HIGHLIGHTS of AGRICULTURAL RESEARCH

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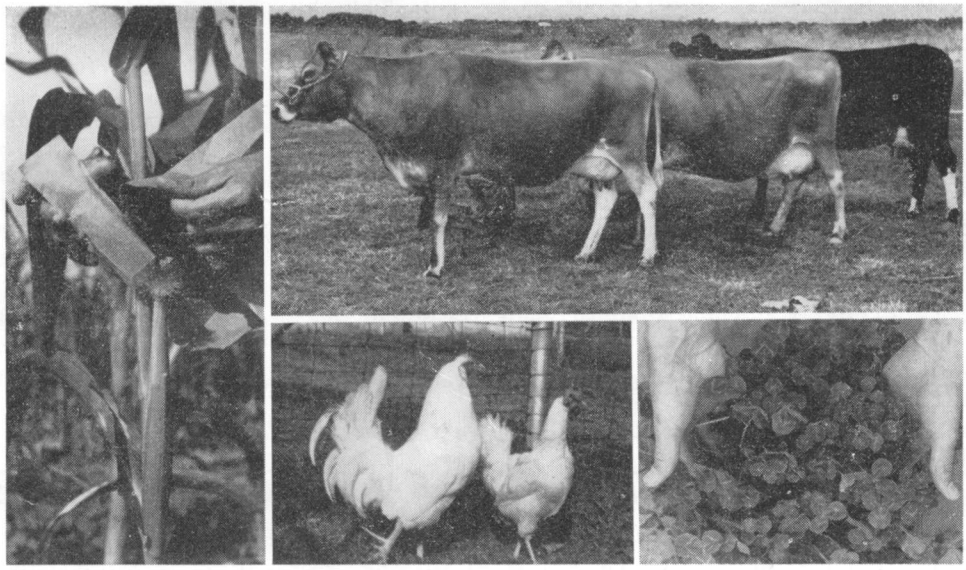
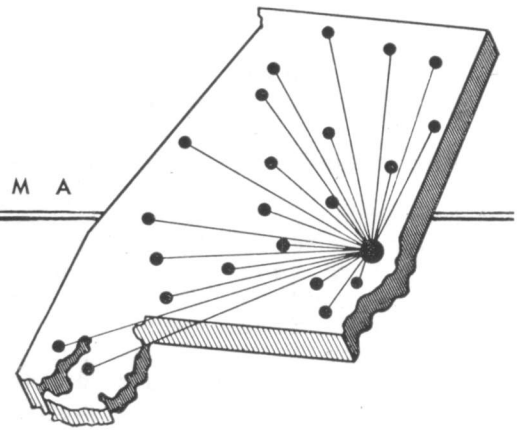


In this issue – What Plant and Animal Breeding Mean to the Farmer . . . Better Sired Replacements . . . New White Clover in the Making . . . Crop Testing Program . . . Vegetable Breeding . . . Auburn White Leghorn Strain . . . Trees and Their Seedlings

SERVING ALL of ALABAMA



AGRICULTURAL EXPERIMENT STATION SYSTEM
of the
ALABAMA POLYTECHNIC INSTITUTE

Plant and Animal Breeding -

WHAT IT MEANS TO THE FARMER

CHAS. F. SIMMONS
Associate Director

THE AVERAGE BUYER of improved seed or strains of animals little realizes the years of research required for their development!

Improvements in breeds or varieties are seldom accidental. They result from patient and planned efforts of breeders. In most instances it is necessary to produce and test thousands of individuals through dozens of generations before the desired characteristics can be fixed in an improved breed or variety.

Development of good hybrid corn varieties is an example. Over a great number of centuries, corn was developed by selection from a wild plant to one of economic importance. The mechanics by which improvement was made were not understood since the principles of genetics necessary for all controlled plant and animal breeding were not discovered until about 1860. Even then, importance of these discoveries were not appreciated and as a result were not widely publicized until about 1900.

Following rediscovery of the principles of genetics, plant breeders began inbreeding corn. Single-corn hybrids were then developed, which outyielded the best open-pollinated varieties. From a practical standpoint, however, these single-corn hybrids had little value because of the difficulty and cost of producing seed.

It wasn't until about 1916 that plant breeders discovered how to maintain the vigor and yielding ability that came from crossing inbred lines and at the same time produce sufficient seed to make the process practical. While this discovery made hybrid corn a more likely possibility, many years of inbreeding, crossing, and testing were necessary before hybrid corn could be recommended generally for commercial planting. In fact, about 30 years work by many geneticists and plant breeders occurred between the time inbreeding was begun and the time suitable hybrid varieties became available for farm planting. Within another 23 years, or by 1953, hybrid seed corn was used to plant over 86% of the total corn acreage of the United States.

