NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE

ANNUAL REPORT

AGRICULTURAL PRODUCTION, MANAGEMENT, AND NATURAL RESOURCES USE
Title of Project

EXTENSION AGRICULTURAL ENGINEERING
Section

1962
Annual Year

Name and Title of Worker	Percentage of Time Devoted to Entire Project by Each Worker
H. M. Ellis, In Charge Project Leader	100 %
J. C. Ferguson, Specialist	100 %
John W. Glover, Specialist	100 %
R. M. Ritchie, Jr., Specialist	100 %
Ronald E. Sneed, Specialist	100 %
W. C. Warrick, Specialist	100 %
Rupert W. Watkins, Specialist	100 %
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Signed _____
Project Leader

Date Submitted February 22, 1963

TABLE OF CONTENTS

FOREWORD

The Extension Agricultural Engineering Department is charged with the responsibility of conducting that segment of the over-all Agricultural Extension Service program which deals with educating and motivating people to make the best practical use of labor, power, and equipment. Agricultural Engineering cuts entirely across the field of agriculture. For this reason, it is impractical to try to present the program of the department as a single report. The educational program is necessarily broken down into different areas, and areas are divided into phases, with an Extension Agricultural Engineering specialist responsible for each phase.

This report does not undertake to set down the entire work program of the past year. It does set down those phases planned for major emphasis during the year.

III. Program Accomplishments - Farm Mechanization

A. 1. Work in mechanized cotton and tobacco production will be intensified in ten respective counties and in major peanut-producing counties of the northeastern area. The promotion of equipment in mechanization will be based on the "all-practice" idea insofar as applicable, the main teaching objective being more economical production of a quality unit with less man hours of labor. Evaluation will be based on observed adoption as well as by appropriate surveys.

2. The increase in number of cotton harvesters from 276 in 1961 to 497 in 1962 as determined by survey is a good indicator of progress in cotton mechanization. Nearly 100,000 acres, or 24% of the crop was estimated to be mechanically harvested in 1962. Two-Bale Club members included 34 new producers.

Tobacco production in North Carolina receives more emphasis than any other crop, but still requires more hand labor and therefore has greater potential in mechanization possibly than any other major crop. Mechanization possibilities, however, are seriously handicapped by the overwhelming number of small allotment farms.

Peanuts, while confined to a limited area of the state, are a major crop in the Northeast. Newly developed production practices require additional machinery in the application of soil fumigants, pesticides, and herbicides. Increased yields with reduced labor have been clearly demonstrated with all-time individual as well as average yield records established.

3. Agricultural Engineering participated in 11 county cotton production meetings dealing with cultivation, herbicide and insecticide application, as well as mechanical harvesting. Assistance was also rendered in field days and tours. Area ginner meetings were attended and

cotton mechanization discussed.

In tobacco work a new 4-row 44-nozzle tobacco sprayer was designed and built for plant pathology use, and field assistance was rendered. This work dealt with the control of disease and indicated a potential return of $200 per acre. Other work was done in transplanting, band application of fertilizer, and in the application of insecticides and sucker control.

In peanuts concentrated work was done with two county agents in setting up demonstration equipment to accomplish newly recommended practices in a once-over planting operation. This involved the modification and adaptation of equipment to two-row planting rigs so that fumigants as well as pesticides could be applied simultaneously at the time of planting. These new practices along with favorable weather conditions all contributed to record yields in peanuts during 1962.

Agricultural Engineering also participated in a series of training meetings dealing with combine harvesting, bulk handling, and mechanical curing of peanuts. These meetings involved a series of six one-day sessions at which agents from all peanut-producing counties, in both North Carolina and Virginia, were represented, as well as peanut processing commercial interests.

The annual Peanut Field Day was held at the Lewiston Research Station, and an excellent display of conventional along with newly developed peanut equipment was arranged.

