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CHANGING TIMES

ANNUAL REPORT OF THE AGRICULTURAL EXTENSION SERVICE OF NORTH CAROLINA STATE COLLEGE FOR 1947

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The twenty years which elapsed between 1927 and 1947 was truly a period of CHANGING TIMES. Prices boomed, prices fell, war was declared and peace was restored.

Each of these changes, along with many others, had a direct bearing upon the progress of North Carolina's agriculture. But despite all of this, the farmers of this great southern state continued to advance their livelihood. They worked long hours; they gathered and sold their products, many times for less than production costs; they lengthened the life of farm machinery because of scarcities; they cut production of certain cash crops when advised to, and raised more needed crops when called upon.

To say the farmers advanced, would be insufficient. It was not the farmer alone, but a combination of the farm family and their agricultural leaders. The housewife, the 4-H Club boy and girl, the county farm and home agents, each played an important role in this progressive movement.

The Extension Service is proud to feel that it had a part in helping promote farming, the largest and most essential business in this State. And in this, the 1947 Extension Annual Report, an attempt has been made to better acquaint the public with the steps of progress that occurred during the period between 1927 and 1947.

Most of the story depicting the changes is best found in the pic-

tures. Because of the innumerable improvements made in all fields of agriculture, it would be impossible to discuss them without preparing a voluminous report. All of the pictures used may not be typical of the average farm, but they do tell the story that has occurred on hundreds of North Carolina farms.

HOME DEMONSTRATION

North Carolina's 57,831 home demonstration club women, organized in more than 2,000 active clubs, continued their untiring efforts for better family living.

Realizing the home is one of the greatest of all institutions for building a better world, Extension increased the service given toward helping "Today's Home Build Tomorrow's World."

Homemakers were given aid by 162 home demonstration agents and their assistants. In addition, there were approximately 20,000 project leaders and more than 10,000 neighborhood leaders who rendered invaluable services toward better homemaking. Volunteer project leaders assisted their neighbors with numerous homemaking problems by conducting 4,369 meetings with an attendance of 79,386 adults.

Extension, alert to the needs for better health in North Carolina, was co-sponsor of an intensified program with the Public Health Department to bring about healthier living among rural people. This was a long time program aimed at solving individual, community and county health problems, and was carried to more than 245,000 people through home demonstration, 4-H Club and community meetings. The meetings were centered around such projects as: Foods in Relation to Health, Sanitation in Relation to Health, and Housing in Relation to Health.

More than 1,100 club women were assisted in marketing their home grown produce through county curb markets. These women sold \$543,023

worth of products grown on their farms in addition to the large supplies of food they canned, froze and otherwise stored for their own family needs. In addition to the curb market sales, individuals were assisted in marketing \$1,429,418 worth of products outside the curb market. These products included vegetables, poultry, butter meats, fruits, cakes, flowers and handicraft, all made or produced on the farm.

Food preservation, always an important duty of the homemaker, continued to receive special attention as homemakers canned 5,055,570 quarts of fruits, 7,253,532 quarts of vegetables and 1,254,608 quarts of meats and fish. They brined 204,700 gallons of these products and cured, stored or froze 20,383,324 pounds more.

Extension assisted 7,759 families in improving the food supply for home use by increasing the production of strawberries, 14,615 in the production of tomatoes, and 15,700 in the production of other Vitamin C foods. Homemakers bought 5,542 new pressure canners during the year making a total of 28,340 in use in rural homes. To keep these canners in good condition for safe and proper use, 2,943 of them were checked and repaired by Extension specialists.

The increasing number of freezer lockers in operation through the state provided a good opportunity for the more than 7,000 home demonstration club women renting lockers to preserve their food in a safe and economical manner. Educational meetings on preparation and storage of food in freezer lockers were held throughout the state by the home agents and Extension specialists in an effort to better acquaint the homemakers with this modern method of food preservation.

Using their talents in addition to providing well balanced meals, keeping their families clothed and striving for a happy way of life, homemakers made more than 24,000 handicraft articles for home use and 7,125 for sale. These articles were valued at \$44,945. Special articles

which were made and sold provided a supplement income of \$8,819.

In providing a variety of fashion clothing for themselves and their families, more than 23,962 homemakers were given assistance in making clothing. A total of 304,964 garments were repaired, 53,111 restyled and 36,536 remade. These clothes making projects saved approximately \$223,000 in family expenses. In addition to their own sewing needs, 1,673 women did sewing for their neighbors and friends and received an income of \$141,503 for their services. To broaden the idea of making clothing in the home, Extension specialists aided homemakers in repairing and adjusting 7,112 machines, 14,502 in learning the use of additional attachments, 2,228 in the organization of sewing centers at home, 3,549 in restyling hats, and 7,517 in making new accessories.

North Carolina homemakers did not forget their duties as patriotic citizens. Even though the war had ended, they realized the conditions left abroad and the prevailing conditions in many of their own counties and communities. More than 12,000 club women joined the Red Cross and made 6,358 garments, knitted 1,094 others. They contributed 9,119 pounds of used kitchen fat to the fat salvage campaign, 80,727 pounds of clothing to the clothing collection and 85,551 pounds of paper to the waste paper drive.

In an effort to further improve living conditions in rural homes, Extension agents assisted 4,136 families in the construction of new dwellings. A total of 5,676 were aided in remodeling their dwellings. Approximately 3,000 families installed sewage systems; 3,317 installed water systems; and 1,768 installed modern heating systems. Other home improvement projects included rearranging or improving 9,351 kitchens and improving 10,010 other rooms.

While the houses were being remodeled and new ones built, homemakers were being assisted in repairing, remodeling or refinishing their furniture.

Many of them bought new and modern equipment, especially for the kitchen. More than 9,500 families received assistance in repairing furniture, and 10,499 families received aid in selecting house furnishings or equipment. More than 29,000 families screened or used other recommended methods of controlling flies and other insects. All of these improvements, along with home ground beautification, were carried out for better and happier rural living.