Even today with available knowledge of corn breeding, it takes about 10 years for a breeder to develop a good hybrid from open-pollinated varieties. Inbreeding open-pollinated varieties to eliminate weak characters usually requires 5 to 6 years. After inbred lines are developed, suitable single and double crosses must be made and tested. This also requires 5 to 6 years. During this period, the corn breeder will handle thousands of lines and crosses, most of which will be discarded because of weaknesses that show up in the testing. Thus, a tremendous amount of time and work go into developing a hybrid before release to farmers.

The basic principles of breeding are about the same with both plants and animals. However, the methods used may vary greatly. The breeder and associates may have to spend many years in laboratory studies before any progress from a practical standpoint becomes evident.

Much of the resources of the API Agricultural Experiment Station is directed toward improvement of both animals and plants. Specific work in poultry, beef and dairy cattle, and hogs is underway in animal breeding. Crop breeding is being done with cotton, corn, white clover, sericea and other legumes, grain sorghum, and vegetable crops. Plans also include research in forest tree breeding.

Resulting from this research in plant and animal breeding have been such improved strains as the Auburn White Leghorn; Auburn reseeding crimson clover; Plains, Auburn 56, and many of the older wilt-resistant strains of cotton; and Combine Sagrain, a grain sorghum variety released to farmers this year.

Our New Report -

HIGHLIGHTS *of* AGRICULTURAL RESEARCH

To Friends of Alabama Agriculture:

Down through the years, the administration and staff of your Agricultural Experiment Station have understood that agricultural research for research's sake alone is not enough; that, to be meaningful, research results must be brought to the attention of farmers and others who can use them. Many means are used by your Experiment Station for this purpose. Scientific bulletins, circulars, leaflets, and articles are published. Newspapers, farm magazine, and radio stories are released. Organized groups of farmers and business men are encouraged to visit the various units of the Experiment Station System, accompanied by county agents, vocational agricultural teachers, or other professional workers.

Each of these devices is useful, yet each has its limitations. Bulletins and the other types of publications mentioned usually deal with the results of a single type of experiment. Visits to a substation or other research unit are valuable since the techniques of visual education can be brought into play, but even they are limited in scope.

In our search for even more effective ways of bringing our research activities to the attention of Alabama's farm leadership, we concluded that a magazine that would from time to time present the highlights of our broad agricultural research program was needed. To fill this need, we have started a new publication, "HIGHLIGHTS of Argicultural Research." We take great pleasure in sending you a copy of the first issue. It is our earnest hope that this publication will contribute materially to the advancement of Alabama Agriculture.

Sincerely yours,
E. V. Smith,
Dean and Director

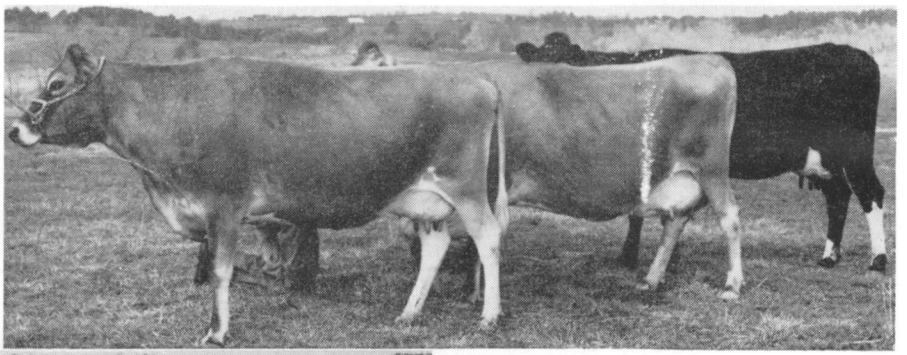
Higher Milk Production from

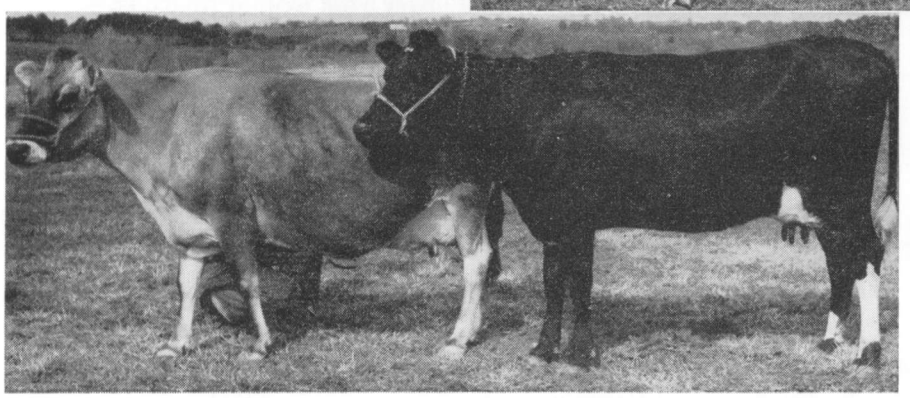
BETTER SIRED REPLACEMENTS

K. M. AUTREY
Head, Dairy
Husbandry Dept.

NEEDED IN ALABAMA—cows that put milk higher up in the pail!