4. Personnel giving leadership to the above reported work is as follows:

Cotton and Peanuts - J. C. Ferguson

Tobacco and Peanuts - John W. Glover

B. Work was done in several horticultural crops including blueberries, grapes, tomatoes, sweet potatoes, and cucumbers. Blueberry growers were assisted with spray equipment better adapted to their needs by means of a sprayer design readily adjustable to various size growth. Also the application of fertilizer was considerably simplified and labor requirements reduced by the introduction of a new type, wide swath, tractor-mounted spreader. Heretofore the spreading of fertilizer has been done largely by hand because of the inability to mechanically band fertilizers underneath the plant without waste in the middles. Both the adjustable sprayer and band spreader were shown at the annual Blueberry Growers' School.

Assistance was rendered bunch grape growers in the design of high pressure, shop-made sprayer units that would meet the needs of a small grower without the expense of more elaborate, commercially assembled units. As a result of a construction demonstration, several additional units were built in Union County, and very satisfactorily met needs in this regard.

Work was also done in spraying field grown trellis tomatoes. A trail type vertical boom high pressure sprayer was designed and built in cooperation with an Orange County agent and grower. The unit performed very satisfactorily and replaced, to some degree, conventional type low pressure systems commonly used.

Sweet potatoes are another important and expanding crop that presents certain problems in mechanical harvesting. A small eastern North Carolina manufacturer has met this problem to a degree through the development of a trail type digger on which potatoes are graded and packed in the field. Several digging demonstrations were arranged and conducted during the harvest season using this equipment along with others that have made contributions in this field.

Attention was given to mechanical aids in cucumber harvesting, a field day being arranged where three different units of commercial as well as experimental equipment were demonstrated. Labor saving in this field has not been striking, but does appear to have potential possibilities.

E. Other activities include three tractor maintenance 4-H leader training schools of three days each.

County arranged tractor schools and workshops involved 15 half-day events.

Sixteen sprayer meetings arranged jointly by county agents and vocational agriculture teachers involved not only basic information in the application of sprays, but also included on several occasions the actual construction of a complete tractor-mounted boom sprayer.

Five one-day schools were held for Research Station personnel, dealing in part with spray and cultivation equipment.

The newly developed electrostatic duster was demonstrated and discussed in detail at the annual pesticide school.

The Agricultural Engineering Department also contributed a half-day's instruction on sprayers and their use in four two-day training schools arranged for vocational agriculture teachers.

Flame cultivation, while of prime interest to cotton growers in North Carolina, does have possibilities in other crops, and interest has been somewhat revised. Two meetings and field demonstrations were conducted during the year on this method of weed control.

Interest continues in the 4-H Tractor Operator Contest as a part of the 4-H Tractor Project, and assistance was rendered to nine counties in local contests, and a district contest was held in each of the six Extension districts. A state contest was run off during

4-H Club Week, the state winner later competing in regional competition in Richmond, Virginia.

The State Fair also sponsors annually a 4-H driving contest which was arranged and conducted by Agricultural Engineering personnel.

Work was continued in the 4-H Automotive Project.

T.V. Shows, Radio, Leaflets, and News Stories:

Timely T.V. shows were presented dealing with various phases of farm mechanization and associated subjects. One T.V. show of 30-minutes duration was documentary in nature, entitled "One Hundred Years' Progress in Mechanization".

Twelve three-minute radio tapes were also made with several live appearances on county agent scheduled programs.

A new sprayer plan was produced, along with several farm machinery memos as needed. Several news stories also dealt with timely subjects.

III. Program Accomplishments - Farm Buildings

A. 1. It was planned to place major emphasis for the year on buildings work in three areas: Poultry houses, swine buildings, and plastic greenhouses, since these three areas seemed to hold the most promise for increasing present and future farm income through building improvements.