Homemakers play an important role on the farm, in the community, county, state and nation, and those in North Carolina can feel proud of their contributions.

CORN

The corn production program in North Carolina was emphasized through training farmers to observe the Ten Commandments of the 100 Bushel Corn Club. These rules, which follow, were carried directly to the farmer by county agents and Extension specialists either through personal farm visits or community and county meetings.

1. I will apply lime to my fields where needed.
2. I will prepare a good seedbed for my corn.
3. I will use a good variety or a hybrid which is adapted to my area.
4. I will use 200 to 500 pounds of 6-8-6 or 4-8-8 at planting unless the soil test shows that another analysis is better suited for my land.
5. I will side-place my fertilizer or mix the fertilizer with the soil and leave 1 to 2 inches of fertilizer-free soil between the seed and fertilizer. I will not be guilty of killing the seed I plant by placing the fertilizer too close to the seed.
6. I will put enough plants on each acre so that no one plant will be required to work too hard.
7. I will not pull suckers which are the lower branches of the plant.
8. I will not let my corn plants starve, freeze and die but will apply a side-dressing of nitrogen, and potash where needed, when the

corn is about 2½ feet high. 9. I will not seriously injure the corn roots by late or deep cultivation, and will not pull fodder or cut tops. 10. I will discuss better corn production methods with my neighbor and encourage him to become a member of the 100 Bushel Corn Club of North Carolina.

By accepting and practicing these rules, hundreds of farmers were able to double their previous year's corn yields. The state average yield increased to 30.5 bushels per acre, an increase of 3.5 bushels over the previous year's average.

More and better adapted hybrids were bred by the Experiment Station and these were distributed to meet the farmers demand. The discovery of new hybrids made it possible for a farmer in any locality of the state to obtain seed specially adapted to his area. This not only meant increased production to the individual farmer, but it also meant cheaper production and permitted many of the small farmers to use their land for other crop production.

ENTOMOLOGY

Realizing that insects were destroying thousands of dollars worth of food and feed each year, the Extension Service placed special emphasis on control of these pests.

Meetings and demonstrations were held in virtually every cotton producing county of the state to teach the farmers the methods and techniques of applying new organic insecticides for the control of boll weevils. For the \$160,000 spent by the farmers for insecticides used on cotton, it is estimated that this expenditure resulted in an over-all saving to the farmers of approximately \$1,200,000.

Aiding farmers in their control against livestock parasites, the Extension Service assisted in spraying barns and animals on 19,391 farms

for fly control. More than 152,000 farm animals were treated for external parasites at a saving of \$321,270 to the farmer.

Approximately 25,000 head of cattle were treated for warble or cattle grub at an estimated saving of \$50,000 to the farmers. Poultrymen were assisted in treating 1,260,922 chickens for lice and mites. This was done at an estimated saving of \$483,750.

Strawberry growers in the Wallace area estimate a saving of more than \$50,000 through the assistance they were given in controlling the heavy infestation of red spiders in their crop. Weather conditions were not favorable for using sulfur for controlling the pests; therefore, arrangements had to be made for using a new treatment. The Extension Service recommended and arranged for shipments of dinitro dust into the area for use in controlling the destructive spiders. Special assistance was given in improving dusting equipment for the most effective use. Growers who followed these practices were well satisfied with the results obtained.

North Carolina's beekeeping industry received the assistance of a full time Extension Beekeeper. Through this assistance, beekeepers produced more than \$2,000,000 worth of honey and more than \$500,000 worth of beeswax. Production of honey during the year was estimated at 36 pounds per colony. This is the highest production ever recorded in North Carolina, and was largely due to better feeding and management practices being followed. If, as frequently stated, it is true that bees are worth ten times as much to agriculture in general as they are in the production of honey and beeswax, the beekeeping industry of the state is worth \$25,000,000 in the production of agricultural crops.

RATS

The Extension Service, in cooperation with the United States Department of Agriculture and state and county health departments, greatly

intensified their efforts in rat control.

This work was carried out as a part of the nation-wide food and feed conservation program. However, plans called for long time efforts to rid the farms of these destructive pests.

Actual county participation in the intensified anti-rat campaigns began in early fall following weeks of planning and preparation. By the end of the year, more than 38,000 pounds of prepared bait were mixed and distributed to farmers throughout the state. Before this program got under way more than 30,000 pounds of bait had already been distributed in small quantities to farmers.

Farmers who participated in the campaigns declare the cost of the bait to be insignificant in comparison to value of results obtained through its use. Average counts of dead rats on many farms exceeded 50 just two or three days after using the poison bait.

As a part of the long time program on rat control, farmers were repeatedly advised to follow recommended measures in preventing future infestations. Destroying breeding and hiding places, destroying sources of food and water, following a general farm clean up program and rat proofing buildings, where practical, were a few of the many recommendations made for minimizing rat infestation.

In Cleveland County, for example, the county agricultural council prepared and distributed more than 8,000 pounds of bait among their farmers and townspeople. This was the largest county campaign held in the state and marked the greatest effort ever towards control of rats in that county. So effective was this campaign that the farmers want to continue them at regular intervals.

BEEF CATTLE

High prices for tobacco, peanuts and other cash crops during the war gave the beef cattle industry in North Carolina a temporary set back.

However, uncertainty about the price outlook for these crops, coupled with a growing consciousness of the value of beef cattle and other livestock for supplementing farm income, made 1947 an outstanding year in the development of the cattle industry.

Four-H beef calf club work recorded its peak year in 1947 with 991 club members exhibiting and selling 220 tons of beef on the hoof. These baby beeves sold for nearly \$250,000, making a profit for their owners of over \$100,000. Many of these young agricultural leaders will soon be going to college on their profits, others will have outstanding breeding herds as a result of the experience and inspiration gained in their club activities.

