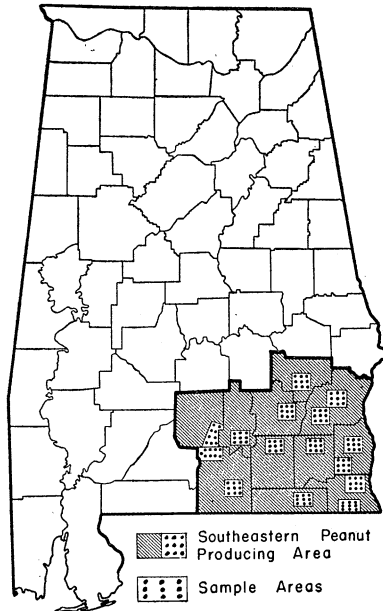


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PEANUT PRODUCTION PRACTICES *in* SOUTHEASTERN ALABAMA



**AGRICULTURAL EXPERIMENT STATION
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PEANUT PRODUCTION PRACTICES *in* SOUTHEASTERN ALABAMA*

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THE PICKED or threshed peanut acreage in Alabama amounted to only 318,000 acres in 1920. By 1943 this acreage had increased to 574,000 acres. Following this peak, there was a steady decrease in acreage until in 1950 it amounted to 335,000 acres, or 42 per cent less than the peak acreage in 1943. Most of the State's commercial production of peanuts is confined to southeastern Alabama (cover). In recent years peanut yields have shown a consistent increase over previous years.

Major problems that peanut producers in southeastern Alabama are facing include possible further reductions in acreage allotments on peanuts to be picked or threshed, high production costs, high labor requirements, maintenance of satisfactory farm incomes, and maintenance and improvement of soil resources. Farmers, therefore, must seriously consider (1) all possible ways of increasing peanut yields, increasing production efficiency, and lowering costs of production; and (2) the addition or expansion of enterprises to supplement peanuts and/or shifts to alternative enterprises that may completely exclude peanuts from individual farm programs.

In view of these considerations and of the present importance of peanuts in this area, a study of peanut production practices was made in the fall of 1950. Information on specific production prac-

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** The author is indebted to the farmers who furnished the information upon which this study is based. For helpful suggestions, special acknowledgement is due Coyt Wilson, Assistant Director; F. L. Davis, Soil Chemist; J. T. Williamson, and D. G. Sturkie, Agronomists; F. S. Arant, Entomologist; and staff members of the Department of Agricultural Economics of the Alabama Agricultural Experiment Station.

tices was secured by personal interview with farmers who grew runner peanuts in 1950. Nine farms selected at random in each of 15 areas or blocks in 11 counties in southeastern Alabama were included in the study (cover). Areas of both heavy and scattered production were included. Farms with small (10 acres or less), medium (11 to 30 acres), and large (31 acres or more) peanut enterprises were considered representative of peanut production enterprises in the area.

This report describes current peanut production practices in southeastern Alabama, indicates variations in these practices, and compares present practices with recommendations of the Alabama Agricultural Experiment Station.

DESCRIPTION of the AREA

The 11 counties included in this study accounted for 92 per cent of the total picked or threshed peanut acreage and 94 per cent of the total peanut production in the State in 1950. There were 30,944 farms in these counties according to the 1950 Census of Agriculture, Table 1. Seventy-four percent of the operators of these farms reported the production of peanuts. Operators of these farms planted an average of 16.5 acres of peanuts in 1949 — 89 per cent of which was picked or threshed. The average yield of peanuts for all farms with peanuts picked or threshed amounted to 852 pounds per acre in 1949 and 1,005 pounds in 1950. Some 80 per cent of the farmers that reported peanuts harvested, saved peanut hay for forage in 1949.

During the past several years, farms in the peanut area have decreased in number and increased in size. On the average, farms in this area increased 27 acres in size between 1945 and 1950. The number of farms decreased 15 per cent during this period. Almost

TABLE 1. NUMBER AND SIZE OF ALL FARMS AND SAMPLE FARMS IN THE PEANUT AREA, 11 COUNTIES IN SOUTHEASTERN ALABAMA, 1950

Range in size of farms	All farms ¹		Sample farms	
	Number	Percentage of total	Number	Percentage of total
	<i>Number</i>	<i>Per cent</i>	<i>Number</i>	<i>Per cent</i>
49 acres or less	11,179	36	20	14
50 - 99 acres	9,402	30	39	29
100 - 179 acres	5,933	19	32	24
180 - 219 acres	1,210	4	12	9
220 acres or more	3,220	11	32	24
TOTAL	30,944	100	135	100

¹ 1950 Census of Agriculture.

TABLE 2. NUMBER OF FARMS AND ACRES OF CROPLAND OF ALL FARMS AND SAMPLE FARMS IN THE PEANUT AREA, 11 COUNTIES IN SOUTHEASTERN ALABAMA, 1950

Range in acres of cropland	All farms ¹		Sample farms	
	Number	Percentage of total	Number	Percentage of total
	<i>Number</i>	<i>Per cent</i>	<i>Number</i>	<i>Per cent</i>
49 acres or less	19,560	69	46	34
50 - 99 acres	7,295	25	44	33
100 - 199 acres	1,334	5	35	26
200 acres or more	249	1	10	7
TOTAL	28,438	100	135	100

¹ 1950 Census of Agriculture.

70 per cent of the farms were reported to be less than 100 acres in size in 1950. The average farm included in the sample consisted of 192 acres.

Harvested cropland averaged 44 acres per Census farm. The average farm included in the sample had 85 acres of cropland. Approximately 34 per cent of the sample farms had 49 acres or less of cropland, while 7 per cent had 200 acres or more, Table 2.

Almost three-fourths of the farm population in the peanut area is white. Less than half of the farmers are owners or part-owners, one-third are tenants, and one-fifth are croppers. Fifty-seven per cent of the sample farms were operated by owners or part-owners, 17 per cent by tenants, and 26 per cent by croppers or half share tenants. Only 19 per cent of the farmers in this area owned tractors in 1950.

