggle to cope, certain problem areas emerge in which Extension can offer help to both EFNEP families and other clientele groups.

B. Objectives

1. To increase awareness of preventive nutrition as a means of cutting health costs.

2. To improve food storage and safety techniques to prevent food waste and possibly cut work loss due to foodborne illness.

3. To improve food buying habits.

4. To increase use of small equipment and energy efficient appliances.

5. To correct canning and drying techniques to eliminate energy costs of freezing and to utilize seasonal produce.

6. To encourage youth to develop good eating habits.

C. Strategies for State Staff

Some specific strategies to be used include:

1. Development of new lessons in the area of preventive nutrition.

2. Promotion of maternal and infant nutrition programs.

3. Development of a North Carolina Market Basket in order to check on food price trends.

4. Continuation of teletip programs, especially in the area of good food buys.

5. Development of new materials on meat canning and training of area agents in this.

6. Demonstrations of foods equipment for gaining maximum utilization of money invested.

7. Work with the media on all aspects of food and nutrition.

8. Assist agents through conferences, with materials, etc.

D. Innovative Approaches

1. Initiation of computer programs in food buying and dietary analysis.

2. Pilot development of "cassette lessons" for teaching nutrition.

E. Results Expected

1. Each county in state to have one or more programs in preventive nutrition.

2. At least 50 agents to become updated on the role of nutrition in maternal and infant helath.

3. Twenty-six teletip updates on good food buys to be made available to the public. (Calls are documented.)

4. All area EFNEP agents to be trained in meat canning and, in turn, program aides to be taught techniques of meat canning.

5. At least 25 counties to have programs in various aspects of food safety.

6. Homemakers in at least 10 counties to learn the maximum use of food processors, microwave ovens, etc., for planning meals to conserve energy and time.

7. Agents and public in at least two counties to utilize computer for dietary analysis and food buying information.

IV. Program Component 8 - EFNEP

A. Adult Phase of EFNEP

1. To help low-income families, especially those with young children, to acquire the knowledge, skills, attitudes, and changed behavior necessary to improve their diets in normal nutrition. Goal: enroll 5,000 new families.

2. To help families become more efficient and effective users of available resources.

B. 4-H Youth Phase of EFNEP

1. Provide education for youth in the principles of nutrition and diets and in the acquisition and use of appropriate foods. Goal: enroll 10,000 new youth.

2. Contribute to the personal development of low-income youth through improved nutrition.

3. Contribute to the improvement of diets and nutrition of the total family by means of educational programs for youth.

4. Develop programs in foods and nutrition for the use of volunteers working with EFNEP youth.

V. Program Component 12 - Textiles and Clothing

A. Problems to be Addressed

1. Buymanship

2. Energy conservation

3. Personal appearance

B. Clothing Objectives

1. Buymanship

To help county clientele assess their individual and/or family clothing need.

To assist county clientele in acquiring and maintaining adequate clothing at appropriate price and quality.

To help county clientele:

a) Assess the feasibility of using clothing alternatives other than new garments to help stay within the clothing budget.

b) Acquire the necessary skills needed to use clothing alternatives.

2. Energy Conservation

To help county clientele learn how to use climate control dressing year round.

To help county clientele learn how to conserve energy by using prescribed stain removal and laundry techniques and still maintain acceptable cleanliness standards.

3. Personal Appearance

To help county male clientele learn how some basic art principles help coordinate a pleasing wardrobe suited to the individual's life style.

To help mature figure audience apply art principles in clothing selection to achieve a more pleasing appearance.

To help county working women clientele learn some basic techniques in how to dress attractively for the job.

To help county 4-H youth clientele learn some basic grooming and social skills techniques.

C. Strategies

1. Use developed programs for various methods of teaching to reach objectives.

2. Develop new programs to meet current and emerging problems.

a. Buymanship

Developed Programs:
"P's and Q's"
"The Second Edition"
"Clothing Sense"
"Mini Demonstrations"
"Annual Fashion Slides"
"Shopping Venture--For Men Only"
"Clothing for Handicap"
"A Trip to the Fabric Store:
"Discovering Fibers and Fabrics"
"Care Guides for Fashion Fabrics"
"Mastery of Matching Plaids"
"Preschooler and Physical Development"
"Hang Tag Tree"
"Fitting the New You"
"Petunia Poorfit"
"See and Sew Set"

Programs Under Development:
"Neat Threads on a Thread Bare Budget"
"The Unconstructed Jacket"
"The Family Goes Suede"
"Clothing Project 4-H Manuals"

b. Energy Conservation

Developed Programs:
"Keep Warm Clothes"
"Outdoor Kit"
"Stain Removal:
"All Temperature Cotton"
"Basic Laundry Know How"

c. Personal Appearance

Developed Programs:
"Accentuate the Positive"
"Mastery of Camouflage"

"Voice of Clothing"
"Body, Poise and Grace"
"Great Skin at Any Age"
"Take a Look at Color"
"The New You"
"What's Your Message?"

Programs Under Development:

"4H Personal Appearance Manual"

E. Expected Results

1. Buymanship

-County clientele who are involved in buymanship programs to use some of the prescribed management principles to plan, select and purchase individual and/or family clothing.

-County clientele to use County Home Agent as a resource person on consumer-related clothing concerns.

-County clientele who are involved in clothing alternative special interest classes to:

a) Compute the actual cost and evaluate the feasibility of using alternative methods versus ready-to-wear methods in securing clothing.

b) Employ skills learned to acquire needed clothing for individual and/or family members' wardrobes.

2. Energy Conservation

-County clientele to use layering as a means of climate control dressing.

-County clientele to use a variety of accessories to help the body maintain a comfortable temperature.

-County clientele to cut down their thermostats in winter and turn up their thermostats in summer as a result of using climate control dressing.

-County clientele to save on energy by using warm water for washing, cold water for rinsing.

-County clientele to refurbish clothing by using prescribed spot and stain removal techniques.

3. Personal Appearance

-County clientele (working women and mature figure enrolled in personal appearance and poise workshops to learn and be able to implement basic techniques on: a) Accessorizing garments; b) Being more graceful; and c) Using aesthetic principles in dress.

-Male county clientele involved in the special interest seminars to observe and practice basic art principles in dressing.

-4-H youth to enroll in revised personal appearance project to implement good grooming techniques.

VI. Program Component 10 - Family Resource Management

A. Objective: To help family members cope with inflation and other financial problems by:

1. Learning to budget present income and plan for future financial needs.

2. Learning how to use money and other resources to provide for family consumption at the lowest cost.

B. Strategy for Objective 1.

Specialists will help county staff members implement programs by providing materials, teaching aids and procedures, subject matter training and materials for mass media.

1. Specific assistance is planned for EHE with FRM responsibility as follows:

-Assist those in 45 counties in implementing mini-computer programs in budgeting, especially for young to middle-aged adults.

-Assist EHE in 50 counties in providing counseling programs in budgeting and home buying, using the programmable calculator.

-Enroll 200 families in the Home Study Course in Money Control, with emphasis on young adult couples or individuals.

-Assist 15 counties in promoting workshops in Planning for Retirement, especially for middle-aged adults.

-Assist 10 counties in implementing special interest or area meetings on family insurance.

-Assist 27 counties with programs on the use of credit.

-Assist 5 counties in educational programs on the legal and financial problems associated with divorce, death or disability of a spouse.

-Encourange EHE in 10 counties to implement special interest programs for youth.

2. Specialists will train agents in subject matter and implementation procedures, and expect to reach EHE in 25 counties who need training on money management programs as well as one agent in each county who needs training in conducting estate planning programs.

3. For mass media, specialists will provide information on various aspects of money management to agents in all county units through the continuation of monthly "Tarheel Consumer" newsletters, and sending pertinent materials in a departmental newsletter as needed. Subjects of general interest will be provided to Extension Media Specialists for distribution to news media.

4. Specialists will be preparing new materials for current and future use on "Children and Money" and "Women and the Law", and pretesting them in five counties each.

5. Specialists expect to have county conferences with newer and inexperienced EHE in at least 20 counties.

For Objective 2.

1. Specialists will provide assistance to EHE so they can help family members cope with inflation through better buymanship and production practices. Activities will include:

-Implementing the home production project in 15 counties, and the program "Time + Talent = $$$" in 20 counties. This is an Extension Homemaker Club leader lesson.

-Assisting with the implementation of programs to help families minimize transportation costs in 18 counties, through workshops or special interest meetings.

-Assisting 13 counties in "Selecting Funeral Services" programs by the provision of slides and other teaching aids.

-Assisting agents in 33 counties to provide varied learning activities on basic shopping skills and legal protection for consumers.

