

Dr. H. J. Reuszer
Agron. Dept.

Agr. Econ. Mimeo. No. 1

March 1943

PEANUTS:

A WAR CROP
ON ALABAMA FARMS

By

Albert H. Harrington,
Phillip E. Jones,
and
William F. Lagrone

Agricultural Experiment Station
of the
ALABAMA POLYTECHNIC INSTITUTE
in Cooperation with
Bureau of Agricultural Economics
UNITED STATES DEPARTMENT OF AGRICULTURE

M. J. Funchess, Director
Auburn, Alabama

NON CIRCULATING

AUTHORS:

Albert H. Harrington, Assistant Agricultural Economist,
Alabama Agricultural Experiment Station,

Phillip E. Jones, Agricultural Economist, and

William F. Lagrone, Assistant Agricultural Economist,
Bureau of Agricultural Economics,
United States Department of Agriculture

Acknowledgments

The authors are indebted to Ben F. Alvord, Agricultural Experiment Station, and C. R. Sayre, Bureau of Agricultural Economics, for their helpful suggestions and criticisms, and to many others who provided information for this report.

A
SB
351
P3
H3
AG15 77
WENDY

C O N T E N T S

	Page
FOREWORD	i
Why Are Peanuts a War Crop?	1
How Many Peanuts Do We Need?	2
Who is Expected to Produce Peanuts?	3
How May the Problems of 1942 be Solved in 1943?	7
Preharvest Production Problems	7
Harvesting and Marketing Problems	8
Price Problems	9
What Are the Usual Costs and Returns for Peanuts and Competing Crops -	11
In the Old Peanut Area?	11
In the New Southern Area?	16
In the New Northern Area?	16
Can I Profitably Increase Peanuts on My Farm -	19
With the Yields I Expect?	19
With My Size of Farm?	22
With My Possibilities for Reducing Labor Costs? ...	23
With Full Use of By-Products?	25
With My Plans for the Future?	26
Additional Publications Relating to Peanuts and Peanut Products	27

FOREWORD

Alabama farmers were asked to make large increases in peanut production in 1942 to help supply additional quantities of vegetable oils needed for domestic wartime uses and for shipment to our allies. Still greater production is sought in 1943. Last year peanut producers, particularly those in areas where previously peanuts had not been produced commercially, were confronted with difficult problems of production and marketing. Lessons learned from 1942 experiences, and more favorable prices now in prospect for oil peanuts, will make expansion in peanut production more profitable in 1943.

This report has been prepared to help farmers complete their 1943 plans. Basic information was obtained from farmers, results of experiment stations' research, county agents, and other agricultural workers. Experiences of peanut producers in 1942 were obtained on a state-wide basis from a mailed questionnaire. Data regarding labor requirements, costs, and returns were secured in Henry and Marshall Counties through interviews with producers there.

PEANUTS: A WAR CROP ON ALABAMA FARMS

Why Are Peanuts a War Crop?

Japan's conquest of the Philippines and the Dutch East Indies abruptly cut off the United States from sources of two-thirds of its usual imports of vegetable oils. At the same time, we were confronted with increased demands for fats and oils from Great Britain, Canada, and Russia, which normally drew much larger supplies from the Southwest Pacific area than did the United States. In both Great Britain and the United States, fats and oils have come to be a far more important source of food energy than during the last war. Per capita consumption in this country has increased over 50 per cent since 1912, and these foods now provide us with approximately 25 per cent of our food energy.

Domestic production of fats and oils in the 1942 crop year is estimated at 11.7 billion pounds as compared with 9.6 billion pounds in 1941. Supplies for 1943--including imports, stocks on hand January 1, and production this year--probably will total 14.5 billion pounds. It is estimated that 1943 military and export requirements will reach 2.6 billion pounds, and civilian use is expected to reach 9.2 billion pounds, making a total of 11.8 billion pounds for military, export and civilian use. This leaves only 2.7 billion pounds for stock piles at the end of 1943 compared with a goal of 3.5 billion pounds established by the Food Requirements Committee for reserve stocks ^{1/}.

Peanuts, cottonseed and soybeans offer the principal means whereby desired increases in vegetable oils may be obtained. Peanut oil has been used principally for food, such as shortenings, cooking fats, oleomargarine, and salad oils. But it now is a major source of grim war necessities, mainly glycerine and industrial lubricants.

^{1/} Fats and Oils Situation, December 1942.

Alabama farmers can contribute more to the needed increase in vegetable oils by expanding peanut production rather than cotton production. Both from the standpoint of production of oil per acre and per hour of man labor, peanuts have a comparative advantage over cotton (Table 1). Furthermore, an expansion of cotton acreage to obtain increased quantities of cottonseed would increase the production of short staple lint, of which there is already a considerable supply.

Table 1.— Pounds of Oil Produced per Acre and per Hour of Labor from Cottonseed, Runner Peanuts, and Spanish Peanuts.

(Using Henry County Data)

Crop	Yield	Hours	Pounds of oil produced	
	per acre	per acre	Per acre	Per hour of labor
	<u>Pounds</u>	<u>Hours</u>	<u>Pounds</u>	<u>Pounds</u>
Cottonseed	440	89	63.8	0.74
Peanuts, runner	800	54	172.0	3.19
Peanuts, Spanish	700	54	220.5	4.08

Nor is oil the only useful part of the peanut. The meal remaining after the oil has been extracted is becoming more and more popular as a high protein livestock feed. With our need for more livestock, we shall have use for all such feed we can obtain. Out of the meal also can be made foods—such as flour, macaroni, and crackers—as well as water paint, vegetable glue, and even plastics to replace metals that have gone to war.

How Many Peanuts Do We Need?

The farmers of this country are asked to produce, in addition to other crops and livestock, 5,500,000 acres of peanuts (Table 2). Alabama's share of this national goal is 850,000 acres, or 15.5 per cent.

The national goal is 1,810,000 acres larger than the 1942 harvested area,

an increase of 49 per cent. The goal which Alabama farmers are planning to attain is 267,000 acres, or 46 per cent, more than they dug in 1942. Both Alabama and the Nation as a whole expanded peanut acreage in 1942 considerably above the 1941 acreage, but the needs for 1943 call for a large increase above the 1942 accomplishment.

Peanut goals are expressed in terms of number of acres, but peanut oil is the real objective. The production desired for the Nation will require 3,712 million pounds of peanuts. Acreage with poor yields will not fulfill this need. After fitting enlarged peanut enterprises into the cropping systems, good production practices are necessary if satisfactory yields are to be obtained from the expanded acreage.

Table 2.- Acreage of Peanuts Harvested, 1941 and 1942, and the Peanut Acreage Goal for 1943.

Year	United States	Alabama			
		Total State	Old Area ^{1/}	New areas ^{1/}	
	1000 acres	1000 acres	1000 acres	Southern 1000 acres	Northern 1000 acres
1941	1,914	297	257	31.0	9.0
1942	3,690	583	371	101.0	111.0
1943 (goal)	5,500	850	495	170.5	184.5

^{1/} For the location of the "old" and "new" peanut areas, see Figure 1.

