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Factors Affecting Costs of Producing Pork In Southeast Alabama

By
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OF THE
ALABAMA POLYTECHNIC INSTITUTE
IN CO-OPERATION WITH
UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS

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Factors Affecting Costs of Producing Pork In Southeast Alabama

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THE PRODUCTION of pork, in excess of requirements for home use, has assumed relatively greater importance in Southeast Alabama than in any other part of the State. In six leading counties of that area there were in 1930, according to the Federal census, an average of 9 hogs per farm as compared with 3 hogs per farm in the remainder of the State. The hog industry in this section is closely associated with the peanut crop which, after the spread of the boll weevil, was substituted for cotton on many acres. Hogs constitute about 10 per cent of the gross cash farm income in Southeast Alabama as compared with 3 per cent for the State as a whole. On the farms included in this study, hogs constituted about 14 per cent of the gross cash income and other products the following percentages: cotton and cottonseed, 50 per cent; peanuts, 14 per cent; other crops, 12 per cent; other livestock, 10 per cent.

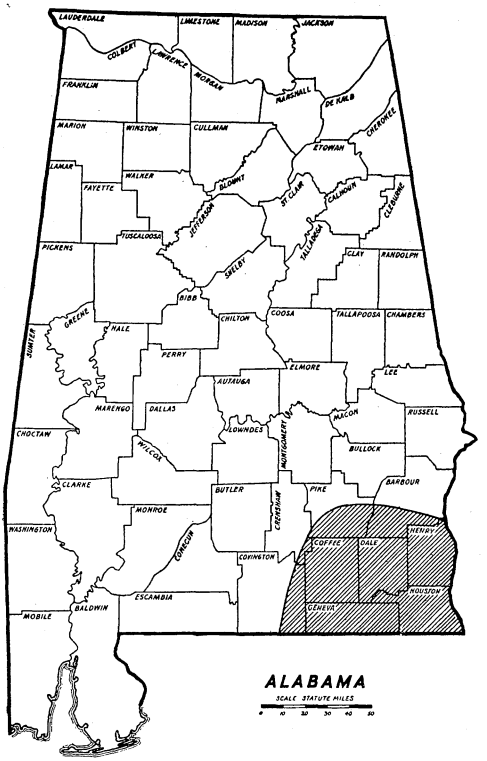

FIGURE 1.—The shaded area indicates the hog-peanut area of Alabama, in which the farms included in this study were located.

Although hog production on most farms in Southeast Alabama is a by-product and a side-line to the major farming operations, many farmers are interested in increasing both the size and profitableness of the enterprise. In order to determine the most important factors associated with the success of the hog enterprise in Southeast Alabama and Southwest Georgia a study was begun in 1927 in co-operation with the Bureau of Agricultural Economics of the United States Department of Agriculture and the Georgia State College of Agriculture. The area in Alabama to which the study refers in shown in Fig. 1.

SYSTEM OF HOG PRODUCTION IN SOUTHEAST ALABAMA

In the area studied, hogs as a commercial enterprise are used: (1) To furnish a medium for marketing peanuts interplanted in corn. About 40 per cent of the corn acreage is interplanted with peanuts and most of these peanuts are hogged-off after the corn has been harvested. This is the most important source of pork produced in the area. (2) To furnish a medium for marketing a portion of the solid peanut acreage. On the average, according to crop reports, about one-fifth of the solid peanut acreage is hogged-off, the other four-fifths being dug and sold. This proportion varies from year to year and from farm to farm. (3) To clean up the waste, after the peanuts have been harvested. Often as many as 10 per cent of the peanuts are left in the ground after harvest and the only practicable way to recover these is through hogs.

The system of producing pork in Southeast Alabama consists essentially of fattening the hogs on runner peanuts from about September 15 to about February 15, or March 1, and maintaining the herd on permanent pasture and hand-fed supplements for the remainder of the year. Ninety per cent of the hand-fed feeds, according to value, is produced on the farm. In addition to corn, some velvet beans and sweet potatoes are often fed by hand. This system has certain variations, the most important of which consists in extending the fattening period so that it begins in July and August on Spanish peanuts, early corn, cowpeas, soybeans, or other early maturing crops, or combinations of crops. Another variation is to provide green grazing of oats and rye in early spring.