The PEANUT ENTERPRISE

The average farmer in the group studied planted 27 acres, or 32 per cent, of his cropland in peanuts. Ninety-three per cent of this acreage was dug. More than one-fourth of the farmers planted 10 acres or less to peanuts. These were classed as small peanut enterprises, Table 3. Small acreages of peanuts were generally associated with small farms. Practically all farmers planted peanuts in accordance with their allotted acreages for picking or threshing. A few planted some additional acreage for hogging or for harvesting to sell as oil stock. The acreage of peanuts planted for all purposes is the acreage reported in this study.

The size of fields planted to peanuts varied from less than 4 to more than 31 acres. About 37 per cent of the fields were less than 6 acres in size, while 6 per cent were 31 acres or more. The average

TABLE 3. RANGE IN ACREAGE OF PEANUTS PLANTED BY SIZE GROUPS, 135 FARMS IN PEANUT AREA, 11 COUNTIES IN SOUTHEASTERN ALABAMA, 1950

Size of peanut enterprise	Average size of farm	Average acres of cropland	Average number of acres of		Farms	
			Peanuts planted	Peanuts dug	Number in each group	Percentage of total
	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Number</i>	<i>Per cent</i>
Small (10 acres or less)	95	36	6	6	36	27
Medium (11-30 acres)	130	69	18	17	57	42
Large (31 acres or more)	358	149	56	52	42	31
TOTAL OR AVERAGE	192	85	27	25	135	100

size of field planted to peanuts was 12 acres. Size of field influences the efficiency with which machinery can be used. Some 78 per cent of the farmers with small peanut enterprises planted peanuts in fields that averaged 4 acres in size. Only 30 per cent of the farmers with the medium-sized peanut enterprises, and 12 per cent of those with large peanut enterprises planted peanuts in fields of less than 6 acres. Almost a fifth of the farmers with large peanut enterprises planted peanuts in fields that averaged 31 acres or more.

Farmers with small peanut enterprise farms (10 acres or less) were located primarily in 8 of the 11 counties studied. On the other hand, 3 counties had more than half of the farmers with large peanut enterprises (31 acres or more). Farmers with medium-sized peanut enterprises were fairly well distributed between the 11 counties.

PEANUT PRODUCTION PRACTICES

Based on the results of many years of research work and of field testing and observation, the Alabama Agricultural Experiment Station has developed a series of recommendations for producing peanuts both economically and efficiently. Although some recommendations are specific and others are general, most of them must be adapted to individual farms, to individual farm resources, and to the capabilities of individual farm operators.

To facilitate an understanding and appraisal of the economic significance of current peanut production practices and techniques, both present and recommended practices are given in this report for comparison and for determining needed practice adjustments. Present practices are based on the crop year 1950. Recommended practices

as shown in this report, unless otherwise stated, are for the same year. Present and recommended practices are discussed by major operations including cropping system, seed and seeding rate, fertilization, insect and disease control, and harvesting.

Cropping System

Recommendations. Peanuts to be dug can be grown in a number of good cropping systems. These systems provide for peanuts in the rotation only once every 3 or 4 years. A 1952 recommended rotation that includes cotton is as follows:

THREE-YEAR ROTATION

- First year — cotton — winter legumes
- Second year — corn
- Third Year — peanuts dug

In this rotation the cotton should be fertilized with 500 pounds of 4-10-7 per acre at planting time and side-dressed with 200 pounds of 14-0-14 at the second cultivation. Corn should receive 300 pounds of 4-10-7 per acre at planting time and either 300 to 400 pounds of nitrate of soda, 150 to 200 pounds of ammonium nitrate, or the equivalent amount of nitrogen in some other satisfactory form as a side-dressing at the first or second cultivation. Peanuts should receive 300 pounds of 0-12-20 per acre at planting time. The winter legumes may require mineral fertilizers when the rotation is started if the land has not been well fertilized previously. Land from which peanuts are harvested should be limed when a lime requirement test of the soil shows that lime is needed. Cotton stalks should be cut and the land thoroughly disked before planting legumes. If preferred, peanuts may be planted after cotton in the above rotation.

Recommended rotations that existed at the time of this study (1950) included the following:

THREE-YEAR ROTATION

- First year — cotton
- Second year — peanuts dug, followed by winter legumes
- Third year — corn

FOUR-YEAR ROTATION

- First year — cotton
- Second year — peanuts dug, followed by winter legumes
- Third year — corn — lupines
- Fourth year — lupine seed harvested, followed by grain sorghum

Present Practices. Forty-one per cent of the fields studied (57 per cent of the acreage in peanuts) were planted to peanuts in 1949 as well as 1950, Table 4.

Of the fields planted to peanuts in 1949, all but one were dug.

TABLE 4. NUMBER, KIND AND PERCENTAGE OF FIELDS PLANTED TO VARIOUS CROPS IN 1949 BY SIZE OF PEANUT ENTERPRISE, 135 FARMS IN PEANUT AREA, 11 COUNTIES IN SOUTHEASTERN ALABAMA, 1950

Kind of summer crop planted in 1949	Number of fields	Percentage of total		Percentage of total farms by size of peanut enterprise		
		Farms	Acreage	Small	Medium	Large
	<i>Number</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>
Peanuts	55	41	57	14	42	62
Corn	38	28	21	45	21	24
Cotton	33	24	16	33	30	10
Other crops	2	2	1	0	2	2
None	7	5	5	8	5	2
TOTAL	135	100	100	100	100	100

TABLE 5. NUMBER AND PERCENTAGE OF FIELDS PLANTED TO WINTER COVER CROPS IN 1949, 135 FARMS IN PEANUT AREA, 11 COUNTIES IN SOUTHEASTERN ALABAMA, 1950

Kind of cover on fields—winter of 1949-50	Number of fields	Percentage of total		Percentage of total farms by size of peanut enterprise		
		Farms	Acreage	Small	Medium	Large
	<i>Number</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>
Blue lupine	30	22	28	6	23	36
Other cover crops	3	2	1	3	4	0
None	102	76	71	91	73	64
TOTAL	135	100	100	100	100	100

Peanuts in 1950 followed cotton and corn on about half of the fields. About 5 per cent of the fields that were planted to peanuts in 1950 were idle in 1949. Apparently farmers with large peanut enterprises were more likely to dig peanuts 2 years in succession from the same field. On the other hand, farmers with small or medium-sized peanut enterprises more often planted peanuts after cotton or corn.