2. Specialists will provide materials and/or programs for mass media, including weekly tapes for radio stations on "Money Matters," and television programs on consumer buying. A television series on "Consumers and the Law" being prepared by the N. C. Bar Association (at UNC-TV) will be promoted for Extension audiences.

C. Pilot Projects

1. Mini-computer Program Project

a. Objective

To pretest the effectiveness of the use of the mini-computer as an educational technique for Extension programs in personal and family finance.

b. Measurement of Results

-Immediate reaction to this technique will be measured by the responses given to questions on the computer program.

-Other results will be mearued by: (1) A survey questionnaire which the participant will be asked to complete after he has studied his data printout; and (2) a record kept by the home agent of the number of computer program clients who contact her for budgeting consultation, and the types of problems these clients have in understanding the computer program.

2. Home Production Project

a. Objectives:

-To teach participants to extend the purchasing power of their incomes through home production activities in order to more satisfactorily cope with inflation and achieve financial goals.

-To measure the social and economic impact of home production activities on households.

b. Measurement of Results:

-Results will be measured by responses from the participants and by the economic savings realized from their home production activities.

3. Home Study Course on "Women and the Law"

a. Objectives:

-To create an awareness of potential economic problems of

women when they become widowed or divorced, or a spouse becomes disabled; and help them acquire ability to cope with and alleviate these problems.

-To enroll 50 women in Home Study Course.

b. Measurement of Results:

-Requests for follow-up information or programs.

-Survey of participants to determine action taken to prevent or alleviate potential problems.

c. Results Expected:

Program participants who implement educational recommendations should achieve:

-Changed behavior in managing life styles which are compatible with means.

-Reduced financial problems.

-Increased net worth.

-Greater satisfaction with financial situation.

VI. Program Component 14 - Housing and Home Environment

A. Objectives

1. To develop the competencies of agents in implementing the Housing, Home Furnishings and Creative Crafts programs.

a. Departmental

(1) Conduct major in-service training classes in Housing, Home Furnishings and Creative Crafts.

(2) Conduct a program planning conference with each new agent.

(3) Keep agents up-to-date in Housing, Home Furnishings and Creative Crafts via newsletters, correspondence, conferences,

meetings, etc.

(4) Plan, implement and evaluate Extension programs efforts.

b. Housing

(1) Train agents in use of computerized home energy analysis program.

(2) Train agents in interior lighting principles and techniques.

(3) Support agents in Western District in development of Mobile Home Newsletter.

(4) Support agents in development of County Housing Workshops.

c. Home Furnishings

(1) Support agents in presenting skills workshops.

(2) Train agents in area of energy labeling as it relates to permanent appliances in the home.

(3) Develop teaching outline and program guides for agents to use in area meetings on the following areas:

-Home Security and Safety

-Table Appointments

(4) Support agents in promotion of Montgomery Ward's "Design Your Own Room"

(5) Study and plan revision of 4-H Home Environment Project.

(6) Train agents in identification of woods and finishes used in the interior of the home.

d. Creative Crafts

(1) To continue to improve the quality of creative crafts produced by North Carolina craftsmen involved in Extension Programs.

(2) To conduct creative craft workshops organized by specialist with an agent committee and taught by crafts leaders.

(3) To promote craft fairs featuring quality creative crafts to the people of North Carolina.

2. To provide North Carolina families with basic knowledge for effective family decision-making and consumer education through educational programs mass media and correspondence.

a. Departmental

(1) Provide energy conservation and inflation information via newsletter, correspondence and conferences.

(2) Participate in county workshops on house planning, renovation, home maintenance, furniture renovation, interior design, kitchen planning, storage, etc.

(3) Encourage counties to participate in demonstration house activities.

b. Housing

(1) Develop up-dated kitchen planning teaching aids and publication.

(2) Develop home lighting teaching materials and publication jointly with home furnishings.

(3) Develop publication on elderly housing.

(4) Develop publication on house planning.

(5) Develop two video tapes on housing.

(6) Work with North Carolina families on house plans that are space efficient.

c. Home Furnishings

(1) Develop two publications on care of home furnishings.

(2) Develop publication on hand tailored draperies.

(3) Develop publication on floor coverings.

(4) Develop publication and visuals on accessories in the home.

(5) Develop four video tapes on home furnishings.

d. Creative Crafts (position vacant)

3. To develop innovative techniques for dissemination of information.

a. Pilot correspondence course for 10 agents on identification of woods and funishes.

b. Computerized home energy analysis programs for consumer use.

c. Video tape series on selected subjects in Housing and Home Furnishings.

d. Special 4-H program to encourage participation in Montgomery Ward's "Design Your Own Room" Contest.

4. To maintain competencies in subject matter as related to job responsibilities.

a. Departmental

(1) Professional Associations.

(2) Home Economics Staff Meetings and Committees.

*(3) Staff development.

(4) Liaison responsibilities with agencies and concerned individuals who are involved in state housing, home furnishings and creative crafts problems.

---

*One specialist will be on study leave to complete residence requirement for terminal degree.

Note: Presently two positions are vacant: Creative Crafts and Housing.

B. Strategies

Primary strategies to be used to support housing, home furnishings and creative crafts programs include:

1. Special interest programs.
2. Workshops and demonstrations.
3. Meetings and conferences.
4. Newsletters.
5. Publications.
6. Mass media methods.
7. Independent study.

C. Applied Studies and/or Pilot Efforts

1. A pilot study will be conducted in the Western District on ways to provide mobile home residents with information on housing and home furnishings to meet their specific needs resulting in bringing this new clientele into existing programs.

2. Conduct a pilot correspondence course with ten agents on identification of woods and finishes.

D. Expected Results

1. Approximately 75% of the agents with responsibilities in the area of housing, home furnishings, and creative crafts will increase competencies by participation in in-service training. These agents will use the knowledge they have gained during the fiscal year by providing information to families through mass media, special interest series, Extension Homemakers Clubs, and consultation with individuals.

2. Seventy-five percent of the counties will sponsor housing and/or home furnishings workshops resulting in improved environments within their income ranges.

3. All families and individuals who attended Extension sponsored programs will reduce their personal energy consumption somewhat to result in a total energy savings of 20%.

4. Approximately 50,000 people will fight inflation and save money in the selection and use of materials and equipment for the home through information provided in newsletters, bulletins, and non face-to-face consultations.

5. Ten agents will become competent in identification of woods and finishes.

6. Craftsmen will improve standards in crafts they make. Extension agents will improve their appreciation of crafts and their ability to recognize quality crafts. There will be an increase in the participation in the 4-H Craft Demonstration program.

F. Innovative Methods

1. Correspondence course on identification of woods and finishes.

2. Computerized home energy analysis programs.

3. Video tape series -- the Housing and Home Furnishings Department has plans for a series of video teaching tapes covering subjects in the areas.

4. Special 4-H program to encourage participation in Montgomery Ward's "Design Your Own Room" contest.

Program Component 8 - Food and Nutrition (EFNEP)

The 4-H EFNEP Program has significantly contributed to the personal development and nutritional awareness of youth from low-income families. However, there are some areas of need which inhibit the implementation of the program to achieve maximum results. The indicators of greatest need are a slower than anticipated progression of EFNEP youth into other 4-H activities and a lack of an adequate core of volunteer leaders.

Based on the aforementioned needs the major thrust in the future 4-H EFNEP Program will be in training. The training will be conducted cooperatively with professionals working in 4-H and in the Adult Foods and Nutrition Program. The content of the training will include: understanding the characteristics and special programming needs of the target audience, teaching techniques, use of multi-media and identifying, selecting, orienting, recruiting, training, utilizing and evaluating volunteers involved in the 4-H EFNEP program.

Learning experiences to be offered for youth include camping (day, overnight, and multi-day), projects such as foods and nutrition and gardening, tours, field trips, farm-city exchanges, and special interest experiences.

The emphasis and experiences described here should result in an increase in the number of youth who move from EFNEP into the mainstream of the on-going 4-H program and a greater utilization of volunteers in this component of the program.

Program Component 8 - EFNEP

1. Adult Phase of EFNEP

a. To help low-income families, especially those with young children to acquire the knowledge, skills, attitudes, and changed behavior necessary to improve their diets in normal nutrition. Goal: enroll 5,000 new families.

b. To help families become more efficient and effective users of available resources.

