

CIRCULAR 148

JN2 4 1964 FARM HANDLING and MARKETING of PECANS in ALABAMA

AUBURN UNIVERSITY Agricultural Experiment Station E. V. Smith, Director Auburn, Alabama

CONTENTS

	Page
Method of Study	4
DEVELOPMENT OF THE PECAN INDUSTRY IN ALABAMA	4
CHARACTERISTICS OF ALABAMA PECAN GROWERS	8
Grower Occupations	8
Size of Grower Operations	
Pecan Varieties	10
Problems Encountered	10
PRODUCTION PRACTICES OF PECAN GROWERS	10
Spacing	
Fertilization	11
Insect and Disease Control	12
Harvesting Practices	19
Shaking Methods	
Gathering Operations	
Storage	13
9	
FARM MARKETING OF ALABAMA PECANS	
Types of Buyers	14
Prices Received	15
PRODUCTION AND MARKETING CONSIDERATIONS FOR	
Improving Alabama's Pecan Industry	15
Production Potential	
Attitudes Concerning Auction Sales	17
Attitudes Toward Government Programs	
Other Marketing Considerations	18
SUMMARY	19

FARM HANDLING and MARKETING of PECANS in ALABAMA*

RONALD E. JONES** and M. J. DANNER
Department of Agricultural Economics

TOTAL FARM INCOME from pecans in Alabama averaged almost 5 million dollars annually for the 10-year period 1953-62, ranging from 1 million dollars in 1957 to 9.5 million dollars in 1958.

The annual value of the State's pecan crop has varied because of differences in annual production. Consequently, pecan prices fluctuated both within a harvest season and from one season to the next. During this somewhat stable 10-year period, average prices per pound received by farmers for pecans varied from a low of 15 cents in 1953 to a high of 42 cents in 1955.

Alabama is second nationally to Georgia as a supplier of pecans of improved varieties. For the 1953-62 period, Alabama ranked third in total production of pecans, exceeded by Georgia and Texas.

There has been speculation concerning efficiency of practices and procedures followed by Alabama pecan growers in producing, handling, and marketing pecans. Inadequate fertilization and lack of proper insect and disease control have been regarded as contributing factors in the State's variable pecan production. In addition, the absence of proper culling and sorting during harvest has added to grading and pricing problems. There have

^{*} This study was supported by funds provided by the Research and Marketing Act of 1946 and by State Research funds. It was conducted as Alabama Research Project 596.

^{**} Resigned.

been few attempts by growers to store in years of high yields to lessen the price impact. This is a factor in the variable annual value of Alabama's pecan crop.

METHOD of STUDY

Purposes of this study were: (1) to determine farm handling and marketing procedures among pecan growers in Alabama; (2) to identify and evaluate pecan marketing problems from production and handling practices followed; and (3) to identify and describe the needed adjustments in production, handling, marketing, and indicate possibilities for improving pecan marketing. Personal interviews were made with a representative sample of growers selected at random within the 25 major pecan producing counties of the State. Only growers with 20 or more trees were included in the sample. Questions asked during interviews concerned occupation, number of trees, management practices, handling and harvesting procedures, production results for the preceding 3-year period, sales outlets used, and prices received.

Secondary data were obtained from various statistical reports published by the Alabama Crop and Livestock Reporting Service and the Statistical Reporting Service, USDA. Other sources of secondary data were the proceedings of the Southeastern Pecan Growers Association and related research reports and bulletins from various state agricultural experiment stations and Cooperative Extension Services.

DEVELOPMENT of the PECAN INDUSTRY in ALABAMA

The pecan tree is a native of Alabama and grows wild in some areas of the State.¹ However, the majority of the State's pecan trees are of improved varieties.

Many commercial pecan orchards in Alabama were planted between 1910 and 1930. Early emphasis was placed on the small home orchard as an extra source of income provided with a minimum of work and expense. Knowledge concerning pecan production was limited and only a few of the early plantings proved profitable. Failures resulting from improper selection of soil or orchard sites and establishment of orchards with unsuitable varieties led to disappointing results among early pecan

¹ H. Harold Hume, *The Pecan and Its Culture*, Mount Pleasant Press (Harrisburg, Pennsylvania, 1906), p. 13.

growers. In addition to the failures contributed by poor production practices, increased plantings of trees resulted in an outbreak of insect and disease problems that had not been anticipated.²

With the knowledge and use of better production practices and procedures, pecan production has become more profitable in Alabama in recent years. Pecans are produced in all 67 counties, but the State's principal area of commercial production is limited to 25 counties in South Alabama, Figure 1. This area annually produces over 70 per cent of the State's commercial pecan crop and contains 76 per cent of the trees.³