Who is Expected to Produce Peanuts?

The 1943 State peanut goal of 850,000 acres has been apportioned among the counties according to the acreage that was thought might be reasonably reached in each county. Some factors considered in setting these county goals were:

- 1) Previous peanut production experience in the county.
- 2) Suitability of the soils and growing season to peanuts.
- 3) Amount of equipment available in the county for peanut production and harvesting.
- 4) Degree to which peanuts conflict with other important farm enterprises.

To facilitate this discussion, the State has been divided into three areas on the basis of past experience with peanuts, length of growing season, and soils. Their extent and relation to general farming areas of Alabama are shown in Figure 1. Farmers in the nine counties of the Southeastern Coastal Plains area, designated as the "Old Peanut Area", have grown peanuts as a major crop for many years. The rest of the State has less peanut experience and has been divided into the "New Northern Area" and the "New Southern Area". In the New Northern Area, Spanish or other early maturing varieties are recommended, while in the New Southern Area the growing season is long enough for both Spanish and runners to mature. The New Southern Area includes roughly the Black Belt, the South Central Coastal Plains, the Southwestern Piney Woods, and the Gulf Coast. The New Northern Area includes the Tennessee and Limestone Valleys, Sand Mountain, Piedmont Plateau, and most of the Upper Coastal Plains.

In 1942 peanuts were dug from more than one-fourth of the cropland in the Old Peanut Area, the proportion ranging from about 19 per cent in Covington and Geneva Counties to about 36 per cent in Henry County. In the two new areas there were but few counties where peanut acreage exceeded 10 per cent of total cropland. Since the Old Peanut Area already has a large part of its cropland in peanuts, these new areas have been asked to share a substantial part of the increased peanut production in 1943.

The Old Peanut Area has a goal of 495,000 acres for 1943, an increase of

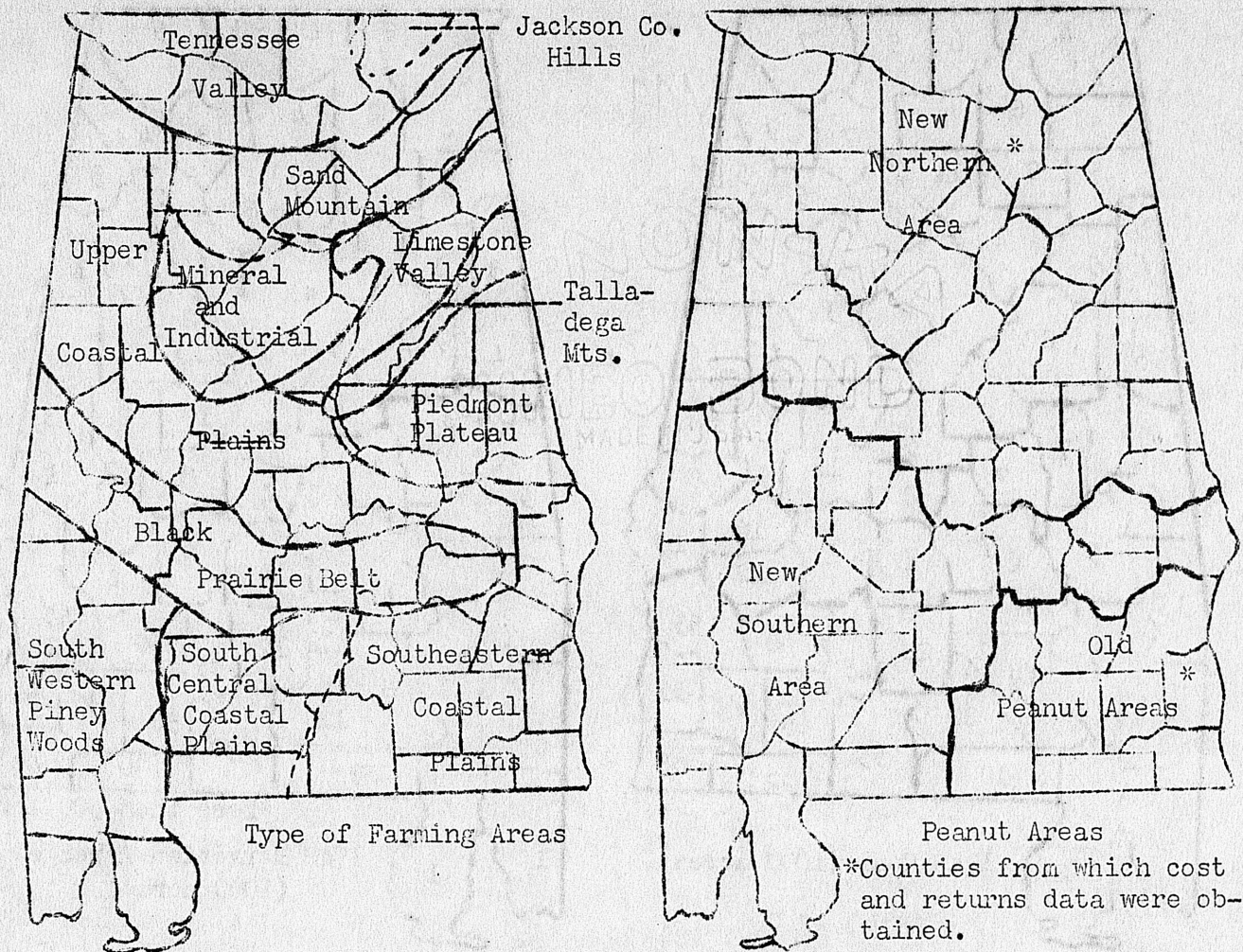


Figure 1.- Type of Farming Areas and Designated Peanut Areas.

124,000 acres, or 33 per cent over the 1942 harvested acreage (Table 2). The New Southern Area expanded harvested peanut acreage from 31,000 acres in 1941 to 101,000 in 1942. The 1943 goal of 170,500 acres is 69 per cent greater than the 1942 harvested acreage. In the New Northern Area harvested peanut acreage was expanded from 9,000 acres in 1941 to 111,000 in 1942. This area has a 1943 goal of 184,500 acres, which is 66 per cent more than the 1942 harvested acreage.

The individual county goals for 1943 and the acreage harvested in each county in 1942 are shown in Figure 2.