Expected Results

1. At least 5000 low-income homemakers acquire knowledge of basic nutrition requirements for health

2. At least 500[illegible] low-income homemakers consume the minimum daily requirements of fruits/vegetables and milk

3. At least 1000 low-income homemakers develop greater security and competence in their roles as mother through participation in EFNEP and other educational programs referred to by the aides

4. At least 500[illegible] low-income homemakers become greater aware of community resources, programs and services, and in turn, gain access as needed

5. At least 100[illegible] low-income homemakers move into on-going home economics Extension programs

6. At least 300[illegible] rural low-income homemakers increase home food production and consumption for year-around availability and nutrition adequacy

7. At least 1000 low-income homemakers begin participating in community affairs by first becoming adult volunteers in EFNEP

8. At least 1000 low-income homemakers obtain employment and/or enroll in a formal educational program as a result of follow-up referrals from EFNEP aides

2. 4-H Youth Phase of EFNEP

a. Provide education for youth in the principles of nutrition and diets and in the acquisition and use of appropriate foods. Goal: enroll 12,000 new youth.

b. Contribute to the personal development of low-income youth through improved nutrition.

c. Contribute to the improvement of diets and nutrition of the total family by means of educational programs for youth

Expected Results

1. At least 5000 youth move into on-going 4-H programs
2. At least 1000 EFNEP youth serve as volunteers in the program
3. At least 1000 youth over 14 years old enroll in EFNEP

PROGRAM COMPONENT: 4-H PROGRAM DEVELOPMENT

The Nature of the Problem

The 4-H program belongs to the people. The citizens of the State of North Carolina, in cooperation with the citizens of other states, provide public funds to support 4-H. These same citizens are users of the 4-H program to support the education and development of their children. As owners and consumers of 4-H, they have the right of program determination within the competencies of the staff and the resources of the university made available with the funds they provide.

The people have a sense of ownership for the programs and structures they help to develop. The assurance that citizens can exercise their right of ownership and enjoy a sense of proprietorship can be accomplished through the development and implementation of three structures at the county level. A county 4-H council will assure that youth have an opportunity to make inputs into the 4-H program and coordinate the activities of their local units. A 4-H leaders association will provide an opportunity for volunteers to identify their leadership development needs and plan programs to meet them. A 4-H and youth committee with representation from the 4-H council, the 4-H leaders association and the community at-large can represen the entire county and identify the needs of youth that are within the scope of the 4-H program. At the present time, more than 90 percent of the counties have a 4-H council, 60 percent have an organized volunteer leader association and 80 percent have organized 4-H and youth committees.

Extension Objectives

(1) A representative 4-H council to function in 95 percent of the counties, in all Extension districts and at the state level.

(2) An association of 4-H volunteers to operate in 75 percent of the counties and 85 percent of the districts.

(3) A 4-H and youth committee to meet an average of three times on the needs of youth and the development of 4-H programs in 90 percent of the counties.

Applied Studies

(1) The status of the 4-H program in North Carolina.

Unique or Innovative Approaches

(1) Utilization of handbooks prepared for County Extension staffs on 4-H councils, 4-H leaders association and 4-H and youth committees.

(2) District-wide conferences for chairmen of 4-H and youth committees.

(3) Multiple-district conferences for Extension staff on the Advisory Leadership System and the plan of work process.

PROGRAM COMPONENT: 4-H CURRICULUM

Nature of the Problem

Today's young people grow up in a ever increasing complex world. The growth of technology, the creation of large social structures, the mobility of population, and the changing nature of youth socialization create new needs and responses among the young. To further complicate matters, there is a growing recognition of the desirability to preserve differing cultures, to provide for individual differences, and plan for stages and phases in human development.

Young people do not grow and develop in a vacuum. The youth development process requires that learning activities be coupled with the maturational level of the youth. Furthermore, learning activities that are of interest to youth or those that have the potential of meeting their needs are the basis for a volunteer program as they will be sought by youth. This simple model is compounded by youth living in a wide range of cultures, social situations and economic circumstances. Thus, programming to involve youth in inherently interesting developmental programs is a challenge that requires a broad and flexible curriculum.

The complexity of the today's world and the diversity of the youth population necessitates a broad and flexible program but one that has a focus sharp enough to assist youth in developing skills for living. A broadly based subject matter flexible enough to be tailored to individual needs and interest can be programmed to focus on life skills such as becoming self-reliant, learning how to learn and use knowledge, relating change and helping and sharing with others.

Extension Objectives

(1) Youth totaling 129,000 develop skills for living in a complex modern society.

(2) Youth in 4-H to have an opportunity to select from more than 50 different areas of subject matter focused on the development of "life skills".

(3) Every 4-H youth to participate in learning activities of their own design and personal choice at the local, county, district and/or state levels.

Expected Results

(1) Youth participation to reach 129,000.

(2) Curriculum for 50 subject matter areas to be offered.

(3) Two new subject matter areas to be programmed.

Applied Studies

(1) 4-H youth reaction to the statewide 4-H camping program.

Unique or Innovative Approaches

(1) The utilization of seven curriculum development committees consisting of specialists, agents, leaders and 4-H youth in the areas of animal sciences, plants and soils; environmental and natural resources; home and family resources; leadership, citizenship, career education, and community development; communication, arts and leisure and mechanical science, energy and safety.

(2) The use of a 4-H curriculum council to advise on instructional materials, 4-H activities and program innovations.

PROGRAM COMPONENT: LEADERSHIP DEVELOPMENT

Nature of the Problem

Citizens who volunteer their services to 4-H expect to learn and grow as a result. The urge to grow and become something more than the present state of development is a need that appears to be universal. People who volunteer are seeking agencies and organizations that provide opportunities for personal development and tend to make commitments to those where their personal needs are satisfied.

A person who volunteers their time to accomplishing a task in an organization expects to be trained to perform the job. More volunteers are coming from low-income populations and there is greater mobility among volunteers than ever before. All of these factors contribute to the need for an organized volunteer training program.

The effectiveness of a volunteer program determines the value of 4-H to young people. It can be said that the need meeting ability of the 4-H program is directly related to the adequacy of 4-H leader training. The goal to increase the membership of 4-H 129,000 means a large number of new leaders must be recruited and trained as well as meeting the personal and organizational needs of continuing and replacement volunteers.

Extension Objectives

(1) Volunteers in the North Carolina 4-H program to increase by 2,000.

(2) Every new 4-H volunteer be provided an orientation to 4-H.

(3) Every 4-H volunteer be provided an opportunity for needed training and/or personal development opportunities.

(4) Increase the percentage of counties of using middle management volunteers to 60.

(2) Every volunteer to be aware of special learning opportunities such as Southern Region Leader Forum and the North Carolina State 4-H Volunteers Conference.

Expected Results

(1) The number of volunteers to exceed 18,000.

(2) Seventy-five percent of volunteers to take part in orientation and training.

(3) Sixty percent of the counties to use specialized volunteers (middle managers).

Applied Studies

(1) A study of 4-H volunteer satisfaction.

(2) Comparison of training methods with low-income volunteers (in public housing).

Unique or Innovative Approaches

(1) Statewide conference for adult and teen volunteers.

(2) In-depth training of adult volunteers and Extension agents as a part of the Southern Region Forum.

PROGRAM COMPONENT: 4-H PROGRAM SUPPORT

Nature of the Problem

Youth desire involvement in a program of developmental activities. The nature of public funding prohibits the use of these dollars in direct support of activities for young people. Nevertheless, youth activities require resources and these must come from the private sector.

4-H volunteers give of their time but they expect an opportunity for personal development and training for the organizational task. The cost of training activities beyond those that can be supported from public funds, must be supported from private sources.

Private contributions and public support are enhanced when donors and the general public are informed of the opportunities in and the accomplishments by 4-H.

Extension Objectives

(1) Every county to seek private funds to support 4-H activities and volunteer leadership development.

(2) Sixty percent of the counties to have a prepared budget for 4-H.

(3) Forty percent of the counties to have a fund raising committee.

(4) State level private contributions to 4-H to reach $100,000.

(5) Every county to be active in publicity, public relations and program interpretation.

Expected Results

(1) All counties seek private support for 4-H.

(2) Sixty percent of the counties prepare a budget.

(3) State contributions to 4-H to equal $100,000.

(4) Donors and citizens aware of 4-H opportunities and accomplishments.