Following the summer crops of 1949, approximately a fourth of the fields (29 per cent of the acreage) were planted to winter cover crops and then followed by peanuts in 1950, Table 5. Blue lupine was the winter cover crop used by most farmers. As size of peanut enterprises increased, the percentage of farmers who planted winter cover crops increased.

Seed, Seeding Rate, and Planting Date

Recommendations. Dixie Runner is the recommended variety of peanuts for southeastern Alabama. Only clean, bright, well-filled, disease-free seed, free from cracks, should be planted. Seed should be shelled and chemically treated according to manufacturers' directions. Under these conditions, it is recommended that 35 to 40 pounds

of treated seed be planted in 36-inch rows with 6-inch spacing in the drill or 40 to 50 pounds in 30-inch rows. A proportionate allowance must be made for seed with lower than 90 per cent germination. Peanuts should be planted between April 1 and 15 in southeastern Alabama.

Present Practices. Of all farms studied, 96 per cent planted Dixie Runners in 1950. Other varieties planted included Old Fashion Runner, Alabama Runner, and North Carolina Runner. Seed treated with chemicals for disease control were planted by 98 per cent of the farmers in 1950. Thirty per cent of the farmers reported use of their own planting seed while 70 per cent purchased seed. About 8 per cent of the farmers with small peanut enterprises, 32 per cent of those with medium-sized peanut enterprises, and 45 per cent of those with large peanut enterprises, used their own planting seed.

The average rate of planting for all farmers was 29 pounds of shelled peanut seed per acre, Table 6. About 13 per cent of the farmers planted between 16 and 20 pounds of shelled peanut seed per acre; 53 per cent planted between 21 and 30 pounds per acre; 28 per cent planted between 31 and 40 pounds per acre; and 6 per cent planted 41 pounds or more per acre. Farmers with small peanut enterprises planted an average of 30 pounds of seed per acre, those with medium-sized peanut enterprises planted 28 pounds per acre, and those with large peanut enterprises planted 31 pounds per acre.

Most farmers planted peanuts by the middle of April, Table 7. However, a few farmers planted earlier than the recommended planting dates, while 45 per cent of the farmers planted later than the recommended time. Farmers with large peanut enterprises planted somewhat earlier than did those with medium-sized or small peanut enterprises.

TABLE 6. POUNDS OF SHELLED PEANUT SEED PLANTED PER ACRE, 135 FARMS IN PEANUT AREA, 11 COUNTIES IN SOUTHEASTERN ALABAMA, 1950

Range in pounds of seed peanuts planted per acre	Average pounds planted per acre	Number of farms	Percentage of total	Percentage of total farms by size of peanut enterprise		
				Small	Medium	Large
	<i>Pounds</i>	<i>Number</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>
16 - 20 pounds	19	17	13	17	16	5
21 - 25 pounds	24	39	29	33	30	23
26 - 30 pounds	29	33	24	11	30	29
31 - 35 pounds	34	23	17	8	14	29
36 - 40 pounds	39	15	11	17	8	9
41 pounds or more	47	8	6	14	2	5
TOTAL OR AVERAGE	29	135	100	100	100	100

TABLE 7. PEANUT PLANTING DATES, 135 FARMS IN PEANUT AREA, 11 COUNTIES IN SOUTHEASTERN ALABAMA, 1950

Range in date peanuts were planted	Number planting	Percentage of total	Percentage of total farms by size of peanut enterprise		
			Small	Medium	Large
	<i>Number</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>
Before April 1	3	2	0	4	2
April 1 - 15	72	53	44	51	65
April 16 - 20	25	19	17	19	19
April 21 - 30	21	16	22	12	14
May 1 or later	14	10	17	14	0
TOTAL	135	100	100	100	100

Fertilization

Recommendations Grow peanuts after well-fertilized crops, preferably where winter legumes are included in the rotation. Bed on fertilizer about 2 weeks ahead of time to plant. If rains prevent this, apply fertilizer to the side of the drill, or well below seed. For each acre planted, use 300 to 400 pounds of 0-12-20 or 100 to 150 pounds of muriate of potash and either 200 to 300 pounds of superphosphate or 400 pounds of basic slag. This means at least 36 pounds of P_2O_5 , and 60 pounds of K_2O per acre.

A high percentage of pops or a low percentage of sound, mature kernels is a good indication that the soil is deficient in calcium. On land that has not been recently limed, apply either: 1 ton of ground limestone per acre prior to planting (effective for several years), or 500 pounds of gypsum (land plaster) per acre on peanuts at blooming time annually, or 1,000 pounds of basic slag per acre broadcast annually prior to planting.

Present Practices. There were wide variations in the kinds and amounts of fertilizer used on the 1949 crops that preceded peanuts in 1950. Nearly 60 per cent of the farmers used 4-10-7 in 1949, while 8 per cent used no fertilizer, Table 8.

There were no major differences in the kinds of fertilizer or amounts used by size of peanut enterprises. Most farmers used mixed fertilizers, with all but a small percentage of the acreage being fertilized. The usual rate of applying fertilizer was 300 to 350 pounds per acre, Table 9. The kinds of summer and winter crops for which fertilizer was used are shown in Tables 4 and 5.