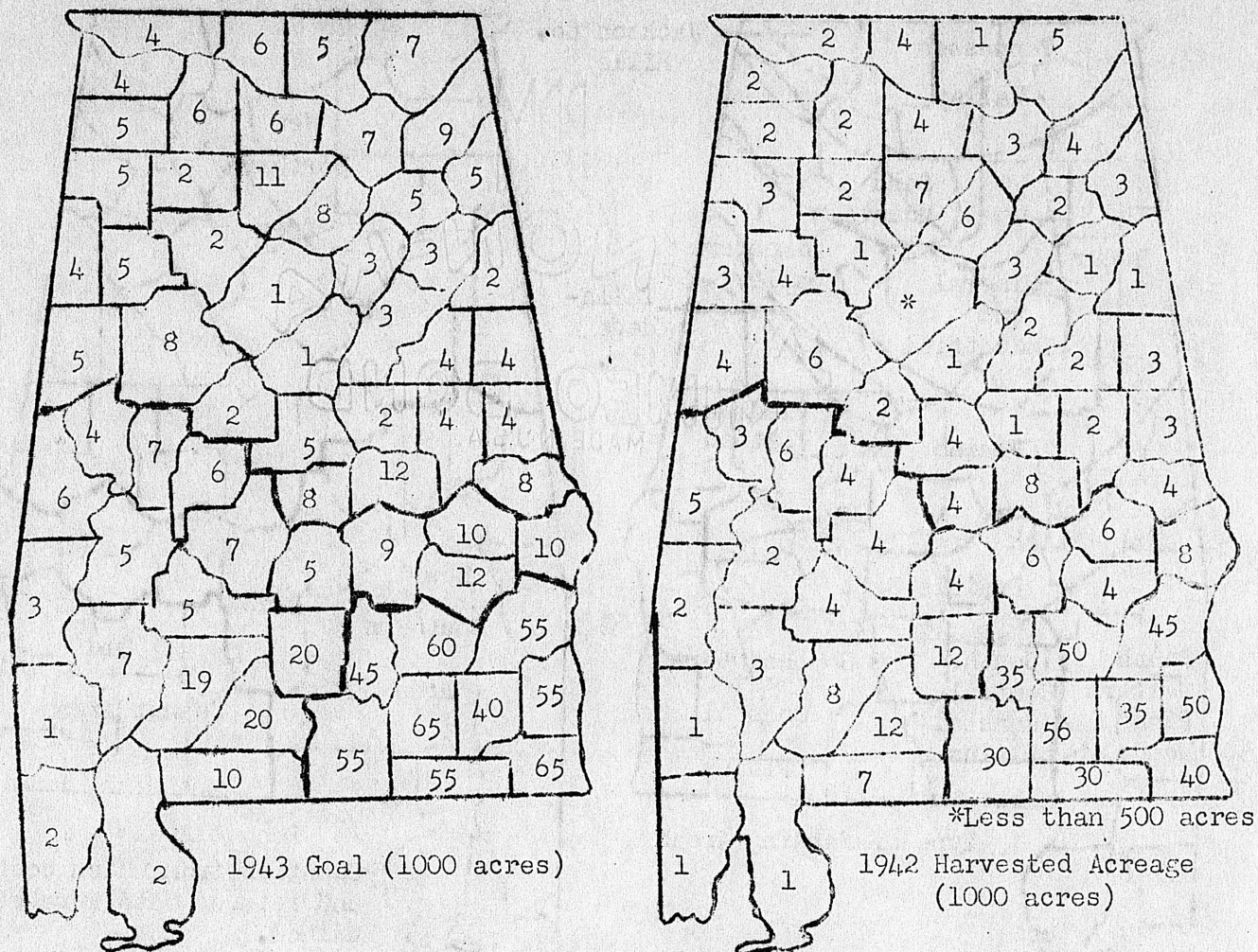


Figure 2.- County Peanut Goals for 1943 and Harvested Acreage in 1942.

Individual farm acreage goals are established for peanuts and certain other war crops. These goals are decided upon by the farmers and the local AAA Committeemen. The farmer will be subject to a penalty of \$15 for each acre that his actual planted acreage falls below 90 per cent of the goal accepted by him for that farm. This penalty will be deducted from but cannot exceed the 1943 Class I AAA payment on that farm. He may avoid the penalty, however, by substituting a sufficient acreage of other designated war crops if he fails to plant 90 per cent of his peanut goal.

How May the Problems of 1942 be Solved in 1943?

A number of difficulties in production and disposal of peanuts were encountered in the "New Areas" of Alabama in 1942, as is to be expected with any rapidly expanded program embracing many new producers. Some of these difficulties were the result of physical limitations, while others were of the legal and administrative variety. Both types were most keenly felt in those areas of the State where peanuts previously had not been produced on a commercial scale. Major obstacles to the full attainment of Alabama's peanut goal included inadequate knowledge of production methods in new areas, adverse weather conditions, poor quality seed, shortage of labor and machinery for harvesting, price relationships between peanut and other crops, and soil-conservation aspects which favored hogging off peanuts rather than digging them for oil, and the prevailing two-price plan.

Preharvest Production Problems.— Most farmers in the new areas of Alabama were confronted with the problem of learning how to produce and harvest a new crop. Despite the fact that existing agricultural agencies did all in their power to teach the farmers how to plant, cultivate, and harvest peanuts, many of the farmers followed seeding, spacing, cultivating, and harvesting practices which varied considerably from those recommended. Together with unfavorable weather conditions and, in many cases, use of inferior seed, adherence to these practices resulted in yields lower than the suitability of the land to peanut production would indicate and often in abandonment. At present it appears that more high quality seed will be available this year than last. Access to this seed, wider distribution of the recommended practices of agronomists, and the lessons learned as a result of 1942 experiences should bring about marked improvement in cultural practices and yields.

Harvesting and Marketing Problems.-- Almost half of the labor required to produce and harvest peanuts for nuts or oil is used in harvesting. Ordinarily, there is plenty of seasonal labor available at harvest time. In 1942, however, drafting of farm laborers, lack of transportation facilities for itinerant workers, and greatly increased opportunities for non-farm employment at attractive wages reduced the usual labor supply. Particularly in areas where Spanish peanuts predominated, the time for harvesting cotton and peanuts coincided and, in many instances, the restricted labor supplies were used first on cotton. Decreased supplies of harvesting labor in or adjacent to the Old Peanut Belt were partially responsible for some of the peanuts, presumably earmarked for harvest, being hogged off. Except for a few areas where there was unusually heavy industrial or military activity, an absolute labor shortage did not prevent any sizeable acreage of peanuts from being dug, but smaller-than-usual labor supplies plus other factors--principally price relationships between oil peanuts and other enterprises--did materially affect the acreage dug.

Drafting of farm labor has continued, but the rate has been considerably reduced, and there is evidence that more positive measures soon will be taken to defer essential agricultural laborers. Moreover, the rate at which farmers are entering defense work has decreased, and legislation for restricting their leaving agriculture is gaining in favor. Although it appears that hiring man power from the farm is in the process of being checked, losses already suffered will necessitate the most efficient use of the remaining supply if 1943 production goals are to be reached. Adoption of laborsaving practices, greater use of townspeople and school children during rush seasons, and swapping labor among farmers will aid materially in combating labor shortages in 1943.