A banner year was realized by the adult farmers also. Breeders of purebred cattle sold 364 head in auction sales for \$121,259, or an average of \$333.13 per head. Many more were sold at private treaty with over 2,000 head going to new homes to be used for improving North Carolina's beef herds.

The Extension Service placed special emphasis on economical production of meat animals and better feeding and care of workstock. Increased feed production, especially good pastures, was given first consideration along with better sires, good management and parasite and disease control. To encourage breeding of better herds, the Extension Service aided farmers in procuring 540 registered bulls and 1,546 females.

North Carolina's sheep industry also gained ground as far as quality and income are concerned. The greatest gross income per ewe from farm flock records in the last twelve years was recorded in 1947. An average of all flocks reporting showed a gross income of \$22.90 per ewe. Boys and girls enrolled in 4-H clubs, especially those in the mountain counties, are becoming more and more interested in sheep. Four-H Club boys and girls from Alleghany, Ashe and Watauga counties had their first coopera-

tive show and sale. About fifty members participated in this show and sold their lambs at auction for an average of nearly \$25 per hundred pounds.

Farmers are becoming more conscious of the value of having their workstock treated for internal parasites and other ailments. Horse and mule clinics were conducted in 65 counties where several thousand work animals were treated.

In cooperation with farm cooperatives, 1,469 farmers sold 118,831 pounds of wool cooperatively. Such a practice of marketing, involving the aid of county agents, animal husbandry and marketing specialists, gave the farmers more than \$6,000 more for their wool than local marketing practices would have given them.

As more and better pastures are seeded throughout the state, beef cattle numbers increase. High grain prices are leading more farmers to produce beef acceptable to the consumer with a minimum of concentrates. The development of improved pastures and the production of higher grade roughages are contributing to this end.

SOIL CONSERVATION

Soil conservation, as much a determinant of increased crop yields as good seed and fertilizer, received special attention from the Extension Service.

Farmers in every county of the state were advised of recommended practices in soil erosion control. Tours, field demonstrations, meetings, and individual farm visits helped to carry the important advice directly to the farmers.

The thousands of acres of improved permanent and temporary pastures seeded during the year not only supplied both summer and winter grazing for the increasing livestock numbers, but also restored acres of unused land and reduced soil losses.

Miles upon miles of terraces were constructed, acres of sod field waterways were seeded and a well planned crop rotation system was carried out on hundreds of farms. In the tobacco belts, farmers were taught the string row method of laying off rows to prevent soil losses. Mountain and piedmont farmers were assisted in planning their fields for contour planting.

The entire Extension Agronomy program was centered around increased production at lower costs, balancing the farming system, building better soils and controlling erosion.

More than 2,500 4-H Club members, F.F.A. members and other high school students representing 41 counties were given special assistance in preparation and competition in the Soil Conservation Speaking Contest. The contest, sponsored by the North Carolina Bankers Association in cooperation with the Extension Service and other agricultural agencies, offered \$3,627 in prize money to the contestants.

This contest was held as a part of the educational program in training both young and adult farmers how to conserve their soil.

Direct assistance was given farmers in analyzing their soils for more efficient fertilization. Special studies were made in several counties in identification, classification, value, use and management of the more common soils or soil groups for better selection and use of suitable soils for particular crops.

A special project for better land use and increased crop production was conducted in the 15 western counties comprising the Tennessee Valley area. The soils were divided into 5 land classes on the basis of soil characteristics, slope, erosion, degree of stoniness and other properties. Slope and erosion classes were also compiled. All of these facts paved the way for more efficient land use in that area.

POULTRY

A combination of better bred chickens, the use of better feed and housing and good management, meant thousands of extra dollars in profit to poultrymen.

To help train future poultrymen to continue the outstanding work now being carried out by hundreds of North Carolina farmers, the Extension Service placed 32,000 certified pullet chicks among 4-H Club members. That the brooding and raising program followed by these club members was sound and practical is evidenced by the fact that 84 per cent of the chicks started were raised through the first six months.

The number of 4-H Club projects involving the growing of better pullets increased from 210 in 21 counties in 1946 to 320 in 32 counties.

Following recommendations of Extension poultrymen, 1,187 farmers who kept records on their demonstration laying flocks, submitted reports showing an average egg production of 187 eggs per hen for the year. This is 60 eggs more per hen than was received by the owners of demonstration flocks in 1927 when this project was started.

In the production of poultry meat, it formerly required ten weeks to produce a two-pound broiler and at least four pounds, if not more, of feed to produce each pound of poultry meat. Thousands of three-pound broilers were produced in eleven weeks during 1947, and many farmers report that they secured 28 pounds of poultry meat from 100 pounds of feed used.

North Carolina's \$15,000,000 broiler industry received special attention from Extension Poultrymen. Broiler growers were constantly advised on brooding, feeding, processing and marketing practices. Much of this work was done through farm to farm visits, while county poultry schools and meetings held an important place in putting the Extension poultry program across.

More turkeys were killed, dressed, frozen, and sold by farmers on local markets or placed in storage in 1947 than ever before. Turkey production became more localized and commercialized with fewer people growing them. However, those people growing turkeys produced them in larger numbers. Estimates show that 379,000 turkeys were raised to maturity during 1947.

Instead of holding their turkeys for a favorable market at a time when large amounts of feed had to be consumed, growers were advised to kill their turkeys when they were ready for market and sell or place them in cold storage. This not only saved hundreds of dollars in extra feed costs, but also afforded the grower a chance to market his turkeys into the channels of consumption as the market demanded.

FOUR-H

Four-H Club work reached a new high in North Carolina during 1947 in its program of training farm youth for better living through economic, physical, social, and spiritual development.