Within the last 7 years under rather favorable prices, dairying has made great progress in this State. However, continued growth will be hampered because Alabama dairymen with cows averaging 3,500 pounds of milk annually are competing with such states as Wisconsin where cows average 7,000 pounds.





The cows above are representative of the first three groups reported in table at bottom of page. Cow at left is typical of 4,300-pound group; center, 7,600-pound group; young cow at right, 10,600-pound group.

Black heifer, shown with her dam, is a daughter of Inka, an outstanding Holstein bull. As a second-calf heifer, she produced 11,830 pounds milk and 467 pounds fat. This production exceeds that of her dam by 2,440 pounds milk, 102 pounds fat.

If dairying in this State is to compete successfully with that in the so-called dairy states, milk producers must turn to (1) developing better dairy cattle and (2) obtaining sufficient records upon which to judge or evaluate producing cows and herd sires.

Production Records

Production records (DHIA) of the College herd at Auburn tell a revealing story of mounting net returns as capacity to produce goes up. Value of production, feed costs, returns above feed cost, and net returns per animal above all costs from cows grouped according to 1953 production averages are summarized in the table below.

Based on these records, a dairyman with eight 10,600-pound cows (third group) could produce about as much milk as he would with 20, 4,300-pound producers (first group). Furthermore, with the higher producing cows, total volume of milk would be produced at 36% less feed and other costs. His net return above all costs would be around $2,300 as compared to $920 from about the same amount of milk but produced by 20 low-producing cows.

Sire Testing Important

Although pedigree evaluation, and conformity to type are useful guides in selecting sires for herd improvement, the only safe procedure is one based on a sire testing program. For example: Five daughters of Blackie, a young Jersey bull that looked good on paper, averaged 7,430 pounds of milk (mature basis) or 640 pounds less than their dams. This sire would **decrease** production in a herd of mature cows averaging more than 6,500 pounds of milk.

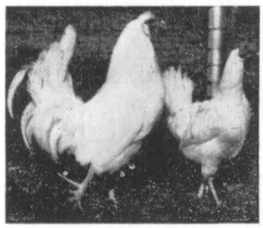
PRODUCTION GROUP	TOTAL VALUE OF PRODUCTION	FEED COST	RETURNS ABOVE FEED COST	NET RETURN ABOVE ALL COST
4,300 lb.	$242	$ 98	$144	$ 46
7,600 lb.	455	122	333	211
10,600 lb.	596	156	440	284
14,700 lb.	846	203	643	440

Another instance, daughters of Lad, a Jersey bull, averaged 8,700 pounds of milk and 418 pounds of fat, or 180 more pounds milk and 25 more pounds fat than their dams. Lad is probably good enough to use with confidence on cows producing 8,500 to 9,000 pounds of milk (mature basis).

Eight daughters sired by a Holstein bull, Inka, produced (mature basis) 3,300 more pounds of milk and 116 more pounds of fat than their Jersey dams (7,351-pound average). This shows the rapid progress that can be expected in developing higher herd production by use of an outstanding sire.

A Holstein bull might be expected to transmit a higher level of production than a Jersey bull. In this case, milk production was not only sharply increased, but Inka transmitted a very high level of fat production, his index being 13,951 pounds of milk and 564 pounds of fat.

These records show why dairymen can afford to pay $1,000 to $1,500 for a good sire or $7 to $10 breeding fees for service of a proved sire. They also show why dairymen can ill afford to use low-grade bulls.



Eighteen Years' Breeding Behind

AUBURN STRAIN WHITE LEGHORN

FRED MOULTRIE, D. F. KING, and G. J. COTTIER
Department of Poultry Husbandry

Death losses in the laying house from diseases make up one of the toughest problems of poultrymen. Such diseases as leucosis (fowl paralysis) cannot be controlled even by present-day vaccination and medication programs.

One of the practical answers is breeding strains resistant to disease. The API Agricultural Experiment Station was one of the first to establish this fact, producing the now nationally known Auburn Strain White Leghorn.

Started 18 Years Ago

Beginning in 1935, the Poultry Department sought to develop a strain resistant to leucosis—the No. 1 cause of deaths in laying houses then and now. In this breeding program, attention also was given to improving egg production.

