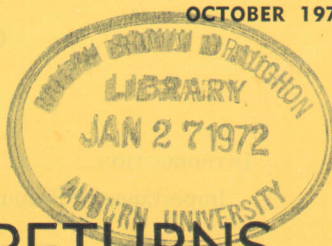


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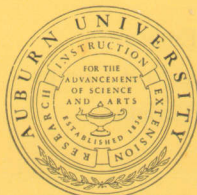
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OCTOBER 1971



COSTS AND RETURNS  
*of*  
PRODUCING PEANUTS  
*in the*  
WIREGRASS AREA  
*of*  
ALABAMA



AGRICULTURAL EXPERIMENT STATION / AUBURN UNIVERSITY

E. V. Smith, Director

Auburn, Alabama

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# Costs and Returns Of Producing Peanuts in the Wiregrass Area of Alabama\*

SIDNEY C. BELL and HOMER REX ETHEREDGE\*\*

## INTRODUCTION

FIRST APPEARANCE of the peanut in the United States was during the early days of colonization, but it was not until 1870 that the crop became commercially important. Acreage increased rapidly in the South after 1900, and the U.S. total reached 27.5 million acres in 1919 (3).

The United States produces about 6 per cent of the world's peanut supply. Its production has been increasing steadily for the past 30 years (5) under stimulation of improved varieties, higher price, higher yields (resulting from use of herbicides and fungicides<sup>1</sup>), and mechanical harvesting and drying.

TABLE 1. TEN MAJOR PEANUT PRODUCING STATES IN  
THE UNITED STATES, 1970

State	Production
	<i>1,000 lb.</i>
Georgia.....	1,133,145
North Carolina.....	442,800
Texas.....	435,000
Alabama.....	313,740
Virginia.....	306,000
Oklahoma.....	206,500
Florida.....	105,060
South Carolina.....	24,375
New Mexico.....	16,985
Mississippi.....	3,300

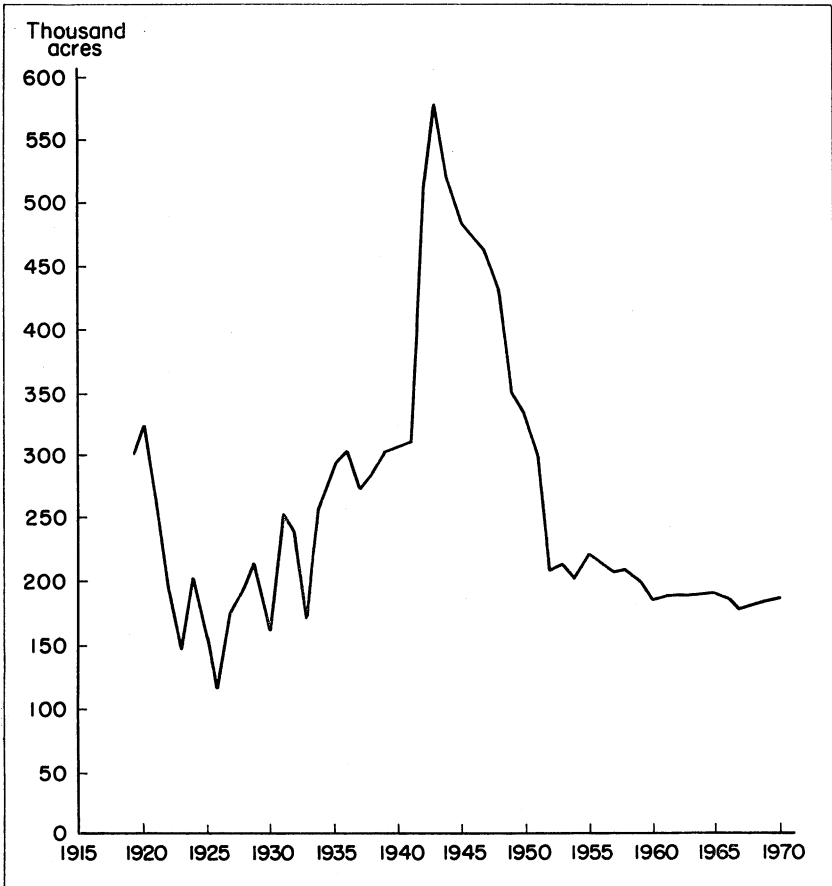
Source: U.S. Department of Agriculture, *Annual Crop Summary 1970*, page 63.

Peanut production on a commercial basis is limited to the Southern States. The bulk of the production is in 10 of these

\* Research on which this report is based was conducted under State project 1-046. Appreciation is expressed to the peanut producers who supplied information for use in this study.

\*\* Professor, Department of Agricultural Economics and Rural Sociology, and Former Graduate Research Assistant, Department of Agricultural Economics and Rural Sociology, now with Farmers Home Administration, Hartselle, Alabama.

<sup>1</sup>Fungicides may include insecticides in this study.



**FIG. 1.** Alabama's peanut acreage fluctuated widely between 1919 and 1970. (Data from Annual Crop Summary 1970, U.S. Department of Agriculture, page 63).

states, Table 1, with Georgia the leader. These 10 states make up most of the three principal areas of peanut production in the United States.

Peanuts were grown in Alabama as far back as the early 1900's, but the first commercial production was in 1919 when 300,000 acres were harvested. Harvested acreage reached a peak in 1943 with about 600,000 acres, Figure 1. After that acreage declined to about 190,000 where it has tended to level off primarily because of government acreage controls.

### **Importance of Peanuts to Agricultural Economy**

Peanuts have become the principal "money" crop in southeastern Alabama. In Alabama during 1966-70, peanuts ranked third in value of production, following cotton and soybeans. Total value of production from cotton averaged \$45.2 million, from soybeans \$31.1 million, from peanuts \$30.7 million, and from corn \$30.2 million (1).

### **OBJECTIVES OF STUDY**

Data on the physical quantities of inputs used by farmers are needed to prepare accurate, up-to-date peanut budgets. However, existing cost data are inadequate and out of date. The overall objective of this study was to provide data for accurate and up-to-date budgets that would help a farmer in his efforts to increase income from peanut production.

Specific objectives were:

1. To determine the physical amount and dollar value of inputs (cost) used in producing peanuts.
2. To determine the gross and net returns of producing peanuts.
3. To determine the effect of size of enterprise and associated factors on cost and returns of producing peanuts.
4. To determine the dollar value of inputs (cost) and returns in the production of different varieties of peanuts.

### **METHOD OF STUDY**

#### **Selection of Sample**

Data were collected from farmers in three of the major peanut producing counties in the State: Henry, Houston, and Coffee, all in the Wiregrass Area. These counties had about half of the total peanut acreage in the State in 1970. From each county, three beats representative of the county's better peanut producers were chosen as areas from which the sample would be selected. The beats chosen with assistance of the county ASCS office manager were 8, 10, and 14 in Houston County; 1, 2, and 7 in Henry County; and 7, 8, and 23 in Coffee County.

Six groups based on size of enterprise were used in selecting the sample, with a minimum of 20 producers to be interviewed in each group. From a complete list of all peanut farmers in the selected beats and all those in the three counties having peanut allotments over 100 acres, 120 producers were selected by a strati-

fied (by size) random sampling technique. A few of the selected farmers declined to cooperate and alternates were chosen. Within the three counties, 114 complete questionnaires were obtained by personal interview with each selected producer.

Both cost of inputs and returns data were collected on each variety of peanuts planted by a producer. The number of varieties planted usually varied from one to three. All data collected were based on the 1970 crop.

### Cost Procedure

An inventory of machinery and equipment used in producing peanuts was obtained from each farmer interviewed. Since most of this machinery also was used in production of other crops, rates of accomplishment for each peanut production operation were obtained from the farmer on a per acre basis. This facilitated calculating actual hours of annual use for each piece of machinery that could be charged to the peanut enterprise. In determining hours of annual use for each piece of machinery, the rate of accomplishment of the operation in which the machinery was used was multiplied by number of acres in the peanut enterprise. A per cent of annual use, which was charged to the peanut enterprise, was then obtained by dividing the hours per year for wear-out life to equal obsolescence life into actual hours of annual use, Appendix Table 1.

Depreciation was calculated by the straight-line method based on years of estimated life with no salvage value, Appendix Table 1. Amount charged to the peanut enterprise was computed by multiplying annual depreciation of each piece of equipment by its per cent of annual use in the peanut enterprise. Interest, taxes, housing, and insurance were computed at 10 per cent of average value of the machinery. Since no salvage value was used, the average value was considered to be one-half of original cost. Variable machinery cost per acre for each piece of equipment was calculated by multiplying rate of accomplishment by operating cost per hour of use given in a Virginia machinery cost study (4).

Costs of seed, herbicide, fertilizer, fungicide, and custom work were obtained from the farmers interviewed. These costs were the actual expenditures reported by the farmers. Items not purchased, such as seed, were charged at the price the farmer reported he would have had to pay had the same item been purchased.

Interest on operating capital was charged at 8 per cent per annum for a 6-month period. The amount of operating capital required was obtained by adding variable machinery costs to material costs. All labor was charged at \$1.60 per hour, with labor requirements based on time requirements reported by the farmer.

Since many farmers had their peanuts custom harvested and hauled, a custom rate for hauling was charged to all farmers interviewed. This was calculated by averaging rates paid by all farmers who reported having their peanuts custom hauled.