No definite system of seasonal distribution of farrowings is generally followed, and uncontrolled breeding is the rule. A peak of farrowings comes in January and February, nearly one-fourth of the total number of pigs each year being farrowed in these two months. The seasonal trend of farrowings on the farms in this study is shown graphically in Figure 2.

The system of marketing followed seems to be to put the hogs on the market when they reach approximately the number one size, the minimum weight of which is 165 pounds. Many hogs are sold at less than this weight when feed crops for grazing have been exhausted. The weight of all hogs sold in both years on the farms included in the present study averaged about 172 pounds.

COSTS OF PRODUCTION AND RETURNS

Methods of Calculating Costs and Income.—The total amount of pork produced on each farm from April 1, 1927 to March 31, 1928, and for the same period for 1928-29 was computed by de-

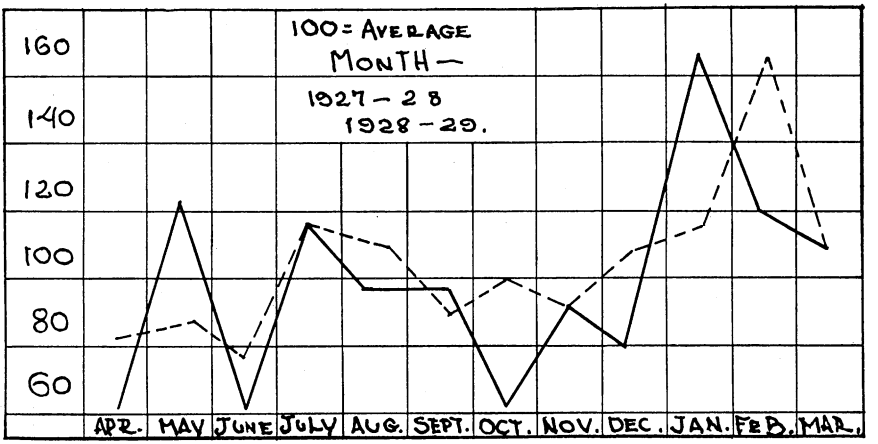

FIGURE 2.—Seasonal trend of farrowings on farms in this study. Solid line, 1927-28; dotted line, 1928-29.

termining the difference between (1) the total weight of the herd on April 1 plus the weight of hogs purchased, and (2) the weight of hogs which died, those butchered, those sold, and those on hand March 31. This figure represents the total net increase in weight in the herd for the year, and is referred to in this report as total gain. The marketable gain was determined by deducting from the total gain that portion of the gain which was made by hogs which died during the year.

Costs of production were calculated by charging the hand-fed feeds grown on the farm at their market value, those purchased at their cost, and hogged-off feeds at the cost of producing such feed. In calculating costs of producing feed, land was charged at the rate estimated by the farmer as the customary rental rate for land of similar grade in the community. Man and mule labor was charged at current rates, which were approximately 12½ cents and 10 cents per hour, respectively. Machinery was charged at three cents per hour for each hour of mule labor involved. Seed and fertilizer were charged at their market value or cost. No charge was made either for peanuts left in the ground after harvest and salvaged by the hogs, or for interest on investment in hogs, the latter item being difficult to determine accurately and of minor significance in costs.

Income per pound of net increase in the hog herd for the year was arrived at by dividing the total number of pounds of net increase, calculated as described above, into the total value of the net increase. The latter value was arrived at by adding together the inventory value of the herd at the beginning of the year and the value of hogs purchased during the year, and subtracting the total from the value of hogs butchered, sold, and on

hand at the end of the year. Income per pound, therefore, is not exactly synonymous with selling price per pound, since the former takes into account the total value of marketable pork produced, all of which was not sold.

Net return per acre of land is used as one measure of success of the hog enterprise. In the case of peanuts interplanted in corn the amount of land used for hog grazing is considered to be that part of the land occupied by the peanuts. For example, if an acre of land were planted to corn and peanuts in alternate rows, and only the peanuts were hogged-off, which is the usual practice, it would be considered that the pork was produced on one-half acre. The yield per acre of peanuts planted solid included in this study was 30.3 bushels per acre. On fields in which the peanuts were interplanted in alternate rows, the yield per acre of peanuts, when assumed to occupy the proportion of land indicated above, was 29.7 bushels per acre. If, however, the peanuts were considered to occupy the entire land area used by the corn-peanut combination, the average yield was 14.8 bushels per acre. As used in this study, the net return per acre of crop land used for grazing hogs (including interplanted peanuts converted to an equivalent solid basis as indicated above) represents what is left after costs of labor and other direct expenses incurred in connection with the hog enterprise are deducted from the value of the net increase. This return to land is the net amount available for interest on investment in land, including permanent improvements, and for depreciation and taxes.