In the economic phase, 105,585 boys and girls completed a total of 141,046 projects in agriculture and homemaking. North Carolina club members tended 17,757 acres of food and feed crops and 6,276 acres of garden. They managed 543,011 chickens in their poultry flocks and conducted livestock projects involving 21,138 animals. Club girls planned and served more than a half million meals, conserved 980,000 quarts of food, made 84,000 garments and conducted 7,497 room improvement projects.

Physical development was stressed through the teaching of proper food, health, clothing, and recreational habits. Health in 4-H Club work is recognized as a definite part of every member's 4-H project. A health improvement program was promoted for all members, stressing the importance of better health, food, clothing, and recreational habits, medical examination, and the necessary follow-up work culminating with the selec-

tion and crowning of a state king and queen of health.

In developing the social phase of the 4-H program, club members were taught the proper ideals and attitudes for wholesome relationships in the homes, neighborhoods, and communities, through family living, club meetings, achievement days and 4-H camps. Staffed and operated by the Extension Service, 4-H camps made possible a week of camp life for 10,307 boys and girls, featuring a program of recreation, handicraft, leadership training, 4-H organization, and spiritual growth and development. The social program was broadened for the 113,937 members and leaders attending 4-H Achievement Days, the 1,285 members attending 4-H Club Week at State College, the 27 delegates attending National Club Congress, and the 6 delegates who went to National Club Camp.

The major emphasis for the spiritual growth and development of 4-H members was the daily vesper program at the 4-H camp and the state-wide observance of 4-H Church Sunday. A total of 944 Church Sunday programs were presented in the state with 16,043 members participating. No other phase of the 4-H program meant more to the boys and girls or to the 4-H Club than the Church Sunday programs.

COTTON

Producing cotton under the seven step program recommended by the Extension Service, meant increased yields and lower production cost per unit.

The seven step program consisted of the following recommendations:

1. Fit cotton into balanced farming.
2. Take care of the soil.
3. Use the best variety.
4. Make labor count.
5. Control insects and diseases.
6. Pick and gin for high grade.
7. Sell for grade and staple value.

Following these recommendations, 319 farmers who competed in the Five-Acre Cotton Contest, produced an average of 723 pounds of lint per

acre. This is more than double the state average yield of 340 pounds. The average yield for the eleven top producers in the contest was 1,172 pounds of lint per acre.

H. E. Bonds of Concord, Route 1, Cabarrus County, was declared state winner in the Five-Acre Contest. Mr. Bonds produced 6,995 pounds of lint on his five-acre plot, an average of 1,399 pounds per acre. He planted his cotton on April 19, using 400 pounds of 4-10-6 fertilizer, 400 pounds of 20 per cent phosphate, and 200 pounds of muriate potash.

Greater emphasis was placed on 4-H cotton club work in 1947 than previously. There were approximately 1,000 club projects carried out on cotton in the state. Bobby Jackson of Sampson County made the highest yield by producing 1,230 pounds of lint per acre. The average yield per acre of the 30 competing contestants was 824 pounds.

In addition to special meetings with cotton growers, ginner and seed crushers in an attempt to develop a more effective cotton educational program, certain problems on individual farms received special attention.

Assistance was given in insulating tobacco barns with fireproof cotton as insulating material. This is a new attempt to aid the tobacco farmers in reducing fuel costs and increasing efficiency. In one of the demonstrations, it is estimated that the saving of fuel amounted to at least 25 per cent.

When adverse weather conditions continued during the cotton harvesting season, much of the seed to be used for planting the next year were considerably damaged. Realizing that this would cause a serious shortage of planting seed for the next cotton crop, the Extension Service launched a campaign to procure sufficient seed from other states. Before the end of the year, more than 250,000 bushels of the 400,000 bushel shortage had been bought from out of state sources. This was done with

the cooperation of county agents, cotton seed crushers, ginner, and merchants.

Farmers were again given the opportunity to market their cotton crop on grade by taking advantage of the free classing service offered by the Extension Service through the Smith-Doxey Classing Program. Despite the price of cotton being in excess of the support program, approximately 3,000 more bales of cotton were classed under the service than for the previous year.

NEGRO

Progress in Negro Extension work moved along at a rapid pace during the year and both farmers and homemakers turned to more food production and conservation.

Ninety-eight farm and home agents carried the Extension program to 43,561 different farm families in 48 counties. This is five more counties than the program covered during the previous year.

Strong emphasis was placed on a live-at-home system of farming, and farmers were encouraged to produce their own food and grow the necessary feed requirements for their livestock. Much of this was accomplished through the use of better seed, proper fertilization and improved cultivation practices.

In more than three-fourths of the counties where Negro Extension work was conducted, large numbers of farmers reported corn yields of 75 bushels and over. The highest yield recorded was 129 bushels. Yield increases were also made in cotton, tobacco, small grains and other crops.

The absence of a milk cow on many farms prompted a drive by the Extension Service to get at least one cow on every farm. One county agent greatly increased the number of cows in his county by encouraging his farmers to "Buy a Cow Before a Car." This slogan was used in his

personal farm visits, community and county meetings and anywhere that milk production could be encouraged.

Other county agents were preaching the value of milk in the daily diet, and soon this was to be realized by many farm families. The result of this drive could be told by what happened in any one of the counties. For example, Cleveland County farmers pooled their money and bought 36 bred heifers in one lot. Each of these heifers were located and approved for purchase by the state Extension dairy specialist. These heifers are now being milked and are furnishing a vital part in the daily diets of their owners.

As the interest in dairy production increased among the farmers, they were encouraged to provide better pastures for their dairy animals, beef cattle, and hogs. This meant lower feed costs and increased production.

While the farmers were busy carrying out their newly learned and profitable practices, the housewives were thinking of more and better foods, more comfort in the home and a higher standard of living. Through the assistance of their county home agents, 17,519 home demonstration club women canned 5,628,685 quarts of vegetables, fruits and meats. They stored, brined and froze large quantities of other home grown produce.