Allocation by counties of new pickers was made by the GFA Peanut associ-

ation, in cooperation with the State and County War Boards, upon the basis of the estimated number of old pickers available and the estimated acreage of peanuts which would be dug. Since new areas were almost entirely without peanut pickers, a large proportion of the new machines was allocated to those areas. The prevailing sentiment was that enough pickers were made available to local machinery dealers to harvest the crop without much difficulty, but in many counties there was considerable delay in distribution to farmers. In some counties adequate numbers of pickers were never placed in the hands of farmers, and in many counties the acreage was so scattered that efficient utilization was not realized. Present indications are that in 1943 the method of allocation and sale of pickers will be changed to permit more of the available supply to be sold.

In new areas, marketing and grading procedure was not worked out sufficiently far in advance of the 1942 marketing season to avoid confusion. Since difficulties of this nature encountered in 1942 are well known, there is reason to believe that, insofar as possible, they will be eliminated in 1943.

Price Problems.- By far the most disconcerting single element in the 1942 peanut program was the distinction between "quota" and "excess" peanuts and the adherence to two sets of prices in accordance with this classification. During most of the harvest season a price of approximately \$140 per ton was paid for edible peanuts, and a price of only \$80 per ton was allowed for oil peanuts. The reason for such a two-price plan being in effect in 1942 was historical in nature. The primary purpose of the Peanut Control Act was to stabilize prices by reducing production. Basically, the act provided for the proclamation of marketing quotas for edible nuts, which became effective for a 3-year period when approved in a referendum by two-thirds of the growers. When quotas were in effect, the price of quota peanuts was protected by a loan or a surplus

diversion program. Non-quota peanuts were subject to a penalty of 3 cents per pound, unless they were sold for oil through a designated agency, which in Alabama was the Georgia-Florida-Alabama Peanut Association. Continuance in wartime of this two-price plan, modeled on prewar conditions of overproduction, seriously hindered the attainment of 1942 peanut production goals.

The two-price plan was most inequitable to farmers in those areas where peanuts never before had been grown commercially and in those areas on the fringes of the Old Area where great increases in peanut acreages were sought. Farmers in the new areas were very patriotic in planting a crop with which they were unfamiliar, for which adequate marketing and processing facilities were not available, and which was very soil depleting. Since these farmers had no peanut quotas, they were required to sell their entire crop at the excess price, regardless of the fact that their unit costs of production were higher than in the old area. The flat price averaging \$129 per ton ^{1/} announced for 1943 for all peanuts of the same variety and grade will do much to eliminate the difficulties associated with peanut prices of 1942.

To assist farmers in producing the maximum amount of vital agricultural products in 1943, incentive payments over and above price-supporting measures have been proposed. With reference to peanuts, the present proposed rate of payment is \$30 per acre of peanuts dug in excess of 90 per cent and up to 110 per cent of the farm peanut goal. No such payment would be made if the excess acreage were hogged off, nor would incentive payments be effective on goals of less than 3 acres. In view of these incentive payments, previously announced ACP payments of \$1.10 per ton would not be made in 1943.

Combined with the one-price plan, incentive payments should enable many

^{1/} U.S.D.A. release, February 10, 1943, "Edible and Oil Peanuts to Have Same Support Prices".

farmers, especially new producers, to grow profitably a larger acreage of oil peanuts. Inasmuch as it is proposed that incentive payments be made only on dug peanuts, many farmers probably would be more inclined to dig their peanuts in 1943 than they were in 1942 when no such payments were made and a two-price plan was in effect.

What Are the Usual Costs and Returns for Peanuts and Competing Crops -

Patriotic appeals inspired many Alabama farmers to "try" peanuts in 1942, while others greatly expanded their 1941 acreages. As farmers prepare to plant the 1943 requested acreage, in the backs of their minds are: "What can I expect to get out of peanuts this year?" "What crops can I best reduce when increasing peanuts?" "What will be the effects on my farming system as a whole?"

In the Old Peanut Area? - Here long experience with peanuts has developed well-adapted production practices. With usual yields and practices and prices at about 1942 levels, returns from runner peanuts sold for oil were about \$10 per acre above expenses--including costs of machinery and man and mule labor (Table 3)^{1/}. Costs of labor and machinery were estimated at \$13.60 per acre with an 800-pound yield. Runner peanut hay was valued at \$6 per ton on the farm, assuming that it would be sold for cash. Its worth for feed was much greater than indicated by the 1942 price. Actually, this price reflects a local surplus. Dug peanuts deplete soil rather rapidly with production practices commonly followed. This cost has not been included in these calculations but it must not be overlooked in consideration of acreages to be planted and of reasonable prices.

^{1/} Price assumptions for 1942 runner peanuts, \$78 per ton; man labor, 15¢ per hour; mule labor, 10¢ per hour; and machinery costs at 3¢ per hour of mule labor. For comparisons of relative returns, the price for lint cotton was assumed to be 19¢; cottonseed, \$48 per ton; corn, \$1.10 per bushel; and hogs, \$11.75 per cwt.

Table 3.- Relative Returns and Expenses for Specified Crops, with Usual Production Practices, Henry County, Alabama.

Item	Unit	Runner peanuts						Cotton		Corn
		For oil		For	For edible nuts		Lint	Seed		
		Nuts	Hay	"hogging"	Nuts	Hay				
Yield per acre	Lb.-bu.	800	900	230 ^{1/}	800	900	230	440	11	
Price per lb. or bushel	Dollars	.039	.003	.1175	.06	.003	.19	.024	1.10	
Gross value per acre	Dollars	33.90	27.00		50.70		54.30		12.10 ^{2/}	
Cash expenses per acre:										
Fertilizer ^{2/}	Dollars	2.20	—		2.20		4.30		1.60	
Seed	"	2.50	2.45		2.50		1.80		.30	
Peanut picking ^{4/}	"	5.00	—		5.00		—		—	
Cotton ginning ^{5/}	"	—	—		—		2.30		—	
Marketing ^{6/}	"	—	1.40		—		—		—	
Poles, nails, & misc.	"	.70	—		.70		—		—	
Total	Dollars	10.40	3.85		10.40		8.40		1.90	
Labor requirements:										
Man	Hours	54	29		54		89		25	
Mule	"	43	31		43		50		34	
Return to labor & invest.:										
Per acre	Dollars	23.50	23.15		40.30		45.90		10.20	
Per hour ^{7/}	"	.44	.80		.75		.52		.41	
Other expenses:										
Man labor ^{8/}	Dollars	8.10	4.35		8.10		15.10		3.80	
Mule labor ^{9/}	"	4.30	3.10		4.30		5.00		3.40	
Machinery ^{10/}	"	1.20	.95		1.20		1.50		1.00	
Total	Dollars	13.60	8.40		13.60		21.60		8.20	
Total specified expenses	Dollars	24.00	12.25		24.00		30.00		10.10	
Per acre return to land and management	"	9.90	14.75		26.70		24.30		2.00	