In general, farmers failed to supply the required amounts of P_2O_5 and K_2O per acre for peanuts in 1950. Approximately 8 pounds of nitrogen, 32 pounds of phosphoric acid (P_2O_5), and 22 pounds of

TABLE 8. KIND AND AMOUNT OF FERTILIZER USED ON SUMMER CROPS PRECEDING PEANUTS, 135 FARMS IN PEANUT AREA, 11 COUNTIES IN SOUTHEASTERN ALABAMA, 1949

Kind of fertilizer used on 1949 summer crop	Average amount of fert. used/acre	Number of farms	Percentage of total	
			Farms	Acreage
	<i>Pounds</i>	<i>Number</i>	<i>Per cent</i>	<i>Per cent</i>
4-10-7	322	80	59	82
0-14-10	357	7	5	3
Other	337	38	28	9
None	0	10	8	6
Average amount per fertilized acre	328	-----	-----	-----
Average amount per planted acre	304	-----	-----	-----
TOTAL		135	100	100

TABLE 9. FERTILIZER PRACTICES ON 1949 SUMMER AND WINTER COVER CROPS PRECEDING PEANUTS IN 1950, BY SIZE OF PEANUT ENTERPRISE, 135 FARMS IN PEANUT AREA, 11 COUNTIES IN SOUTHEASTERN ALABAMA, 1949

Item	Unit	Size of peanut enterprise		
		Small	Medium	Large
Number of farms	<i>Number</i>	36	57	42
Summer crops:				
Proportion of farmers using				
Mixed fertilizer only	<i>Per cent</i>	64	67	69
Mixed fertilizer and side-dressing	<i>Per cent</i>	22	24	17
Other	<i>Per cent</i>	3	2	9
No fertilizer	<i>Per cent</i>	11	7	5
Proportion of acreage receiving				
Mixed fertilizer only	<i>Per cent</i>	64	69	77
Mixed fertilizer and side-dressing	<i>Per cent</i>	26	20	10
Other	<i>Per cent</i>	3	2	8
No fertilizer	<i>Per cent</i>	7	9	5
Rate of application where used				
Mixed fertilizer only	<i>Pounds</i>	341	337	305
Materials only	<i>Pounds</i>	-----	-----	500
Fertilizer and/or materials and side-dressing				
Mixed fertilizer	<i>Pounds</i>	296	336	256
Phosphate	<i>Pounds</i>	100	100	300
Materials	<i>Pounds</i>	116	149	182
Rate of application per planted acre				
Mixed fertilizer	<i>Pounds</i>	294	301	271
Other	<i>Pounds</i>	3	2	17
Side-dressing and/or added materials	<i>Pounds</i>	33	33	27
Total all fertilizer	<i>Pounds</i>	330	336	315
Analysis of fertilizer used				
Proportion of total acreage receiving ¹				
4-10-7	<i>Per cent</i>	70	78	85
0-14-10	<i>Per cent</i>	10	3	2
6-8-4	<i>Per cent</i>	7	6	1
Other mixed fertilizer	<i>Per cent</i>	3	2	4
Phosphate only	<i>Per cent</i>	3	2	8
No fertilizer	<i>Per cent</i>	7	9	5

TABLE 9. (Continued) FERTILIZER PRACTICES ON 1949 SUMMER AND WINTER COVER CROPS PRECEDING PEANUTS IN 1950, BY SIZE OF PEANUT ENTERPRISE, 135 FARMS IN PEANUT AREA, 11 COUNTIES IN SOUTHEASTERN ALABAMA, 1949

Item	Unit	Size of peanut enterprise		
		Small	Medium	Large
Analysis of side-dressing				
Proportion of total acreage receiving				
Sodium nitrate	<i>Per cent</i>	29	22	11
Potash	<i>Per cent</i>	2	0	7
Winter cover crops:				
Proportion of farmers using winter cover crops that fertilized	<i>Per cent</i>	67	53	36
Proportion of all acreage receiving fertilizer for winter cover crops	<i>Per cent</i>	6	21	12
Analysis and rate of application per acre for winter cover crops				
4-10-7	<i>Pounds</i>	-----	250	-----
0-14-10	<i>Pounds</i>	400	181	304
Phosphate	<i>Pounds</i>	600	279	300
Slag	<i>Pounds</i>	-----	800	1,000
Summary of fertilizer elements used in 1949 for summer and winter crop ² :				
N per planted acre	<i>Pounds</i>	16	19	12
P ₂ O ₅ per planted acre	<i>Pounds</i>	35	41	37
K ₂ O per planted acre	<i>Pounds</i>	23	22	25

¹ Summed percentages may exceed 100 per cent because some farmers used more than one kind of fertilizer on the same acreage.

² There were little differences in the pounds of fertilizer elements used per fertilizer acre and per planted acre since all but 6 per cent of the acreage was fertilized.

potash (K₂O) were applied, Table 10. Although nitrogen is not included in present recommendations, more than 60 per cent of the farmers used nitrogen, primarily in mixed fertilizers. The amount of P₂O₅ used by farmers was 11 per cent below the amount recommended and the amount of K₂O used was 63 per cent below the recommended amount. Some 10 per cent of the farmers did not fertilize peanuts in 1950. Of this group, one-fourth planted peanuts after a winter legume that had been fertilized with phosphate only; the remaining three-fourths neither used a fertilizer with peanuts nor were peanuts planted after a winter legume.

Of the 135 farmers included in this study, 122 used fertilizer in 1950. Of those using fertilizer, 104, or 85 per cent, planted seed directly over the fertilizer. The remaining 18 farmers, or 15 per cent, applied fertilizer to the side or off-set from the planted seed. Approximately 7 per cent of the farmers mixed their own fertilizer.