In their efforts to make living conditions more comfortable, homemakers included new foods in the diet of their families, and prepared food in various and appetizing manners. They also spent much time in repairing their furniture, and making their homes more attractive. This was partly accomplished by removing 13,623 existing fire and accident hazards.

Negro farm women sold \$27,118 worth of farm produce on six home demonstration curb markets to their city neighbors. Farm and home agents

assisted individual farmers in selling \$300,569 worth of produce.

There were 33,337 boys and girls representing 23,098 homes, enrolled in 4-H Club work. They conducted 41,498 different club projects, ranging from tobacco to home industry, arts and crafts. Of the projects, home gardens were the most popular. A total of 7,958 club members completed garden projects consisting of 2,213 acres.

The 4-H Club girls turned to clothing as their most popular project. In this work, 4,925 girls made 16,163 new garments and remodeled 5,931 others.

Other projects completed by club members included growing out 141,528 chickens and caring for 1,063 dairy animals. They produced 714,639 pounds of pork, 25,000 pounds of beef, 200,655 gallons of milk, and 223,677 dozen eggs. They canned 255,311 quarts of fruits, vegetables and meats; dried 18,367 pounds of fruits and stored 863,696 pounds of other home grown products.

Per acre yields in some of the crop projects include 55.7 bushels of corn per acre, 1,240 pounds of peanuts, 139 bushels of Irish potatoes, and 167 bushels of sweet potatoes.

TOBACCO

Tobacco, the main source of livelihood for thousands of Tar Heel farmers, continued in the spotlight as furnishing more income than any other crop produced. Since about fifty per cent of the cash farm income in North Carolina is derived from tobacco, the Extension Service realizes the great importance of this crop to both farmers and industry.

The production of Turkish tobacco, a relatively new attempt by farmers in a few of the western counties, received special attention. This new tobacco was grown on 64 farms in Ashe, Alleghany, Caldwell, Watauga and Wilkes counties, and the success that these growers had with their

crop is proof that Turkish tobacco will have a very definite place in the farm plans of thousands of western North Carolina farms in the future.

In selecting the 74 demonstrations for the production of this crop, Extension workers considered such factors as soil type, size of farm, building facilities, interest of farmers, and the number of people available to carry out the project. Special assistance was given in preparing and seeding the plant beds, setting the plants, fertilization practices and cultivation. Method demonstrations in construction of drying racks, priming leaves, stringing, spacing and wilting were given on all farms growing the tobacco for the first time.

Seven model curing barns were constructed by Turkish growers during the year, bringing the total to ten. These barns were built as demonstrations. All metal siding and roof were used, with a concrete floor and curing platform and large curing racks mounted on casters.

The outlook for increased production of this type of tobacco is most promising. The three years of farm experimental work has proved conclusively that high quality aromatic tobacco can be grown and the yield and value per acre is such to command the attention of farmers.

There were 524 fewer tobacco barns burned in 1947 than in the previous year. The Extension Service feels that an extensive study conducted during 1946 on the causes of tobacco barn fires greatly aided the farmers in reducing fire losses this year. Much credit is also due the manufacturers for correcting weaknesses in their curing units. Growers were also more conscious of the fire hazards and were more careful.

Considerable attention was devoted to weed and disease control in the tobacco plant beds. More than 200 demonstrations were conducted in 29 counties to show the farmers how both time and money could be saved by following good plant bed management.

The number of plants per acre of any crop has a direct bearing upon the final yield. Thus, one of the recommendations the Extension Service made to the state's tobacco growers was to increase the number of plants per acre.

Instead of planting tobacco 30 to 36 inches apart in 5 or 6 foot rows, farmers were advised to increase their yields by spacing their plants 18 to 24 inches apart in 3½ to 4 foot rows.

By following these practices along with better fertilization and higher topping, Tar Heel farmers have increased their yields from 755 pounds in 1927 to 1,131 pounds in 1947.

Tobacco farmers were able to produce normal crops by planting disease resistant varieties on infected land. Before these varieties were found, many growers were experiencing complete or partial crop failures. With these improvements in tobacco growing, the total production in the crop for future years will continue to increase despite a reduction in acreage.

PASTURES

Ladino Clover Year is the name given to 1947 since it was during this year that the new, fast growing, heavy producing legume became a reality in every county of North Carolina.

After tests and experiments proved that Ladino could be successfully grown in North Carolina, the Extension Service launched an all-out drive to increase and improve the permanent and temporary pastures of the state.

To better acquaint the farmers with this wonder clover, 37 tours were arranged and 67 meetings conducted in which more than 3,000 farmers participated. More than 20,000 copies of a circular on Ladino clover were also printed and distributed. As a result of these efforts with

all agricultural agencies cooperating, more than 150,000 acres of permanent pasture and 200,000 acres of supplementary pasture were seeded in 1947

Wake County claims 4,000 acres of Ladino clover and orchard grass or tall fescue seeded during the fall. Stanly and Iredell counties estimate 2,000 acres each. The grazing period of permanent pastures has been lengthened about 2 months per year simply by adding Ladino clover to the mixture and using adequate amounts of fertilizer. Many fields of Ladino clover were grazed in March and were still being grazed in late October and November--the answer to the livestock man's dream.

Alfalfa, too, has become a very popular legume among Tar Heel farmers. Several counties estimated over 1,000 acres each seeded in the fall of 1947. Wake County estimated 2,000 acres seeded which pushes their acreage to more than 4,000. Iredell County estimated 5,000 acres and Catawba County has a field of alfalfa on almost every farm.

The fact that total milk production increased in 1947 in spite of a decrease in livestock numbers and a shortage of commercial feed seems to speak well for the feed program.

DAIRY

The continuous growth of North Carolina's dairy industry was accelerated in 1947 by better breeding and selection of cows, better pastures, renewed interest among farmers for supplementary farm income and the expansion of local markets.