### CHARACTERISTICS OF PEANUT PRODUCING AREA

Ninety-seven per cent of Alabama's peanut acreage is planted in 12 southeastern counties (1), Figure 2. Data for this study were collected from 114 farmers in 3 of these 12 counties: 23 in Henry, 26 in Coffee, and 65 in Houston.

#### Description of Farms

The 114 peanut producers interviewed operated an average of 596 acres of farm land, Appendix Table 2. Of the 82 farmers who were renting land, 5 rented all they operated — an average of 467.4 acres each. Ninety per cent of the farmers who rented land planted an average of 94 acres of peanuts on the rented land. The five who rented all their farm land planted an average of 87 acres of peanuts. Ninety-two per cent of the farmers owning land planted an average of 52 acres of peanuts. This amounted to 13 per cent of total land owned by the farmers.

The 109 farmers who owned land estimated the average market value of the land on which their peanuts were planted at \$288 per acre. Those farmers cash renting paid an average rent of \$22.60 per acre, which was 7.8 per cent of average market value of the peanut land. Thirty-three per cent of the farmers either rented or purchased on a cash basis an average of 38 acres of peanut allotments and transferred this acreage to their farms. The minimum price for renting allotments was \$15 per acre, and purchase price for allotments went as high as \$300 per acre. Five farmers share-rented land, all on a half-share basis.

**CROP ENTERPRISES.** Peanuts were the major crop enterprise, in terms of acreage, in the three sampled counties. Farmers planted an average of 100.8 acres for harvesting, 39 per cent of total crop acreage, Appendix Table 3. Size of the peanut enterprise ranged

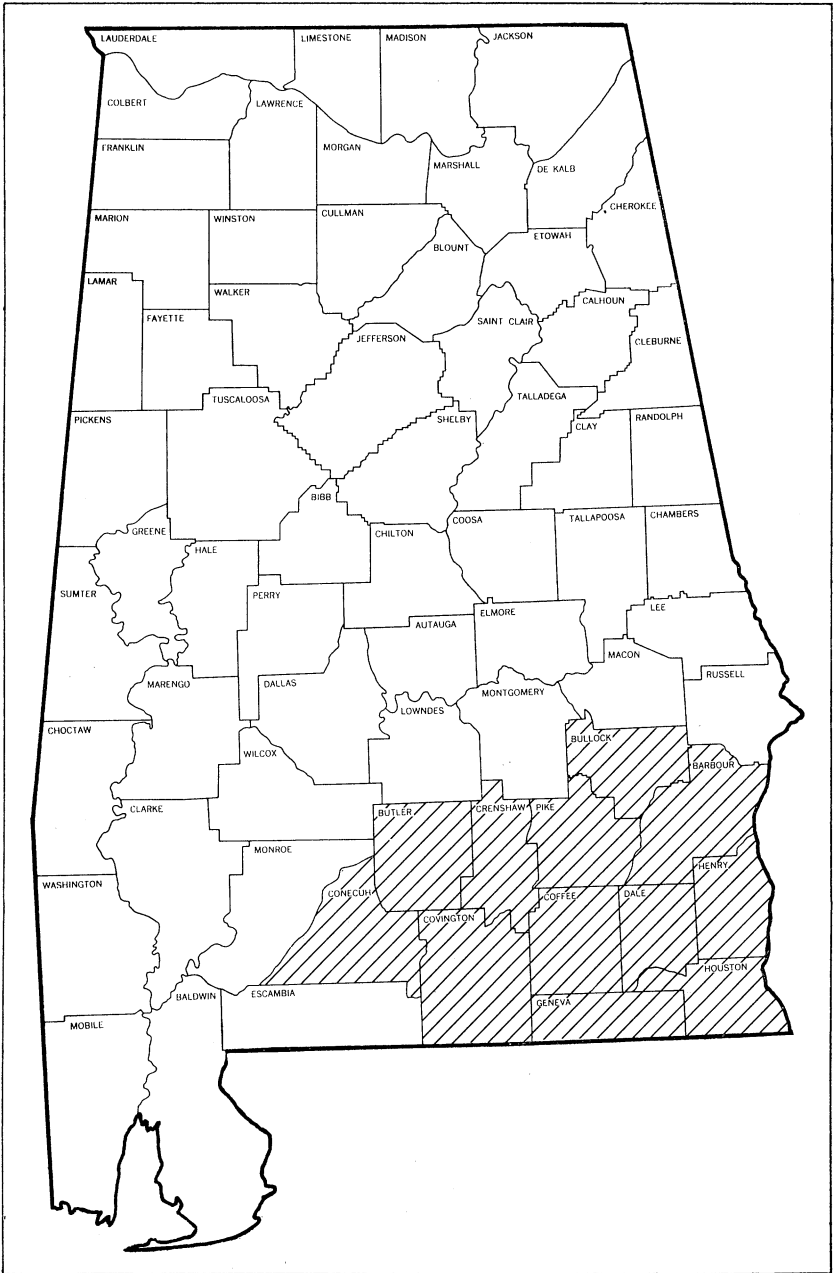


FIG. 2. Shaded area identifies Alabama's 12 major peanut producing counties.



from 5 to 474 acres, but 30 per cent of the farmers interviewed had 130 acres or more. Average yield of 2,204 pounds of peanuts per acre was reported for 1970, with a maximum yield of 4,187 pounds and a minimum of 987 pounds per acre. Forty-eight per cent of the farmers used hogs to glean fields on an average of 49 acres of peanuts.

Corn was second to peanuts as a major crop enterprise in terms of acres planted. Ninety-six per cent of the farmers reported planting an average of 99 acres of corn. Cotton was the next most popular crop, being planted on 73 of the 114 farms. Other crops were soybeans, wheat, and grain sorghum.

**LIVESTOCK ENTERPRISES.** The most popular livestock enterprise in the peanut area was beef cattle. Eighty-five of the 114 producers reported having an average of 63 brood cows in a normal year, ranging from a high of 340 to a low of 2. Following beef cattle in importance was swine, an enterprise reported by 61 per cent of the farmers. These farmers had an average of 17 brood sows in a normal year and retained one boar for breeding purposes. Nineteen per cent of the farmers reported selling an average of 192 feeder pigs, while 10 per cent purchased an average of 119 feeder pigs. Generally, farmers in this area market much of their corn through hogs.

Eight of the peanut producers included in the study had commercial dairy operations. The average herd size was 135 milk cows, with a maximum of 350 and a minimum of 65 reported. Of the 114 farmers interviewed, four reported commercial poultry operations. Three had broiler operations and reported raising an average of 169,333 broilers in a normal year. The other one had 12,000 hens for egg production.

### **Problems in Producing Peanuts**

Farmers said weather was the principal problem in producing peanuts. Excessive rainfall during the harvest season can contribute just as much toward losing a peanut crop as inadequate moisture during nut growth. A number of farmers reported heavy peanut losses in the field because of heavy rains during harvest, and others reported that dry weather caused low yields. When asked about their problems, farmers reported that leafspot and white mold were two other hazards. Both diseases will cause a peanut vine to deteriorate rapidly.

Peanut producers estimated that if acreage allotments and price supports were abolished the average price of peanuts would be about \$120 per ton. Responses of 99 of the 114 farmers interviewed, given below, indicate actions they would take if peanut acreage allotments and price supports were abolished:

<i>Farmer's response</i>	<i>Number of farms</i>
Discontinue production.....	48
Continue to produce same acreage.....	26
Decrease acreage.....	13
Increase acreage.....	12

Of those who would decrease acreage or discontinue production, 57 per cent said they would use cropland formerly planted in peanuts for livestock purposes. Others would quit renting land or use cropland for some type of grain crop.

### **Credit**

Many peanut producers are hampered by limited capital resources. Thus, the only alternative in financing their farming operation is to borrow the necessary operating capital. Peanut producers who used short-term credit could not separate the amount of money used in the peanut enterprise from that used in other farm enterprises; therefore, the credit information obtained in this study applied to all farm enterprises.

Farmers with large peanut enterprises (over 130 acres) borrowed an average of \$20,433, as compared with \$2,966 for farmers with small peanut enterprises (less than 50 acres) Appendix Table 4. Short-term loans were obtained by almost 53 per cent in the large producer group, but only 21.3 per cent of producers with small enterprises. During the interviews, farmers with small peanut enterprises appeared more reluctant to borrow capital than farmers with large enterprises.

Fifty-eight per cent of the farmers using credit reported commercial banks as their primary source. Production Credit Associations, which were second to commercial banks, and the Farmers Home Administration were other credit sources used. Nineteen of the 40 farmers who borrowed money gave crops as security for short-term loans. Other types of security reported were livestock, machinery, and equipment, or a combination of these. The borrowed funds were used for general farm operating expenses, including such items as seed, fertilizer, labor, and equipment repairs. Interest rate averaged 7.5 per cent per annum.

### Peanut Yields

Average peanut yield for Alabama was 1,660 pounds per acre in 1970 (6), but growers in the sample reported an average of 2,204 pounds in 1970 and 1,903 pounds per acre over the last 5 years. The highest average by a single farmer in the sample over the last 5 years was 2,390 pounds per acre. The years in which sample farmers reported highest yields were as follows:

<i>Years</i>	<i>Per cent</i>
1970.....	55.3
1969.....	18.4
1968.....	14.0
1967.....	8.8
1966.....	3.5

## PRODUCTION PRACTICES IN PRODUCING PEANUTS

### Cropping System

A good crop rotation system is important in the production of peanuts. Planting peanuts on the same soil year after year is not recommended because of increases in disease and nematodes that lower yields and grades.