The Alabama Agricultural Census of 1959 indicates that there were 634 thousand pecan trees in Alabama in orchards of 20 or more trees. This total consisted of 547 thousand trees of improved varieties and 87 thousand wild or seedling trees.⁴

The average annual production of pecans for the period from 1953-62 in Alabama exceeded 20 million pounds, but production from year to year was variable. The trend in annual production has been characterized by years in which "bumper" crops were produced followed by poor crop years. The crop of 30 million pounds in 1953 was followed by two small crop years of 8 million pounds. The 1956 crop of 30.5 million pounds was followed by a production of 4 million pounds in 1957. The 1958 crop of 36 million pounds was followed by two below average crops of 15.2 and 17.3 million pounds in 1959 and 1960. Following this pattern, the crop of 50 million pounds in 1961 was followed by 7 million pounds in 1962. Pecan production for 1963 approximated 52 million pounds, the largest on record. For a period of 16 years, pecan production in Alabama has followed this pattern of two larger-than-average pecan crops in any five-year period. Possible factors that have contributed to this pattern include: (1) a shortage of plant food; (2) adverse climatic conditions; (3) the biennial bearing habit of the pecan tree, particularly in regard to the Stuart variety; (4) diseases and insects; or (5) some com-

 $^{^{\}rm 2}$ John Bagby, $Pecan\ Production,$ Circular 426. Auburn University Agricultural Extension Service, Auburn, Alabama. March 1961.

³ United States Bureau of the Census, *Census of Agriculture: 1959.* Final Report, Vol. 1, Part 32, *Tree Fruits, Nuts and Grapes*, p. 224 (Washington: Government Printing Office, 1960).

⁴ The Census no longer enumerates trees in holdings of less than 20 trees.

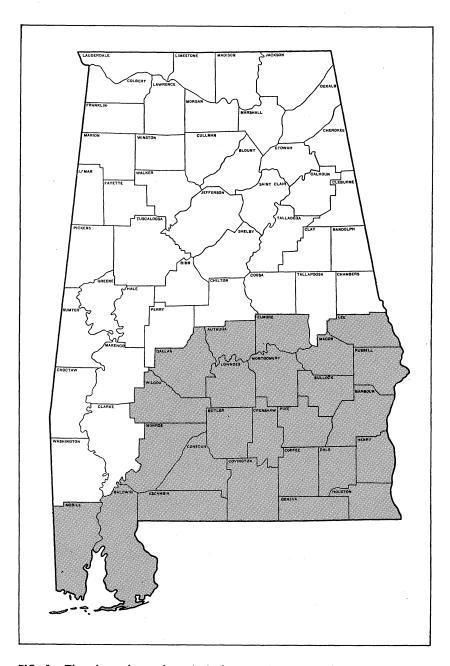


FIG. 1. The chart shows the principal area of commercial pecan production.

bination of these and other related factors. The variability of Alabama's annual pecan production is not unique. All pecan-producing states in the Southeast are faced with a somewhat similar problem.

The annual value of sales from pecans varies directly with the State's annual production. However, the degree of difference in annual value from year to year is not as great as difference in production. Production, price, and value of sales for pecans in Alabama from 1953 to 1962 and preliminary estimates for 1963 are given in Table 1.

For the 10-year period, the average annual value approximated 4.7 million dollars. During this period, one of relatively general price stability, the average annual price of pecans was about 23 cents per pound. The price dropped to a low of 68 per cent of the 10-year average in 1953 as compared with a high of 183 per cent in 1955. Production in 1957 was 19 per cent of the 10-year average but 243 per cent of the average in 1961. An example of the buffering action of prices on value in years of extremely high or low production can be seen in the 1953 data, Table 1. Pecan production in 1953 was 146 per cent of the average, but the value of sales was only 94 per cent of the average annual production because of low prices for the year.

TABLE 1. ANNUAL VOLUME OF PRODUCTION, PRICE PER POUND, AND VALUE OF Pecan Sales, Alabama, 1953-62

Year	Prod	uction Price per pound Value of sa		Price per pound		of sales
	1,000 pounds	Per cent of average	Cents	Per cent of average	1,000 dollars	Per cent of average
1953	30,000	146	15.4	68	4,408	94
1954	8,000	39	32.5	143	2,338	50
1955	8,000	39	41.8	183	3,006	64
1956	30,500	148	18.0	79	5,315	113
1957	4.000	19	28.7	126	1,032	22
1958	36,000	175	27.2	119	9,556	204
1959	15,200	74	30.8	135	4,529	96
1960	17,300	84	32.7	143	5,435	116
1961	50,000	243	18.5	81	9,041	193
1962	7,000	34	34.5	151	2,279	49
1953-62						
average	20,600	100	22.8*	100	4,694	100
1963**	52,000	252	18.5	81	9,428	201

^{*} Weighted average.
** Preliminary.