PLAN OF WORK SUMMARY DATA

FOR

PROFESSIONAL EXTENSION STAFF MEMBERS

FY 1980

PLANNED TIME BY AREA OF EMPHASIS - PROGRAM COMPONENT
FOR 1862 PROFESSIONAL EXTENSION STAFF MEMBERS
N. C. AG. EXTENSION SERVICE
FY 80

	Planned Days	% of Total Planned Time	% of Area of Emphasis Time
AREA OF EMPHASIS: Ag. and Natural Resources	61190	46.31	100.00
Program Components			
Beef	4779	3.62	7.81
Dairy	3869	2.93	6.32
Horses	266	.20	.43
Swine	6714	5.08	10.97
Poultry	2352	1.78	3.84
Seafood	569	.43	.93
Wildlife	255	.19	.42
Other animals	249	.19	.41
Tobacco	6089	4.61	9.95
Corn	2536	1.92	4.14
Cotton	700	.53	1.14
Forage crops	1479	1.12	2.42
Peanuts	1152	.87	1.88
Soybeans	3009	2.28	4.92
Grain crops	955	.72	1.56
Turf	756	.57	1.24
Other crops	189	.14	.31
Forestry	4030	3.05	6.59
Fruit and nuts	2032	1.54	3.32
Vegetables	4353	3.29	7.11
Ornamentals, flowers & landscaping	3001	2.27	4.90

	Planned Days	% of Total Planned Time	% of Area of Emphasis Time
Other Horticultural crops	1048	.79	1.71
General agriculture	8488	6.42	13.87
Food and nutrition(Human)	200	.15	.33
Housing	15	.01	.02
Human development	71	.05	.12
Resource mgt. (family)	30	.02	.05
General 4-H & Youth	183	.14	.30
General CRD	278	.21	.45
General Extension	863	.65	1.41
Staff Development	680	.51	1.11
AREA OF EMPHASIS: CRD	7260	5.49	100.00
Program Components			
Beef	65	.05	.90
Dairy	24	.02	.33
Seafood	15	.01	.21
Tobacco	5	-	.07
Cotton	4	-	.06
Grain crops	4	-	.06
Fruit and nuts	30	.02	.41
Vegetables	96	.07	1.32
Ornamentals, flowers & Landscaping	120	.09	1.65
Other horticultural crops	8	.01	.11
General agriculture	67	.05	.92
Food & nutrition (Human)	24	.02	.33
Clothing and textiles	18	.01	.25

	Planned Time	% of Total Planned Time	% of Area of Emphasis Time
Housing	197	.15	2.71
Human development	216	.16	2.98
Resource mgt. (family)	8	.01	.11
Aging	1	-	.01
General Home Economics	43	.03	.59
General 4-H & Youth	34	.03	.47
General CRD	5894	4.46	81.18
General Extension	192	.15	2.64
Staff Development	195	.15	2.69
AREA OF EMPHASIS: HOME EC.	29838	22.58	100.00
Program Components			
Seafood	20	.02	.07
Vegetables	45	.03	.15
Ornamentals, flowers & landscaping	151	.11	.51
Other horticultural crops	35	.03	.12
General agriculture	57	.04	.19
Food & nutrition (Human)	6158	4.66	20.64
Clothing and textiles	3909	2.96	13.10
Housing	6773	5.13	22.70
Human development	3587	2.71	12.02
Resource mgt. (family)	3728	2.82	12.49
Aging	1668	1.26	5.59
General Home Economics	3125	2.37	10.47
General 4-H & Youth	20	.02	.07
General CRD	206	.16	.69
General Extension	235	.18	.79
Staff Development	121	.09	.41

	Planned Time	% of Total Planned Time	% of Area of Emphasis Time
AREA OF EMPHASIS: 4-H	25670	19.43	100.00
Program Components			
Beef	20	.02	.08
Dairy	27	.02	.11
Horses	42	.03	.16
Swine	37	.03	.14
Poultry	132	.10	.51
Wildlife	80	.06	.31
Other animals	16	.01	.06
Tobacco	93	.07	.36
Corn	2	-	.01
Peanuts	12	.01	.05
Forestry	227	.17	.88
Vegetables	7	.01	.03
Ornamentals, flowers & landscaping	5	-	.02
General agriculture	5	-	.02
Food & nutrition (Human)	78	.06	.30
Clothing and textiles	304	.23	1.18
Housing	56	.04	.22
Human development	135	.10	.53
Resource mgt. (family)	52	.04	.20
General Home Economics	50	.04	.19
General 4-H & Youth	23076	17.47	89.89
General CRD	122	.09	.48
General Extesnion	55	.04	.21
Staff Development	1037	.78	4.04

	Planned Time	% of Total Planned Time	% of Area of Emphasis Time
AREA OF EMPHASIS: ADMINISTRATION	8164	6.18	100.00
Program Components			
General Agriculture	23	.02	.28
Resource mgt. (family)	22	.02	.27
General Home Economics	15	.01	.18
General 4-H & Youth	7	.01	.09
General CRD	84	.06	1.03
General Extension	6708	5.08	82.17
Staff development	1305	.99	15.98
GRAND TOTAL	132122	100.00	

PLANNED TIME BY PROGRAM COMPONENT - SUBJECT
FOR 1862 PROFESSIONAL STAFF MEMBERS
N. C. AG. EXTENSION SERVICE
FY 1980

	Planned Time	% of Total Planned Time	% of Program Component Planned Time
PROGRAM COMPONENT: BEEF	4864	3.68	100.00
Subject:			
Animal & Plant nutrition	1137	.86	23.38
Animal & plant diseases	555	.42	11.41
Bldg., struc. & facilities	164	.12	3.37
Cultural practices	357	.27	7.34
Entomology	30	.02	.62
Farm management	607	.46	12.48
Marketing	741	.56	15.23
Pest mgt. & pesticide ed..	33	.03	.68
Selection & Breeding	1001	.76	20.58
Weeds	50	.04	1.03
CRD concepts & group action	5	-	.10
Waste disposal & management	99	.07	2.04
Leadership development	20	.02	.41
Organization dev. & maint.	40	.03	.82
Program planning, implementation and evaluation	10	.01	.21
Program support & dev.	15	.01	.31
PROGRAM COMPONENT: DAIRY	3920	2.97	100.00
Subject			
Animal & plant nutrition	718	.54	18.32
Animal & plant diseases	544	.41	13.88
Bldg., struc. & facilities	278	.21	7.09

	Planned Time	% of Total Planned Time	% of Program Component Planned Time
Cultural practices	304	.23	7.76
Entomology	13	.01	.33
Farm management	671	.51	17.12
Marketing	31	.02	.79
Pest mgt. & pesticide ed.	35	.03	.89
Processing	174	.13	4.44
Selection & breeding	569	.43	14.52
Family resource mgt.	10	.01	.26
Waste disposal & mgt.	206	.22	7.30
Energy	10	.01	.26
Leadership development	60	.05	1.53
Organization dev. & maint.	155	.12	3.95
Program Planning, implementation and evaluation	13	.01	.33
Report preparation	6	-	.15
Program support & dev.	41	.03	1.05
Safety	2	-	.05
PROGRAM COMPONENT: HORSES	308	.23	100.00
Subject			
Animal & plant nutrition	58	.04	18.83
Animal & plant diseases	87	.07	28.25
Bldg., struc. & facilities	18	.01	5.84
Cultural practices	44	.03	14.29
Entomology	18	.01	5.84
Farm Management	30	.02	9.74
Marketing	6	-	1.95

	Planned Time	% of Total Planned Time	% of Program Component Planned Time
Selection & breeding	5	-	1.62
Organization dev. & maint.	35	.03	11.36
Recreation	7	.01	2.27
PROGRAM COMPONENT: SWINE	6751	5.11	100.00
Subject			
Animal & plant nutrition	662	.50	9.81
Animal & plant diseases	942	.71	13.95
Bldg., struc. & facilities	1510	1.14	22.37
Cultural practices	663	.50	9.82
Entomology	30	.02	.44
Forest management	15	.01	.22
Farm management	898	.68	13.30
Irrigation & drainage	19	.01	.28
Marketing	306	.23	4.53
Pest mgt. & pesticide ed.	86	.07	1.27
Processing	4	-	.06
Selection & breeding	1153	.87	17.08
Selection & buying	16	.01	.24
Waste disposal & mgt.	341	.26	5.05
Energy	23	.02	.34
Environment	18	.01	.27
Leadership development	21	.02	.31
Organization development and maintenance	34	.03	.50
Program support and development	10	.01	.15

	Planned Time	% of Total Planned Time	% of Program Component Planned Time
PROGRAM COMPONENT: POULTRY	2484	1.88	100.00
Subject			
Animal & plant nutrtiion	424	.32	17.07
Animal & plant diseases	265	.20	10.67
Bldg., struc., & facilities	176	.13	7.09
Cultural practices	87	.07	3.50
Entomology	22	.02	.89
Farm management	768	.58	30.92
Machinery, equipment and related engineering	10	.01	.40
Marketing	46	.03	1.85
Pest mgt. & pesticide ed.	140	.11	5.64
Processing	144	.11	5.80
Human nutrition	12	.01	.48
Selection and buying	15	.01	.60
Manpower & economic dev.	52	.04	2.09
Waste disposal & mgt.	180	.14	7.25
Business	6	-	.24
Energy	50	.04	2.01
Environment	15	.01	.60
Organization dev. & maint.	10	.01	.40
Program planning, implementation and evaluation	24	.02	.97
Report preparation	25	.02	1.01
Safety	13	.01	.52