All farmers interviewed indicated an awareness of recommended rotation practices and said there were definite advantages in rotating peanuts with other crops. Of the 114 farmers interviewed, approximately 95 per cent reported some form of crop rotation — 54 per cent with corn on a yearly basis and 39 per cent rotated peanuts with a combination of other crops, mainly corn and cotton. Others rotated peanuts with soybeans, truck crops, and idle land. Three farmers planted peanuts behind peanuts because of too little land for rotation. Many farmers indicated they would like to rotate corn and peanuts more often but lack of suitable land prevented it.

### Varieties

The most common peanut varieties planted in the Wiregrass Area of Alabama in 1970 were the Florunner, Florigiant, Early Runner, and Virginia Bunch 67. For analysis purposes, data on Early Runner and Virginia Bunch 67 were combined and the name Early Runner was used when referring to these two varieties. Cultural practices and seed cost of these two varieties are similar and both are marketed as runner type peanuts.

Varieties included in this study and average yields obtained were as follows:

<i>Variety</i>	<i>Average yield per acre, pounds</i>	<i>Number of farmers</i>
Florunner.....	2,696	56
Florigiant.....	2,327	88
Early Runner.....	1,956	83

Florigiant was the most popular variety in terms of acres planted. It was grown by 88 of the 114 farmers on an average of 54.3 acres. However, Florunners produced a higher average yield than Florigiants. Since the Florunner was a relatively new variety with a limited supply of seed, farmers were not able to plant as many acres as they wanted to grow. Many farmers indicated their 1971 peanut enterprise would consist mainly of Florunners if seed supplies were adequate.

### Cultural Practices

**LAND PREPARATION.** Land preparation consisted mostly of disk harrowing, breaking land, and applying herbicides. There was some variation, depending on the previous crop. Where cotton was the previous crop, it was necessary to cut the cotton stalks, usually with a rotary mower. After cutting stalks, land was usually disked with a harrow and then broken. The most common type plows used for breaking were 3- and 4-bottom ones. The land was usually disked after breaking and herbicides applied with a sprayer and incorporated with a disk harrow. Some farmers reported disk harrowing land twice after herbicides were applied because herbicides were more effective when this was done.

**FERTILIZATION.** Soil test results are an excellent guide for lime and fertilizer use. Sixty-four per cent of the farmers reported having soil tested during 1968-70. As size of enterprise increased, a larger percentage of farmers reported having soil tested. Thirty-eight per cent followed the recommendations and the others applied more fertilizer than was recommended.

Although only 64 per cent of the producers had peanut soil tested, 85 per cent had limed within the past 3 years. Percentage using lime went up as size of peanut enterprise increased. However, farmers in the small enterprise group applied about the same rate of lime (1 ton per acre) as the large size group.

Although soil testing is the recommended way to determine

fertilizer requirements, the recommended rate<sup>2</sup> for peanuts is as follows (2):

Fertilizer element	Amount per acre, by fertility level, lb.		
	Low	Medium	High
P <sub>2</sub> O <sub>5</sub> .....	80	40	0
K <sub>2</sub> O.....	80	40	0

Data on average amount of fertilizer applied per acre for the peanut varieties included in this study, Table 2, indicate that farmers were using sufficient amounts for medium soil fertility. All but 2 of the 114 farmers reported some direct application of mixed fertilizer to peanuts. These two planted peanuts following corn that got an extra amount of fertilizer, which they considered adequate for the peanut crop. Although nitrogen is not recommended for peanuts, 78 per cent of the farmers reported applying it to the crop because "it added growth when peanuts were young."

TABLE 2. AVERAGE RATES OF MIXED FERTILIZERS USED BY VARIETIES, 114 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970<sup>1</sup>

Variety	Farms planting variety	Nitrogen used per acre	P <sub>2</sub> O <sub>5</sub> used per acre	K <sub>2</sub> O used per acre
	No.	Lb.	Lb.	Lb.
Florunner.....	56	16.9	51.2	75.3
Florigiant.....	88	17.1	51.3	75.9
Early Runner.....	83	16.4	51.6	67.9
AVERAGE.....		16.8	51.4	73.0

<sup>1</sup> For use of fertilizers by varieties within size of enterprise, see Appendix Tables 5, 6, and 7.

Many farmers reported applying either gypsum or slag as a topdressing for peanuts during the blooming stage. The highest rate of gypsum used was on Florigiants, with 58 farmers applying an average of 692 pounds per acre. Early Runners received the lowest rate, an average of 495 pounds per acre applied by 19 farmers, Table 3. Farmers topdressing with slag used an average of 670 pounds per acre.

Ninety-seven farmers reported broadcasting fertilizer and 15 drilled it in rows. Among those who reported broadcasting, 63 per cent used custom hire with the charge for spreading included in price per ton paid for the fertilizer. The remaining farmers

<sup>2</sup> No nitrogen is recommended regardless of level of soil fertility.

TABLE 3. AVERAGE RATES OF GYPSUM AND SLAG USED BY VARIETIES, 114 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Variety	Gypsum use		Slag use	
	Farms using	Rate per acre	Farms using	Rate per acre
	No.	Lb.	No.	Lb.
Florunner.....	23	562	30	713
Florigiant.....	58	692	45	683
Early Runner.....	19	495	60	613
AVERAGE.....		583		670

spread fertilizer with their own equipment – generally 2-row and 4-row mechanical spreaders pulled by tractors.

PLANTING. Planters used for planting peanuts were also used for other crops like corn and cotton. All peanuts were planted with 2- or 4-row planters: 58 per cent used 4-row and 42 per cent 2-row planters.

The average seeding rate per acre was 78 pounds for Florunners, 106 pounds for Florigiants, and 84 pounds for Early Runners, Appendix Table 8. Spacing in the drill and width of rows were uniform among the varieties, with averages of 2.5 inches and 35.7 inches, respectively. Farmers planting the Early Runner variety used a higher percentage of certified seed than did those planting the other two varieties. As size of enterprise increased, the number planting certified seed decreased and number planting registered seed increased, Appendix Table 9. Three farmers in the large size group planted both certified and non-certified seed. The middle size group used a slightly higher average seeding rate per acre than the large size group.

WEED CONTROL. Only one of the interviewed farmers reported not using some type of herbicide. Of those using herbicides, 90 per cent reported using Benefin or Vernolate or a combination of the two. Cost per acre for the pre-emergence material averaged \$9.15. Twelve farmers reported having herbicides custom applied at an average cost of \$2.70 per acre.

Cultivation also was used to control weeds, and the farmers reported an average of three cultivations. Hoeing and hand weeding have decreased in recent years with improvement of chemical and mechanical weed control methods, but 42 per cent reported hiring labor for hoeing and hand weeding.

INSECT AND DISEASE CONTROL. Ninety-seven per cent of the farmers reported using fungicides on peanuts, mainly to control

**TABLE 4. PERCENTAGE OF FARMERS APPLYING FUNGICIDE, AVERAGE NUMBER OF APPLICATIONS, AND AVERAGE COST PER ACRE BY SIZE OF ENTERPRISE, 114 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970**

Size of enterprise, acres	Farms in size groups	Proportion applying fungicide	Number of applications	Cost per acre
	<i>No.</i>	<i>Pct.</i>	<i>No.</i>	<i>Dol.</i>
0-50.9.....	47	91.5	2.7	7.68
51-130.9.....	33	100.0	2.8	11.15
131 or more.....	34	100.0	2.9	12.24
<b>AVERAGE OR TOTAL.....</b>	<b>114</b>	<b>97.2</b>	<b>2.8</b>	<b>10.36</b>

leafspot. The most common material used was copper-sulfur, with some farmers adding Sevin to control worms. Custom application by airplane was reported by 14 per cent of the farmers. Those applying fungicides with ground rigs used either a tractor mounted duster or sprayer depending on whether dust or liquid was used. The most common rate of dust per application was 20 pounds per acre.

Growth in size of enterprise was accompanied by an increase in average cost per acre of fungicide, Table 4. Farmers with large peanut enterprises tended to use slightly more fungicide per acre than those with smaller acreage. Average cost per acre of fungicide for all farms was \$10.36. The number of fungicide applications was positively related with yield. Yield increased about 400 pounds per acre as number of applications went from 0-3 up to 7 or more, as shown below:

<i>Number of fungicide applications</i>	<i>Average yield, pounds</i>	<i>Number of farms</i>
0-3.....	1,856	23
4-6.....	2,195	70
7 or more.....	2,213	21

**Harvesting**

The principal method used to determine when to dig peanuts was to pull up a sample in several different spots in the field and examine the inside hulls of the peanuts. If 60 to 80 per cent of the inside of hulls were dark colored, it was time to start digging. Many farmers indicated that condition of vines also was important in determining the time to dig. If vines are allowed to deteriorate before digging, excessive amounts of peanuts will usually be left on or in the soil. Harvesting dates for the different varieties varied from the last 10 days in August to the middle 10 days in September.

Harvest dates by varieties were distributed as follows:

Date	Number harvesting		
	Florunner	Florigiant	Early Runner
August 22-31.....	24	38	44
September 1-10.....	26	42	28
September 11-20.....	3	0	3
Combination.....	3	5	7

Seventeen farmers reported getting peanuts dug on a custom basis for average cost of \$3.40 per acre. These farmers had small peanut enterprises and thought it was not economical to own a digger-shaker.