Source: Tree Nuts by States, Annual Series, Statistical Reporting Service, U.S. Department of Agriculture, Washington, D.C.

CHARACTERISTICS of ALABAMA PECAN GROWERS

Alabama pecan growers have varied occupations and interests. Problems encountered in production, handling, and marketing were probably caused by this diversity of interests.

Grower Occupations

Pecan production in Alabama is not limited to persons who derive income from farming. Only 34 per cent of the 200 pecan growers interviewed received half or more of their incomes from tarming. Those whose incomes came principally from nonfarm sources included wage earners, retired persons, and self-employed. Farmers, however, had larger and more productive holdings and produced 60 per cent of the total pecan crop. Of the nonfarm group, retired persons were the largest and most productive growers. In the farm group of pecan growers, cattle farmers were most important. This group made up half of those whose incomes came principally from farm sources. It also accounted for 18 per cent of all growers, Figure 2.

The sale of pecans was the major source of income for only 3 per cent of the growers. These six growers were considered to be



FIG. 2. In the farm group of pecan growers, cattle farmers were most important. This group made up half of those whose incomes came principally from the farm.

pecan farmers. They reported almost 6,000 trees. Average yield per tree was about 60 pounds. Production from 11 per cent of the total trees sampled, accounted for 15 per cent of all pecans produced.

Less than one-fifth of the growers in the nonfarm group reported that 20 per cent or more of their income from farm sources came from pecan sales. For the entire nonfarm group, pecan sales accounted for less than 10 per cent of total income.

Size of Grower Operations

For purposes of analysis, the 200 pecan growers interviewed in Alabama were divided according to size of operation. These five groups and the proportion of growers were as follows:

Size of grower operation	Percentage of growers
20-99 trees	44
100-199 trees	20
200-399 trees	19
400-999 trees	12
1,000 or more trees	5
Total	100

More than 60 per cent of the growers owned less than 200 trees. Only 5 per cent reported a thousand or more trees.

The number of trees and the amount of production that each group recorded in the 3-year period from 1959-61 are reported in Table 2. Producers in the smallest group, consisting of 44 per cent, produced less than 10 per cent of the total production in the sample for the 1959-61 period. Producers with large operations represented only 5 per cent, but produced 38 per cent of the pecans.

Table 2. Number of Growers, Pecan Trees, and Annual Average Volume of Production, by Size of Grower Operation, Alabama Sample of Growers, 1959-61

Size of grower operation, trees	Growers	Total trees	Bearing trees	1959-61 annual average production
Number	Number	Number	Number	1,000 pounds
20-99	88	4,390	4,300	124
100-199	40	5,200	5,020	92
200-399	38	10,180	9,810	221
400-999	24	13,540	12,970	366
1,000 or more trees	10	18,100	17,400	495
Total	200	51,410	49,500	1,297

Pecan Varieties

The Stuart was the leading variety of pecans grown in Alabama. More than 67 per cent of the pecan trees reported in the survey were of this variety. All but 3 per cent of the growers reported some Stuart trees. Success was the second most important variety, about 9 per cent of all trees. Seven per cent were of the Schley variety, and seedlings accounted for 7 per cent. Altogether these leading varieties accounted for 90 per cent of the total trees. Other varieties reported in important numbers were Frotcher, Moneymaker, Mahan, Van Deman, and Pabst.

Problems Encountered

More than a third of the growers reported variable annual production as their greatest problem. Pecan scab was the major problem reported by a fifth of the growers an insect damage was given as the major problem by almost a fifth. Limited time for management in producing, harvesting, and marketing was the most serious problem listed by 14 per cent. Other replies were concerned with inadequate market outlets and damage caused by pecan pests such as birds and rodents. Pecan growers in all groups were aware of the problem of variable production. A higher percentage of larger growers considered this the major problem when compared with smaller growers. Almost two-thirds of the growers listed variable production as either most important or second most important problem.

PRODUCTION PRACTICES of PECAN GROWERS

A part of the variation in annual yields was attributed to inadequate care of orchards. Production practices that influenced yields were spacing, fertilization, and insect and disease control.