Civilian demand for milk increased sharply over prewar years; therefore, milk production in the state was still short of the demand. Striving to correct this condition, Extension proved to thousands of farmers that dairy cows would fit into almost any system of farming. This was done through the cooperative efforts of Extension specialists and county farm

and home agents who continued to promote the production of milk for home use and for market.

One of the greatest accomplishments in dairy farming during the year was the establishment of artificial breeding associations. Extension cooperated in this program by helping to form 22 such associations in individual counties where more than 20,000 cows were signed up to be bred. In each of the counties where a cooperative association was formed, laboratories were set up at a cost of approximately \$500 each, and a county inseminator was hired and trained at State College. This entire program was promoted to encourage farmers to build up their herds through better breeding. In addition to the work on breeding associations, Extension assisted 936 farmers with procuring purebred bulls.

Increased milk production meant increased manufacturing, and the Extension Service continued to give assistance to the manufacturing plants. During the year, manufacturing establishments made 1,325,000 pounds of butter, 1,350,000 pounds of cheddar cheese, 12,950,000 gallons of ice cream, 35,000,000 pounds of evaporated milk, and 900,000 pounds of skim milk powder.

Increased attention was also given to dairy herd improvement associations. There were 17 associations in the state composed of 181 herds and 5,751 cows. This is an increase of 6 associations and 75 cows over last year.

Extension assisted with 16 breeder consignment sales where 665 females and 27 bulls were sold. In cooperation with the creamery fieldmen, Extension dairy specialists assisted in organizing 14 milk routes on which there were 236 milk producers. More than 1,000 sets of plans for dairy barns and buildings were sent to farmers through the cooperation of the agricultural engineering department, and assistance was given in many construction problems.

As a means for creating interest among rural youth and to train them for future dairy farmers, the Extension Service gave special attention to 4-H Club work. Much of this was done through the 21 Junior Dairy Cattle Shows where boys and girls exhibited 1,674 animals in competition for \$12,880 in prize money. The 1947 shows, both county and district, were the most successful since their beginning. Not only did these shows afford boys and girls an opportunity to show their prize-winning cattle, but they were taught how to feed and manage dairy herds for greater profits.

Extension gave considerable aid in helping club members locate purebred cattle. Non-profit sales were conducted by breeders for the benefit of these youth. At one of the sales, 39 purebred Jersey heifers were sold. Another one offered 20 Holstein heifers, and another offered 22 Guernseys.

There were 4,252 boys and 432 girls representing 94 counties, enrolled in 4-H calf clubs during the year. Of this number 3,097 boys and 342 girls completed their projects.

All in all, 1947 was a great year for the dairy industry in North Carolina, but there is still a need for further expansion. Large numbers of farmers are now turning to dairying and many of them are enjoying prosperity. With this increased interest and plentiful local markets, dairy farming will continue to expand and advance.

SWINE

Improving the quality of hogs in North Carolina received special emphasis through the sow testing program and the placement of purebreds with good performance records.

The Extension Service, through the county agents and swine specialists, assisted 1,011 farmers in 95 counties with the purchase of purebred

boars and 2,074 farmers in 93 counties with the purchase of females. There were 354 purebred hogs sold in 16 North Carolina purebred sales for \$36,257, an average of \$102.13 per head.

Results of the production testing program set up to test the performance of sows indicate that 120 litters were entered, and the average weight per litter at 56 days of age was 310 pounds. The heaviest litter weighed 493 pounds.

Adult farmers and 4-H Club members found a ready market for their hogs in the spring fat stock shows and sales. Four hundred and twenty-seven hogs, weighing 97,953 pounds, were sold in 8 fat stock shows for \$25,451.69, or an average of \$27.04 per hundred pounds. Six of the eight grand champions exhibited in the shows were won by 4-H Club members, one by an F.F.A. member and one by an adult farmer.

Pig "chains," sponsored by commercial companies, professional and civic clubs, in cooperation with the Extension Service, did much during the year to promote interest in 4-H pig club projects. These chains were sponsored in more than half of the counties in the state. There were 7,108 boys and girls enrolled in 4-H pig club projects and 4,661 completed projects consisting of 9,381 animals. The pig chain is endless in that the member receiving a pig must give his 4-H Club a gilt pig to be given to some other member.

County agents in 84 counties assisted 16,300 farmers in conducting thrifty pig demonstrations on pastures. One farmer in Wake County had a sow to farrow 8 pigs on March 22, and the sow and pigs were placed on one-third acre of Ladino clover on April 8. On May 22, the pigs weighed 428 pounds or an average of 53.5 pounds per head.

Swine growers throughout the state were assisted with marketing their hogs. With the establishing of new daily hog buying stations, a

good market is now found in all parts of the state. Modern packing plants, which continued to develop and expand during the year, also aids the farmer in getting a better market price for his product.

There are now 97 freezer locker plants in operation over the state making an investment of more than \$7,000,000. More than 55,000 locker boxes are in use serving nearly 250,000 people. The present zero degree capacity is in excess of 10,000,000 pounds and the curing capacity for any one season is more than 20,000,000 pounds.

The scope of the freezer locker plants and their importance to the farmers demanded increased attention from the Extension Service. Special conferences, meetings, and personal contacts helped solve many operational problems. Short courses in freezer locker management helped to acquaint both old and new operators with improved practices as well as suggestions on eliminating certain problem conditions in the plant.

LOOKING TO THE FUTURE

Blessed with thousands of outstanding rural people and a host of great leaders, there is all reason to believe that North Carolina will continue to remain as a leading agricultural state, and her farmers will continue to enjoy prosperity.

The Extension Service enjoys this belief in a bright future. The long time plan of agriculture presented to the farmers is being applied locally by the farmers themselves through county and community levels. With the strong acceptance of these facts and the local application of them, the future should hold much in store for Tar Heel farmers.