Peanut combines, powered by either engines or power take-offs and primarily pulled by a tractor, were used to harvest peanuts. Only two farmers reported using self-propelled combines. Thirty-six farmers with small peanut enterprises had peanuts harvested on a custom basis and paid an average of \$22.07 per acre.

In recent years, many of the larger size peanut farmers have bought and installed peanut drying systems rather than using custom drying. In 1970, 32 of the 114 farmers did their own peanut drying. Since these farmers were unable to give the necessary cost data for their drying systems, they were charged the average price reported for custom drying.

### Labor Inputs

Labor requirements for peanut production are relatively high compared with other crop enterprises. Land preparation through harvest took an average of 7.16 hours per acre, Table 5.

As size of enterprise increased, labor required per acre decreased, Appendix Table 10. When labor inputs were analyzed

TABLE 5. LABOR HOURS AND PERCENTAGE OF TOTAL LABOR PER ACRE BY OPERATIONS USED IN PEANUT PRODUCTION, 114 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970<sup>1</sup>

Operation	Labor hours	Per cent of total labor
Land preparation.....	2.29	32
Planting.....	.56	8
Cultivation.....	1.20	17
Application of fertilizer and fungicide.....	1.15	16
Hoing and weeding.....	.65	9
Harvest.....	1.29	18
Total labor.....	7.16	100

<sup>1</sup> Includes farmers who used custom work for various operations, but were charged no labor.



by size of peanut enterprise, however, there was a marked difference in some operations. Labor for land preparation, planting, and cultivation showed a definite decrease with large size of operation. Harvesting labor for the small group was much lower than the two larger groups, but this figure is misleading because 77 per cent of the small operations used custom harvesting. Farmers in the middle and large size groups used their own equipment for harvesting.

Data were also divided into three groups on the basis of total costs of production excluding land and labor costs — high, medium, and low cost groups. When labor inputs were analyzed on this basis, the high cost group had the largest total labor requirements per acre, Appendix Table 11. Labor for land preparation, cultivation, and application of fertilizer and fungicide increased as total costs of production went higher.

### **COST AND RETURNS OF PRODUCING PEANUTS**

Cost of inputs usually fluctuates slightly from year to year because of price variations. Total costs of producing peanuts fluctuate little from year to year, however, mainly because farmers tend to use the same production practices every year. The price received per ton based on quality has remained relatively constant since the United States Government sets price supports for peanuts. But gross returns from peanuts are quite unstable since yield varies from year to year.

#### **Costs**

Costs were determined by the price reported paid and quantity of inputs that producers used. Average material cost per acre varied among the varieties, Table 6. This averaged \$9.11 higher for Florigiant than Florunner and \$17.10 higher than the Early Runner, primarily because of higher seed cost. Material cost averaged \$69.03 per acre for all farms, Table 7.

The material cost of \$69.03 per acre accounted for 65 per cent of average variable cost. Average variable machinery cost was \$11.04 per acre for all farms, with land preparation and harvesting making up 64 per cent of this. Custom work for all farms averaged \$27.91 per acre and accounted for 25 per cent of average variable cost. Average variable cost for producing peanuts amounted to \$112.30 per acre for all farms.

TABLE 6. AVERAGE MATERIAL COSTS BY VARIETIES, 114 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Item	Cost per acre, by variety		
	Florunner	Florigiant	Early Runner
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Seed .....	28.79	37.20	24.60
Fertilizer .....	17.22	18.76	16.06
Lime .....	2.71	2.71	2.71
Herbicide .....	9.40	9.50	8.90
Fungicide .....	11.90	10.96	9.76
TOTAL MATERIAL COST .....	70.02	79.13	62.03
<i>Number of farms planting</i> .....	56	88	83
<i>Average yield/acre, pounds</i> .....	2,696	2,327	1,956

TABLE 7. AVERAGE VARIABLE COSTS FOR PRODUCING PEANUTS, 114 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Item	Variable cost per acre
	<i>Dollars</i>
<b>Material cost</b>	
Seed .....	30.15
Fertilizer .....	16.98
Lime .....	2.71
Herbicide .....	9.15
Fungicide .....	10.04
TOTAL MATERIAL COST .....	69.03
<b>Machinery cost</b>	
Land preparation .....	3.50
Planting .....	.88
Cultivating .....	1.64
Application of fertilizer and fungicide .....	1.41
Harvesting .....	3.61
TOTAL MACHINERY COST .....	11.04
Custom drying .....	13.06
Custom hire <sup>1</sup> .....	14.85
Interest on operating capital .....	4.32
TOTAL VARIABLE COST .....	112.30
<i>Number of farms</i> .....	114
<i>Average acreage of peanuts/farm</i> .....	100.8
<i>Average yield/acre, pounds</i> .....	2,204

<sup>1</sup> Includes custom combining, digging, hauling, and application of herbicide and fungicide.

### Returns

With average yield of 2,204 pounds per acre, the 114 peanut producers in the study had an average gross return of \$289.30 per acre, Table 8. Net return to land, labor, and management averaged \$166.68 per acre. This figure does not include a charge for land or labor. Land was charged at the average cash rent of

TABLE 8. AVERAGE COSTS AND RETURNS FOR PRODUCING PEANUTS,  
114 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Item	Average costs and returns per acre
	<i>Dollars</i>
Gross returns.....	289.30
Total variable cost.....	112.30
Fixed machinery cost.....	10.32
Land cost <sup>1</sup> .....	22.60
Labor cost.....	11.46
All costs.....	156.68
Returns to land, labor, and management.....	166.68
Returns to land and management.....	155.22
Returns to labor and management.....	144.08
Returns to management.....	132.62
<i>Number of farms</i> .....	114
<i>Average acreage of peanuts/farm</i> .....	100.8
<i>Average yield/acre, pounds</i> .....	2,204

<sup>1</sup> Charged at average cash rent.

\$22.60 per acre and labor at \$1.60 per hour for an average of 7.16 hours. Thus, total labor charge was \$11.46 per acre. Land and labor charges raised average total cost of production to \$156.68 per acre, leaving a net return to management of \$132.62 per acre.

**Effect of Size of Enterprise**

To determine whether economies of size were present, the data were divided into three groups based on acreage of peanuts. As size of enterprise increased, yield per acre decreased and material cost increased, Table 9. The large size group spent more for seed, fertilizer, herbicide, and fungicide than either of the other two groups. Material cost averaged \$63.04 per acre for the small size group and \$75.12 per acre for the large.

Size group differences in average variable machinery cost are unrealistic because many farmers in the small group used custom hire for many operations and were charged no machinery cost. If custom work were added to average variable and fixed machinery cost, the average total machinery cost of each group would have been as follows:

Item	Cost by size group		
	<i>Small</i>	<i>Middle</i>	<i>Large</i>
Variable machinery cost.....	\$ 9.48	\$12.51	\$11.78
Custom work.....	36.98	19.64	18.75
Fixed machinery cost.....	7.83	12.70	11.46
TOTAL.....	\$54.29	\$44.85	\$41.69

TABLE 9. AVERAGE VARIABLE COSTS FOR PEANUT PRODUCER GROUPS BY SIZE OF ENTERPRISE, 114 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Item	Variable cost/acre by acreage		
	0-50.9 <i>Dollars</i>	51-130.9 <i>Dollars</i>	131 or more <i>Dollars</i>
<b>Material cost</b>			
Seed.....	28.84	30.95	31.19
Fertilizer.....	15.92	16.60	18.80
Lime.....	2.52	2.70	2.59
Herbicide.....	8.08	9.49	10.30
Fungicide.....	7.68	11.15	12.24
TOTAL MATERIAL COST.....	63.04	70.89	75.12
<b>Machinery cost</b>			
Land preparation.....	3.45	3.67	3.40
Planting.....	1.02	.84	.74
Cultivating.....	1.88	1.51	1.43
Application of fertilizer and fungicide....	1.31	1.33	1.62
Harvesting.....	1.82	5.16	4.59
TOTAL MACHINERY COST.....	9.48	12.51	11.78
Custom drying.....	13.29	13.04	12.74
Custom hire <sup>1</sup> .....	23.69	6.60	6.01
Interest on operating capital.....	4.38	4.12	4.22
TOTAL VARIABLE COST.....	113.88	107.16	109.87
Number of farms.....	47	33	34
Average acreage of peanuts/farm.....	23.2	91.8	216.8
Average yield/acre, pounds.....	2,292	2,186	2,099

<sup>1</sup> Includes custom combining, digging, hauling, and application of herbicide and fungicide.

These figures indicate decreasing costs as size of enterprise increased.

The small size group had the highest average total cost, but these farmers also had a higher net return per acre than in either of the larger groups, Table 10. Both gross returns and net returns decreased as size of enterprise increased. The differences in net returns to land, labor, and management indicated that increasing returns to size did not exist in peanut production. A decrease in average yield per acre as size of enterprise increased was the reason for the lower net returns.

When data were analyzed by varieties within size of enterprise, cost and returns varied among varieties. The middle size group growing Florunner variety had the highest average yield and highest return per acre — 2,888 pounds and gross return of \$387.45 per acre, Appendix Table 12. Average variable cost for the middle size group was \$104.25 per acre and net return to land, labor, and management averaged \$270.50 per acre.