Spacing

Proper spacing was one of the most neglected practices in pecan production. Nearly half of the trees were located in over-crowded orchards where limbs of adjacent trees intermingled. Serious overcrowded conditions existed mainly in orchards with trees from 40 to 50 years of age. Orchards of young trees were less crowded, but in most orchards tree spacing was such that overcrowding could present future problems.

Fertilization

Inadequate fertilization was another problem in pecan production. Most orchards were poorly fertilized. Growers realized the importance of fertilization as indicated by 42 per cent using soil testing as a basis for planning a fertilization program. However, half of those who had soils tested reported that recommendations were not followed with respect to the quantity of fertilizer used. Growers who used soil testing controlled or owned 58 per cent of the total number of bearing trees and produced approximately two-thirds of the total production in the 2-year period 1960-61, Table 3.

A "general program" of applying fertilizer was followed by about one-third of the growers. These included growers who applied chemical fertilizer but not on the basis of soil tests. Amounts applied varied from 10 to 80 pounds of various grades of mixed fertilizer per mature tree. The average application was 30 pounds per mature tree, less than a third of the standard recommendation.

Approximately one out of six growers did not fertilize pecan trees. This group, represented mostly by small growers, controlled 8 per cent of the bearing trees and produced about 3 per cent of the total production for the 2-year period 1960-61. Animal manures, principally from poultry, were used by 6 per cent of the growers. These growers accounted for less than 2 per cent of the total production.

Commercial fertilizer, when used in accordance with soil tests, gave a higher average production per tree than from manures or no fertilizer. More than three-fourths of the growers applied fertilizer in the spring; 15 per cent in the fall; and 5 per cent in both spring and fall.

Table 3. Proportion of Growers Using Fertilization Practices, Proportion of Bearing Trees Fertilized, Proportion of Total Volume by Fertilization Practice, and Effect of Fertilization Practice on Production Per Tree, Alabama Sample of Growers, 1960-61 Average

Fertilization practice	Growers	Number of bearing trees	Pounds of production	Production per tree
	Per cent	Per cent	Per cent	Pounds
Soil test basis	42	58	66	37
General program	3 5	31	29	30
Manure only	6	3 8	2	17
None	17		3	12

Insect and Disease Control

A third of the pecan growers used chemicals to control insects. This accounted for half the bearing trees, and 58 per cent of total production. Malathion and DDT were the most common insecticides and were generally used in combination.

A total of 59 per cent of the growers who applied chemicals used ground spraying equipment and 41 per cent airplane sprayers. A few growers reported as many as 14 spray applications per season, but most growers used 3 to 5 applications.

When asked to name the insect they considered most destructive in their pecan operations, a third of the growers reported the pecan nut casebearer to be the most harmful. The fall webworm was considered to be most destructive by a little more than a a fourth, and the pecan weevil was named as the most destructive by the same percentage of growers. These three insects accounted for responses of 88 per cent of the growers. The remaining 12 per cent listed black pecan aphids, hickory or pecan shuck worms, rust mites, walnut caterpillars, twig girdlers, and pecan leaf casebearers as the most destructive. Entomologists have indicated the most destructive insects to be the pecan weevil, black pecan aphid, and pecan nut casebearer.

Only 18 per cent of the growers used a disease spray program. These growers accounted for a third of the trees. The Stuart, a highly scab-resistant variety in most areas, had a tendency to lessen the disease problem. More than 50 per cent of the growers reported having tree varieties that were highly susceptible to scab diseases. Many growers stated that they did not spray for scab control because the cost of necessary equipment and materials required a larger number of trees. Custom spraying filled the needs of a few growers, who had small numbers of trees susceptible to scab.

Zineb and Cyprex were most commonly used by growers who sprayed for disease control. The only disease of significant importance reported was pecan scab.

The number of trees owned had a considerable bearing on adoption of spray programs for both insect and disease control. In all groups, with the exception of the smallest group, 20 per cent or more of the growers employed spray programs for both insect and disease control. Growers with large numbers of trees accounted for a large proportion of the spray programs.

HARVESTING PRACTICES

Shaking Methods

More than three-fourths of the growers used some method of shaking pecan trees and remaining growers relied on a "natural fall." Hand methods of shaking were used by nearly half of the growers accounting for less than a third of the bearing trees. Approximately a fifth of the growers used mechanical shakers accounting for nearly half of the bearing trees. Ten per cent of the growers used bamboo poles to thrash tree limbs. More than 80 per cent of the bearing trees were exposed to some method of shaking.