Peanut yields on the farms studied were related to the analysis of

TABLE 10. PEANUT FERTILIZER PRACTICES BY SIZE OF PEANUT ENTERPRISE, 135 FARMS IN PEANUT AREA, 11 COUNTIES IN SOUTHEASTERN ALABAMA, 1950

Item	Unit	Size of peanut enterprise		
		Small	Medium	Large
Number of farms	<i>Number</i>	36	57	42
Peanuts planted	<i>Acres</i>	212	1,036	2,363
Proportion of farmers using:				
Mixed fertilizer only	<i>Per cent</i>	80	82	86
Other ¹	<i>Per cent</i>	6	9	12
No fertilizer	<i>Per cent</i>	14	9	2
Proportion of acreage receiving:				
Mixed fertilizer only	<i>Per cent</i>	85	86	87
Other ¹	<i>Per cent</i>	4	7	9
No fertilizer	<i>Per cent</i>	11	7	4
Rate of application when used:				
Mixed fertilizer only	<i>Pounds</i>	297	272	316
Other ¹	<i>Pounds</i>	382	355	476
Average of all fertilizer	<i>Pounds</i>	301	283	325
Rate of application per planted acre:				
Mixed fertilizer only	<i>Pounds</i>	251	234	276
Other ¹	<i>Pounds</i>	16	29	36
Total all fertilizer	<i>Pounds</i>	267	263	312
Analysis of fertilizer:				
Proportion of acreage receiving ²				
4-10-7	<i>Per cent</i>	52	67	71
0-14-10	<i>Per cent</i>	25	27	20
Other	<i>Per cent</i>	16	7	15
No fertilizer	<i>Per cent</i>	11	7	4
Summary of fertilizer elements:				
Per fertilized acre				
N	<i>Pounds</i>	8	8	10
P ₂ O ₅	<i>Pounds</i>	37	31	35
K ₂ O	<i>Pounds</i>	25	22	23
Per planted acre				
N	<i>Pounds</i>	7	7	9
P ₂ O ₅	<i>Pounds</i>	33	29	34
K ₂ O	<i>Pounds</i>	22	20	22

¹ Other consisted of mixed fertilizer plus added materials or materials only.

² Summed percentages may exceed 100 per cent because some farmers used more than one kind of fertilizer on the same acreage.

the fertilizers used and to the amount and methods used in applying fertilizers, Table 11. There were no significant differences in yields based on the summer crops planted in 1949 and followed by peanuts in 1950.

Only 18, or 13 per cent, of the farmers studied had applied lime to the fields where peanuts were planted in 1950 within the past 5 years. Only 10, or 7 per cent, had used slag on the fields where pea-

TABLE 11. RELATIONSHIP OF KIND, AMOUNT, AND METHOD OF APPLYING FERTILIZER TO PEANUT YIELDS, 135 FARMS IN PEANUT AREA, 11 COUNTIES IN SOUTHEASTERN ALABAMA, 1950

Item	Average amount of fertilizer used per acre	Total N-P-K per acre	Percentage of total		1950 average yield per acre
			Farms	Acreage	
	<i>Pounds</i>	<i>Pounds</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Pounds</i>
Kind of fertilizer used with peanuts:					
0-14-10	316	76	17	21	1,136
4-10-7	272	57	60	64	1,097
Other	353	69	13	10	1,082
None	-----	---	10	5	983
TOTAL OR AVERAGE	296	62	100	100	1,091
Method of applying fertilizer:					
Directly under seed	285	60	77	76	1,086
Off-set from seed	340	71	13	19	1,194
None used	-----	---	10	5	983
TOTAL OR AVERAGE	296	62	100	100	1,091

nuts were planted in 1950 within the past 5 years. Of the farmers who had used lime or slag, very few had any definite opinions as to the value of these materials and were not sure that they would be used again in the future.

Insect and Disease Control

Recommendations. The most destructive insects of peanuts are thrips, leafhoppers, and leaf-eating worms. Leafspots are the most important diseases of the growing plant. Thrips can be controlled with 5 per cent DDT or 10 per cent toxaphene dust applied at the rate of 20 to 25 pounds per acre. Two applications 7 to 10 days apart, started when damage appears, is best. Leafhoppers can be controlled by using a dust containing 2.5 per cent DDT or 10 per cent toxaphene. While leafspots can be partially controlled by dusting with dusting sulfur, sulfur-copper dust containing 3.4 per cent metallic copper is recommended.

A combination dust containing 3.4 per cent metallic copper and 2.5 per cent DDT or 10 per cent toxaphene is recommended for joint control of leafhoppers and leafspots. Four applications should be made at 7- to 10-day intervals, beginning about the time of the last cultivation. The rate should be 20 to 25 pounds per acre per applica-

tion. This dust should not be used on peanuts within 30 days of harvesting if the hay is to be saved.

When control of peanut worms is necessary within less than 30 days of harvest, the peanuts should be dusted with cryolite at the rate of at least 20 pounds per acre or with 5 per cent methoxychlor at the same rate.

Present Practices. Of the 135 farmers included in this study, about one-fourth reported the presence of insects in 1950, while nearly two-thirds reported diseases. Some farmers may have mistaken disease damage for insect damage or vice-versa. Nevertheless, more than two-thirds of the farmers recognized an infestation of either diseases or insects or both. Only 35 per cent of these farmers did any dusting in 1950. The average yield of peanuts per acre of the farms where dust was used was 75 pounds more than where dust was not used. The average amount of dust used in 1950 was 19 pounds per acre per application. Based on the number of farmers that dusted peanuts in 1950, the following are the percentages of farmers that applied various numbers of applications:

<i>Number of applications</i>	<i>Percentage of farmers¹</i>
One	28
Two	28
Three	36
Four	8
TOTAL	<u>100</u>

Based on the number of farmers that dusted peanuts in 1950, the following are the percentages of farmers that used various kinds of dust:

<i>Kind of dust</i>	<i>Percentage of farmers¹</i>
Sulfur only	28
Sulfur-Copper-DDT	28
Sulfur-DDT	23
Sulfur-Copper	9
DDT only	4
Combination	8
TOTAL	<u>100</u>

¹ Based on 47 farmers who dusted peanuts in 1950, and not on the total number studied.