Summary of Costs and Returns.—As a two-year average the total amount of pork produced was 311 pounds per acre, of which 300 pounds was marketable, and 11 pounds was gain on hogs that died during the year. It cost an average of $6.73 to produce 100 pounds of marketable pork for which an income of $7.06 was received. The cost of producing marketable pork was $6.24 in 1927-28 and $7.22 in 1928-29. The two-year average net return per acre of land was $5.70 (Table 1).

TABLE 1.—Cost and Income per Hundredweight of Pork Produced, Pounds of Pork Produced per Acre, and Net Return per acre of Land, 179 Farms, 1927-28 and 1928-29.

Year	Number of Farms	Cost per 100 pounds of gain		Income per 100 pounds of gain		Pounds of pork produced per acre		Net return per acre of land
		Marketable	Total	Marketable	Total	Marketable	Total	
1927-28	99	$6.24	$5.99	$6.62	$6.35	346	360	$6.06
1928-29	80	7.22	7.02	7.50	7.30	255	262	5.35
Two-Year Average	179	$6.73	$6.50	$7.06	$6.82	300	311	$5.70

Distribution of Costs.—Feed was by far the largest single item of cost on the farms studied and accounted for 90 per cent of the total cost of production. The labor of caring for the herd and marketing the hogs amounted to 8.3 per cent, and miscellaneous costs, mostly veterinary expense, amounted to about 2 per cent of the total costs (Table 2).

TABLE 2.—Distribution of Costs of Producing Pork, Two-Year Average, 1927-28 and 1928-29.

Item	Two-year average cost per pound of		Per cent of total cost per pound of total gain
	Marketable gain (cents)	Total gain (cents)	
Farm-grown feed fed by hand	1.4	1.3	20.5
Purchased feed fed by hand	0.3	0.3	4.4
Permanent pasture	0.1	0.1	1.0
Grazing crops	0.1	0.1	1.6
Soiling crops	--	--	0.5
Peanuts	3.7	3.6	55.5
Other finishing crops	0.4	0.4	6.0
Labor	0.6	0.5	8.3
Veterinary and miscellaneous	0.1	0.2	2.2
Total	6.7	6.5	100.0

Peanuts hogged-off constituted the single most important item in feed costs amounting to about 55 per cent of total costs. Hand-fed feeds grown on the farm amounted to 20.5 per cent, and purchased hand-fed feeds 4.4 per cent of total costs.

The distribution of costs of producing peanuts is indicated in Table 3. The total cost was 1.67 cents per pound, of which 0.64 cents or 38 per cent was the charge for the use of land. Man and mule labor together amounted to 42 per cent of total costs and the use of machinery, seed, and fertilizer accounted for the remaining 20 per cent.

TABLE 3.—Distribution of Costs of Producing Runner Peanuts for Hog Grazing, Two-Year Average, 1927-28 and 1928-29

Item	Cost		Per cent of total cost
	Per acre	Per pound	
	Dollars	Cents	
Man labor	2.74	0.37	22
Mule labor	2.39	0.33	20
Fertilizer	0.37	0.05	3
Seed	1.31	0.18	11
Machinery	0.72	0.10	6
Land rent	4.64	0.64	38
Total	12.17	1.67	100

Variations in Costs.—Wide variations in costs of producing pork existed among the farms studied, as is indicated in Table 4. Ignoring a few extremes of highest and lowest costs, which were exceptional cases, there was a range of costs during the two years on most of the farms from $3.00 to $9.00 per hundred pounds of pork produced. Costs were higher in 1928-29 than in 1927-28, indicating that average costs may vary from one season to another as well as from farm to farm.

TABLE 4.—Number of Farms Having Specified Costs of Producing Pork, 1927-28 and 1928-29.