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
PROGRAM COMPONENT: SEAFOOD	604	.46	100.00
Subject			
Marine science	143	.11	23.68
Processing	441	.33	73.01
Human nutrition	20	.02	3.31
PROGRAM COMPONENT: WILDLIFE	335	.25	100.00
Subject			
Animal & plant nutrition	16	.01	4.78
Entomology	10	.01	2.99
Forest management	221	.17	65.97
Water	20	.02	5.97
Environment	13	.01	3.88
Organization dev. & maint.	55	.04	16.42
PROGRAM COMPONENT: OTHER ANIMALS	265	.20	100.00
Subject			
Animal & plant nuqrition	27	.02	10.19
Animal & plant diseases	6	-	2.26
Cultural practices	12	.01	4.53
Entomology	141	.11	53.21
Farm management	20	.02	7.55
Marketing	46	.03	17.36
Pest management and pesticide education	3	-	1.13
Recreation	10	.01	3.77
PROGRAM COMPONENT: TOBACCO	6187	4.68	100.00
Subject			
Animal & plant nutrition	913	.69	14.76

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
Animal & plant diseases	1062	.80	17.17
Bldg., struc. & facilities	30	.02	.48
Cultural practices	1648	1.25	26.64
Entomology	157	.12	2.54
Fram management	227	.17	3.67
Irrigation & drainage	8	.01	.13
Machinery, equipment and related engineering	173	.13	2.80
Marketing	69	.05	1.12
Pest mgt. & pesticide ed.	865	.65	13.98
Processing	108	.08	1.75
Selection & breeding	39	.03	.63
Soil	14	.01	.23
Weeds	565	.43	9.13
Civil Rights & Equal Employment	15	.01	.24
Energy	176	.13	2.84
Leadership development	5	-	.08
Personal growth & dev.	8	.01	.13
Program support & mgt.	43	.03	.70
In-service training	42	.03	.68
Other training	20	.02	.32
PROGRAM COMPONENT: CORN	2538	1.92	100.00
Subject			
Animal & plant nutrition	495	.37	19.50
Animal & plant diseases	338	.26	13.32
Cultural practices	560	.42	22.06

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
Entomology	74	.06	2.92
Farm management	126	.10	4.96
Machinery, equipment and related engineering	29	.02	1.14
Marketing	58	.04	2.29
Pest mgt. & pesticide ed.	150	.11	5.91
Selection and breeding	139	.11	5.48
Soil	155	.12	6.11
Weeds	326	.25	12.84
Energy	46	.03	1.81
Program planning, implementation and evaluation	42	.03	1.65
PROGRAM COMPONENT: COTTON	704	.53	100.00
Subject			
Animal & plant nutrition	17	.01	2.41
Animal & plant diseases	25	.02	3.55
Cultural practices	185	.14	26.28
Entomology	115	.09	16.34
Machinery, equipment and related engineering	1	-	.14
Marketing	20	.02	2.84
Pest mgt. & pesticide edu.	282	.21	40.06
Weeds	55	.04	7.81
Organization dev. & maint.	4	-	.57
PROGRAM COMPONENT: FORAGE CROPS	1479	1.12	100.00
Subject			
Animal & plant nutrition	336	.25	22.72
Cultural practices	562	.43	38.00

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
Entomology	23	.02	1.56
Farm management	87	.07	5.88
Marine science	80	.06	5.41
Marketing	5	-	.34
Pest mgt. & pesticide ed.	20	.02	1.35
Processing	5	-	.34
Selection and breeding	272	.21	18.39
Soil	22	.02	1.49
Weeds	40	.03	2.70
Civil Rights and Equal Employment	1	-	.07
Personal growth & dev.	12	.01	.81
Program planning, implementation and evaluation	5	-	.34
In-service training	5	-	.27
Other training	2	-	.14
Orientation training	3	-	.20
PROGRAM COMPONENT: PEANUTS	1164	.88	100.00
Subject			
Animal & plant nutrition	108	.08	9.28
Animal & plant diseases	129	.10	11.08
Cultural practices	370	.28	31.79
Entomology	88	.07	7.56
Machinery, equipment and related engineering	60	.05	5.15
Marketing	20	.02	1.72
Pest mgt. & pesticide ed.	115	.09	9.88

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
Selection and breeding	178	.13	15.29
Weeds	80	.06	6.87
Economics	12	.01	1.03
Organization dev. & maint.	4	-	.34
PROGRAM COMPONENT: SOYBEANS	3009	2.28	100.00
Subject			
Animal & plant nutrition	570	.43	18.94
Animal & plant diseases	216	.16	7.18
Bldg., struc. & facilities	2	-	.07
Cultural practices	989	.75	32.87
Entomology	56	.04	1.86
Farm management	61	.05	2.03
Machinery, equipment and related engineering	36	.03	1.20
Marketing	138	.10	4.59
Pest mgt. & pestcide ed.	271	.21	9.01
Selection and breeding	85	.06	2.82
Soil	57	.04	1.89
Weeds	449	.34	14.92
Creative crafts	18	.01	.60
Gerontology	60	.05	1.99
Economics	1	-	.03
PROGRAM COMPONENT: GRAIN CROPS	959	.73	100.00
Subject			
Animal & plant nutrition	131	.10	13.66
Animal & plant diseases	258	.20	26.90

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
Bldg., struc. & facilities	8	.01	.83
Cultural practices	220	.17	22.94
Entomology	60	.05	6.26
Farm management	19	.01	1.98
Machinery, equipment and related engineering	40	.03	4.17
Marketing	30	.02	3.13
Selection and breeding	65	.05	6.78
Soil	18	.01	1.88
Weeds	96	.07	10.01
Energy	10	.01	1.04
Personnel	2	-	.21
Safety	2	-	.21
PROGRAM COMPONENT: TURF	756	.57	100.00
Subject			
Animal & plant nutrition	90	.07	11.90
Animal & plant diseases	147	.11	19.44
Cultural practices	313	.24	41.40
Entomology	62	.05	8.20
Pest mgt. & pesticide ed.	60	.05	7.94
Weeds	25	.02	3.31
Home grounds	44	.03	5.82
CRD concepts & groug action	15	.01	1.98
PROGRAM COMPONENT: OTHER CROPS	189	.14	100.00
Subject			
Animal & plant nutrition	8	.01	4.23
Animal & plant diseases	28	.02	14.81

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
Bldg., struc., & facilities	20	.02	.47
Cultural practices	516	.39	12.12
Entomology	12	.01	.28
Forest management	1891	1.43	44.42
Farm management	5	-	.12
Machinery, equipment and related engineering	18	.01	.42
Marketing	309	.23	7.26
Pest mgt. & pesticide ed.	141	.11	3.31
Processing	210	.16	4.93
Weeds	64	.05	1.50
Clothing and textiles	20	.02	.47
Home groungs	40	.03	.94
Housing	15	.01	.35
Selection and buying	50	.04	1.17
Community facilities & serv.	15	.01	.35
Natural resources	25	.02	.59
Business	76	.06	1.79
Natural beauty	15	.01	.35
Economics	13	.01	.31
Energy	266	.20	6.25
Environment	10	.01	.23
Organization dev. & maint.	197	.15	4.63
Personal growth & dev.	20	.02	.47
Program planning, implementation and evaluation	168	.13	3.95
Program support & dev.	1	-	.02
Recreation	89	.07	2.09

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
PROGRAM COMPONENT: FRUIT & NUTS	2062	1.56	100.00
Subject			
Animal & plant nutrition	89	.07	4.32
Animal & plant diseases	345	.26	16.73
Cultural practices	933	.71	45.25
Entomology	64	.05	3.10
Farm management	69	.05	3.35
Irrigation & drainage	16	.01	.78
Machinery, equipment and related engineering	22	.02	1.07
Marketing	200	.15	9.70
Pest mgt. & pesticide ed.	142	.11	6.89
Processing	25	.02	1.21
Weeds	73	.06	3.54
Environment	29	.02	1.41
Extension organ. & policy	10	.01	.49
Program planning, implementation and evaluation	45	.03	2.18
PROGRAM COMPONENT: VEGETABLES	4501	3.41	100.00
Subject			
Animal & plant nutrition	274	.21	6.09
Animal & plant diseases	400	.30	8.89
Bldg., struc. & facilities	26	.02	.58
Cultural practices	1717	1.30	38.15
Entomology	122	.09	2.71
Farm management	284	.22	6.31
Irrigation & drainage	19	.01	.42