Thirty-seven per cent of the farmers who dusted, dusted only for diseases; 4 per cent dusted for insects only; and 59 per cent dusted for both diseases and for insect control.

The first application of dust was applied as early as May 20 and as late as September 10. Most of the dusting was done during July

TABLE 12. DUSTING PROGRAM USED BY SIZE OF PEANUT ENTERPRISE, 135 FARMS IN PEANUT AREA, 11 COUNTIES IN SOUTHEASTERN ALABAMA, 1950

Item	Unit	Size of peanut enterprise		
		Small	Medium	Large
Percentage of farmers dusting	<i>Per cent</i>	11	33	57
Percentage of farmers not dusting	<i>Per cent</i>	89	67	43
Dusted for diseases only	<i>Per cent</i>	50	21	38
Dusted for insects only	<i>Per cent</i>	0	5	4
Dusted for both diseases and insects	<i>Per cent</i>	50	74	58
Pounds of dust applied per acre per application	<i>Pounds</i>	16	18	20
Number of applications used:				
1 dusting	<i>Per cent</i>	50	26	25
2 dustings	<i>Per cent</i>	0	26	33
3 dustings	<i>Per cent</i>	50	37	34
4 dustings	<i>Per cent</i>	0	11	8
Range in intervals between applications	<i>Days</i>	10-30	10-30	7-30

and August. The rates of application varied from 5 to 25 pounds of dust per acre.

As size of peanut enterprises increased, the percentage of farmers who dusted increased, Table 12. More than half of the farmers with large peanut enterprises dusted, while only about a tenth of those with small peanut enterprises dusted. Also, as size of peanut enterprises increased, the pounds of dust applied per acre per application increased.

Method and Time of Harvesting

Recommendations. Harvest peanuts when most of the pods are filled and the inside of the hulls turn dark and show darker veins. Digging too early will result in a large number of "pops." Late harvesting may result in many nuts being left in the ground. Peanuts dusted to control leafspot usually are ready to dig later than are those that are not dusted. Careful stacking has much to do with the quality of peanuts. Rains may cause heavy damage if stacking is improperly done. Neither stacked nor windrowed peanuts should be picked until properly cured.

Present Practices. Approximately 80 per cent of the farmers had dug their peanuts by the last of September, Table 13. Farmers with small peanut enterprises were later in planting peanuts and also later in digging and picking them. The larger the peanut enterprises, the earlier peanuts were planted and dug. More than two-thirds of

the farmers with large peanut enterprises had dug their peanuts by September 20, while only about a fifth of those with small peanut enterprises had dug by that date.

A vine sample was collected at each farm while peanut picking was in process. From these samples, peanuts were checked for stage of maturity. Peanuts with black or red coloring inside the shell were considered mature, while those with white coloring were considered immature. The percentage of mature peanuts, disregarding pops, was determined. Although this was a measure of maturity at the time of picking, the results indicated that many farmers dug peanuts in 1950 before they reached the stage of maturity that would have given them the highest grade. Peanuts with a low percentage maturity contained a high percentage of pops and a low percentage of sound, mature kernels, Appendix Table 1. There were no major differences in stage of maturity, percentage of pops, and sound, mature kernels (SMK) by size of peanut enterprises.

Almost a third of the farmers interviewed had more than 20 per cent pops. The percentage of pops was determined by dividing the number of pops on the vine by the total number of all nuts including pops and multiplying by 100. As the percentage of pops increased, the percentage of sound, mature kernels decreased. Yield did not differ greatly between the different ranges in number of pops, Appendix Table 2.

Each farmer classified the condition of his stand of peanuts before digging in one of the following groups: good, fair, or poor. About 61 per cent reported a good stand, 34 per cent a fair stand, and 5 per cent a poor stand, Appendix Table 3. Apparently the rate of seeding had

TABLE 13. DATE PEANUTS WERE DUG AND RELATED DATA BY SIZE OF PEANUT ENTERPRISE, 135 FARMS IN PEANUT AREA, 11 COUNTIES IN SOUTHEASTERN ALABAMA, 1950

Date of digging	Percentage of total farms by size of peanut enterprise			Average of all	Average yield per acre
	Small	Medium	Large		
	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Pounds</i>
September 10 or earlier	0	19	21	15	1,148
September 11-20	19	32	48	33	1,143
September 21-30	42	30	21	31	1,073
October 1 or later	39	19	10	21	995
TOTAL OR AVERAGE	100	100	100	100	1,091
Average date of planting,	Apr. 19	Apr. 15	Apr. 12	Apr. 15	-----
Average date of digging,	Sept. 27	Sept. 19	Sept. 18	Sept. 21	-----
Length of growing season, days	161	157	159	159	-----

little effect on the stand as estimated by farmers. However, the larger the peanut enterprise the greater was the percentage of farmers with good stands. Also, yields increased with better stands.

Power machinery was most often used with large peanut enterprises. Fifty per cent of the farmers with small peanut enterprises dug peanuts with tractors as compared to 86 per cent of those with large peanut enterprises. Only 8 per cent of the farmers with small peanut enterprises compared to 79 per cent of those with large peanut enterprises used mechanical shakers, Table 14. None of the farmers with small peanut enterprises but 26 per cent of those with large peanut enterprises cured peanuts in windrows.

On the average, 75 per cent of the farmers studied dug peanuts with tractors and 25 per cent used mules. However, 56 per cent practiced hand-shaking compared to 44 per cent who used mechanical shakers. Full use of known labor-saving possibilities were not being made by all of the farmers that used tractors to dig peanuts.