1/ Pork produced per acre. 2/ Value of grazing velvet beans interplanted in corn excluded. 3/ 200 pounds 0-14-10 on peanuts for oil and edible nuts; no fertilizer on "hogged" peanuts; 200 pounds of 4-10-7 and 75 pounds of nitrate of soda on cotton; 75 pounds of nitrate of soda on corn. 4/ \$12.50 per ton includes picking, baling hay, and hauling to market. 5/ 70 cents per cwt. of lint; \$1.50 per bale for bagging and ties. 6/ 60 cents per cwt. for hauling and auction or commission charges. 7/ Man labor. 8/ 15 cents per hour except cotton picking; cotton picking \$1.00 per cwt. seed cotton. 9/ 10 cents per hour. 10/ 3 cents per hour of mule labor

By hogging off runner peanuts--a common practice in this section of Alabama--the gross value of the crop produced with 1942 prices was \$27.00 per acre. Utilizing the crop in this way, thus eliminating digging and picking costs and the expense of poles and miscellaneous items necessary to harvest the crop for nuts, reduced the cash outlay per acre to \$3.85. When the crop is hogged off, the combined labor requirements of production and harvest are 29 man hours per acre, as compared with 54 hours--or almost double--when harvested for nuts. With assumed yields, practices, and 1942 prices, per-acre returns to land and management from hogging off were \$14.75 (Figure 3). In addition to these money returns, hogging off peanuts increased soil fertility.

With a price of \$120 per ton, the per-acre returns to land and management from edible nuts were \$26.70. On many farms in the area there is little difference between operations followed in producing edible, or quota, peanuts and those for oil. This is a reflection not only of production habits, but also, to some extent, of the fact that the grades used in 1942 for oil and edible peanuts were closely related. Of late a few farmers have discontinued the time-consuming practice of shaking and stacking by hand in favor of using side-delivery rakes for windrowing and pitchforks in stacking, thus saving about one-half the labor required for both operations. Opportunities for such shifts, however, are most favorable to those farmers who have tractor power or who can obtain the services of a tractor and side-delivery rake on a custom-rate basis. Custom-rate charges for this work usually range between 75 cents and \$1.00 per acre.

With a price of 19 cents, and with a yield of 230 pounds of lint per acre (the normal yield in Henry County), returns to land and management from cotton were \$24.30. Man-labor requirements for cotton, with 2-mule equipment

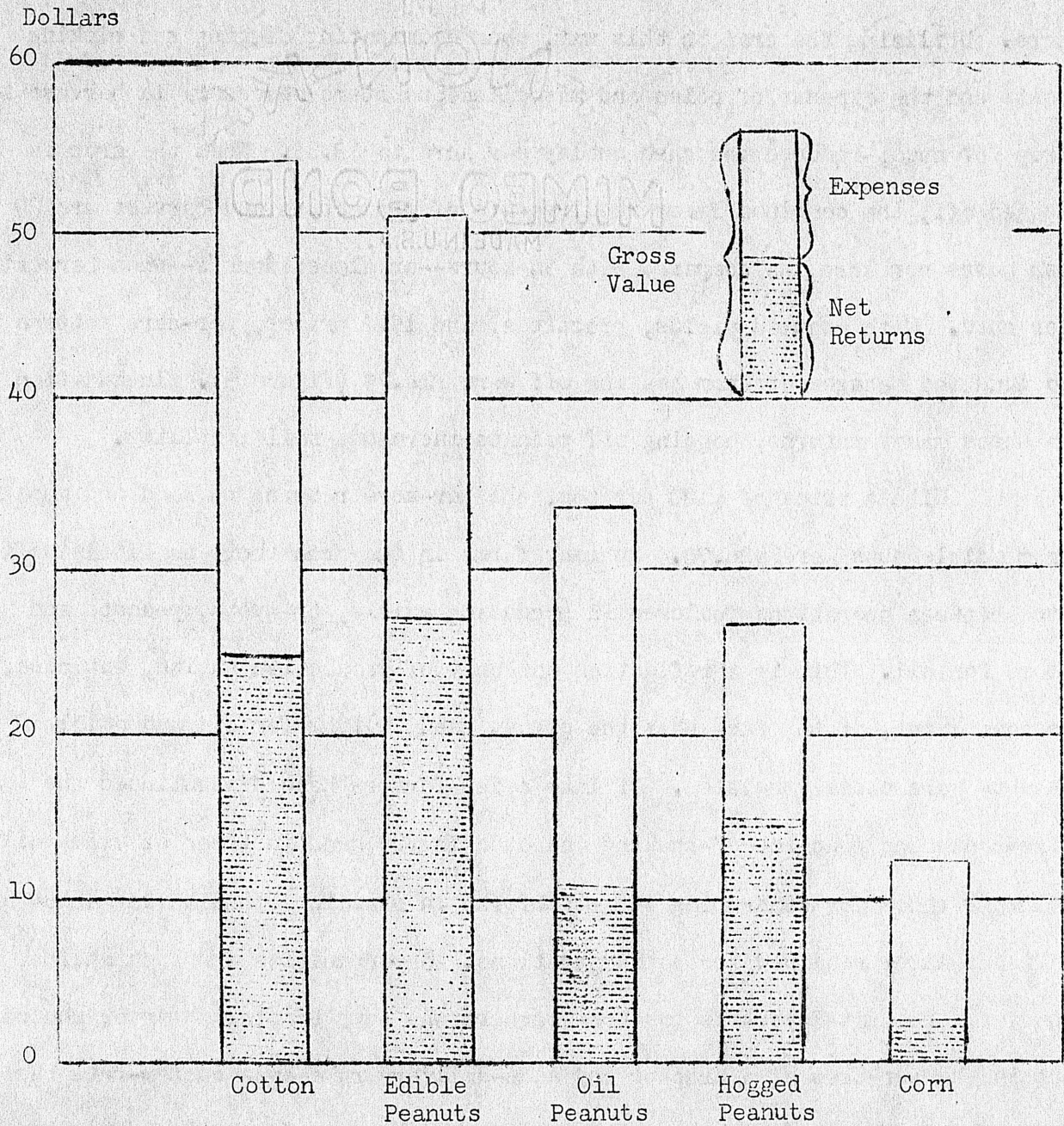


Figure 3.- Gross Value and Net Returns to Land and Management per Acre for Specified Crops with 1942 Prices, Henry County, Alabama.

and normal yields, are 89 hours per acre.

Returns from corn, valuing the corn at \$1.10 per bushel, were low compared with peanuts and cotton. With a corn yield of 11 bushels per acre, returns to land and management for this crop were \$2.00 per acre. About 25 man hours of labor are required to produce corn with usual practices.

If other prices continue in 1943 as in 1942 and the price for peanuts averages about \$129 as announced by the Department of Agriculture, the returns from expanded acreage of peanuts will compare much more favorably with other crops (Table 4).

Table 4.- Gross Value, Expenses and Net Returns per Acre with Peanut Prices as Announced for 1943 and Other Prices at 1942 Levels, Henry County, Alabama^{1/}.