By 1943, death losses in the new strain from leucosis had been greatly reduced. The program was then broadened to include breeding for resistance to all other common diseases and disorders.

Eleven of the best strains available were used as foundation stock in developing the Auburn Strain that is now widely known and praised for its ability to resist common poultry diseases and for its high egg production. This strain is now extensively used in Alabama, and breeding stock also has been shipped to 20 other states and to 4 foreign countries.

Production Up, Mortality Down

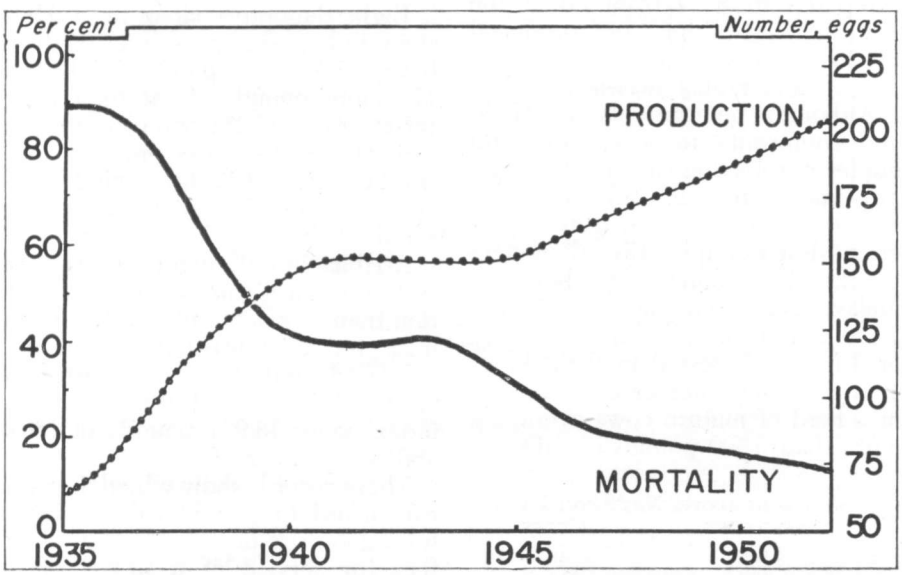
During the 18 years of this work, death losses of unculled Auburn Strain pullets under severe exposure in the laying house have been reduced from 89% in 1935 to 15% in 1952. (See chart.) Most of this drop in mortality was due to a decrease in leucosis, which killed about two-thirds of the birds housed in 1935 but only about 3% of those housed in 1952. Along with this great improvement in ability to live, the strain has shown a sharp increase in egg production, (See chart.) In 1935, the flock averaged only 64 eggs per bird housed. Due mostly to increase in livability, the flock now averages a little over 200 eggs per bird housed.

It is the opinion of some poultrymen that strains developed to resist disease in one location are not resistant in another. In 1948, breeding stock was exchanged with the New York Agricultural Experiment Station, which also had developed resistant strains. The purpose was to test both strains at the two stations at the same time. Results of this test indicated that the strains developed at both stations were resistant to leucosis at both their home and distant stations; actually the Auburn Strain laid more eggs per bird in New York than in Alabama.

Out-Performs Others

Before release of the Auburn Strain to poultrymen, 3 years of performance tests were conducted at Auburn, comparing the strain with 14 of the leading Leghorn strains in Alabama and the United States. During this 3-year period, the Auburn Strain excelled all strains tested, having 22% better livability in the laying house than the average of the 14 strains tested. The Auburn Strain also excelled the average of the other strains by 49 eggs per pullet housed.

Since release in 1948, 318,000 hatching eggs of the Auburn Strain have been distributed to hatcherymen and poultrymen.



Death losses in Auburn Strain were reduced from 89% in 1935 to 15% in 1952, while egg production was increased from 64 to over 200 eggs per bird housed.

CHANCES ARE BETTER WITH HIGH-PRODUCING LAYERS

Greater the number of eggs produced per bird, the better are your chances of making a profit.

In a study of 130 commercial egg-producing farms in Alabama, 23 flocks averaging less than 150 eggs per layer lost 10¢ per dozen.

A group of 53 flocks averaging 179 eggs per hen returned a profit of 4¢ per dozen, or a labor income of 95¢ per hour.

The highest producing group, over 200 eggs per layer, returned to owners a 14¢ profit per dozen, or an income of $2.06 per hour of labor.

Of the 64 White Leghorn flocks in the study, 22 were of the Auburn Strain and had the lowest death losses.

Bulletin 290, "Costs and Returns to Commercial Egg Producers," reporting this study will be available late in June.