Thirteen different makes or kinds of mechanical shakers were used in 1950. The most frequently used tool for shaking was a side-delivery rake. None of the peanuts cured in windrows or piles included in this study were rained on during the curing period in 1950. Although windrowed peanuts had a considerably higher initial moisture content, there were only minor differences in sound, mature kernels, between windrowed and stack-cured peanuts.

Picking of peanuts by the farmers included in this study in 1950 started on September 25 and extended to November 10. Fifty-two

TABLE 14. METHOD OF DIGGING, SHAKING AND CURING PEANUTS, 135 FARMS IN PEANUT AREA, 11 COUNTIES IN SOUTHEASTERN ALABAMA, 1950

Item	Unit	Size of peanut enterprise		
		Small	Medium	Large
Method of digging:				
Tractor	<i>Per cent</i>	50	82	86
Mule	<i>Per cent</i>	50	18	14
Method of shaking:				
Hand	<i>Per cent</i>	92	60	21
Mechanical	<i>Per cent</i>	8	40	79
Method of curing:				
Windrows or piles	<i>Per cent</i>	0	12	26
Stacks	<i>Per cent</i>	100	88	74
Quality of stacking:¹				
Good	<i>Per cent</i>	14	30	29
Fair	<i>Per cent</i>	83	60	58
Poor	<i>Per cent</i>	3	10	13

¹ Quality of stacking was judged by the enumerator.

TABLE 15. PEANUT YIELDS PER ACRE, 135 FARMS IN PEANUT AREA, 11 COUNTIES IN SOUTHEASTERN ALABAMA, 1950

Range in yield per acre	Average yield per acre	Number of farms	Percentage of total	
			Farms	Acreage
	<i>Pounds</i>	<i>Number</i>	<i>Per cent</i>	<i>Per cent</i>
800 pounds or less	656	27	20	15
801-1,000 pounds	979	49	36	39
1,001-1,200 pounds	1,164	22	16	18
1,201-1,400 pounds	1,306	12	9	9
1,401 pounds or more	1,612	25	19	19
TOTAL OR AVERAGE	1,091	135	100	100

per cent of the farmers included in this study had picked their peanuts by October 20. On the average, farmers with the largest peanut enterprises picked the earliest, and those with the smallest peanut enterprises picked the latest, Appendix Table 4. Farmers with small peanut enterprises used the longest curing period.

Research work on peanuts in Alabama indicates that average yields of 1,800 pounds per acre are possible with recommended practices. Four per cent of the farmers included in this study reported yields of more than 1,800 pounds of peanuts per acre. Some 56 per cent of all farmers interviewed had yields of less than 1,000 pounds per acre, Table 15. The variation in yields between farms ranged from less than 400 pounds to more than 2,000 pounds per acre.

SUMMARY and CONCLUSIONS

A total of 135 farms located in 11 counties in southeastern Alabama was included in this study. Data were secured covering 1950 peanut production and harvesting practices and some data covering the year 1949. The 11 counties accounted for 92 per cent of the total picked or threshed peanut acreage, and 94 per cent of the total peanut production in the State in 1950.

Many farmers planted peanuts 2 years in succession on the same land rather than using a rotation. Few farmers planted peanuts following winter cover crops.

Most farmers planted Dixie Runner seed, and most seed were treated in 1950. Forty-five per cent of the farmers planted later than the recommended planting date. The rate of seeding was less than that recommended. Forty to fifty pounds of shelled and treated peanut seed must be planted to get a stand of 35,000 plants per acre with 6-inch spacing in 30-inch rows. Most farmers planted less than 30

pounds of seed per acre. Based on past field germination studies, this rate of seeding would provide about three-quarters the plants needed for high per-acre peanut yields.

Few farmers were using the recommended kinds and amounts of fertilizer per acre for peanuts in 1950. Most farmers used some nitrogen on peanuts although none was recommended. The use of phosphate (P_2O_5) was near the recommended amount, but the use of potash (K_2O) was only about a third of the amount recommended. Crops that preceded peanuts were not being fertilized at rates high enough to allow the soil to have a carryover of plant food for peanuts. High yields of peanuts per acre are obtainable through proper fertilization of crops that precede peanuts, the planting of sufficient seed to insure a large number of plants, and the use of the proper kind and amount of fertilizer.

Two-thirds of the farmers recognized an infestation of diseases or insects or both in 1950. However, only 35 per cent did any dusting. Most of the farmers who dusted did so to control both diseases and insects. Some farmers began dusting too early while others started extremely late. The rates of application varied from 5 to 25 pounds of dust per acre. More than half of the farmers with large peanut enterprises applied dust, while only about a tenth of those with small peanut enterprises dusted. Proper disease and insect control should be given more careful attention by most farmers in the peanut area.

More than two-thirds of the farmers with large peanut enterprises dug peanuts by September 20, while only about a fifth of those with small peanut enterprises dug by this date. Only 10 per cent of the farmers with large peanut enterprises dug peanuts in October while 39 per cent of those with small peanut enterprises dug in October. The proper time to dig runner peanuts will vary with the fertilization and dusting program followed. Consequently, farmers should dig peanuts based on the condition of each individual field.

Peanuts were dug with tractors by 86 per cent of the farmers with large peanut enterprises, but by only 50 per cent of those with small peanut enterprises. On the average, 75 per cent of all farmers studied dug peanuts with tractors but only 44 per cent used mechanical shakers. Considerably more power machinery could be used by farmers who dig peanuts with tractors and shake by hand.

All of the farmers with small peanut enterprises cured peanuts in stacks, while 26 per cent of those with large peanut enterprises used windrows. Although windrowed peanuts had a considerably higher initial moisture content, there were only minor differences in sound, mature kernels between windrowed and stacked peanuts. In 1950,

52 per cent of the farmers had picked peanuts by October 20. On the average, farmers with the largest peanut enterprises picked the earliest, and those with the smallest peanut enterprises picked the latest. Sixty per cent of the farmers with large peanut enterprises owned pickers, while only 6 per cent of those with small peanut enterprises owned pickers.