Cost per 100 pounds of marketable gain	Number of farms	
	1927-28	1928-29
Dollars		
1.00— 1.99	1	-
2.00— 2.99	2	-
3.00— 3.99	8	3
4.00— 4.99	15	3
5.00— 5.99	19	16
6.00— 6.99	18	16
7.00— 7.99	17	13
8.00— 8.99	5	13
9.00— 9.99	5	6
10.00—10.99	4	4
11.00—11.99	1	1
12.00—12.99	-	4
13.00 and more	4	1
Total	99	80

The costs reported in this study were calculated on the basis of 1927-28 and 1928-29 prices for land rent, labor, feeds, and other costs. Since at the beginning of 1933, land rents, labor rates, and feed costs had declined by at least half from the levels which prevailed during the years to which this study refers, costs of production on the basis of early 1933 prices would be around one-half of the figures given, or between three and four cents per pound. However, the relationships discussed below between certain factors and profits from the hog enterprise would hold true at any set of prices, provided the various cost items remained in approximately the same ratio as prevailed from 1927 to 1929.

Cost of Producing Pork on Waste Peanuts.—Many farms which grow peanuts for direct sale, fatten a few hogs each year on the waste salvaged after harvest. These farms are not typical of the farms included in this study, the latter representing farms on which the hog enterprise was above average in size and on which comparatively large acreages of peanuts were hogged-off. Data were obtained on two farms in 1927-28 and six farms in 1928-29 on which the hogs were fattened entirely on waste peanuts, these farms not being included in the tables

presented in this report. The costs on these farms were $1.15 and $3.46 per hundred pounds of total gain in 1927-28 and 1928-29 respectively. In calculating these costs no charge was made for the waste peanuts consumed by the hogs. Without hogs, the waste peanuts would have been entirely valueless. This method of fattening hogs, though very economical, is, of course, limited to the amount of available peanut waste on the farm.

Cost of Producing Pork on Interplanted Peanuts.—On 13 farms in 1927-28 and 12 farms in 1928-29, the hogs were fattened entirely on interplanted peanuts. From the farmer's point of view the interplanted peanuts are grown as a secondary crop in connection with corn, since the corn would be grown whether accompanied by peanuts or not. From this standpoint corn should bear the entire charge for the use of land and peanuts charged only the additional costs incurred in connection with that crop. These additional costs are the peanut seed, fertilizer applied directly to the peanuts, and the labor, if any, of hoeing the peanuts. In the tables presented in this study, costs of interplanted peanuts were calculated on the basis of charging the peanuts with one-half the land rent where they occupied one-half of the land, and likewise their proportionate share of other costs of production of the combined corn-peanut crop. On this basis, the two-year average cost on the 13 farms in 1927-28 and the 12 farms in 1928-29 referred to above was $6.72 per hundredweight of marketable gain. When, however, the interplanted peanuts are charged with only the small additional costs involved in their production, which is in line with the farmer's point of view, the cost of producing pork is reduced to $3.52 per hundredweight. These data indicate that the use of interplanted peanuts is a very economical method of fattening hogs when considered a by-product of corn production. As stated above, most of the pork in Southeast Alabama is produced by this method, but on farms where it is used as the sole method, the hog enterprise is limited in accordance with the corn acreage which may be interplanted with peanuts.

THE EFFECT OF EARLY FINISHING CROPS ON COSTS

One of the purposes of the study was to compare the costs of production with different cropping and hog-grazing systems used in the area.

When this study was begun it was thought that a significant relationship might exist between the use of early finishing crops and low costs of production. It was believed that the use of such crops in addition to the main crop of runner peanuts would bring about a substantial and profitable reduction in hand-fed feed requirements. Several farms which were using early fin-

ishing crops were included in the study. However, a comparison of this group of farms with those which used only runner peanuts indicated very little difference between the two groups in costs of production.

As an average of 1927-28 and 1928-29, those farms which used early finishing crops, in addition to the main crop of runner peanuts, produced pork at a cost of 10 cents per hundredweight of marketable gain more than those which did not include such crops. The former group received a net return for use of land of 18 cents less and produced somewhat less pork per acre than the latter group. These differences are not significant (Table 5).

TABLE 5.—Comparative Costs of Pork Production with Late Finishing Crops and with Early and Late Finishing Crops, 1927-28 and 1928-29.