NEW ALABAMA WHITE CLOVER

Now in the Making

P. B. GIBSON
Associate Plant Breeder

To have a stand of vigorous white clover plants, you must plant seed of a variety adapted to Alabama. Otherwise, cost of preparing land, fertilizing, and planting may be partially or totally lost.

White clover seed look alike regardless of source or variety. They may produce plants adapted to Alabama growing conditions; then again they may be almost worthless. This wide range was clearly shown in tests last year at the API Agricultural Experiment Station's Plant Breeding Unit near Tallassee.

So-called "Whites" Tested

A small plot was seeded to each of 100 different samples from dealers' supplies taken in several states. Of these, 37 were tagged and being sold as "white" or "white Dutch clover from Louisiana." Only five produced plants that made good to excellent growth. A few were complete failures and the remainder ranged between the two extremes (Fig. 1). Results of this test emphasize need for reliable seed supplies of white clover adapted to Alabama conditions.

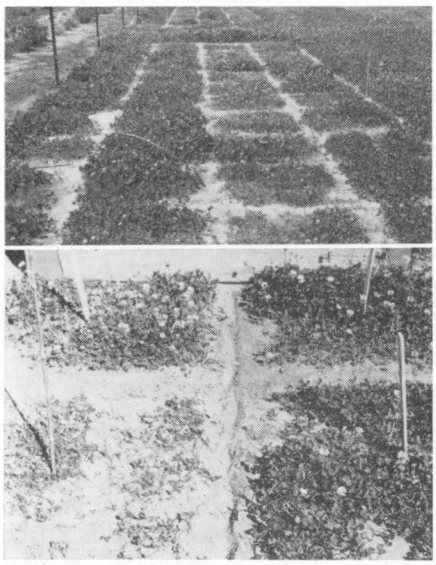


FIG. 1. Above: Portion of plots on which samples from dealer supplies were tested. Below: Four of the dealer-seed test plots showing good to very poor growth.

New Variety in the Making

Already underway is a double-barreled program for developing a superior white clover and for establishing reliable seed sources of adapted varieties. The Experiment Station is now in its third year of developing what plant breeders call a synthetic variety—putting together or intercrossing a number of superior parent lines. First plant selections were made in summer of 1952. About 20 superior lines selected from 10,000 plants are being tested for use in a future synthetic variety.

Figure 2 diagrams the five-step process of developing and producing seed of a synthetic variety. The first three steps involve the plant breeder,

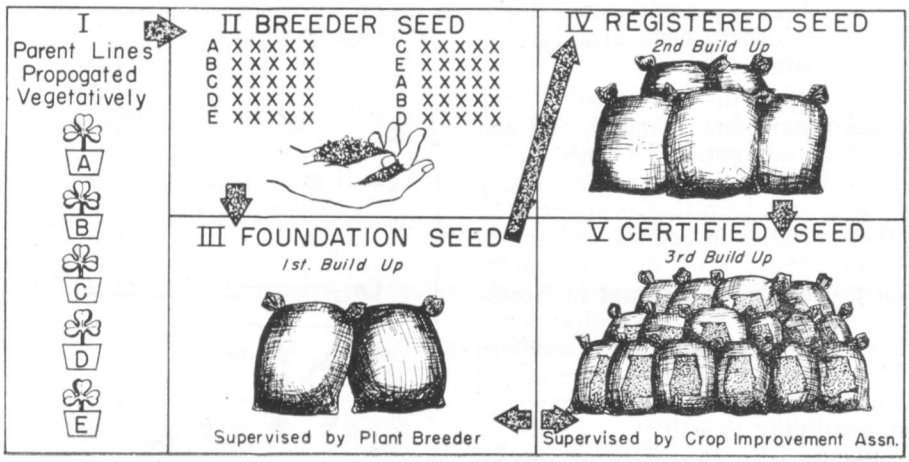


FIG. 2. Procedure of developing and producing seed of a synthetic variety.

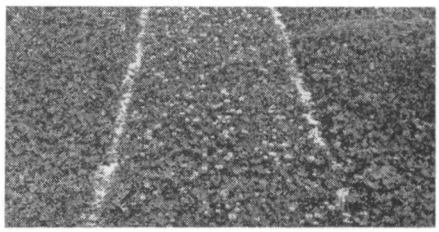


FIG. 3. Plants from seed of best lines are tested in small plots, from which the top lines are selected to go into the final synthetic variety.

while the last two are supervised by the Alabama Crop Improvement Association. The first step requires several years of selecting superior plants from source nurseries. These plants are then maintained by vegetative propagation and designated as lines, which are critically tested under varied conditions. Finally the top few lines are selected as parent lines for a new variety (Fig. 3).