Only 4 per cent of the farmers included in this study reported yields of more than 1,800 pounds of peanuts per acre, while 56 per cent had yields of less than 1,000 pounds per acre. Variations in yields between farms ranged from less than 400 pounds to more than 2,000 pounds per acre. Yields of 1,800 pounds of peanuts per acre are obtainable by practically all farmers in the peanut area by the proper use of known production practices.

Peanut growers are faced today with the problem of the extent to which they should substitute machinery for man labor under existing economic conditions. The extent to which these shifts should be made on individual farms will depend on the size of the peanut enterprise on these farms, the other crops that are grown in combination with peanuts, future government-control programs, and relative costs of machinery and labor.

APPENDIX TABLE 1. STAGE OF MATURITY AND RELATED FACTORS, 135 FARMS IN PEANUT AREA, 11 COUNTIES IN SOUTHEASTERN ALABAMA, 1950

Item	Unit	Range in stage of maturity				Total or average
		60 per cent or less	61-70 per cent	71-80 per cent	81 per cent or more	
Average stage of maturity	<i>Per cent</i>	53	67	76	86	74
Number of farms	<i>Number</i>	20	31	45	39	135
Percentage of total	<i>Per cent</i>	15	23	33	29	100
Grade of peanuts: ¹						
Sound, mature kernels	<i>Per cent</i>	58	59	61	64	61
Shrivels	<i>Per cent</i>	9.0	8.4	8.0	7.3	8.1
Damaged kernels	<i>Per cent</i>	2.0	2.5	1.9	1.8	2.0
Fall shelled moisture content	<i>Per cent</i>	8.3	7.2	7.4	7.4	7.5
Fall free fatty acids	<i>Per cent</i>	0.68	0.66	0.53	0.47	0.56
Percentage pops	<i>Per cent</i>	29	20	16	15	18
Average yield per acre	<i>Pounds</i>	1,010	1,104	1,048	1,158	1,091

¹ Grade of peanuts, moisture, and fatty acids were determined from a 15-pound sample of peanuts after they were machine picked on the farm.

APPENDIX TABLE 2. PERCENTAGE OF POPS AND RELATED FACTORS, 135 FARMS IN PEANUT AREA, 11 COUNTIES IN SOUTHEASTERN ALABAMA, 1950

Item	Unit	Range in percentage pops				Total or average
		10 pct. or less	11-20 per cent	21-30 per cent	31 pct. or more	
Average percentage pops	<i>Per cent</i>	7	15	24	40	18
Number of farms	<i>Number</i>	37	54	22	22	135
Percentage of total	<i>Per cent</i>	28	40	16	16	100
Grade of peanuts:						
Sound, mature kernels	<i>Per cent</i>	65	61	61	57	61
Shrivels	<i>Per cent</i>	7.1	8.3	7.9	9.3	8.1
Damaged kernels	<i>Per cent</i>	1.8	1.9	2.0	2.5	2.0
Stage of maturity	<i>Per cent</i>	77	76	71	63	74
Fall shelled moisture content	<i>Per cent</i>	7.1	7.6	7.4	8.0	7.5
Fall free fatty acids	<i>Per cent</i>	0.54	0.56	0.54	0.64	0.56
Average yield	<i>Pounds</i>	1,074	1,123	1,105	1,025	1,091
Average planting date	<i>Date</i>	Apr. 18	Apr. 15	Apr. 12	Apr. 15	Apr. 15
Average digging date	<i>Date</i>	Sept. 25	Sept. 19	Sept. 19	Sept. 20	Sept. 20
Length of growing season	<i>Days</i>	160	157	160	158	159

APPENDIX TABLE 3. CONDITION OF PEANUT STAND BEFORE DIGGING AND RELATED FACTORS, 135 FARMS IN PEANUT AREA, 11 COUNTIES IN SOUTHEASTERN ALABAMA, 1950

Item	Unit	Condition of peanut stand ¹		
		Good	Fair	Poor
Proportion of farms by size:				
Small peanut enterprises	<i>Per cent</i>	47	42	11
Medium peanut enterprises	<i>Per cent</i>	54	42	4
Large peanut enterprises	<i>Per cent</i>	81	17	2
Average of all farms	<i>Per cent</i>	61	34	5
Rate of seeding per acre	<i>Pounds</i>	30	28	31
Average yield per acre	<i>Pounds</i>	1,128	1,058	864
Sound, mature kernels	<i>Per cent</i>	60	62	64

¹ Based on estimates of farmers.

APPENDIX TABLE 4. DATE OF PICKING PEANUTS, LENGTH OF CURING PERIOD AND RELATED DATA, 135 FARMS IN PEANUT AREA, 11 COUNTIES IN SOUTHEASTERN ALABAMA, 1950

Item	Unit	Size of peanut enterprise		
		Small	Medium	Large
Average picking date	<i>Date</i>	Oct. 28	Oct. 16	Oct. 11
Average number of curing days	<i>Days</i>	31	27	23
Average time from planting to picking	<i>Days</i>	192	184	182
Average yield per acre	<i>Pounds</i>	1,001	1,135	1,107
Average stage of maturity	<i>Per cent</i>	74	75	72
Average percentage pops	<i>Per cent</i>	16	18	20
Average percentage of sound mature kernels	<i>Per cent</i>	61	63	60
Average percentage shrivels	<i>Per cent</i>	8.9	7.6	8.0
Average percentage damaged kernels	<i>Per cent</i>	1.8	2.0	2.3
Average percentage fall moisture content	<i>Per cent</i>	7.4	7.4	7.6
Average percentage free fatty acids	<i>Per cent</i>	0.77	0.50	0.47
Proportion of farmers owning picker	<i>Per cent</i>	6	23	60