Wholehearted cooperation of all agricultural agencies, farm organizations, civic, business and religious groups, is of untold value to Extension. The inter department cooperation of all branches of Extension itself aids in long time planning on a more sound and practical basis.

When an emergency arises, Extension stands ready to furnish remedial suggestions to the farmers. This was evident when the flue-cured tobacco acreage was reduced, removing a large portion of the main source of livelihood for thousands of farmers. It was this that warranted sending two teams of Extension specialists in December to every county where flue-cured tobacco was grown. These men presented the facts to the farmers and offered them practical solutions for replacing the income which will be lost from reduced tobacco production.

Many of the new developments in farming are carried to the rural homes through the public relations division of Extension. This service is invaluable in reaching large numbers of farmers and presenting them with needed information. In addition to a daily broadcast over WPTF in Raleigh, a five-page radio script was prepared and sent to every radio station in the state six days a week. More than 1,000,000 bulletins, circulars, and folders were printed for distribution. Each of these was prepared to better acquaint the farmers with the facts about North Carolina agriculture.

In addition to the printed publications, the news service supplied 44 dailypapers and 151 weekly papers with 2,298 pages of copy. There were 291 feature articles prepared, 948 one-page stories, 306 short stories, 52 pages of timely farm questions and answers, 52 pages of homemakers hints, 104 pages of filler and 74 pages of special feature.

Through the wide reaching arms of its entire service, Extension carried and will continue to carry to the farmers the findings in agricultural research.

VIEWING THE RECORD

Total number of farms (1945 census).....	287,412
Number of farm or home visits.....	287,608 ✓
Different farms or homes visited.....	160,063 ✓
Office and telephone inquiries.....	638,242 ✓
Bulletins distributed.....	925,456 ✓
Attendance at 2,648 meetings for local leaders.....	54,459
Attendance at 1,319 meetings for 4-H leaders.....	20,603
Method demonstration meetings held (adult).....	25,639 ✓
Attendance at these meetings.....	430,127 ✓
Method demonstration meetings for youth.....	21,620 ✓
Attendance at these meetings.....	773,829 ✓
Meetings held at result demonstrations.....	2,951 ✓
Attendance at these meetings.....	75,562 ✓
Attendance at 561 achievement day programs.....	113,937 ✓
Meetings held by local leaders for adults.....	6,322 ✓
Attendance at these meetings.....	138,436 ✓
Meetings held by local leaders for 4-H members.....	2,644 ✓
Attendance at these meetings.....	61,722 ✓
Number of farms with definite changes in practices.....	238,477 ✓
Number of farm homes with definite changes in practices.....	149,795 ✓
Number of other homes showing definite changes.....	55,827 ✓
Number of farm homes with 4-H Club members enrolled.....	68,422 ✓
Number of other homes with 4-H members enrolled.....	13,738
Farm families influenced by some phase of Extension.....	288,043 ✓
Other families influenced by Extension.....	84,441 ✓
Voluntary local leaders in forwarding Extension program.....	53,863 ✓
Total membership of 2,029 4-H Clubs.....	105,585 ✓
Membership in 2,286 adult home demonstration clubs.....	57,831 ✓
Value of products sold by home demonstration club women.....	\$2,300,126 ✓

HORTICULTURE

Food production and home beautification received special attention by Extension Horticulturists.

Working directly with farm men and women, Extension continued to emphasize the importance of raising the home food supply. Through demonstrations and the aid of county farm and home agents, hundreds of farm families were advised to add new fruits and vegetables to their gardens. Not only did these contribute towards a better diet for the farm family, but, in many instances, they helped provide additional income through the sale of excess products.

Both commercial and non-commercial fruit and vegetable growers received assistance in planning, producing and marketing their produce. This work was carried on in cooperation with the Extension Plant Pathology and Marketing specialists.

The production of commercial apples in the state was 768,000 bushels, having a value of more than \$1,500,000. North Carolina's 1947 peach crop was estimated at 2,905,000 bushels. This crop was valued at \$4,212,250.

Special emphasis was also placed on increased production of small fruits. Extension Horticulturists assisted farm and home agents in 20 community meetings in the promotion of growing small fruits for home use and for sale to patrons of freezer locker plants. County home agents held 587 additional meetings on this subject with more than 18,000 people in attendance. As a result of these meetings, more than 128,000 strawberry plants, 920 raspberry plants, 1,531 dewberry plants and 671 grape vines were ordered. Other counties in the state, through the efforts of their farm and home agents, placed pool orders for thousands of other strawberry and dewberry plants for farm families.

The interest resulting in small fruit production may be found in Henderson and Transylvania counties where farmers and 4-H Club members planted more than 260 acres to strawberries. These were easily marketed through a recently constructed processing plant in that area, which in 1947, bought 102,000 pounds of strawberries returning to the growers a total of \$15,300.

North Carolina farmers were assisted in growing 64,000 acres of sweet potatoes which yielded a total production of 7,360,000 bushels. The crop was valued at \$15,824,000. Farmers, commercial concerns and 4-H Club members received assistance in all phases involving the production and marketing of their crop. Special emphasis was placed on the production of quality sweet potatoes through more than 400 result demonstrations planned by the county agents.

A total of 65 meetings, attended by 3,474 people, were held to acquaint farmers and homemakers with home beautification practices and homestead planning. Such topics as house plans, planning the house to fit the ground, coordinating house plans and yard plans, the location of all buildings, walks and drives, and other features entering into the plans, were discussed at these meetings. Other meetings centered around home improvements.

FORESTRY

Extension has always recognized the value of farm timber; and, therefore, has given valuable assistance to farmers in protecting their forests and managing them through systematic harvest.

Continued assistance was given farmers during the year in developing a systematic program of forest management, protection and harvest of timber crops and in the marketing of forest products with the long-time goal of making the farm woods a permanent producing part of a balanced

economic farming enterprise.