In step 2, parent line plants are grown in an isolated field. Plants of each line are set at random so that plants of one line will cross with those of all other parent lines. Thus, a new variety is "synthesized" or formed by compositing the parent lines. Seed harvested from this isolated area are bulked, and are classified as breeder seed.

In step 3, foundation seed are produced—that is the breeder seed are multiplied by planting breeder seed in a field isolated from other white clover.

In steps 4 and 5, foundation seed are increased through two generations by cooperating farmer-growers under supervision of the Crop Improvement Association. The last step results in certified seed for sale to Alabama farmers.

The parent lines used in this seed production program correspond to the inbred lines used in producing a hybrid corn variety. As with a hybrid corn variety, the clover variety can be produced as long as the parent lines are maintained.

Since the Alabama Station as yet has no variety to release, we must depend on varieties developed elsewhere. The Louisiana Agricultural Experiment Station has released the parent lines of its La. S-1 white clover for seed production in Alabama. Seed growers in the State will be in a position to supply farmers with certified seed of this variety.

Better Yields Result from

CROP VARIETY TESTING PROGRAM

HOWARD T. ROGERS, Head
Dept. of Agronomy and Soils

IT WAS A COLD DAY in November, 1950, that put the bite on non-hardy varieties of alfalfa under test at Auburn and the Substations and Experiment Fields throughout the State. Unfortunately, many Alabama farmers had planted some of the unadapted varieties of alfalfa and lost their stands as a result of not planting those recommended. This experience not only cost the farmer but discouraged the use of a crop that has been called the "queen of the forages" in other sections of the United States.

Scope of Testing Program

Variety testing is one of the oldest types of research conducted by the API Agricultural Experiment Station. The scope of this work in 1953 is shown in the table. Nearly 200 tests were conducted last year at various locations, ranging from the Tennessee Valley and Sand Mountain on the north to the Gulf Coast on the south, and from Auburn on the east to Aliceville and Winfield on the west. These tests included 14 on fiber crops, 43 on grain crops, 19 on oil crops, 116 on forages, and 2 on sugar.

Techniques Vary

Variety testing requires various techniques depending on nature of crop and type of information sought. Generally, new crop varieties are not recommended until they have performed satisfactorily for 3 years. Total yield is only one of the factors that must be measured. In addition to yield, records of disease and insect damage, lodging, quality of fiber, forage or seed, cold and drought resistance, and suitability for machine harvesting must be used in determining the worth of varieties under test. The forages are perhaps the most difficult of all crops to evaluate. With these crops, yields must be taken several times during the season since length of growth period as well as palatability and feeding value are often more important than total production.

SCOPE OF FIELD CROP VARIETY TESTS IN ALABAMA, 1953

CROPS	NUMBER OF LOCATIONS	CROPS	NUMBER OF LOCATIONS	CROPS	NUMBER OF LOCATIONS
Fiber		**Forage**		**Forage**	
Cotton	13	Legumes:		Grasses:	
Bamboo	1	Alfalfa	6	Millet	3
Grain		Crimson clover	1	Napier	1
Corn	15	Lupine	3	Orchard	13
Small grains	16	Sericea	3	Reed canary	13
Grain sorghum	12	Vetches	1	Rescue	4
Oil		White clover	3	Ryegrass	13
Peanuts	1	Grasses:		Small grains	16
Soybeans	4	Bahia	13	Sudangrass	3
Flax	1	Bermuda	2*	Sweet sorghum	1
Sugar		Brome	13	Tall fescue	13
Cane	1	Dallis	13	**Turf**	1
Sorghum	1				

* One test compares coastal and common Bermudas in grazing paddocks.

Value of Variety Tests

The value of variety tests can be seen by looking at corn yields in the State. About 50 per cent of Alabama's corn acreage (1,110,000 acres) was planted to hybrid seed in 1953. The Station's corn variety tests show that the best adapted hybrids yield about 20% more corn than open-pollinated corns or poorly adapted hybrids. Thus, the use of recommended hybrids in 1953 on the other half of the acreage would have increased corn yields by 3 to 4 million bushels. The use of adapted varieties of other crops will produce yield increases fully as great as that of corn.

Why Tests at Different Locations

Figure 1 shows the units of the Experiment Station System where field crop varieties are tested. Also shown are the three geographic areas designated as northern, central, and southern Alabama.

Crop varieties frequently have small geographic, climatic, and soil areas of adaptation. Combine Sagrain, for instance, is a new variety of grain sorghum that is superior to other varieties in central and southern Alabama, but doesn't mature early enough for planting in Northern Alabama. Certain cotton varieties are superior for northern Alabama, but cannot be used in southern portion of State because of susceptibility to wilt.