For the Florigiant variety, average yield per acre went down

TABLE 10. AVERAGE COSTS AND RETURNS FOR PEANUT PRODUCER GROUPS BY SIZE OF ENTERPRISE, 114 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Item	Costs and returns/acre, by acreage		
	0-50.9	51-130.9	131 or more
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Gross returns.....	297.44	290.61	276.80
Total variable cost.....	113.88	107.16	109.87
Fixed machinery cost.....	7.83	12.70	11.46
Land cost <sup>1</sup> .....	22.60	22.60	22.60
Labor cost.....	12.43	10.90	10.67
All costs.....	156.74	153.36	154.60
Returns to land, labor, and management	175.73	170.75	155.47
Returns to land and management.....	163.30	159.85	144.80
Returns to labor and management.....	153.13	148.15	132.87
Returns to management.....	140.70	137.25	122.20
<i>Number of farms</i> .....	47	33	34
<i>Average acreage of peanuts/farm</i> .....	23.2	91.8	216.8
<i>Average yield/acre, pounds</i> .....	2,292	2,186	2,099

<sup>1</sup> Charged at average cash rent.

as size of enterprise increased, Appendix Table 13. Cost of production for the small size group averaged \$171.45 per acre, higher than for either of the other two size groups. Although the small enterprise group had the highest production cost, it also made the highest net return to land, labor, and management, \$198.70 per acre. Of the three size groups producing the Florigiant variety, the small one had the highest yield, highest gross return, highest total cost, and highest net return per acre.

For the Early Runner variety, farmers in the small size group produced an average of 2,076 pounds per acre, highest yield of the three size groups for this variety, Appendix Table 14. As with Florigiants, average yield of Early Runners dropped as size of enterprise increased. The small size group had the highest gross return, highest total cost, and highest net return per acre from Early Runners.

### Comparison Among Cost Groups

Data were divided into cost groups based on average total costs of production, excluding a charge for land and labor. These groups were designated as low, medium, and high. Analysis of cost groups revealed that increases in average total cost of production were accompanied by increases in average yield per acre, gross returns, and net returns.

Material cost for the high cost group was \$79.15 per acre, as

TABLE 11. AVERAGE VARIABLE COSTS FOR PEANUT PRODUCER GROUPS BY COSTS OF PRODUCTION, 114 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Item	Variable costs/acre by cost groups <sup>1</sup>		
	Low	Medium	High
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
<b>Material cost</b>			
Seed .....	25.60	29.71	39.94
Fertilizer .....	15.08	16.62	19.03
Lime .....	2.56	2.59	2.63
Herbicide .....	7.98	8.86	10.26
Fungicide .....	7.16	10.53	12.29
TOTAL MATERIAL COST .....	58.38	68.31	79.15
<b>Machinery cost</b>			
Land preparation .....	3.31	3.62	3.61
Planting .....	.81	.78	1.07
Cultivating .....	1.58	1.68	1.69
Application of fertilizer and fungicide .....	1.14	1.37	1.69
Harvesting .....	3.72	3.61	3.42
TOTAL MACHINERY COST .....	10.56	11.06	11.48
Custom drying .....	9.57	13.30	16.25
Custom hire <sup>2</sup> .....	7.96	13.19	20.16
Interest on operating capital .....	3.46	4.23	5.08
TOTAL VARIABLE COST .....	89.93	110.09	132.12
Number of farms .....	38	38	38
Average acreage of peanuts/farm .....	95.5	128.1	77.7
Average yield/acre, pounds .....	1,840	2,171	2,600

<sup>1</sup> Based on total cost of production excluding land and labor costs.

<sup>2</sup> Includes custom combining, digging, hauling, and application of herbicide and fungicide.

compared with \$58.38 per acre for the low cost group, Table 11. Average variable machinery cost for the low and high cost groups was \$10.56 and \$11.48 per acre, respectively. Adding custom work to average variable and fixed machinery cost brought average total machinery cost per acre for the three groups up to the following:

Item	Cost by cost groups		
	Low	Medium	High
Variable machinery cost .....	\$10.56	\$11.06	\$11.48
Custom work .....	17.53	26.49	36.41
Fixed machinery cost .....	9.41	9.69	11.74
TOTAL .....	\$37.50	\$47.24	\$59.63

Average yield per acre ranged from 1,840 pounds for the low cost group to 2,600 pounds for the high cost group, Table 12. When a charge for land and labor was included, expenses of production ranged from \$133.04 per acre for the low cost group to \$178.88 for the high group. Even though the high cost group had the highest production cost, their net return to land, labor, and

TABLE 12. AVERAGE COSTS AND RETURNS FOR PEANUT PRODUCER GROUPS BY COSTS OF PRODUCTION, 114 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Item	Costs and returns/acre by cost groups		
	Low	Medium	High
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Gross returns .....	234.93	283.69	347.02
Total variable cost .....	89.93	110.09	132.12
Fixed machinery cost .....	9.41	9.69	11.74
Land cost .....	22.60	22.60	22.60
Labor cost .....	11.10	10.90	12.42
All costs .....	133.04	153.28	178.88
Returns to land, labor, and management .....	135.59	163.91	203.16
Returns to land and management .....	124.49	153.01	190.74
Returns to labor and management .....	112.99	141.31	180.56
Returns to management .....	101.89	130.41	168.14
<i>Number of farms</i> .....	38	38	38
<i>Average acreage of peanuts/farm</i> .....	95.5	128.1	77.7
<i>Average yield/acre, pounds</i> .....	1,840	2,171	2,600

management averaged \$203.16 per acre, higher than for either of the other two groups. Much of the variation in return noted among these three cost groups resulted from differences in yield per acre.

Least-squares regression technique was used to estimate the relationship between size of enterprise and total costs of production (excluding land and labor costs) as size varied. Costs were calculated for each of the 114 farmers. The equation derived to estimate the influence of size of enterprise on costs was  $Y = 120.34 - .11183X$ , where  $Y$  = total costs of production excluding land and labor costs and  $X$  = size of enterprise. The correlation coefficient,  $r$ , was  $-.05$ . Using this analysis, the relationship between size of enterprise and total costs of production was not significant at the .05 level.

When data were analyzed by varieties within cost groups, yield and net return showed a definite increase as production costs went higher. The high cost group had the highest yield, highest gross returns, and highest net returns for all three peanut varieties, Appendix Tables 15, 16, and 17. The high gross and net returns were mainly the result of substantially higher yields of the high cost group.

### Variation Among Varieties

Analysis of the three varieties revealed wide variation in yield, gross returns, and net returns. Of the 114 farmers, 56 planted

Florunners and averaged 2,696 pounds yield per acre and gross return of \$363.86 per acre, Table 13. Variable cost was \$108.98 per acre, with material cost accounting for 64 per cent of it. Return to land, labor, and management was \$244.56 per acre and gross return less average total cost left a return to management of \$210.50 per acre. Some farmers reported selling Florunners for as high as \$300 per ton. The average grade for this variety was 73 per cent sound mature kernels.

Average yield for the Florigiant variety was 2,327 pounds per acre. Florigiants had the highest material cost of the three varieties, \$79.13 per acre, and this accounted for 65 per cent of the \$122.01 per acre variable cost. Seed was the high item in material cost, \$37.20 per acre. Average total cost for Florigiants was \$166.39 per acre. It was higher than the other two varieties

TABLE 13. AVERAGE COSTS AND RETURNS FOR PRODUCING PEANUTS BY VARIETIES, 114 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Item	Costs and returns by variety		
	Florunner	Florigiant	Early Runner
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
<b>Variable costs</b>			
<b>Material</b>			
Seed .....	28.79	37.20	24.60
Fertilizer.....	17.22	18.76	16.06
Lime .....	2.71	2.71	2.71
Herbicide.....	9.40	9.50	8.60
Fungicide.....	11.90	10.96	9.76
TOTAL MATERIAL COST.....	70.02	79.13	62.03
Custom drying.....	12.00	15.00	12.00
Custom hire <sup>1</sup> .....	11.73	12.15	12.18
Variable machinery cost.....	11.04	11.04	11.04
Interest on operating capital.....	4.19	4.69	3.89
TOTAL VARIABLE COST.....	108.98	122.01	101.14
<b>Other costs</b>			
Fixed machinery cost.....	10.32	10.32	10.32
Land cost <sup>2</sup> .....	22.60	22.60	22.60
Labor cost.....	11.46	11.46	11.46
ALL COSTS.....	153.36	166.39	145.52
Returns to land, labor, and management.....	244.56	181.35	135.79
Returns to land and management.....	233.10	169.89	124.33
Returns to labor and management.....	221.96	158.75	113.19
Returns to management.....	210.50	147.29	101.73
Number of farms.....	56	88	83
Average acreage of peanuts/farm.....	41.3	54.3	53.0
Average yield/acre, pounds.....	2,696	2,327	1,956
Average gross receipts/acre, dollars.....	363.86	313.68	247.25

<sup>1</sup> Includes custom combining, digging, hauling, and application of herbicide and fungicide.

<sup>2</sup> Charged at average cash rent.



mainly because of a heavier seeding rate and therefore a higher seed cost per acre. Return to land, labor, and management was \$181.35 and gross return less average total cost left a return to management of \$147.29 per acre. Even though producing Early Runner peanuts cost less than the other varieties, returns were also less. Eighty-three farmers planted this variety and averaged 1,956 pounds per acre. Gross return of \$247.25 per acre for Early Runners was more than \$100 less per acre than from Florunners. Material cost of \$24.60 per acre accounted for 61 per cent of average total variable cost, which was \$20 less than for Florigiants. The return to land, labor, and management was \$135.79 per acre, as compared with \$244.56 for Florunners and \$181.35 for Florigiants. Average grade for Early Runners was 68 per cent sound mature kernels. Many farmers who planted this variety indicated they would change to Florunners in 1971. Of the three varieties in the study, the Florunner was by far the highest yielding and most profitable in 1970.