2 and 3. a. Poultry Buildings:- Because of keen interest and conflicting recommendations on poultry house insulation and ventilation, the specialist devoted approximately two weeks' time to field visits and a review and analysis of available information on insulation and ventilation for poultry houses in our climate. A mimeographed report on this subject was distributed to agents in March 1962 and made available to feed company representatives, farmers, and others. This effort has helped in standardizing recommendations to the end that Extension workers now have a guide in recommending to the industry the improvements which should be profitable.

Two additional demonstrations were set up where records were to be kept in insulated broiler houses. In one of these, results will be inconclusive due to disease complications. In the other we have an excellent cooperator who is keeping detailed and accurate records. This information will be summarized when the winter season is completed.

Assistance has been given to a number of producers in laying house design. This includes various combinations of high density, controlled environment, slat floors, and colony cages. So far, none of these efforts has resulted in new houses which have been sufficiently proved to merit adoption or standard recommendations. Observations will continue.

2 and 3. b. Swine Buildings:- After consulting with swine specialists and observing practices and trends in the field, major revisions were made in the two most popular swine plans, one for a central farrowing house and one for confinement feeding pens. These are being used widely in a statewide program for expanded swine production.

Through farm visits and conferences, we have contacted growers who are considering swine buildings radically different from those in common use. Most of these involve partially or fully slatted floors, some built directly over lagoons for efficient waste disposal. Some are including automatic feeding systems, feed grinding and mixing, and limited feeding. Based on the experience of these early adopters, we plan to release an information sheet on slatted floors for North Carolina in the spring of 1963. These changes will be incorporated in standard plans as experience justifies.

2 and 3. c. Plastic Greenhouses:- Cooperating with horticultural specialists, an Extension circular on plastic greenhouses was released early in 1962. This publication covers information on construction, heating, and ventilating, based on North Carolina observations and publications from other states.

Assistance was given in conducting an agent training school on tomato production in plastic greenhouses in the spring of 1962.

An applied research project in plastic greenhouses was initiated in cooperation with Extension horticulturists. The engineering objectives of this project were to develop practical supporting structures for plastic covers and to investigate methods of heating and ventilating. The horticulturist will use the resulting structures to investigate the production of crops which may have commercial potential in North Carolina.

The following work has been accomplished in this project: Tentative specifications for a suitable plastic greenhouse frame were agreed upon; four test frames using variations of the same basic pattern were built and test-loaded; a design was selected, and materials were procured to build one 20' x 48' house using the selected frame; and this house has now been completed and is in use by horticultural workers. Due to some difficulties experienced in building this house, we are not ready to recommend this as a standard plan, and further work will be done to develop an acceptable design as time and money permit.

2 and 3. d. The all-practice demonstration program was extended to include several additional major commodities during 1962. The farm buildings specialist served on committees to develop all-practice recommendations for beef cattle, swine, and burley tobacco.

2 and 3. e. Approximately 50% of the time of the farm buildings specialist was spent in a general program including agent training schools, assisting agents with meetings and individual farm problems, and in preparation and distribution of information on farm buildings. This would also include limited assistance given with plans for public agricultural buildings such as agricultural office buildings, fair buildings, livestock sales barns, community buildings, etc.

4. R. M. Ritchie, Jr., is the specialist in charge of farm buildings work.

PLAN SERVICE

The following plans were distributed from this department in 1962:

Residences	4,804
General purpose barns	212
Dairy buildings	1,415
Beef cattle buildings	1,021
Swine buildings	2,113
Poultry buildings	369
Tobacco buildings	549
Other buildings	664
Equipment plans	4,030
Special blue prints (not standard plans)	199
Miscellaneous	208
	15,584

In addition to this, over 800 kitchen guide plans were distributed, including a number of complete books of these plans; and over 3,000 study sheets for house plans, including a number of folders containing one each of all standard house plans.