Finally, the objectives of variety testing change with new developments in agriculture. Mechanization, for instance, brought out the need for upright cotton, short-stalked corn, weather-resistant peanuts, and soybeans with pods well above ground level. Thus, variety testing is a continuing job needed to assist Alabama farmers in obtaining efficient production in a progressive agriculture.

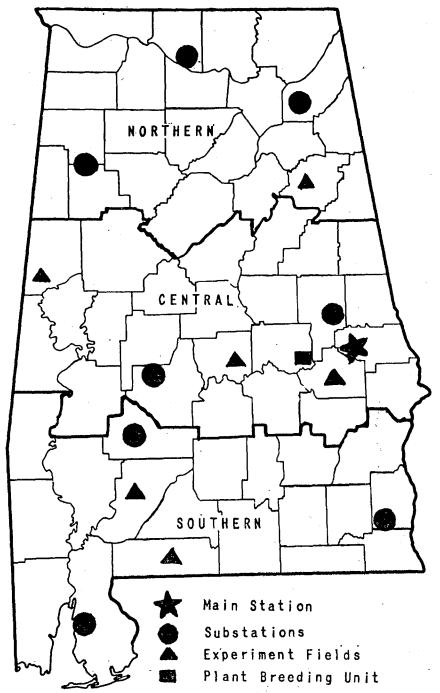


FIG. 1. Locations where crop variety tests are carried on.

TREES CAN BE NO BETTER THAN THEIR PARENTS

G. I. GARIN and JACK MAY
Department of Forestry

Like other agricultural crops, trees inherit good and bad characteristics from their parents—chips off the old blocks!

Forestry research results indicate that yields of forests grown from seed of selected parents can double or even triple those grown from inferior sources.

Most forests have been established by natural regeneration, with little attention given to quality of seed source. To pay attention to quality of seed trees has become increasingly important in natural regeneration and particularly in reforestation.

For years, woodlot owners have recognized differences in tree qualities in natural stands. They cut and sold the best trees to increase their immediate cash returns. They did not make use of their observations to improve their new growing stock. This practice has led to decline in tree quality in our second-growth.

Most commercially important tree species are wind-pollinated. While various methods are used to select both parents for seed production in experimental work, the large supplies of tree seed needed for natural regeneration or for raising seedlings in tree nurseries must come from wind-pollinated flowers. Only one parent tree is known when these seed are used. However, it has been experimentally proved that selection of even one parent results in big improvement.

To select trees to remain in a timber stand as seed producers or for seed collection, here are certain desirable characteristics to look for: (1) rapid growth in height and diameter; (2) straightness of trunk and small taper; (3) absence of forking; (4) relatively narrow crown with small branches; (5) absence of old branches and evidence of good, natural pruning; (6) evidence of resistance to disease and insect attacks; and (7) in turpentine region, high gum yield. These and many other characteristics are in large measure transmitted to the next generation.

Most of Alabama's 20-odd million acres in forests has been and will be reseeded naturally. If seed trees of high quality are selected, this acreage will produce increasing yields of wood products. When seed for growing seedlings in tree nurseries are collected from superior parents, good planting stock will be made available for establishing new forest plantations. To insure good planting stock, landowners are encouraged to supply their own seed from selected trees. Custom growing of planting stock is done by state nurseries. Seedlings grown from seed supplied by a landowner are raised separately and furnished the owner.

Alabama's future as one of the leading states in timber production and processing depends on constant improvement of forest practices. One phase of this goal is selection of good parent trees for natural regeneration and reforestation. It is good common sense and good forestry.

VEGETABLE VARIETIES for ALABAMA CONDITIONS

C. L. ISBELL, Horticulturist

Not too long ago Alabama gardeners and truck growers depended almost entirely on seed of varieties developed for other sections of the country. It was not uncommon for these varieties to practically fail because they were not adapted to Alabama conditions. About the only varieties that could be depended on were those that had been selected as outstanding by individual gardners handed down through the years.

Recognizing the need for varieties better adapted to Alabama conditions, the API Agricultural Experiment Station several years ago started a vegetable variety improvement program at Auburn. The Station has worked toward improvement of varieties of snap beans, cabbage, collards, cow peas, kale, lettuce, okra, onions, peppers, pumpkins, tomatoes, sweet corn, and watermelons. Improved varieties of some of these already have been released and considerable progress has been made with others.

Some of these improved varieties have been developed from numerous selections of home-grown vegetable seed collected from gardens and farms throughout the State, and from foreign countries. Many others are being used in the breeding phase of the program, some lines of which are now in the 14th generation.

The three phases of Auburn's vegetable variety development program are (1) selection and testing of farmer-improved strains, (2) selection and testing of foreign strains, and (3) breeding new varieties.