Item	Runner peanuts		Cotton	Corn
	Dug ^{2/}	Grazed with hogs		
	Dollars	Dollars	Dollars	Dollars
Gross value	52.70	27.00	54.30	12.10
Expenses ^{3/}	24.00	12.25	30.00	10.10
Net returns to land and management	28.70	14.75	24.30	2.00

^{1/} These comparisons do not take into account the soil depleting effect of dug peanuts and the soil building effects of peanuts which are hogged off.

^{2/} The price for runner peanuts will probably average \$4 or \$5 less than the announced average purchase price--\$129 per ton. Calculations are based upon \$125 per ton.

^{3/} Includes the same specified expense items as Table 3.

Both peanut oil and pork are needed in the war effort and their production should be expanded to the very limit on each farm. Hog prices are now above 1942 levels, and the acute meat situation makes it probable that high hog prices will prevail for the duration of the war. In addition, the Government has announced that it will support hog prices at "not less than \$13.25 per cwt.

for good to choice butcher hogs, 240 to 270 pounds at Chicago". This hog price support is to remain in effect until September 30, 1944^{1/}. On farms which are well-fenced and shorthanded, further expansion in hog production would be desirable.

With 1943 announced prices for peanuts, with short-staple cotton prices at about current levels, and with average yields, peanuts will return more per acre than cotton. In addition, any farmer in deciding between cotton and peanuts should remember that cotton requires at least 50 per cent more labor than peanuts.

In the New Southern Area? - In much of this area, costs and returns from peanuts are about the same as in the Old Peanut Area (Table 3). This reflects the similarity in soils, and in topographic and climatic conditions. Furthermore, some farmers in most parts of this area have had experience in producing peanuts for grazing or harvest. The expansion in peanut acreage in the extreme western part of the area has been relatively unimportant.

In the New Northern Area? - Until last year peanut production in this area was limited mainly to small patches for home use. As might be expected with any new crop, costs on most farms were higher than in the established peanut growing areas. Spanish varieties were introduced in this section of the State since they mature more quickly than runners.

Compared with yields in the Old Peanut Area, Marshall County yields were good in 1942, averaging about 850 pounds per acre. Most of the peanuts are grown in the Sand Mountain portion of the County. Practically all of the commercial peanuts in this area were grown on the more adaptable sandy soils.

^{1/} Mimeographed summary, "Price Policies and Price Supports for 1943", November 27, 1942, released by the U.S.D.A.

Generally, farmers in this section flat-break their land, drag harrow, and lay off rows before planting. Almost half of the farmers planted peanuts by hand. Generally, the crop is hoed at least once and cultivated about four times with either scratchers or half-row cultivators. Each operation on the new crop required a little more time last year than probably will be necessary in the future. This is particularly true for shaking, setting poles, and stacking operations. Labor costs, as reported by the farmers interviewed, with the most common operations in 1942 were \$14.30 per acre compared with \$8.10 in the Old Peanut Area. Seed and picking costs also were higher in the new area. At \$82 per ton (the 1942 price) Spanish peanuts for oil returned about \$4.30 per acre to land and management (Table 5).

Returns from corn--with an average yield of about 20 bushels--were \$9 per acre. If more efficient peanut production practices were adopted at 1942 prices, peanuts for oil would return about the same as corn; however, it would not be advisable for farmers to reduce their corn acreage too far and depend upon purchased grain. A balance will have to be maintained since feedstuffs are beginning to become scarce.

Marshall County cotton yields averaged around 400 pounds per acre in 1942. With lint at 19 cents per pound, this enterprise returned about \$44.50 per acre. Thus, with 1942 prices and yields cotton returned considerably more than peanuts for oil. Spanish peanuts at \$129 per ton--the price announced for 1943--would return \$24.30 per acre. This would be appreciably less than the return from cotton in 1942. Peanuts would have to yield about 1,200 pounds to make the returns the same, at \$129 per ton, as cotton on land which will yield 400 pounds per acre.

Table 5.- Relative Returns and Expenses of Specified Crops,
Marshall County, Alabama.

Item	Unit	Spanish pea-		Cotton		Corn
		nuts for oil	Nuts	Hay	Lint	
Yield per acre	Lb.-bu.	850	850	400	600	20
Price per lb. or bu.	Dollars	.041	.007	.19	.024	1.10
Gross value per acre	Dollars	40.80		90.40		22.00 ^{1/}
Cash expenses per acre:						
Fertilizer ^{2/}	Dollars	2.80		10.60		3.20
Seed	"	5.80		1.00		.30
Peanut picking ^{3/}	"	7.90		—		—
Cotton ginning ^{4/}	"	—		4.40		—
Poles, nails, & misc.	"	.30		—		—
Total	Dollars	16.80		16.00		3.50
Labor requirements:						
Man	Hours	95 ^{9/}		110		36.0
Mule	"	49		60		38.0
Return to labor and investment:						
Per acre	Dollars	24.00		74.40		18.50
Per hour ^{5/}	"	.25 ^{9/}		.68		.52
Other expenses:						
Man labor ^{6/}	Dollars	14.30 ^{9/}		23.60		5.40
Mule labor ^{7/}	"	3.90		4.60		3.00
Machinery ^{8/}	"	1.50		1.70		1.10
Total	Dollars	19.70		29.90		9.50
Total specified expenses	Dollars	36.50 ^{2/}		45.90		13.00
Net return to land and management	Dollars	4.30 ^{9/}		44.50		9.00

^{1/} Value of fodder and interplanted crops excluded.

^{2/} 200 pounds 4-8-4 on peanuts; 600 pounds 6-8-4 on cotton plus compost; 150 pounds nitrate of soda on corn.

^{3/} \$10 per ton picking, \$5.50 per ton hay baling, \$3.00 per ton hauling.

^{4/} \$1.10 per cwt. for ginning, bagging, and ties.

^{5/} Man hour.

^{6/} 15 cents per hour except cotton picking \$1.50 per cwt.

^{7/} 8 cents per hour.

^{8/} 3 cents per mule hour based on assumption machinery used when mules used.

^{9/} The time reported by the farmers interviewed is probably greater than will be normally necessary because of adverse weather conditions and farmers' inexperience in 1942.

Can I Profitably Increase Peanuts on My Farm -

Variations from usual costs and returns can be expected on individual farms, and needed adjustments in farm organization will differ. In particular, a farmer should consider his expected yields in comparison with the normal yields used in the previous section, the best adjustments to make in increasing peanuts on his size of farm, his possibilities for greater labor efficiency, and the full use of by-products.

1. With the Yields I Expect? - If lower-than-usual yields are obtained, most of the costs remain the same. Some costs of harvesting--such as picking peanuts, baling peanut hay, and ginning cotton--will be less with poorer yields. Likewise, with poorer yields the gross returns are less.

In order to give some idea of net returns from peanuts, cotton, and corn at different yield levels, Tables 6 and 7 have been prepared. Since costs included estimated charges for man and mule labor, and for machinery as well as cash operating expenses, the net returns above these costs represent returns to land and management.