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
Machinery, equipment and related engineering	41	.03	.91.
Marketing	433	.33	9.62
Pest mgt. & pesticide ed.	379	.29	8.42
Selection and breeding	50	.04	1.11
Soil	35	.03	.78
Weeds	107	.08	2.38
Creative crafts	25	.02	.56
Food supply	194	.15	4.31
Home grounds	30	.02	.67
Business & indus. dev.	160	.12	3.55
Community facilities & ser.	50	.04	1.11
Economics	90	.07	2.00
Organization dev. & maint.	20	.02	.44
Program planning, implementaion and evaluation	35	.03	.78
In-service training	10	.01	.22
PROGRAM COMPONENT: ORNAMENTALS	3277	2.48	100.00
Subject			
Animal & plant nutrition	92	.07	2.81
Animal & plant diseases	163	.12	4.97
Bldg., struc, & facilities	10	.01	.31
Cultural practices	1127	.85	34.39
Entomology	229	.17	6.99
Farm management	31	.02	.95
Marketing	28	.02	.85

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
Pest. mgt. & pesticide ed.	166	.13	5.07
Selection & breeding	38	.03	1.16
Weeds	121	.09	3.69
Home grounds	995	.75	30.36
Community facil. & services	10	.01	.31
CRD concepts & group action	3	-	.09
Land use	30	.02	.92
Natural beauty	20	.02	.61
Economics	41	.03	1.25
Energy	10	.01	.31
Environment	6	-	.18
Organization dev. & maint.	15	.01	.46
Personal growth & dev.	5	-	.15
Program planning, implementation and evaluation	47	.04	1.43
In-service training	5	-	.15
Formal training	75	.06	2.29
Other training	10	.01	.31
PROGRAM COMPONENT: OTHER HORTICULTURAL CROPS	1091	.83	100.00
Subject			
Animal & plant nutrition	96	.07	8.80
Animal & plant diseases	50	.04	4.58
Bldg., struc., & facilities	14	.01	1.28
Cultural practices	297	.22	27.22
Entomology	26	.02	2.38
Farm management	66	.05	6.05

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
Machinery, equipment and related engineering	7	.01	.64
Marketing	77	.06	7.06
Pest mgt. & pesticide ed.	238	.18	21.81
Selection & breeding	15	.01	1.37
Weeds	43	.03	3.94
Food supply	72	.05	6.60
Personnel	10	.01	.92
Program planning, implementation and evaluation	80	.06	7.33
PROGRAM COMPONENT: General Ag.	864	6.54	100.00
Subject			
Animal & plant nutrition	539	.41	6.24
Animal & plant diseases	204	.15	2.36
Bldg., struc. & facilities	79	.06	.91
Cultural practices	364	.28	4.21
Entomology	365	.28	4.22
Farm management	1383	1.05	16.01
Irrigation & drainage	153	.12	1.77
Machinery, equipment and related engineering	155	.12	1.79
Marketing	1010	.76	11.69
Pest mgt. & pesticide ed.	1507	1.14	17.44
Processing	399	.30	4.62
Selection & breeding	55	.04	.64
Soil	447	.34	5.17
Water	75	.06	.87

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
Weeds	125	.09	1.45
Home grounds	50	.04	.58
Selection & buying	52	.04	.60
Community facil. & services	12	.01	.14
Comprehensive community planning	25	.02	.29
Land use	108	.08	1.25
Occupational experiences	10	.01	.12
Waste disposal & mgt.	201	.15	2.33
Economics	414	.31	4.79
Energy	159	.12	1.84
Environment	10	.01	.12
Leadership development	45	.03	.52
Organization dev. & maint.	217	.16	2.51
Personnel	20	.02	.23
Personal growth & dev.	23	.02	.27
Program planning, implementation and evaluation	68	.05	.79
Program support & dev.	336	.25	3.89
Safety	10	.01	.12
Other training	20	.02	.23
PROGRAM COMPONENT: FOOD AND NUTRITION	6460	4.89	100.00
Subject			
Cultural practices	15	.01	.23
Marketing	4	-	.06
Processing	145	.11	2.24

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
Water	6	-	.09
Human nutrition	3949	2.99	61.13
Food supply	1267	.97	19.61
Family resource mgt.	36	.03	.56
Health-physical & mental	140	.11	2.17
Child care	80	.06	1.24
Selection and buying	466	.35	7.21
Occupational experiences	4	-	.06
Energy	51	.04	.79
Leadership development	27	.02	.42
Organization dev. & maint.	12	.01	.19
Other admin. functions	25	.02	.39
Program planning, implementation and evaluation	46	.03	.71
Safety	147	.11	2.28
In service training	40	.03	.62
PROGRAM COMPONENT: CLOTHING	4231	3.20	100.00
Subject			
Clothing and textiles	3770	2.85	89.10
Creative crafts	20	.02	.47
Health - mental & physical	47	.04	1.11
Housing	15	.01	.35
Selection and buying	281	.21	6.64
Energy	61	.05	1.44
Personal growth & dev.	12	.01	.28
Program planning, implementation and evaluation	25	.02	.59

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
PROGRAM COMPONENT: HOUSING	7041	5.33	100.00
Subject			
Animal & plant nutrition	45	.03	.64
Entomology	90	.07	1.28
Irrigation & drainage	5	-	.07
Marketing	9	.01	.13
Pest mgt. & pesticide ed.	15	.01	.21
Cultural arts	13	.01	.18
Creative crafts	970	.73	13.78
Gerontology	8	.01	.11
Family resource mgt.	169	.13	2.40
Home furnishings	2571	1.95	36.51
Home grounds	9	.01	.13
Housing	2376	1.80	33.75
Child care	20	.02	.28
Selection and buying	98	.07	1.39
Energy	584	.44	8.29
Environment	10	.01	.14
Program planning, implementation and evaluation	34	.03	.48
Safety	15	.01	.21
PROGRAM COMPONENT: HUMAN DEV.	4009	3.03	100.00
Subject			
Forest management	25	.02	.62
Cultural arts	50	.04	1.25
Creative crafts	54	.04	1.35
Gerontology	112	.08	2.79

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
Family resource mgt.	25	.02	.62
Health-mental & physical	96	.07	2.39
Home grounds	14	.01	.35
Human relations	2096	1.59	52.28
Child care	878	.66	21.90
CRD concepts & group action	5	-	.12
Comprehensive community planning	15	.01	.37
Manpower & economic dev.	7	.01	.17
Occupational experiences	5	-	.12
Civil Rights and Equal Employment	15	.01	.37
Communication skills	25	.02	.62
Leadership development	448	.34	11.17
Personal growth & dev.	134	.10	3.34
Safety	5	-	.12
PROGRAM COMPONENT: FAMILY RES. MGT.	3840	2.91	100.00
Subject			
Animal & plant nutrition	20	.02	.52
Bldg., struc., & facilities	68	.05	1.77
Farm management	15	.01	.39
Machinery, equipment and related engineering	10	.01	.26
Marketing	4	-	.10
Clothing	70	.05	1.82
Creative crafts	25	.02	.65
Human nutrition	37	.03	.96
Gerontology	15	.01	.39

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
Family resource mgt.	3074	2.33	80.05
Health - mental & physical	36	.03	.94
Housing	43	.03	1.12
Selection and buying	199	.15	5.18
Economics	103	.08	2.68
Energy	44	.03	1.15
Personal growth & dev.	20	.02	.52
Program planning, implementation and evaluation	47	.04	1.22
Safety	10	.01	.26
PROGRAM COMPONENT: AGING	1669	1.26	100.00
Subject			
Gerontology	1471	1.11	88.14
Familu resource mgt.	19	.01	1.14
Health - mental & physical	33	.03	1.98
Human relations	37	.03	2.22
Selection and buying	20	.02	1.20
Community facil. & services	15	.01	.90
Personal growth & dev.	50	.04	3.00
Program support & dev.	15	.01	.90
Recreation	5	-	.30
Safety	4	-	.24
PROGRAM COMPONENT: GEN. HOME ECONOMICS	3233	2.45	100.00
Subject			
Marketing	93	.07	2.88
Clothing and textiles	155	.12	4.79
Cultural arts	36	.03	1.11

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
Creative crafts	313	.24	9.68
Family resource mgt.	19	.01	.59
Health-mental & physical	86	.07	2.66
Home furnishings	71	.05	2.20
Housing	15	.01	.46
Child care	36	.03	1.11
Selection and buying	59	.04	1.82
CRD concepts & group action	10	.01	.31
Communication skills	30	.02	.93
Economics	5	-	.15
Energy	114	.09	3.53
Ext. organization & policy	28	.02	.87
Leadership development	1109	.84	34.30
Organization dev. & maint.	560	.42	17.32
Personal growth & dev.	100	.08	3.09
Program planning, implementation and evaluation	70	.05	2.17
Program support & dev.	263	.20	8.13
Safety	20	.02	.62
In service training	31	.02	.96
Formal training	10	.01	.31
PROGRAM COMPONENT: GEN. 4-H	23320	17.65	100.00
Subject			
Animal & plant nutrition	22	.02	.09
Animal & plant diseases	5	-	.02
Bldg., struc, & facilities	8	.01	.03