A great deal of work was also done by drafting room personnel preparing graphs, charts, posters, lecture materials, etc., for this and other departments. This work is summarized below:

Display material	22	T.V. cards	61
Banners	20	Flip charts	87
Lettering strips	281	Certificates	175
Charts	145	Cover designs	15
Posters	94	Graphs	40
Signs	192	Maps	5

III. Program Accomplishments - Rural Housing

A. 1. Extension workers have directed their efforts in housing to rural housing mainly. Rural housing constitutes 57% of the total in North Carolina with some counties having little urban housing and others with the major portion being urban housing. The 1960 census revealed poor housing for non-white rural families and rural white families. Of the non-white rural dwellings, only 9.4% were considered sound and had a complete bath. Of white total rural occupied units, 18% lacked cold piped water. Plans were made for emphasis on improving low income family housing in 1962.

2. More than 1200 rural homes were built through Farmers Home Administration financing alone in the first half of the fiscal year 1962-63. This was double the 1961-62 figure. Extension workers have worked closely with F.H.A. supervisors in assisting with plan selection, etc. F.H.A. reported that over 50% of F.H.A. loans were made for houses to be built by Extension plans - greater than in any other state.

In Person County, Negro Extension agents reported 36 new Negro homes built and 24 houses remodeled during 1962. The F.H.A. made 24 of these new home loans. The Person County agents are very enthusiastic about their housing work.

3. Several methods have been used at the state level to promote better rural housing:

a. For promoting low-income family housing, which is mostly Negro, two conferences were held with the Negro state administration staff to point out the problem and to recommend a plan of action. Following these conferences, training conferences of one day each

were conducted for the three Negro districts. These were conducted for the purpose of orienting the agents to the need for housing emphasis and to establish guide lines for county housing programs. Minimum housing standards were outlined for these Negro agents.

b. Plans were made for three Negro result demonstration houses to cost under $5,000. These have not been effected, although three Negro housing demonstrations are under construction. The cost of these varies from $6,800 for a 1200 sq. ft. solite block house to $10,500 for a 1350 sq. ft. brick-veneer-over-frame house.

c. A large size basic floor plan along with minimum standards in housing and furnishings were provided for Negro agents' use in training meetings. Chronological steps to follow in the building process, and rural lending agencies were listed for agents' use.

d. Planning and supervising four result demonstrations with white agents were provided. Pitt County had "open house" at a result demonstration house in April 1962. Excellent (and, very important, up-to-date) slides were made of this house and a demonstration house in Wilkes County for use by agents and specialists in housing work.

e. Agents' requests for individual assistance with problem remodeling and planning were honored throughout the year. This is expensive in terms of specialist's time, yet very important to a good housing program.

f. A district training school on housing was conducted for one day in the Southeastern District.

g. Housing meetings were conducted in various counties for special interest groups.

3. Radio, T.V., and newspapers were used to promote housing improvements.

The Extension housing program was apparently very effective in 1962. Perhaps the increase in home improvements as indicated by the increase in F.H.A. loans reflects housing work done in prior years in changing attitudes toward credit and better living standards in the home. Extension educational emphasis on improving housing for low-income families combined with a loan program such as was made available through F.H.A. in 1962 should result in rapid improvement in low-income housing. The momentum as illustrated by the Person County report will continue in proportion to the availability of money. It is natural that an educational program in housing accompany the loans.

4. Woodley C. Warrick is the Agricultural Engineering Extension specialist in rural housing work.

B. Several meetings were conducted that were not included in the plan of work for 1962.

1. A program was conducted for all the Carolina Power & Light Co. home economics personnel to acquaint them with the Extension housing program and aids available to them from this office.

2. A technical training program in house construction was conducted for the F.H.A. supervisors in eastern North Carolina.

3. A talk by an Agricultural Engineering Extension specialist was given to a national conference of Extension House Furnishing

specialists in New York City in November 1962 on the subject of cooperative work between Agricultural Engineering and Home Economics in an Extension housing program.

III. Program Accomplishments - Water Systems

A. 1. The objectives of the program in water systems were several: (1) To promote the installation of water systems among the Negro population. (2) To prepare a bulletin on water systems.