To determine how cultural practices and other related characteristics, such as age and education of the producer, affect yields, the averages for the 10 high and 10 low producers for each variety were computed, Appendix Table 18. The items showing the most differences between the two groups were: (1) number of fungicide applications (high producers used about two more applications per acre); (2) rate of seeding (high producers used about 8 pounds per acre more seed); and (3) age of farmer (high producers averaged about 7 years older).

Based on analysis of the cultural practices it seemed that timeliness, quality, and precision of operation, along with rainfall, probably influenced yield as much or more than the difference in cultural practices.

### SUMMARY

The overall objective of this study was to provide up-to-date data on cost and returns of peanut production that would help farmers increase net farm income. Size of enterprise and variety of peanuts grown were examined for their effect on production costs and gross and net returns.

Varieties included were Florunners averaging 2,696 pounds per acre, Florigiants averaging 2,327 pounds, and Early Runners averaging 1,956 pounds per acre. The average seeding rate per

acre was 78 pounds for Florunners, 106 pounds for Florigiants, and 84 pounds for Early Runners. As size of enterprise increased, there was a decrease in number of farmers planting certified seed.

The number of fungicide applications was positively related to yield. Yield increased about 400 pounds per acre as number of applications increased from 0-3 up to 7 or more.

Average amount of labor required for all farms from land preparation through harvest was 7.16 hours per acre. Labor needs went down as size of enterprise increased. When data were sorted by total costs of production, the high cost group had highest average total labor requirements per acre.

Gross return for all farms in 1970 averaged \$289.30 per acre. Material and machinery cost (including interest on operating capital) totaled \$122.62 per acre, leaving an average return to land, labor, and management of \$166.68 per acre. Charging \$22.60 cash rent for land brought return to labor and management down to \$144.08 per acre. When average labor requirement was charged at \$1.60 per hour, average return to management was \$132.62 per acre.

As size of enterprise increased, the analysis showed that yield per acre decreased, gross returns per acre decreased, and net returns per acre decreased. When average total machinery cost was added to custom work, machinery cost showed a decreasing trend as size of enterprise increased. But farmers with small peanut enterprises had higher average return to land, labor, and management, \$175.73 per acre, as compared with \$155.47 per acre for farmers with large enterprises. A decrease in average yield per acre with larger enterprises was the major reason for this drop in net returns. Another difference was in materials cost, \$75.12 per acre for the large group and \$63.04 per acre for the small group.

Data were divided into three cost groups based on total costs of production excluding a charge for land and labor. Analysis of these groups revealed that as total cost of production increased there were increases in average yield per acre, gross returns, and net returns. Therefore, the additional materials – seed, fertilizer, herbicides, and fungicides – more than paid for themselves. Least squares regression technique was used to estimate relationship between size of enterprise and total costs of production as size varied. The relationship between size and total costs of production indicated no significant trend.

Analysis of data by varieties identified Florunners as by far the

highest yielding and most profitable variety in 1970. Its gross return was \$363.86 per acre, with net return to land, labor, and management amounting to \$244.56 per acre. Florigiants had highest total production cost (average of \$166.39 per acre) mainly because of higher seed price and heavier seeding rate per acre. Early Runners had the lowest net return to land, labor, and management, \$135.79 per acre. Many farmers who planted this variety indicated intentions of changing to Florunners in 1971.

Some farmers with large peanut enterprises indicated that it was more economical for them to install a drying system rather than paying a custom rate. No cost data were obtained on drying systems and more research is needed in this area.

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**APPENDIX**

APPENDIX TABLE 1. ESTIMATED LIFE OF FARM MACHINERY

Machine	Years until obsolete	Wear-out life	Use/year for wear-out life to equal obsolescence life
	<i>Years</i>	<i>Hours</i>	<i>Hours</i>
<b>Tillage</b>			
Cultivator .....	12	2,500	208
Disk harrow .....	15	2,500	167
Moldboard plow .....	15	2,500	167
Rotary hoe .....	15	1,500	100
Spike-tooth harrow .....	20	2,500	125
Spring-tooth harrow .....	20	2,000	100
<b>Planting</b>			
Row crop planter .....	15	1,200	80
Fertilizer distributors .....	15	1,200	80
<b>Harvesting</b>			
Peanut combine .....	10	1,200	120
Peanut digger-shaker .....	12	1,500	125
Rake, side delivery .....	12	2,500	208
<b>Miscellaneous</b>			
Rotary cutter .....	12	2,000	167
Field sprayer .....	10	1,500	150
<b>Tractor</b>			
Wheel-type tractor .....	15	12,000	800

Source: American Society of Agricultural Engineers, St. Joseph, Michigan, ASAE Data: AS D230, Farm Machinery Cost and Use.

APPENDIX TABLE 2. AVERAGE NUMBER OF ACRES OWNED, OPERATED, AND RENTED BY SELECTED PEANUT PRODUCERS, 114 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Item	Acres/farm, average	Number of farms
Acres operated .....	596	114
Acres owned .....	397	109
Acres rented .....	304	82

APPENDIX TABLE 3. NUMBER OF FARMS AND ACREAGE BY CROPS GROWN ON SELECTED PEANUT PRODUCING FARMS, 114 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Crop	Number of farms	Total acres	Average acreage per farm
Peanuts .....	114	11,494	100.8
Corn .....	109	10,816	99.2
Cotton .....	73	2,770	37.9
Produce crops .....	32	596	18.6
Wheat .....	28	1,448	51.7
Grazing and cover crops .....	20	717	35.9
Soybeans .....	16	990	61.9
Grain sorghum .....	6	631	105.2

APPENDIX TABLE 4. PERCENTAGE, AMOUNT, AND SOURCES OF CREDIT BY SIZE OF ENTERPRISE, 114 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Size of enterprise, acres	Farms	Farmers using credit	Average amount borrowed	Sources of credit		
				Commercial bank	P.C.A. <sup>1</sup>	Other <sup>2</sup>
	<i>No.</i>	<i>Pct.</i>	<i>Dol.</i>	<i>Pct.</i>	<i>Pct.</i>	<i>Pct.</i>
0-50.9 .....	47	21.3	2,996	10.6	4.3	6.4
51-130.9 .....	33	36.4	8,558	21.2	12.1	3.1
131 or more .....	34	52.9	20,433	32.3	20.6	0.0
TOTAL OR AVERAGE .....	114	36.9	10,662	21.4	12.3	3.2

<sup>1</sup> Production Credit Associations.<sup>2</sup> Includes merchants, individuals, and Farmers Home Administration.

APPENDIX TABLE 5. AVERAGE RATES OF MIXED FERTILIZERS USED BY FLORUNNER PRODUCERS BY SIZE OF ENTERPRISE, 56 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Size of enterprise, acres	Farms planting variety	Nitrogen used per acre	P <sub>2</sub> O <sub>5</sub> used	K <sub>2</sub> O used
			per acre	per acre
	<i>No.</i>	<i>Lb.</i>	<i>Lb.</i>	<i>Lb.</i>
0-50.9 .....	18	18.4	53.2	75.0
51-130.9 .....	16	16.0	62.5	77.9
131 or more .....	22	17.1	55.6	80.5
AVERAGE OR TOTAL .....	56	17.2	57.1	77.8

APPENDIX TABLE 6. RATES OF MIXED FERTILIZERS USED BY FLORIGIANT PRODUCERS BY SIZE OF ENTERPRISE, 88 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Size of enterprise, acres	Farms planting variety	Nitrogen used per acre	P <sub>2</sub> O <sub>5</sub> used	K <sub>2</sub> O used
			per acre	per acre
	<i>No.</i>	<i>Lb.</i>	<i>Lb.</i>	<i>Lb.</i>
0-50.9 .....	29	19.6	46.6	63.1
51-130.9 .....	27	14.6	57.4	71.1
131 or more .....	32	15.9	48.0	85.6
AVERAGE OR TOTAL .....	88	16.7	50.7	73.3

APPENDIX TABLE 7. AVERAGE RATES OF MIXED FERTILIZERS USED BY EARLY RUNNER PRODUCERS BY SIZE OF ENTERPRISE, 83 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Size of enterprise, acres	Farms planting variety	Nitrogen used per acre	P <sub>2</sub> O <sub>5</sub> used	K <sub>2</sub> O used
			per acre	per acre
	<i>No.</i>	<i>Lb.</i>	<i>Lb.</i>	<i>Lb.</i>
0-50.9 .....	32	15.5	41.8	59.8
51-130.9 .....	25	14.4	54.2	56.8
131 or more .....	26	18.5	56.3	81.3
AVERAGE OR TOTAL .....	83	16.1	50.8	66.0

APPENDIX TABLE 8. SEEDING PRACTICES BY PEANUT VARIETY, 114 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Variety	Farms planting variety	Average rate of seeding per acre	Average spacing in drill	Average width of rows	Used certified seed	Used non-certified seed	Used registered seed
	No.	Lb.	In.	In.	Pct.	Pct.	Pct.
Florunner.....	56	78	2.5	35.7	66.1 <sup>1</sup>	7.1 <sup>1</sup>	23.2 <sup>1</sup>
Florigiant.....	88	106	2.5	35.8	86.4 <sup>2</sup>	5.7 <sup>2</sup>	6.8 <sup>2</sup>
Early Runner.....	83	84	2.4	35.7	91.6 <sup>2</sup>	2.4 <sup>2</sup>	4.8 <sup>2</sup>
AVERAGE.....		89	2.5	35.7	81.4	5.1	11.6

<sup>1</sup> One farmer reported using both certified and non-certified seed and another reported using breeder seed.