Varieties of vegetables developed for other sections are not generally capable of producing good yields of high quality under southern conditions. Therefore, farmers and gardeners by necessity have saved vegetable seed from strains that have done well. Many of these strains are obtained by the Station and tested. If found desirable they are improved, seed of which are increased on a small scale, given a descriptive name, and released to seed producers for multiplication.

Varieties found unsuited in the tests but having certain favorable qualities are crossed with other varieties to combine a number of desirable characteristics in new strains. These new varieties, likewise, are named, and small amounts of seed are produced and released for seed increase.

A large number of small samples of seed of various kinds of vegetables from foreign countries are grown on a small scale. The behavior of these is noted to determine if they have promise in their present form. If found to have outstanding characteristics, they are used in developing new varieties.

Development of new varieties through breeding involves carefully controlled experiments. Many generations of crosses and back-crosses are made to create one or more varieties possessing special qualities desired by the consumer. When you plant an Auburn-developed or improved vegetable variety, you may be sure that it has been tried and that it has stood the test.

Editor's Note: The Experiment Station has no seed or plants of the new varieties for distribution.

HIGHLIGHTS
of
AGRICULTURAL RESEARCH

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Auburn, Alabama

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New and Timely PUBLICATIONS

Listed here are timely and new publications reporting research by the Agricultural Experiment Station:

CIR. 116. Single-Deck Cages for Laying Hens explains the management of layers in individual cages, and advantages and disadvantages of system. (Revision of Cir. 110.)

LEAFLET 33. Aids to Planning an Artificial Curing System for Hay gives requirements for hay drying, equipment needed, air distribution system, cost of drying, and effect on quality.

LEAFLET 41. Storing Shelled Corn in Alabama tells what is necessary for safe storage, and gives results of farm-size storage experiments.

LEAFLET 43. Chemical Control of Cherokee Rose, Alder, and Certain Other Pasture Weeds explains what chemicals are effective, mixtures to use, and when to apply.

LEAFLET 44. Suggestions for Improving Farm Woodlots tells how to rid stands of undesirable tree species by girdling and poisoning.

Free copies may be obtained from your county agent or by writing the Agricultural Experiment Station, Auburn, Ala.

Cooperation Speeds Up NEW CORN HYBRIDS *to* FARMERS

F. S. McCAIN
Associate Plant Breeder

The speed with which adapted hybrid corn varieties have been developed is a story of cooperation that has meant increased yields to southern farmers.

Ten years ago there was not a single hybrid in tests at the API Agricultural Experiment Station that would qualify as being well suited to Alabama conditions. It was not until 1947 that the Alabama Station included a few hybrids in its variety recommendations.

If it had not been for the collective action of state experiment station and USDA plant breeders, the story of hybrid corn would have been much different. We would not have had the wide usage of hybrids and the resulting profits if each individual corn breeder had tried to carry on his program without outside help from others. Relatively few of of the outstanding hybrids today are the direct result of any one corn breeding program.

In contrast to the Corn Belt where more than 90% of the corn acreage is planted to hybrids, there is slightly more than half of the corn acreage in the Southeastern or Cotton Belt States planted to hybrids. This big difference is understandable when it is recalled that hybrids were being planted in the Corn Belt more than 15 years prior to the time adapted hybrids became available in the South. Actually, the South has made great strides in the use of hybrids in a relatively short period of time. A cooperative organization known as the Southern Corn Improvement Conference has played a big part in overall advances in production by making available to farmers hybrids adapted to southern conditions.

The Southern Corn Improvement Conference is an organization of the USDA and state experiment station corn breeders from Oklahoma, Arkansas, Texas, Louisiana, Mississippi, Kentucky, Tennessee, Alabama Virginia, North Carolina, South Carolina, Georgia, and Florida. A free interchange of breeding material in addition to cooperative testing programs between these states has led to most of the better adapted southern hybrids. Dixie 18, for example, is one of the most widely used hybrids in the Southeast today. This hybrid was developed at the Georgia Coastal Plain Experiment Station, but that station is responsible for only one of the inbred lines used in Dixie 18. Two of the inbred lines were developed in Florida and one in Louisiana. If it had not been for the Southern Corn Improvement Conference and the resulting cooperative work between corn breeders, Dixie 18 probably would never have been developed.

This cooperative work goes further than the mere exchange of breeding material. Drouths during the last 2 or 3 summers have made the production of foundation seed of some of the more widely used hybrids most difficult. Fortunately, foundation seed have been produced in some states when production failed elsewhere. A mutual understanding between states has led to a fairly equal distribution of available foundation seed to all states. This has enabled hybrid seed producers in all states to continue their production of adapted hybrids and thus make them available to farmers.

The Southern Corn Improvement Conference is dedicated to a continuing cooperative program from which will come better hybrids of tomorrow.

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