2. The results of these concentrated efforts have been gratifying. Water systems and bathrooms are being installed at a record rate in all counties. One county that set a goal of 30 bathrooms each year for five years easily met their goal the first year.

2 and 3. The year 1962 showed very gratifying results in the program to promote installation of water systems. The program was begun at three one-day district housing schools in March, attended by the Negro agents. There they were presented the inspiration they needed to start a program in their own county.

This was followed by visits to 29 counties where the water systems specialist either had an office conference with the agents and/or conducted a farmer meeting. Ten sets of slides on water systems were made available to the agents, and many counties spent a month presenting programs to Home Demonstration Clubs, 4-H Clubs, and Community Development Clubs.

In addition, seven counties displayed a model water system at their county fair. Industry assisted in each of these fair displays and also helped in many of the water systems meetings. One county installed a water system as a method demonstration.

3. The leaflet, "Which Water Pump for You," was published in June 1962 and has been well used. In addition, work was continued on a bulletin water conditioning or water quality control. This is being

expanded into a Southern Regional publication and will be printed sometime in 1963. The water systems specialist is the senior author.

Two people from Extension Agricultural Engineering presented a half-day program on simple water systems to a group of agricultural personnel from Kenya.

4. Ronald E. Sneed is responsible for leadership in the area of water systems.

III. Program Accomplishments - Irrigation

A. 1. The objectives of the program in irrigation were threefold:

(1) To acquaint more tobacco farmers with the irrigation of tobacco.

(2) To work more closely with irrigation dealers and distributors.

(3) To start applied type research projects on peanuts and cotton.

2. The applied research projects in peanuts and cotton met with some success. A peanut cooperator was found in Edgecombe County, and a cotton cooperator in Montgomery County. The peanut project was not a success because there was no need for irrigation of peanuts in that section of the state. The cotton work in Montgomery County was fairly successful in that we found that two irrigations that were not applied cost the producer about 250 pounds of lint cotton.

2 and 3. Extension's relations with irrigation industry are very good. This is evidenced by the fact that the irrigation specialist was asked to appear on the program of each of the major coupler distributors' annual dealer meetings. A meeting held at the college and arranged by the irrigation specialist to discuss problems of irrigation was attended by most of the distributors represented in the state.

Each year a questionnaire is sent out by the irrigation specialist to get total irrigation sales in the state. In 1962 sales totaled approximately $1,500,000, adding 5700 acres to the irrigated acreage of the state. This brings the total irrigated acreage in North Carolina to approximately 73,400 acres.

3. Farmer meetings, radio programs, and a bulletin on "Costs and Returns of Irrigating Flue-Cured Tobacco" were methods used to reach more tobacco farmers. Mimeographed leaflets on "Cotton Irrigation"

and "Peanut Irrigation" were prepared and distributed to county agents and other interested persons to increase their knowledge and help them sell irrigation of these two crops.

A bulletin on "Lawn Irrigation" introduced in May 1962 proved very popular, as 5,000 copies were distributed in less than a week, and the bulletin was awarded a Blue Ribbon by the American Society of Agricultural Engineers' Committee on Extension Activities.

In addition to visiting most of the major distributors in the state, the irrigation specialist also called on many dealers to offer assistance as needed.

4. Ronald E. Sneed is responsible for leadership in irrigation.

B. In addition to the planned work, the irrigation specialist assisted one blueberry grower in the design of an underground irrigation system for 17 acres of blueberries, and a strawberry grower in the design of an irrigation system for frost protection.

The Forestry Department, Agronomy Department, and Agricultural Experiment Stations were assisted in the design of irrigation equipment for their use.