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
Cultural practices	67	.05	.29
Entomology	58	.04	.25
Farm management	15	.01	.06
Machinery, equipment and related engineering	39	.03	.17
Processing	15	.01	.06
Selection and breeding	78	.06	.33
Clothing and textiles	18	.01	.08
Creative crafts	16	.01	.07
Human nutrition	106	.08	.45
Food supply	25	.02	.11
Gerontology	15	.01	.06
Family resource mgt.	12	.01	.05
Health - mental & physical	71	.05	.30
Home grounds	55	.04	.24
Human relations	78	.06	.33
Community facil. & services	30	.02	.13
CRD concepts & group action	46	.03	.20
Comprehensive community planning	20	.02	.09
Natural resources	38	.03	.16
Occupational experiences	40	.03	.17
Business	5	-	.02
Citizenship	51	.04	.22
Communication skills	107	.08	.46
Economics	309	.23	1.33
Energy	88	.07	.38

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
Environment	93	.07	.40
Exchange programs	84	.06	.36
Ext. organization & policy	70	.05	.30
Leadership development	5499	4.16	23.58
Organization dev. & maint.	6660	5.04	28.56
Personnel	16	.01	.07
Personal growth & dev.	4763	3.61	20.42
Program planning, implementation and evaluation	1863	1.41	7.99
Program support & dev.	2174	1.65	9.32
Recreation	150	.11	.64
Safety	241	.18	1.03
Other training	270	.20	1.16
PROGRAM COMPONENT: GEN. CRD	6584	4.98	100.00
Subject			
Animal & plant nutrition	25	.02	.38
Bldg., struc., & facilities	33	.03	.50
Forest management	15	.01	.23
Farm management	10	.01	.15
Machinery, equipment and related engineering	7	.01	.11
Marine science	15	.01	.23
Marketing	53	.04	.81
Pest mgt. & pesticide ed.	50	.04	.76
Soil	213	.16	3.24
Water	38	.03	.58
Cultural arts	25	.02	.38

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
Creative crafts	10	.01	.15
Human nutrition	15	.01	.23
Food supply	60	.05	.91
Family resource mgt.	10	.01	.15
Health - mental & physical	10	.01	.15
Home grounds	25	.02	.38
Housing	65	.05	.99
Business & indus. dev.	87	.07	1.32
Community facil. & services	399	.30	6.06
CRD concepts & group action	1527	1.16	23.19
Comprehensive community planning	434	.33	6.59
Land use	558	.42	8.48
Manpower & economic dev.	95	.07	1.44
Natural resources	50	.04	.76
Natural beauty	250	.19	3.80
Taxation & local govt.	20	.02	.30
Waste disposal & mgt.	203	.15	3.08
Business	5	-	.08
Citizenship	86	.07	1.31
Communciation skills	10	.01	.15
Economics	23	.02	.35
Energy	236	.18	3.58
Environment	65	.05	.99
Leadership development	783	.59	11.89
Organization dev. & maint.	220	.17	3.34

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
Personnel	10	.01	.15
Personal growth & dev.	60	.01	.91
Program planning, implementation and evaluation	485	.37	7.37
Program support & dev.	171	.13	2.60
Recreation	78	.06	1.18
Safety	50	.04	.76
PROGRAM COMPONENT: GEN. EXT.	8053	6.10	100.00
Subject			
Animal & plant nutrition	48	.04	.60
Animal & plant diseases	24	.02	.30
Cultural practices	10	.01	.12
Entomology	45	.03	.56
Machinery, equipment and related engineering	42	.03	.52
Pest mgt. & pesticide ed.	75	.06	.93
Water	60	.05	.75
Waste disposal & mgt.	129	.10	1.60
Civil Rights and Equal Employment	84	.06	1.04
Communication skills	70	.05	.87
Energy	147	.11	1.83
Environment	10	.01	.12
Ext. organization & policy	313	.24	3.89
Leadership development	135	.10	1.68
Organization dev. & maint.	325	.25	4.04
Other admin. functions	1330	1.01	16.52

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
Personnel	697	.53	8.66
Personal growth & dev.	12	.01	.15
Program planning, implementation and evaluation	2173	1.64	26.98
Program support & dev.	1325	1.00	16.45
Report preparation	58	.04	.72
Safety	156	.12	1.94
In service training	289	.22	3.59
Formal training	100	.08	1.24
Other training	203	.15	2.52
Orientation training	193	.15	2.40
PROGRAM COMPONENT: STAFF DEVELOPMENT	3338	2.53	100.00
Subject			
Animal & plant diseases	50	.04	1.50
Cultural practices	12	.01	.36
Selection and breeding	5	-	.15
Soil	70	.05	2.10
Water	30	.02	.90
Weeds	70	.05	2.10
Human nutrition	30	.02	.90
Family resource mgt.	15	.01	.45
CRD concepts & group action	98	.07	2.94
Waste disposal & mgt.	10	.01	.30
Communication skills	165	.12	4.94
Economics	95	.07	2.85
Ext. organization & policy	52	.04	1.56

	Planned Days	% of Total Planned Time	% of Program Component Planned Time
Leadership development	344	.26	10.31
Orgranziation dev. & maint	79	.06	2.37
Other admin. functions	202	.15	6.05
Personnel	181	.14	5.42
Personal growth & dev.	490	.37	14.68
Program planning, implementation and evaluation	1121	.85	33.58
Program support & dev.	18	.01	.54
Report preparation	5	-	.15
In service training	105	.08	3.15
Other training	88	.07	2.64
Orientation training	3	-	.09
GRAND TOTAL	132122	100.00	

PLANNED TIME FOR 1862 PROFESSIONAL STAFF MEMBERS
BY SUBJECTS
N. C. AG. EXTENSION SERVICE
FY 80

Subjects	Planned Days	% of Planned Time
Animal and plant nutrition	6971	5.28
Animal and plant diseases	5883	4.45
Buildings, structures, & facilities	2444	1.85
Cultural practices	11415	8.64
Entomology	1946	1.47
Forest management	2167	1.64
Farm management	5392	4.08
Irrigation and drainage	220	.17
Machinery, equip. & related engineering	691	.52
Marine science	238	.18
Marketing	3737	2.83
Pest management & pesticide education	4839	3.66
Processing	1670	1.26
Selection and breeding	3748	2.84
Soil	1031	.78
Water	229	.17
Weeds	2294	1.74
Clothing and textiles	4033	3.05
Cultural arts	124	.09
Creative crafts	1451	1.10
Human nutrition	4169	3.16
Food supply	1618	1.22
Gerontology	1681	1.27
Family resource management	3389	2.57

Subjects	Planned Days	% of Planned Time
Health - mental and physical	519	.39
Home furnishings	2642	2.00
Home grounds	1262	.96
Housing	2529	1.91
Human relations	2211	1.67
Child care	1014	.77
Selection and buying	1256	.95
Business & industrial development	247	.19
Community facilities & services	531	.40
CRD concepts and group action	1709	1.29
Comprehensive community planning	494	.37
Land use	696	.53
Manpower and economic development	154	.12
Natural resources	113	.09
Natural beauty	285	.22
Occupational experiences	59	.04
Taxation and local government	20	.02
Waste disposal and management	1449	1.10
Business	92	.07
Citizenship	137	.10
Civil Rights and Equal Employment	115	.09
Communication skills	407	.31
Economics	1106	.84
Energy	2075	1.57
Environment	279	.21
Exchange programs	84	.06

Subjects	Planned Days	% of Planned Time
Extension organization and policy	473	.36
Leadership development	8496	6.43
Organization development & maintenance	8642	6.54
Other administrative functions	1557	1.18
Personnel	936	.71
Personal growth and development	5709	4.32
Program planning, implementation and evaluation	6401	4.84
Program support and development	4412	3.34
Recreation	339	.26
Report preparation	94	.07
Safety	675	.51
In service training	526	.40
Formal training	185	.14
Other training	613	.46
Orientation training	199	.15
GRAND TOTAL	132122	100.00