With prices of \$132 per ton of peanuts and 19 cents per pound of cotton in Henry County, an acre of peanuts yielding 900 pounds will return \$37 to land and management, and an acre of cotton yielding 300 pounds of lint will return \$38.70. In Marshall County, at the same prices, an acre of peanuts yielding 900 pounds will return \$28.10, and an acre of cotton yielding 300 pounds of lint will return \$27.40. With usual costs for each crop and in each area, higher yields bring higher net returns.

The use of these tables should be limited to that of a rough guide for substituting one crop for another on the basis of expected yields. Net returns have been estimated on the basis of reported practices and costs. Insofar as the

Table 6.- Estimated Net Returns per Acre to Land and Management for Peanuts, Cotton, and Corn with Varying Yields and Prices, Henry County.

Yield per acre (pounds)	Peanuts					
	Price per ton ^{1/}					
	\$80	\$100	\$120	\$132	\$140	\$160
500	\$ 0.20	\$ 5.20	\$10.20	\$12.70	\$15.20	\$20.20
600	3.90	9.90	15.90	18.90	21.90	27.90
700	7.10	14.10	21.10	24.60	28.10	35.10
800	10.70	18.70	26.70	30.70	34.70	42.70
900	14.50	23.50	32.50	37.00	41.50	50.50
1000	18.20	28.30	38.20	43.20	48.20	58.20
1100	21.40	32.40	43.40	48.90	54.40	65.40
1200	25.10	37.10	49.10	55.10	61.10	73.10
1300	28.80	41.80	54.80	61.30	67.80	80.80
1400	32.50	46.50	60.50	67.50	74.50	88.50
1500	36.20	51.20	66.20	73.70	81.20	96.20

Yield per acre (pounds of lint)	Cotton					
	Price per pound of lint ^{2/}					
	13¢	15¢	17¢	19¢	21¢	23¢
200	\$ 7.70	\$11.70	\$15.70	\$19.70	\$23.70	\$27.70
300	20.70	26.70	32.70	38.70	44.70	50.70
400	33.60	41.60	49.60	57.60	65.60	73.60
500	46.70	56.70	66.70	76.70	86.70	96.70
600	59.70	71.70	83.70	95.70	107.70	119.70

Yield per acre (bushels)	Corn					
	Price per bushel ^{3/}					
	\$0.90	\$1.00	\$1.10	\$1.20	\$1.30	\$1.40
8	\$ -2.50	\$ -1.70	\$ -0.90	\$ -0.10	\$ 0.70	\$ 1.50
12	0.80	2.00	3.20	4.40	5.60	6.80
16	4.10	5.70	7.30	8.90	10.50	12.10
20	7.40	9.40	11.40	13.40	15.40	17.40
24	10.60	13.00	15.40	17.80	20.20	22.60
28	13.90	16.70	19.50	22.30	25.10	27.90

^{1/} Peanut hay valued at \$6.00 per ton.

^{2/} Cottonseed valued at \$48.00 per ton.

^{3/} Value of fodder excluded.

Table 7.- Estimated Net Returns per Acre to Land and Management for Peanuts, Cotton, and Corn with Varying Yields and Prices, Marshall County.

Yield per acre (pounds)	Peanuts Price per ton ^{1/}					
	\$80	\$100	\$120	\$132	\$140	\$160
500	\$ -8.80	\$ -3.80	\$ 1.20	\$ 3.70	\$ 6.20	\$11.20
600	-5.00	1.00	7.00	10.00	13.00	19.00
700	-2.00	5.00	12.00	15.50	19.00	26.00
800	1.90	9.90	17.90	21.90	25.90	33.90
900	5.60	14.60	23.60	28.10	32.60	41.60
1000	9.40	19.40	29.40	34.40	39.40	49.40
1100	12.70	23.70	34.70	40.20	45.70	56.70
1200	16.50	28.50	40.50	46.50	52.50	64.50
1300	20.20	33.20	46.20	52.70	59.20	72.20
1400	24.10	38.10	52.10	59.10	66.10	80.10
1500	27.80	42.80	57.80	65.30	72.80	87.80

Yield per acre (pounds of lint)	Cotton Price per pound of lint ^{2/}					
	13¢	15¢	17¢	19¢	21¢	23¢
200	\$ -2.10	\$ 1.90	\$ 5.90	\$ 9.90	\$13.90	\$17.90
300	9.40	15.40	21.40	27.40	33.40	39.40
400	20.50	28.50	36.50	44.50	52.50	60.50
500	32.30	42.30	52.30	62.30	72.30	82.30
600	43.80	55.80	67.80	79.80	91.80	103.80

Yield per acre (bushels)	Corn Price per bushel ^{3/}					
	\$0.90	\$1.00	\$1.10	\$1.20	\$1.30	\$1.40
8	\$ -5.00	\$ -4.20	\$ -3.40	\$ -2.60	\$ -1.80	\$ -1.00
12	-1.70	-0.50	0.70	1.90	3.10	4.30
16	1.70	3.30	4.90	6.50	8.10	9.70
20	5.00	7.00	9.00	11.00	13.00	15.00
24	8.40	10.80	13.20	15.60	18.00	20.40
28	11.70	14.50	17.30	20.10	22.90	25.70

^{1/} Peanut hay valued at \$14.00 per ton. See Table 5, footnote 9, regarding labor costs.

^{2/} Cottonseed valued at \$48.00 per ton.

^{3/} Value of fodder excluded.

individual farmer can obtain an average level of yields with lower-than-normal costs, his net returns will be greater. High yields obtained at too great cost are not economical.

2. With My Size of Farm? - Besides the relative returns from these crops, the balance of all farm enterprises should be considered. The factors involved differ between small and large farms.

Before 1942, 50 per cent or more of the cropland on small farms was planted with food and feed crops. In the Old Peanut Area the remainder was used for cotton and peanuts, and in the new areas mainly for cotton. The provision of feed and food for home use is important on small farms, and opportunities for adjustment are seriously limited because the small cropland base limits the acreage that can be shifted from food and feed production to cash crops. More intensive production through double cropping and planting of winter grazing crops would reduce the acres required for food and feed production. In the Old Peanut Area, as well as in the new areas, cropland formerly idle might be planted to feed crops in 1943 and the land thereby released planted to peanuts. The substitution of harvested peanuts for cotton in the southeastern counties is another adjustment which can be made with some saving of labor.

In the New Southern Area adjustments can be made much the same as in the Old Peanut Area. High boll weevil infestation, with subsequent reduced cotton yields, makes it profitable on many farms to substitute peanuts for cotton. Moreover, peanut hay can be substituted for other hay and to some extent for corn.

In the New Northern Area farmers on small farms can probably best increase peanut acreage by utilizing formerly idle land for feed and food crops and by double cropping and winter grazing, thus allowing some substitution of peanut acreage for corn and hay.