Item	Crops used in hog grazing	
	Late finishing crops only	Early and late finishing crops
Average number of farms:	57	33
Pounds of feed disappearing per 100 pounds marketable gain:		
Peanuts hogged	236	218
Other late finishing crops hogged	53	75
Early finishing crops hogged	0	36
Hand-fed feeds	120	95
TOTAL FEED	409	424
Pounds of total pork produced per acre	332	296
Pounds of marketable pork produced per acre	321	284
Income per 100 pounds marketable gain	$7.00	$7.12
Cost per 100 pounds marketable gain	6.68	6.78
Profit per 100 pounds marketable gain	0.32	0.34
Net returns to land per acre	5.82	5.64

In Table 5 is indicated the pounds of concentrated feeds which disappeared per hundredweight of gain on the farms on which the hogs were fattened on only runner peanuts and other late finishing crops, and on the farms on which early finishing crops were included. The term "disappeared" is used here since apparently in many instances the hogs did not eat all the feed but some of it was wasted or plowed back into the ground. In both groups of farms peanuts constituted 74 per cent by weight of the grazed feeds used; the digestible nutrients consumed by the hogs on both groups of farms were therefore derived preponderantly from peanuts.

As an average for the two years, the group of farms using early finishing crops fed about 20 per cent less of hand-fed feeds than the group not having such crops. However, the former group used 4 per cent more of all feeds or 424 pounds per hun-

dredweight of gain as compared with 409 pounds used by the latter group.

It appears that although the use of early finishing crops resulted in a material reduction in the quantity of hand-fed feeds required to produce a given amount of pork, the use of such crops did not reduce materially the costs of production. The data indicate that green crops may be substituted for a large part of the hand-fed feeds required, but the cost remains about the same. In other words, the cost of early finishing crops amounted to about as much as the value of the hand-fed feeds thereby displaced.

RELATION OF YIELD PER ACRE TO COSTS

The crops grazed by the hogs were charged against the cost of producing pork at the cost of producing those crops. When other things are equal, the higher the yield per acre of such crops the lower the unit cost of the grazed feed. Peanuts was the most important crop grazed and the relationship of yield per acre of peanuts to the cost per pound is shown in Figure 3. Since grazed feeds formed such an important part of cost of production in the area, it would be expected that the cost of producing pork would be materially influenced by the yield per acre of grazed feed crops. That such a relationship exists is indicated in Table 6. As the yield per acre of grazed feed increased the pounds of pork produced per acre increased, the cost of production decreased, and the net return per acre of land increased. It is significant, therefore, that the yield per acre of peanuts has a vital relationship to costs of producing pork in Southeast Alabama.

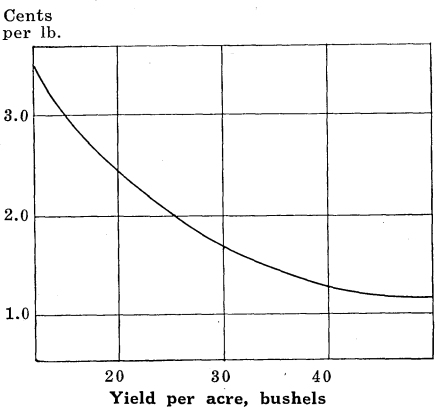

FIGURE 3.—Relation of yield per acre to cost of production per pound of peanuts.

RELATION OF FEED PER UNIT OF GAIN TO COSTS

Although the yield per acre of grazed feed and pounds of pork per acre were important factors related to costs, they were not the sole determinants of the cost. Another factor, namely, the amount of feed which disappeared per 100 pounds of gain was examined and found to exert considerable influence on cost of gain. In other words, not only the cost of producing feed, but also the

TABLE 6.—Relation of the Yield per Acre of Finishing Crops to the Cost of Producing Pork and Other Factors, 1927-28 and 1928-29.