With the great demand for lumber to be used in buildings, a tremendous amount of farm timber had to be harvested. To insure meeting present and future timber needs, Extension aided in a program to cut farm timber carefully.

Extension foresters and county farm foresters gave assistance to 471 farmers in selecting, marketing and scaling or otherwise estimating 59,705,000 board feet of saw timber, 5,172,000 board feet of veneer logs, 9,328 cords of pulpwood and 1,320 cords of fuel wood. During the year, sales of marked and estimated timber reported by 337 farmers amounted to \$883,165 and covered the following timber volumes: sawtimber, 51,305,000 board feet; veneer timber, 6,286 board feet; piling, 100 pieces; pulpwood, 12,555 cords; fuel wood, 1,306 cords, and other minor products. In addition, county agents in 60 counties gave assistance to 1,319 farmers in the sale or purchase of forest products amounting to \$1,617,331.

To carry this assistance to the farmers, the Extension foresters traveled 32,141 miles, held 196 meetings which were attended by more than 8,000 farmers, and distributed more than 254,000 bulletings, leaflets, posters and folders through the mail and at meetings and demonstrations.

With approximately 4,000 acres of forest land and idle crop land which are not restocking in a reasonable time, Extension realized a strong need for artificial planting of forest trees. Cooperating with the Division of Forestry of the North Carolina Department of Conservation and Development, Extension aided farmers in producing and planting 997,950 seedlings. These seedlings consisted of pines, black locust, yellow poplar, red cedar, black walnut and balsam.

A 4-H Club boy in Wayne County, interested in helping supply the demand for Christmas trees, planted two acres of red cedar in 1938 and

has sold \$2,194 worth of trees. The demand for red cedar seedlings far exceeded the supply; however, 24,750 seedlings were furnished to 49 persons in 27 counties.

As a result of Extension's efforts in forest fire prevention, 98 county agents report 44,025 farmers who followed preventative measures. Special attention was also given by these farmers in protecting forests against disease and insects.

Controlling erosion through tree planting proved to be very popular to many farmers in the piedmont and mountain counties. Extension assisted 29 farmers in Cabarrus County with planting 84,000 trees, 7 farmers in Randolph County with planting 57,500 trees and 41 farmers in the TVA counties with planting 116,000 trees. These are just a few of the counties where farmers turned to these recommended practices.

Forestry management was stressed through 4-H Clubs and approximately 800 boys and girls completed projects involving 1,063 acres. Other club members were given special training in the production and management of farm forests.

AGRICULTURAL ENGINEERING

Scarcities and high prices had their effects upon additions and replacements of farm machinery and buildings, but with the help of Extension and other agricultural agencies, 1947 proved to be the boom postwar year for replacing worn out machinery and the construction and repair of needed buildings.

To assist farmers in the proper construction of their farm buildings, Extension agricultural engineers prepared and mailed more than 13,000 blue prints. These plans were classified as dairy barns, 1,052; dairy equipment, 72; poultry houses, 2080; poultry equipment, 68; swine houses, 543; swine equipment, 1,116; and miscellaneous, 8,933. Miscellaneous

plans consisted primarily of rural dwellings and household equipment, and special housing plans such as bathrooms and kitchens, corn cribs and granaries, sweet potato curing houses, sheep, horse, mule and hay barns.

The land drainage problem on many farms was solved through the use of dynamite. Because of Extension's efforts to convert hundreds of acres of unused land to land which could be seeded to pastures or planted to row crops, farmers throughout the state are now producing high yields on what was once believed to be waste land.

Agricultural engineering specialists assisted county agents in 48 counties in conducting 71 ditch blasting demonstrations. A total of 15,055 pounds of dynamite were used in these demonstrations to open 31,190 lineal feet of ditches. Approximately 5,000 farmers saw this work done in a quick, economical and satisfactory manner.

Typical of the demonstrations held was the one on a Caswell County farm where six acres of potentially good bottom land were reclaimed. With 520 pounds of nitro-glycerin dynamite and the labor of 7 men for 5½ hours, a main ditch 950 feet long, 4 feet deep, with a top width of 10 feet, together with two lateral ditches, totaling 450 feet in length, 3 feet deep with a top width of 7 feet, were opened.

In addition to land drainage, Extension was also concerned with better land use and assisted 20,850 farmers with land use problems, 3,234 in construction of terraces and 5,755 with contour farming. All of this work was conducted in cooperation with county agents.

To help bring about improved conditions in the home, Extension aided 3,526 farm families in 99 counties with installation of water systems, 2,797 families with installation of sewage systems, and 4,247 families with installation of sanitary privies.

More than 36,000 farm tractors are now in use in North Carolina; therefore, Extension gave special attention in teaching farmers the proper care and maintenance of these tractors for maximum economical use. To help train potential young leaders in teaching maintenance of tractors, two, three-day tractor maintenance schools were held in which 31 county agents and 105 4-H Club boys received instructions.

Interest in barn hay driers continued to be manifested by both large and small dairymen. In addition to drawing the plans and providing 72 farmers with needed information on mechanical hay driers, Extension greatly aided many others in planning and installing driers.

There are now more than 100 hay driers in operation throughout the state, which, if operated to capacity, can cure more than 6,000 tons of hay in one season.

FARM MANAGEMENT

The farmer, like any businessman, must follow sound managerial practices if he is to realize the maximum net return for his efforts.

One of the most important things a farmer should do is to use what he has on his farm to the best advantage. This was the aim of the Extension farm management program as it was carried into every county of the state.

Working closely with all phases of the Extension program, farm management specialists offered invaluable assistance to small and large farmers alike. Much of this was done through personal farm visits where a program of work was set up for individual farms. Such planning meant better utilization of land, labor and capital to the farmer and helped provide a year-round income.

The following types of farm management result demonstrations were conducted by the specialists and agents during the year: general farm