<sup>2</sup> One farmer reported using both certified and non-certified seed.

<sup>3</sup> One farmer reported using both certified and non-certified seed.

APPENDIX TABLE 9. SEEDING PRACTICES BY SIZE OF ENTERPRISE, 114 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Size of enterprise, acres	Farms	Average rate of seeding per acre	Average spacing in drill	Average width of rows	Used certified seed	Used non-certified seed	Used registered seed
	No.	Lb.	In.	In.	Pct.	Pct.	Pct.
0-50.9.....	47	88	2.4	35.9	89.5	5.2	5.3
51-130.9.....	33	94	2.5	35.8	85.7	2.9	11.4
131 or more.....	34	93	2.6	35.6	75.0 <sup>1</sup>	6.2 <sup>1</sup>	13.8 <sup>1</sup>
AVERAGE OR TOTAL.....	114	92	2.5	35.8	83.4	4.8	10.2

<sup>1</sup> Three farmers used both certified and non-certified seed and another reported using breeder seed.

APPENDIX TABLE 10. LABOR HOURS PER ACRE USED IN THE PRODUCTION OF PEANUTS AND NUMBER OF FARMS BY SIZE OF ENTERPRISE, 114 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970<sup>1</sup>

Acres of peanuts	Number of farms	Hours of labor used per acre						
		Land preparation	Planting	Cultivation	Application of fertilizer and fungicide	Hoeing and weeding	Harvesting	Total
0-50.9 .....	47	2.77	.79	1.70	1.30	.37	.84	7.77
51-130.9 .....	33	2.09	.46	.92	1.01	.60	1.73	6.81
131 or more .....	34	1.83	.36	.79	1.09	1.10	1.50	6.67

<sup>1</sup> Includes farmers who used custom work for various operations. These farmers were charged no labor.

APPENDIX TABLE 11. LABOR HOURS PER ACRE USED IN THE PRODUCTION OF PEANUTS AND NUMBER OF FARMS BY COSTS OF PRODUCTION, 114 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970<sup>1</sup>

Cost groups <sup>2</sup>	Number of farms	Hours of labor used per acre						
		Land preparation	Planting	Cultivation	Application of fertilizer and fungicide	Hoeing and weeding	Harvesting	Total
Low .....	38	2.21	.51	1.17	.95	.75	1.35	6.94
Medium .....	38	2.28	.48	1.18	1.05	.54	1.28	6.81
High .....	38	2.40	.71	1.30	1.43	.69	1.23	7.76

<sup>1</sup> Includes farmers who used custom work for various operations. These farmers were charged no labor.

<sup>2</sup> Based on total costs of production excluding land and labor costs.



APPENDIX TABLE 12. AVERAGE COSTS AND RETURNS FOR PRODUCING FLORUNNER PEANUTS BY SIZE OF ENTERPRISE, 56 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Item	Costs and returns by acreage		
	0-50.9 <i>Dollars</i>	51-130.9 <i>Dollars</i>	131 or more <i>Dollars</i>
<b>Variable costs</b>			
<b>Material</b>			
Seed.....	27.64	29.43	29.27
Fertilizer.....	17.00	16.35	18.08
Lime.....	2.52	2.70	2.59
Herbicide.....	8.54	8.51	10.75
Fungicide.....	8.88	14.42	12.53
TOTAL MATERIAL COST.....	64.58	71.41	73.22
Custom drying.....	12.00	12.00	12.00
Custom hire <sup>1</sup> .....	22.07	4.32	3.97
Variable machinery cost.....	9.48	12.51	11.78
Interest on operating capital.....	4.32	4.01	4.04
TOTAL VARIABLE COST.....	112.45	104.25	105.01
<b>Other costs</b>			
Fixed machinery cost.....	7.83	12.70	11.46
Land cost <sup>2</sup> .....	22.60	22.60	22.60
Labor cost.....	12.43	10.90	10.67
ALL COSTS.....	155.31	150.45	149.74
Returns to land, labor, and management.....	229.09	270.50	242.08
Returns to land and management.....	216.66	259.60	231.41
Returns to labor and management.....	206.49	247.90	219.48
Returns to management.....	194.06	237.00	208.81
Number of farms planting.....	18	16	22
Average acreage of peanuts/farm.....	11.1	27.4	76.0
Average yield per acre, pounds.....	2,614	2,888	2,625
Average gross receipts/acre, dollars.....	349.37	387.45	358.55

<sup>1</sup> Includes custom combining, digging, hauling, and application of herbicide and fungicide.

<sup>2</sup> Charged at average cash rent.

APPENDIX TABLE 13. AVERAGE COSTS AND RETURNS FOR PRODUCING  
FLORIGIANT PEANUTS BY SIZE OF ENTERPRISE, 88 PEANUT  
FARMS, WIREGRASS AREA OF ALABAMA, 1970

Item	Costs and returns by acreage		
	0-50.9	51-130.9	131 or more
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
<b>Variable costs</b>			
<b>Material</b>			
Seed.....	37.85	36.23	37.53
Fertilizer.....	18.44	17.99	19.72
Lime.....	2.52	2.70	2.59
Herbicide.....	8.46	9.43	10.45
Fungicide.....	9.08	10.99	12.52
TOTAL MATERIAL COST.....	76.35	77.34	82.81
Custom drying.....	15.00	15.00	15.00
Custom hire <sup>1</sup> .....	22.82	4.84	4.06
Variable machinery cost.....	9.48	12.51	11.78
Interest on operating capital.....	4.94	4.39	4.54
TOTAL VARIABLE COST.....	128.59	114.08	118.19
<b>Other costs</b>			
Fixed machinery cost.....	7.83	12.70	11.46
Land cost <sup>2</sup> .....	22.60	22.60	22.60
Labor cost.....	12.43	10.90	10.67
ALL COSTS.....	171.45	160.28	162.92
Returns to land, labor, and management.....	198.70	186.71	166.10
Returns to land and management.....	186.27	175.81	155.43
Returns to labor and management.....	176.10	164.11	143.50
Returns to management.....	163.67	153.21	132.83
Number of farms planting.....	27	29	32
Average acreage of peanuts/farm.....	12.9	45.9	96.9
Average yield per acre, pounds.....	2,509	2,299	2,198
Average gross receipts/acre, dollars.....	335.12	313.49	295.75

<sup>1</sup> Includes custom combining, digging, hauling, and application of herbicide and fungicide.

<sup>2</sup> Charged at average cash rent.

APPENDIX TABLE 14. AVERAGE COSTS AND RETURNS FOR PRODUCING EARLY RUNNER PEANUTS BY SIZE OF ENTERPRISE, 83 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Item	Costs and returns by acreage		
	0-50.9	51-130.9	131 or more
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
<b>Variable costs</b>			
<b>Material</b>			
Seed.....	24.21	24.87	24.83
Fertilizer.....	14.55	15.78	18.19
Lime.....	2.52	2.70	2.59
Herbicide.....	7.60	9.64	9.79
Fungicide.....	7.08	9.91	12.90
TOTAL MATERIAL COST.....	55.96	62.90	68.30
Custom drying.....	12.00	12.00	12.00
Custom hire <sup>1</sup> .....	22.65	4.68	4.50
Variable machinery cost.....	9.48	12.51	11.78
Interest on operating capital.....	4.01	3.68	3.86
TOTAL VARIABLE COST.....	104.10	95.77	100.44
<b>Other costs</b>			
Fixed machinery cost.....	7.83	12.70	11.46
Land cost <sup>2</sup> .....	22.60	22.60	22.60
Labor cost.....	12.43	10.90	10.67
ALL COSTS.....	146.96	141.97	145.17
Returns to land, labor, and management.....	147.23	140.59	118.94
Returns to land and management.....	134.80	129.69	108.27
Returns to labor and management.....	124.63	117.99	96.34
Returns to management.....	112.20	107.09	85.67
Number of farms planting.....	32	25	26
Average acreage of peanuts/farm.....	17.0	50.4	100.0
Average yield per acre, pounds.....	2,076	1,941	1,822
Average gross receipts/acre, dollars.....	259.16	249.06	230.84

<sup>1</sup> Includes custom combining, digging, hauling, and application of herbicide and fungicide.

<sup>2</sup> Charged at average cash rent.