Yield per acre of finishing crops (pounds)	Number of farms	Average yield of all finishing crops per acre (pounds)	Average yield of peanuts per acre (pounds)	Marketable pork produced per acre (pounds)	Number of hogs on hand September 1 per acre	Net returns to land per acre	Per 100 pounds of marketable gain	
							Income	Cost
	1927-28							
0— 799	27	652	594	285	1.7	$3.06	$6.95	$7.63
800—1199	50	957	832	330	2.1	6.46	6.82	6.21
1200 and more	22	1615	1047	477	2.7	9.34	5.96	5.07
All farms	99	998	806	346	2.1	$6.06	$6.62	$6.24
	1928-29							
0— 699	26	532	494	213	1.4	$3.86	$7.47	$7.63
700—1099	35	886	726	271	1.9	4.72	7.35	7.38
1100 and more	19	1287	1125	300	1.8	8.89	7.75	6.48
All farms	80	842	730	255	1.7	$5.35	$7.50	$7.22

efficiency with which it was utilized by the hogs and converted into pork affects the cost of producing pork. The quantity of grazed feeds disappearing per 100 pounds of gain showed a wide range, varying from about 200 pounds to about 700 pounds. The data in Table 7 indicate the relationship of pounds of feed disappearing per 100 pounds of gain to cost of production. The relationship is marked. In both years an increase of 100 pounds of feed disappearing per 100 pounds of gain was associated with an increase of about one cent per pound in cost of producing pork.

It is also interesting to note (Table 7) that on the farms on which the larger quantities of feed disappeared per 100 pounds of gain, and which had the higher costs, there was a tendency for yields of finishing crops per acre to be higher. The higher yields were associated with lower unit costs of feed; but the benefit of cheaper feed on the higher yielding acres was partially lost by less efficient use of the feed.

ADJUSTMENT OF HOGS TO FEED SUPPLY

The question arises, why did some farmers use the feed grazed by hogs so much more efficiently than other farmers? Apparently a hog would make about the same response to the same feed, other things equal, on one farm as on another. But the hogs did not gain equally on all farms and the problem is to find the causes of this inequality.

If all the feed available for hog grazing on a given area of land is to be converted into pork there must be an adequate number of hogs on the field for a sufficient number of days to fully utilize the feed. It is not possible, of course, to forecast accurately the yield of a field sufficiently far in advance to be able to raise the required number of pigs to use the feed efficiently. A partial adjustment may be made by finishing the hogs to a heavier weight, but this type of adjustment will not fully take care of the fluctuations in peanut yields. The problem exists, therefore, of having on hand the proper number of hogs to use efficiently the grazed feed available. In some cases farmers buy hogs if they have a surplus of feed, but many of them simply turn into the fields the hogs they have on hand at the time. Although there was a tendency for farmers with the heavier-yielding acres to have on hand at the beginning of the fattening period more hogs per acre than those with lower-yielding acres, the former did not have on hand enough more hogs to use efficiently the larger quantity of feed.

The data in Table 8 indicate that the number of head of hogs on hand September 1 per 1,000 pounds of grazed feed is related to the amount of feed disappearing per 100 pounds of gain and therefore to cost of production. Many farms lost a

TABLE 7.—Relation of the Pounds of all Feed Disappearing per 100 Pounds of Total Gain on Hogs to the Yield per Acre of All Finishing Crops and to the Income and Cost per 100 Pounds of Gain, 1927-28 and 1928-29.

Pounds of feed disappearing per 100 pounds of total gain	Number of farms	Average number of pounds of all feed disappearing per 100 pounds of total gain	Average yield of all finishing crops per acre (pounds)	Income per 100 pounds marketable gain	Cost per 100 pounds of gain	
					Marketable	Total
	1927-28					
0—299	27	243	894	$6.63	$4.52	$4.37
300—399	36	344	876	6.92	6.50	6.08
400 and more	36	524	1129	6.34	7.26	7.08
All farms	99	383	998	$6.62	$6.24	$5.99
	1928-29					
0—299	16	252	584	$7.95	$6.00	$5.86
300—399	25	340	735	7.30	6.85	6.67
400 and more	39	549	971	7.45	7.98	7.76
All farms	80	421	842	$7.50	$7.22	$7.02

large part of the benefit from larger than average yields per acre by not having enough hogs or by not keeping them on the peanuts long enough, or both, to utilize efficiently the feed available. Although the average weight of hogs sold was lighter in the groups having the larger number of hogs in relation to the feed supply, the income per hundredweight of marketable gain was not materially reduced.

TABLE 8.—Relation of Number of Hogs on Hand September 1 per 1,000 Pounds of Grazed Feed to Pounds of Grazed Feed Disappearing per 100 Pounds of Total Gain and other Factors, 1927-28 and 1928-29.