On many small family-operated farms there will be sufficient labor to produce and harvest crops in 1943. In fact, on some of them there may be enough labor for part of it to be used on larger farms, especially during cotton and peanut harvesting.

On large farms labor shortages have been and will be most keenly felt. Although on these farms the acreage in corn can be more easily reduced in favor of peanuts than on small units, the increased labor requirements for peanuts as compared with corn would mean an increase in total labor requirements. If harvested peanuts were substituted for cotton, total labor requirements would be reduced; particularly where runner peanuts are grown, the fall labor peak would be lessened. Currently proposed prices for oil peanuts in 1943 would permit this adjustment on large farms without decrease in incomes.

It would be advisable for farmers operating large units to calculate the probable supply of labor on their farms during 1943 compared with labor requirements of crops which they expect to grow. For example, in Henry County 2 acres of cotton require roughly as much labor as 3 acres of harvested peanuts and as much as 3 1/2 acres of corn. With increased experience with peanuts somewhat similar relationships may be expected in the new areas. The comparisons would furnish farmers a good basis for utilizing the farm labor supply to the limit and for decreasing labor peaks at harvesting time.

3. With My Possibilities for Reducing Labor Costs? - The greatest single cost item in peanut production is labor, supplies of which may be short on certain types of farms and in defense areas in 1943. Fortunately, however, labor costs probably can be reduced more easily than many other expenses.

Farmers in Henry County (located in the Old Peanut Area) indicated that harvested peanuts usually have required about 54 hours of man labor per acre

(Table 8), while farmers in Marshall County (in the New Northern Area) indicated that 1942 labor requirements were about 40 hours more than in Henry County. Henry County farmers spent 9 hours in getting land ready for planting (cutting stalks, breaking land, and laying off rows) and 4 hours in fertilizing and planting. In Marshall County peanuts were planted by the time-consuming method of hand-dropping, whereas a planter with a special peanut plate was used in Henry County. Thus, considerable labor saving might be made in the new areas by purchase of such plates, cooperative purchase and use by several farmers being the

Table 8.- Usual Operations and Man Labor Required per Acre
in Producing Peanuts,
Henry County, Alabama.

Operation	Hours
Land preparation	9.0
Fertilize and plant	4.0 ^{1/}
Cultivate	7.0
Hoe	10.0
Harvest (cut and set poles, dig, shake, and stack)	22.0
Haul to picker	2.0 ^{2/}
Total	54.0

- ^{1/} Labor required for hulling nuts planted not included
^{2/} Picker-operator furnished an average of 2.0 man hours per acre in threshing operation, also labor and transportation for hauling peanuts to market.

most economical method. Another difference in labor requirements between the two areas was greater time reported for cultivating and hoeing in Marshall County. This may have been due partially to adverse weather conditions ^{1/}, but use of

^{1/}Farmers in Henry County, Alabama, also reported that labor required in cultivating peanuts was greater in 1942 due to adverse weather conditions than normal requirements shown in Table 8.

peanut weeders and joe harrows has permitted many farmers in the Old Area to reduce these cultivating requirements, which are normally 17 hours. Labor required in harvesting was also greater in Marshall County than in Henry County, most of the extra labor being required in shaking and stacking. Small acreages per farm and small fields, together with lack of experience, contributed to this difference. Recent information secured from a few Henry County farmers indicates that a labor saving of approximately one-third (from 22 to about 15 hours) can be made in harvest operations by the use of a side-delivery rake.

Full use of available laborsaving power and equipment is imperative in the face of drastically curtailed and rationed supplies of new equipment. Owners of laborsaving equipment should feel strongly their responsibility of aiding in the war effort by making this equipment available to other farmers whenever possible. Many farmers can gain useful, laborsaving information from their more experienced neighbors or from agricultural agencies. Labor peaks during cotton and peanut harvest might possibly be reduced by staggering peanut planting dates.

4. With Full Use of By-Products? - An acre yielding 800 pounds of peanuts produces 800 to 900 pounds of hay, and from the crushing of the peanuts about 300 pounds of peanut cake in addition to the oil. The peanut cake when ground into meal and used as a livestock feed is a protein supplement which compares favorably with cottonseed and soybean meal. More general feeding of this high protein concentrate and the peanut hay should provide opportunity for the farmer to feed a better balanced ration and even in some cases to feed an increased number of livestock. Hogs turned into peanut fields after harvesting can gather considerable feed in the gleanings.

The value of these by-products to the individual farmer should be added to the usual net returns in considering the place of peanuts on his farm. On

small farms these by-products, if fully utilized, will allow greater substitution of harvested peanuts for feed crops without reduction in total feed supply. On larger farms their value should be carefully considered in fitting peanut increases into the commercial production of livestock and livestock products. Peanuts for oil are Alabama's number one war crop, but in the war effort Alabama farmers share the responsibility of producing badly needed livestock products. The use of all by-products is part of this responsibility and, with present prices, can add to profits from peanuts.

5. With My Plans for the Future? - With the urgent need for oils and the improved price for peanuts, many Alabama farmers will gain further experience in growing peanuts in 1943. Conditions can be expected to continue favorable to peanut production throughout the war, but a decline in demand for peanuts will undoubtedly follow soon after the end of the war. Furthermore, harvested peanuts are extremely hard on the land, and, if grown on the same land for several years, may even ruin it. Such are the unfavorable aspects of the expanded peanut goals.

A more favorable prospect is involved in the soil building effect of hogging peanuts. Experiment station results indicate that unfertilized plots of corn rotated with hogged peanuts maintained yields far above those on unfertilized plots of continuous corn^{1/}. In addition yields of peanuts and consequently yields of pork were maintained at high levels. Some farmers might well consider planning for the future a farm program which will include hogging peanuts. Such a program would take advantage of the experience now being gained in growing peanuts; it would offer a cash income from hogs, and it would economically build up the fertility of the land and the productivity of the farm.

^{1/} In 1942 at the Wiregrass Experiment Substation corn yields in the rotation were 47.5 bushels and, where grown continuously, 4.1 bushels. Further information can be obtained from the Agricultural Experiment Station.

Additional Publications
Relating to
Peanuts and Peanut Products

Peanuts. Leaflet No. 5, July 1934. (Reprinted 1935 and 1937.)

Planting and Cultivating Peanuts. Mimeographed Publication.

The Effect of "Digging" and "Hogging" Peanuts on Cotton Yields.
Leaflet No. 18, October 1939.

Peanuts for Fattening Hogs in the Dry Lot. Bulletin 223,
June 1924: (Reprinted 1931 and 1937.)

Peanut Meal as a Protein Supplement to Corn for Fattening Hogs
in the Dry Lot. Bulletin 224, August 1924. (Reprinted
1931 and 1937.)

The Value of Peanuts and Peanut Meal in Rations for Chickens.
Circular 80, November 1937.

Any of these publications may
be obtained by writing to

Agricultural Experiment Station
Auburn, Alabama