APPENDIX TABLE 15. AVERAGE COSTS AND RETURNS FOR PRODUCING FLORUNNER PEANUTS BY COSTS OF PRODUCTION, 56 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Item	Costs and returns by cost groups <sup>1</sup>		
	Low	Medium	High
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
<b>Variable costs</b>			
<b>Material</b>			
Seed .....	25.47	28.46	30.95
Fertilizer.....	15.30	16.70	18.68
Lime.....	2.56	2.59	2.63
Herbicide.....	7.93	8.79	10.76
Fungicide.....	8.37	12.70	13.20
TOTAL MATERIAL COST.....	59.63	69.24	76.22
Custom drying.....	12.00	12.00	12.00
Custom hire <sup>2</sup> .....	6.89	10.14	16.50
Variable machinery cost.....	10.56	11.06	11.48
Interest on operating capital.....	3.56	4.10	4.65
TOTAL VARIABLE COST.....	92.64	106.54	120.85
<b>Other costs</b>			
Fixed machinery cost.....	9.41	9.69	11.74
Land cost <sup>3</sup> .....	22.60	22.60	22.60
Labor cost.....	11.10	10.90	12.42
ALL COSTS.....	135.75	149.73	167.61
Returns to land, labor, and management.....	217.05	240.73	262.54
Returns to land and management.....	205.95	229.86	250.12
Returns to labor and management.....	194.45	218.16	239.94
Returns to management.....	183.35	207.26	227.52
Number of farms planting.....	13	20	23
Average acreage of peanuts/farm.....	46.1	52.9	28.4
Average yield per acre, pounds.....	2,398	2,635	2,919
Average gross receipts/acre, dollars.....	319.0	356.99	395.13

<sup>1</sup> Based on total costs of production excluding land and labor costs.

<sup>2</sup> Includes custom combining, digging, hauling, and application of herbicide and fungicide.

<sup>3</sup> Charged at average cash rent.

APPENDIX TABLE 16. AVERAGE COSTS AND RETURNS FOR PRODUCING FLORIGIANT PEANUTS BY COSTS OF PRODUCTION, 88 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Item	Costs and returns by cost groups <sup>1</sup>		
	Low	Medium	High
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
<b>Variable costs</b>			
<b>Material</b>			
Seed.....	32.91	38.16	39.03
Fertilizer.....	17.26	18.66	19.87
Lime.....	2.56	2.59	2.63
Herbicide.....	8.14	8.82	10.54
Fungicide.....	7.73	11.14	12.76
TOTAL MATERIAL COST.....	68.60	79.37	84.83
Custom drying.....	15.00	15.00	15.00
Custom hire <sup>2</sup> .....	6.96	11.15	17.48
Variable machinery cost.....	10.56	11.06	11.48
Interest on operating capital.....	4.04	4.66	5.15
TOTAL VARIABLE COST.....	105.16	121.24	133.94
<b>Other costs</b>			
Fixed machinery cost.....	9.41	9.69	11.74
Land cost <sup>3</sup> .....	22.60	22.60	22.60
Labor cost.....	11.10	10.90	12.42
ALL COSTS.....	148.27	164.43	209.60
Returns to land, labor, and management.....	144.87	174.23	209.60
Returns to land and management.....	133.77	163.33	197.18
Returns to labor and management.....	122.27	151.63	187.00
Returns to management.....	111.17	140.73	174.58
Number of farms planting.....	22	31	35
Average acreage of peanuts/farm.....	56.0	62.9	46.3
Average yield per acre, pounds.....	1,960	2,258	2,620
Average gross receipts/acre, dollars.....	259.44	305.16	355.28

<sup>1</sup> Based on total costs of production excluding land and labor costs.

<sup>2</sup> Includes custom combining, digging, hauling, and application of herbicide and fungicide.

<sup>3</sup> Charged at average cash rent.

APPENDIX TABLE 17. AVERAGE COSTS AND RETURNS FOR PRODUCING EARLY RUNNER PEANUTS BY COSTS OF PRODUCTION, 83 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Item	Costs and returns by cost groups <sup>1</sup>		
	Low	Medium	High
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
<b>Variable costs</b>			
<b>Material</b>			
Seed .....	22.81	24.80	27.44
Fertilizer .....	14.94	16.13	18.00
Lime .....	2.56	2.59	2.63
Herbicide .....	8.32	9.12	9.59
Fungicide .....	6.88	10.26	13.81
TOTAL MATERIAL COST .....	55.51	62.90	71.47
Custom drying .....	12.00	12.00	12.00
Custom hire <sup>2</sup> .....	7.55	11.28	16.61
Variable machinery cost .....	10.56	11.06	11.48
Interest on operating cost .....	3.42	3.89	4.46
TOTAL VARIABLE COST .....	89.04	101.13	116.02
<b>Other costs</b>			
Fixed machinery cost .....	9.41	9.69	11.74
Land cost <sup>3</sup> .....	22.60	22.60	22.60
Labor cost .....	11.10	10.90	12.42
ALL COSTS .....	132.15	144.32	162.78
Returns to land, labor, and management .....	120.59	140.61	161.20
Returns to land and management .....	109.49	129.71	148.78
Returns to labor and management .....	97.99	118.01	138.60
Returns to management .....	86.89	107.11	126.18
<i>Number of farms planting</i> .....	33	32	18
<i>Average acreage of peanuts/farm</i> .....	56.2	58.1	37.8
<i>Average yield per acre, pounds</i> .....	1,744	1,986	2,273
<i>Average gross receipts/acre, dollars</i> .....	219.04	251.43	288.96

<sup>1</sup> Based on total costs of production excluding land and labor costs.

<sup>2</sup> Includes custom combining, digging, hauling, and application of herbicide and fungicide.

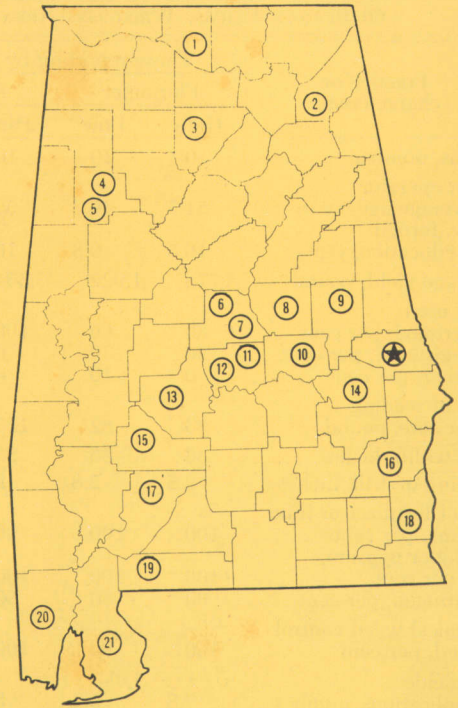
<sup>3</sup> Charged at average cash rent.

APPENDIX TABLE 18. CULTURAL PRACTICES AND OTHER RELATED CHARACTERISTICS OF THE 10 HIGH AND 10 LOW PRODUCERS, BY VARIETIES, 60 PEANUT FARMS, WIREGRASS AREA OF ALABAMA, 1970

Practice or characteristic	Those reporting by variety and producer group					
	Florunner		Florigiant		Early Runner	
	High	Low	High	Low	High	Low
Farms, number.....	10	10	10	10	10	10
Farm operator						
Average age, years .....	51.3	46.3	52.6	40.7	55.9	49.4
Av. formal education, years .....	10.5	9.8	10.4	12.5	9.9	9.9
Average yield, pounds.....	3,778	1,922	3,554	1,463	2,806	1,279
Seed used						
Certified, per cent .....	80	60	100	70	100	100
Registered, per cent .....	20	30	0	10	0	0
Other, per cent .....	0	10	0	20	0	0
Rate of seeding per acre, pounds .....	83	82	115	100	91	80
Row width, inches.....	36	35	36	36	36	36
Spacing in drill, inches .....	2.5	2.8	2.8	2.8	2.6	2.7
Use of fertilizer or lime						
Lime, per cent.....	100	100	90	90	90	70
Slag or gypsum, per cent .....	100	100	100	100	90	80
Nitrogen, per cent .....	90	80	80	60	70	60
Chemical weed control used, per cent .....	100	90	100	100	100	100
Fungicide applications, number .....	7.8	5.4	5.8	5.0	6.0	3.3
Crop rotation						
Behind corn alone, per cent .....	80	60	30	70	70	70
Corn and others, per cent .....	20	10	30	20	20	30
Other crops, per cent.....	0	30	40	10	10	0
Digging date						
Last 10 days of August, per cent .....	60	30	40	70	80	50
First 10 days of September, per cent.....	20	60	60	30	20	50
Middle 10 days of September, per cent.....	20	10	0	0	0	0

## AGRICULTURAL EXPERIMENT STATION SYSTEM OF ALABAMA'S LAND-GRANT UNIVERSITY

With an agricultural research unit in every major soil area, Auburn University serves the needs of field crop, livestock, forestry, and horticultural producers in each region in Alabama. Every citizen of the State has a stake in this research program, since any advantage from new and more economical ways of producing and handling farm products directly benefits the consuming public.



### Research Unit Identification

★ Main Agricultural Experiment Station, Auburn.

1. Tennessee Valley Substation, Belle Mina.
2. Sand Mountain Substation, Crossville.
3. North Alabama Horticulture Substation, Cullman.
4. Upper Coastal Plain Substation, Winfield.
5. Forestry Unit, Fayette County.
6. Thorsby Foundation Seed Stocks Farm, Thorsby.
7. Chilton Area Horticulture Substation, Clanton.
8. Forestry Unit, Coosa County.
9. Piedmont Substation, Camp Hill.
10. Plant Breeding Unit, Tallassee.
11. Forestry Unit, Autauga County.
12. Prattville Experiment Field, Prattville.
13. Black Belt Substation, Marion Junction.
14. Tuskegee Experiment Field, Tuskegee.
15. Lower Coastal Plain Substation, Camden.
16. Forestry Unit, Barbour County.
17. Monroeville Experiment Field, Monroeville.
18. Wiregrass Substation, Headland.
19. Brewton Experiment Field, Brewton.
20. Ornamental Horticulture Field Station, Spring Hill.
21. Gulf Coast Substation, Fairhope.