Hogs on hand September 1 per 1,000 pounds of grazed feed	Number of farms	Average number of hogs on hand September 1 per 1,000 pounds of grazed feed	Average weight of hogs sold	Pounds of grazed feed disappearing per 100 pounds of total gain	
				Peanuts	Total
	1927-28				
1.9 and less	36	1.5	181	229	357
2.0—3.4	45	2.5	176	182	230
3.5 and more	18	4.3	144	120	169
All farms	99	2.1	173	193	277
	1928-29				
1.9 and less	32	1.3	174	322	423
2.0—3.4	35	2.6	172	212	278
3.5 and more	13	4.5	161	132	165
All farms	80	2.0	172	246	321

Another measure of the degree of adjustment between hogs and feed supply is the number of hog grazing days provided for a given amount of feed available for grazing. This measure may be expressed as the pounds of grazed feed available per grazing day. The relationship of pounds of grazed feed available per hog grazing day to the pounds of grazed feed disappearing per 100 pounds of total gain is indicated in Table 9. It will be noted that as the pounds of grazed feeds available per hog grazing day on finishing crops increased the pounds of feed disappearing per 100 pounds of gain increased. In all groups peanuts were in about the same proportion to other feeds, and amounted to about 74 per cent by weight of the total grazed feeds available. Thus the group having the largest amount of grazed feed available per grazing day used nearly twice as much feed in 1927-28, and more than twice as much in 1928-29 to make 100 pounds of gain as the group having the smallest amount of grazed feed available. The daily gain per hog in the group using the largest average quantity of feed was 0.9 pounds as compared with 0.7 pounds in the group using the smallest

TABLE 9.—Relation of Pounds of Grazed Feed Available per Grazing Day to the Pounds of Grazed Feed Disappearing per 100 Pounds of Total Gain and Income and Cost per 100 Pounds of Marketable Gain, 1927-28 and 1928-29.

Pounds of grazed feed available per grazing day	Number of farms	Average pounds of grazed feed available per grazing day	Pounds of grazed feed disappearing per 100 pounds of total pork produced	
			Peanuts	Total
	1927-28			
1.9 and less	24	1.6	157	190
2.0—2.9	39	2.5	191	257
3.0 and more	35	4.0	220	358
All farms	98*	2.7	194	277
	1928-29			
2.4 and less	17	1.7	162	197
2.5—3.9	32	3.1	221	304
4.0 and more	31	5.4	318	407
All farms	80	3.4	246	321

*One farm used in other tables is omitted from this table because of inadequate data on hog grazing days.

average quantity of grazed feeds per day. The use of the larger quantities of feed resulted in a slightly larger rate of daily gain but not enough larger to offset the much larger quantities of feed used in relation to the gain obtained. The farms on which the larger quantities of feed disappeared did not have enough hogs on the fields for a sufficient number of days to use the feed to as good advantage as the farms using the smaller quantities of feed.

Many farmers seemed to have as an objective the finishing to a marketable weight the hogs they happened to have on hand at the beginning of the fattening period instead of planning to have the proper number of hogs needed to convert into pork the total supply of feeds available for hogging-off. This lack of adjustment between hogs and the quantity of feeds available for grazing is typical of the general attitude of many farmers toward the hog enterprise in Southeast Alabama. Hogs are considered by many an incidental by-product, the revenue obtained from this source being regarded as mostly clear gain. This lack of adjustment of hogs to feed, however, is a problem inherent in the system of fattening hogs on peanuts. The adjustment cannot be made by holding the feed until hogs can be raised to use it, as in the case of corn-hog production. Those farms which had the lowest costs and largest profits not only had better than average yields per acre of feed crops, but had on hand an adequate number of hogs to more efficiently and economically use the available feeds. Whether this better adjustment of hogs to feed on some farms was predetermined or accidental is not clear from a study of the records, nevertheless it proved profitable.