III. Program Accomplishments - Crop Processing

A. a. Bulk Tobacco Curing

a. 1. Bulk tobacco curing is a major development in reducing the requirement for harvesting labor by approximately 50%, and it provides for better control over the curing process. An education effort was conducted to familiarize growers with the process, instruct the adopters on proper operation, and work with equipment manufacturers on improving or developing equipment. No specific effort was made to promote the adoption of the practice.

a. 2. Bulk curing barns increased in North Carolina from approximately 15 in 1961 to approximately 150 in 1962. Growers were generally successful in their operation. The bulk cured tobacco was marketed and brought equal or better prices as compared to conventional cured tobacco. Manufacturers improved their equipment during the year, and farmer and county agent requests for information and assistance increased.

a. 3. Prior to the curing season several meetings were conducted in counties to familiarize growers with the process and its operation. A set of minimum equipment specifications were compiled and given to the equipment manufacturers. These specifications were upgraded in many areas from observations in the field to improve the cure. One of the primary improvements was changing the minimum air recommendation from 30 CFM per square foot to 40 CFM per square foot. This was suggested by the Extension Agricultural Engineer based on field observations, approved by research personnel, and adopted by most manufacturers. The Extension Agricultural Engineer appeared in Chicago on the program of the Crop

Drying Council (equipment manufacturers) to present the process and explain the drying equipment needed to do the job. Many conferences with manufacturers were held, and assistance was given in conducting a number of dealer meetings on curing operations.

At the end of the curing season, educational efforts and farmer acceptance of the bulk curing method were appraised by a survey in which Extension personnel collected "questionnaire type" reports from more than 95% of the farmers using bulk curers. Survey results revealed the success of the program in that: (1) the equipment was equal to the task; (2) the large majority of the farmers reported to have received adequate operating instructions; (3) the large majority were well pleased with their curers; and (4) in those cases where farmers cured tobacco in conventional barns as well as in bulk barns, the majority received higher average prices for bulk cured tobacco than for tobacco cured conventionally.

4. John W. Glover and Rupert W. Watkins.

B. a. To point out the value of adequate operating instructions, the following example is cited: In early August the Extension agricultural agent in Vance County requested help with a "problem barn" which one of his farmers, Mr. D. Gray Faulkner, had been using. Upon visiting the farm, we found that Mr. Faulkner was bitterly disappointed in his bulk curer and had stopped using it. Discussion revealed that he had been following faulty operational instructions and had partially ruined three cures of tobacco. After an explanation of the curing process and the operation of the bulk curer, Mr. Faulkner requested the Extension specialist to supervise one cure in the bulk

barn for him. Mr. Faulkner was well pleased with the demonstration cure, and he operated the curer for the remainder of the season with gratifying results.

A. b. Peanuts

b. 1. The educational program stressed quality peanut curing. Mechanical peanut curing is being rapidly adopted, but faulty operation has tended to reduce quality. The present price system does not reflect the qualities (flavor and shelling damage) that can be altered by curing techniques.

b. 2. Major accomplishments were: The peanut manufacturing industry stopped fighting the system and joined in an educational effort to promote proper use of the system. Recommendations for curing were up-graded to enhance better quality, and North Carolina and Virginia published joint recommendations.

b. 3. The recommendations were changed to include a larger air velocity or volume to enable better drying while protecting quality. The manufacturers and dealers were first informed of this change so that equipment could be offered to meet the recommendations. Most manufacturers responded favorably, and some even designed new fans. As a result, in general the equipment offered for sale was up-graded.

A joint publication was published by North Carolina and Virginia and distributed to operators of peanut curers (both farm and commercial) through the county agents and the peanut buyers.

The peanut advisory committee recommended that industry

buyers be better trained since they are in close contact with the farmers during the curing and sales season, and many operate custom commercial curers. A series of eight one-day schools were conducted jointly by the Extension Agricultural Engineers from North Carolina and Virginia. The peanut manufacturing industry furnished the facilities and brought their buyers and some leading farm operators to these training meetings. One meeting was devoted to in-depth training for county agents only.