PLANNED TIME FOR 1862 PROFESSIONAL STAFF MEMBERS
BY AUDIENCE TYPES
N. C. AG. EXTENSION SERVICE
FY 80

Audience Types	Planned Days	% of Planned Time
Agri-business firms	4527	3.43
Farmer	42136	31.89
Family members	14493	10.97
Homemakers	7829	5.93
Extension Homemakers	3523	2.67
Senior citizens	1390	1.05
Handicapped	75	.06
Volunteer leaders (Adult)	3769	2.85
Volunteer leaders (Jr/Teen)	456	.35
Volunteer leaders (Adult/Jr.)	4272	3.23
Extension citizens committees	2896	2.19
Extension professionals	20167	15.26
Non Extension professionals	1424	1.08
Extension paraprofessionals	560	.42
4-H members	3976	3.01
EFNEP Youth	668	.51
Other youth and/or youth & adults	6234	4.72
4-H members and adults	4905	3.71
Adults	5846	4.42
Associations	662	.50
Government agencies	817	.62
Accountability groups	400	.30
Legitimizing groups	1097	.83
GRAND TOTAL	132122	100.00

PLANNED TIME BY 1862 PROFESSIONALS IN EFNEP
BY PROGRAM COMPONENT - SUBJECT
N. C. AG. EXTENSION SERVICE
FY 80

	Planned Time	% of Planned Time
PROGRAM COMPONENT: CORN	40	100.00
Subject		
Pest mgt. & pesticide education	40	100.00
PROGRAM COMPONENT: GRAIN CROPS	20	100.00
Subject		
Pest mgt. & pesticide education	20	100.00
PROGRAM COMPONENT: VEGETABLES	107	100.00
Subject		
Animal and plant nutrition	5	4.67
Animal and plant diseases	17	15.89
Cultural practices	20	18.69
Pest mgt. & pesticide education	5	4.67
Food supply	55	51.40
Family resource management	5	4.67
PROGRAM COMPONENT: GENERAL AG.	110	100.00
Subject		
Entomology	50	45.45
Pest mgt. & pesticide education	60	54.55
PROGRAM COMPONENT: FOOD & NUTRITION	3272	100.00
Subject		
Animal and plant nutrition	28	.86
Human nutrition	2264	69.19
Food supply	458	14.00
Family resource management	35	1.07

	Planned Time	% of Planned Time
Selection and buying	224	6.85
Extension organization and policy	5	.15
Leadership development	6	.18
Organization development & maintenance	36	1.10
Personnel	25	.76
Personal growth and development	12	.37
Program planning, implementation and evaluation	168	5.13
Safety	11	.34
PROGRAM COMPONENT: HOUSING	50	100.00
Subject		
Entomology	45	90.00
Creative crafts	5	10.00
PROGRAM COMPONENT: FAMILY RESOURCE MGT.	15	100.00
Subject		
Energy	15	100.00
PROGRAM COMPONENT: GEN. HOME ECONOMICS	32	100.00
Subject		
Cultural arts	30	93.75
Organization development & maintenance	1	3.13
Program planning, implementation and evaluation	1	3.13
PROGRAM COMPONENT: GENERAL 4-H	16	100.00
Subject		
Cultural practices	1	6.25
Human nutrition	15	93.75

	Planned Time	% of Planned Time
PROGRAM COMPONENT: GENERAL EXTENSION	10	100.00
Subject		
Other administrative functions	5	50.00
Program planning, implementation and evaluation	5	50.00
PROGRAM COMPONENT: STAFF DEVELOPMENT	43	100.00
Subject		
Extension organization and policy	8	18.60
Program planning, implementation and evaluation	35	81.40
GRAND TOTAL	3715	

PLAN OF WORK SUMMARY DATA

FOR

PARAPROFESSIONAL EXTENSION STAFF MEMBERS

FY 1980

PLANNED TIME FOR EFNEP PARAPROFESSIONALS
BY PROGRAM COMPONENT - SUBJECT
N. C. AG. EXTENSION SERVICE
FY 80

	Planned Time	% of Planned Time
PROGRAM COMPONENT: DAIRY	8	100.00
Subject		
Program planning, implementation and evaluation	8	100.00
PROGRAM COMPONENT: VEGETABLES	235	100.00
Subject		
Human nutrition	96	40.85
Food supply	139	59.15
PROGRAM COMPONENT: GENERAL AG.	180	100.00
Subject		
Human nutrition	180	100.00
PROGRAM COMPONENT: NUTRITION	37359	100.00
Subject		
Pest management & pesticide education	50	.13
Human nutrition	28471	76.21
Food supply	5480	14.67
Family resource management	281	.75
Health - mental & physical	65	.17
Selection and buying	1761	4.71
Leadership development	119	.32
Organization development & maint.	350	.94
Personal growth and development	135	.36
Program planning, imple. & eval.	282	.75
Program support & development	8	.02
Report preparation	40	.11
Safety	317	.85

	Planned Time	% of Planned Time
PROGRAM COMPONENT: HUMAN DEVELOPMENT	10	100.00
Subject		
Personal growth and development	10	100.00
PROGRAM COMPONENT: GEN. HOME ECONOMICS	15	100.00
Subject		
In service training	15	100.00
PROGRAM COMPONENT: GENERAL 4-H & YOUTH	395	100.00
Subject		
Human nutrition	395	100.00
PROGRAM COMPONENT: GENERAL EXTENSION	36	100.00
Subject		
Organization development & maint.	36	100.00
PROGRAM COMPONENT: STAFF DEVELOPMENT	15	100.00
Subject		
Family resource management	15	100.00
GRAND TOTAL	38253	

PLANNED TIME FOR 4-H PROGRAM ASSISTANTS
BY PROGRAM COMPONENT - SUBJECT
N. C. AG. EXTENSION SERVICE
FY 80

	Planned Days	% of Planned Time
PROGRAM COMPONENT: BEEF	230	100.00
Subject		
Cultural practices	15	6.52
Farm management	30	13.04
Marketing	85	36.96
Leadership development	15	6.52
Personal growth & development	65	28.26
Program planning, implementation and evaluation	15	6.52
Program support and development	5	2.17
PROGRAM COMPONENT: HORSES	212	100.00
Subject		
Selection and breeding	30	14.15
Leadership development	42	19.81
Organization development & maint.	40	18.87
Program planning, implementation and evaluation	100	47.17
PROGRAM COMPONENT: ORNAMENTALS	15	100.00
Subject		
Program support & development	15	100.00
PROGRAM COMPONENT: GEN. HOME ECONOMICS	2	100.00
Subject		
Other administrative functions	2	100.00

	Planned Days	% of Planned Time
PROGRAM COMPONENT: GENERAL 4-H	446	100.00
Subject		
Leadership development	84	18.83
Organization development & maint.	20	4.48
Personnel	72	16.14
Personal growth and development	20	4.48
Other training	250	56.05
GRAND TOTAL	905	

PLANNED TIME FOR 1862 PARAPROFESSIONALS EXTENSION STAFF MEMBERS
BY SUBJECTS
N. C. AG. EXTENSION SERVICE
FY 80

Subjects	Planned Days	% of Planned Time
Animal and plant nutrition	33	.71
Animal and plant diseases	17	.37
Cultural practices	36	.78
Entomology	95	2.06
Farm management	30	.65
Marketing	85	1.84
Pest management & pesticide ecuation	125	2.71
Selection and breeding	30	.65
Cultural arts	30	.65
Creative crafts	5	.11
Human nutrition	2279	49.33
Food supply	513	11.10
Family resource management	40	.87
Selection and buying	224	4.85
Energy	15	.32
Extension organization and policy	13	.28
Leadership development	147	3.18
Organization development & maint.	97	2.10
Other administrative functions	7	.15
Personnel	97	2.10
Personal growth and development	97	2.10
Program planning, implementation and evaluation	324	7.01
Program support and development	20	.43
Safety	11	.24
Other Training	250	5.41
GRAND TOTAL	4620	100.00

PLANNED TIME FOR 1862 PARAPROFESSIONAL EXTENSION STAFF MEMBERS
BY AUDIENCE TYPE
N. C. AG. EXTENSION SERVICE
FY 80

Audience Types	Planned Days	% of Planned Time
Farmer	240	.54
Family members	8000	18.04
Homemakers	19117	43.11
Extension Homemakers	102	.23
Handicapped	69	.16
Volunteer leaders (adult)	684	1.54
Volunteer leaders (Jr/Teen)	30	.07
Volunteer leaders (Adult/Jr.)	1699	3.83
Extension Citizens committees	104	.23
Extension professionals	187	.42
Non Extension professionals	29	.07
Ext. paraprofessionals	684	1.54
4-H members	575	1.30
EFNEP Youth	8591	19.37
Other Youth and/or Youth & Adults	1246	2.81
4-H members and adults	1188	2.68
Adults	1783	4.02
Legitimizing groups	14	.03
_RAND TOTAL	44342	100.00