COMBINED EFFECT OF ACRE-YIELDS AND FEEDING EFFICIENCY ON COSTS

The available data indicate that both yield per acre and the economical use of feed through adjustment of hogs to feed supply are outstanding factors influencing costs of production in Southeast Alabama. The higher yields per acre are associated with low costs per unit of feed produced for hog grazing; provision for enough hogs for a sufficient length of time to utilize the available feed to the best advantage is associated with the efficiency with which the feed is used. Low efficiency in one factor may offset high efficiency in the other. Those farms which were above average in both of them had the lowest costs of production. For example, in 1927-28 the farms which were above average in number of hogs per 1,000 pounds of grazed feed and in yield per acre produced pork at $4.53 per hundredweight of marketable gain in 1927-28 and $6.45 in 1928-29, while those farms which were below average in both these factors had a cost of $7.73 and $8.22, respectively (Table 10).

SUMMARY

Hog production in Southeast Alabama is based largely on peanuts, which when hogged-off are a relatively cheap method of fattening hogs. A large part of the pork produced in Southeast Alabama is finished on interplanted peanuts which may be regarded as a by-product of corn production. The area, however, is one of high costs of maintaining the herds and raising the pigs between peanut crops.

The general system of hog production followed in the area consists of fattening the hogs on runner peanuts during the fall and winter months and maintaining the herd on permanent pasture and hand-fed feeds, consisting mostly of corn, for the remainder of the year. On some farms early maturing crops such as Spanish peanuts are used, thereby extending the length of the fattening period.

Ninety per cent of the cost of producing pork on the farms studied was feed cost, of which 23 per cent consisted of home-grown feed fed by hand, 5 per cent of purchased feed fed by hand, and 62 per cent peanuts grazed. The most important single item of the total feed cost was the cost of producing runner peanuts for hog grazing. The two-year average cost of producing runner peanuts planted solid was $12.17 per acre or $1.67 per hundredweight.

Costs of producing pork varied widely as between different farms, ranging from $3.00 to $9.00 per hundredweight of total gain on the majority of the farms.

TABLE 10.—Relation of Number of Hogs on Hand September 1, and the Yield per Acre of Grazed Feed to the Cost and Income per 100 Pounds of Marketable Gain and the Net Returns per Acre, 1927-28 and 1928-29.

Hogs on hand September 1 per 1,000 pounds of grazed feed	Above average yield per acre of grazed feed				Below average yield per acre of grazed feed			
	Number of farms	Per 100 pounds of marketable gain		Net returns to land per acre	Number of farms	Per 100 pounds of marketable gain		Net returns to land per acre
		Income	Cost			Income	Cost	
	1927-28							
Above average	19	$5.91	$4.53	$13.57	37	$6.86	$6.39	$6.19
Below average	25	6.38	6.05	5.93	18	7.20	7.73	3.50
	1928-29							
Above average	14	$7.84	$6.45	$10.95	34	$7.16	$7.57	$3.26
Below average	25	7.62	6.95	6.67	7	8.02	8.22	4.30

The two-year average cost of producing 100 pounds of marketable and total gain was $6.73 and $6.50, respectively; income was $7.06 and $6.82 respectively. Pork produced per acre was 300 and 311 pounds for marketable and total gain, respectively. Net return per acre of land used for hog grazing averaged $5.70, the interplanted peanut acreage being reduced to a solid acre basis.

Costs and returns on the group of farms which fattened the hogs in fall and winter and those which began the fattening period in the latter half of the summer on early maturing finishing crops, principally Spanish peanuts, were about equal. Slightly more pounds of feed were used with early finishing crops than without them. The system of hog-grazing followed did not appear to exert a controlling influence on costs, except that the farms using only waste peanuts had very low costs, as did those using only interplanted peanuts when the latter are treated as a by-product in computing their costs of production.

Yield per acre of finishing crops was an important factor affecting costs of production. High yields were associated with a high poundage of pork produced per acre and low total costs of producing pork.

The amount of feed disappearing or used per 100 pounds of gain was also an important factor affecting costs. Other things being equal, the smaller the quantity of feed required per unit of gain, the lower the cost.

The quantities of grazed feed disappearing per 100 pounds of gain were associated with the number of head of hogs on hand on September 1 and the number of days of grazing provided for the consumption of a given quantity of feed. Adjustment of the number of hogs to the feed supply influenced markedly the efficiency with which feed was used.

The two factors, namely, yield per acre of crops hogged-off and adjustment of number of hogs to the feed supply exerted an outstanding influence on costs of production. As a two-year average, the farms which were above average in both these factors produced pork at a cost of approximately $5.50 per hundredweight of marketable gain; those below average in both factors at approximately $8.00 per hundredweight.