Many county meetings were conducted for farm operators of curing equipment.

b. 4. John W. Glover

C. b. On Peanut All-Practice Committee.

A. c. Grain

c. 1. Additional grain drying and storage facilities are needed on North Carolina farms. Much of the corn must be shipped out of eastern North Carolina at harvest due to inadequate storage.

c. 2 and 3. Training conferences for county agents, and grain schools were conducted during the year. Some farmers were assisted with using their bulk curing tobacco barns for grain drying.

c. 4. John W. Glover and Rupert W. Watkins

C. c. The Extension Agricultural Engineer is a member of the North Carolina Grain Production and Marketing Committee. This committee consists of representatives from all agencies (ASCS, North Carolina Department of Agriculture, etc.) and the grain school activities are a result of this committee's activities.

A. d. Hay Drying

Educational efforts have been made in mechanical hay drying. Conferences have been held with Extension agricultural agents and farmers. In these conferences the advantages of mechanical drying in high quality hay production have been emphasized. Two on-the-farm demonstrations are planned for 1963 in which technical assistance will be afforded the farmers by Extension Agricultural Engineering specialists. The most modern labor-saving equipment and recommended operational procedures will be demonstrated.

d. 4. John W. Glover and Rupert W. Watkins

C. Two two-day county and home agent training schools were conducted to train the agents in areas related to the 4-H Electric Project.

The specialist helped to establish all-practice demonstrations on burley tobacco and peanuts.

III. Program Accomplishments - Rural Civil Defense

A. 1. Long range, overall objective is to conduct educational program and motivate people to take action to assure maximum possible survival in case of nuclear attack.

1962 Program:

a. To inform Extension staff of their responsibilities.

b. To screen information and supply staff with that which was usable from a practical standpoint.

c. To develop slide set for use of county agricultural and home economics agents.

d. To start general awareness program by promoting the use of and training of some local leaders.

2 and 3. a. Extension's assigned responsibilities and a statement of the situation and proposed program were discussed with entire staff, state and county, white and Negro, at nine Extension District Conferences in December 1961 and January 1962.

b. Publications and general information were screened; and when it was passed on to agents, it was accompanied by letters suggesting how it might best be used.

c. A slide set, 50 slides with script, was prepared and was used by 34 counties. In each county they were shown to the Home Demonstration Clubs, which vary in number from 16 to 24 per county. These slides have been viewed by approximately 700 audiences.

d. The specialist met with the Home Demonstration Council of the state and presented Rural Civil Defense program and set up

plans for each club to have at least one civil defense program during 1963. This could involve approximately 2,000 clubs. A number of counties were assisted in training leaders by conducting a sample meeting attended by leaders. The specialist met with county civil defense directors at their meeting and presented the Rural Civil Defense program.

4. H. M. Ellis is Extension Program Leader of Rural Civil Defense.

Summary: Accomplishments during 1962 at least fulfilled, and possibly exceeded plans.

III. Program Accomplishments - Proposed 4-H Club Camp

B. In late May 1962 the project leader of Extension Agricultural Engineering was appointed by the Director to chair the construction committee for a proposed $400,000 4-H Club camp. This assignment was in addition to regular duties. This assignment required 22% of the specialist's time during 1962, and - needless to say - time that could not have been better spent.

III. Program Accomplishments - Safety

A. 1. To give Extension endorsement and active assistance in conducting educational programs in the broad area of safe living.

2. The project leader of Extension Agricultural Engineering chaired the Executive Committee of the North Carolina Rural Safety Council. This coordinating council, among other accomplishments, co-sponsored with the North Carolina Agricultural Extension Service a safety program that resulted in approximately 1,500 radio broadcasts between medical doctors and county agricultural agents on safety. Many of these broadcasts were in the area of safety in connection with the use and storage of agricultural and household poisons.

The safety program required 16.7% of the specialist's time. Due to accurate results being unobtainable, evaluation must be based on involvement of people, and that exceeded all expectations.

4. H. M. Ellis was responsible for leadership in the safety program.