The number of trees in individual orchards had considerable bearing on the adoption of mechanical shaking. This was a result in part to the high initial outlay necessary for the purchase of equipment.

Gathering Operations

Hand labor was used mainly for gathering nuts. Growers with small orchards used family members, and growers with large orchards usually hired workers.

Hired workers were obtained more easily and generally accepted a lower rate of pay per pound when mechanical shakers were used. The rate paid for gathering ranged from 2 to 8 cents per pound.

During the harvesting season, growers gathered pecans from one to 10 or more times. Some growers shook trees mechanically as soon as a third of the nuts could be dislodged and again when remaining nuts were ready to fall. More than half the growers who used mechanical shakers gathered four times or less. They also completed harvest before many growers who relied on a natural fall began. Growers using hand methods of shaking often gathered from four to six times and growers relying on a natural fall usually gathered no less than six times, with eight to nine gatherings being common. There was a relationship between the more advanced methods of shaking to the least number of gatherings.

Storage

Of the 200 growers interviewed, only five reported storage of pecans for future sale. Pecans stored by these growers accounted for only 3 per cent of the 1961 crop, the largest on record. Three

growers used private storage facilities and the remaining two used facilities of a pecan purchasing cooperative. Very few growers owned adequate storage facilities or had such facilities at their disposal. More than 90 per cent of the growers held pecans for periods of no longer than 1 to 2 weeks after harvest with the majority being sold within 48 hours.

FARM MARKETING of ALABAMA PECANS

In general, pecan marketing at the farm level was simple and unorganized. Growers had little information on current prices being paid for pecans. Very little grading was done and producers of superior pecans had little incentive to stress quality. Most buyers at the grower level were small truckers or dealers who bought directly from producers and sold to larger dealers or shellers.

Types of Buyers

Most growers sold to local truckers who bought pecans in orchards and at growers' sheds. About three-fifths of the growers, who had 57 per cent of the trees depended on local truckers, Table 4. Local dealers were second in importance as buyers of pecans. These were small buyers, who generally operated a pecan buying service in connection with other business operations. Pecan shellers ranked third in importance among types of buyers. However, only eight growers sold to shellers. Other market outlets included cooperatives and auctions. Retail sales accounted for less than 1 per cent of the pecans sold.

Small and large growers interviewed sold pecans in much the same manner. Location had more influence on choice of market outlet used by growers than did the factor of volume. Facilities for selling pecans through a cooperative were available only in

Table 4. Proportion of Growers Selling Pecans and Proportion of Trees Owned, by Type of Buyer, Alabama Sample of Growers, 1961

Growers	Bearing trees
Per cent	Per cent
61.0	57.3
30.5	26.7
4.0	9.2
4.5	6.8
200	51,410
	Per cent 61.0 30.5 4.0 4.5

Mobile County. However, only a fifth of the growers in that county used this facility.

Prices Received

The relatively large 1961 pecan crop sold at below average prices. The average price received by growers for Stuart pecans was 19 cents per pound and the average price received for seedling pecans was 16 cents, Table 5. Almost all growers had sold Stuart pecans and about half had sold seedlings.

Local truckers buying at the growers' houses, sheds, or orchards offered lower average prices than did other buyers. Local dealers at specified buying stations gave an average price slightly higher than local truckers. This price differential may be accounted to transportation costs. In general, growers who sold to shellers received an average price 4 to 5 cents per pound more than growers who sold to other types of buyers. The fact that growers who sold to shellers were usually among the largest indicated that the growers' volume offered a relative bargaining advantage. Average prices received for pecans, both improved and seedlings, in each of the eight counties varied slightly.

Frequency of selling had little effect on prices received except for growers who sold all their pecans at the end of the season. Growers who held pecans for one sale at the end of the 1961 season were confronted with an oversupplied market and thus received lower prices. Growers who made frequent sales received slightly higher prices. Growers who used improved methods of shaking trees usually gathered from two to four times and received relatively higher prices by selling early.

PRODUCTION and MARKETING CONSIDERATIONS for IMPROVING ALABAMA'S PECAN INDUSTRY

Half of the growers interviewed, principally the smaller ones, indicated little interest in improving their production and market-

Table 5. Average Prices Received Per Pound for Pecans, Stuart Varieties and Seedlings, by Type of Buyer, Alabama Sample of Growers, 1961

Type of buyer	Stuart variety	Seedlings
,	Cents	Cents
Local truckers	18.3	16.1
Local dealers	19.1	16.6
Shellers	24.1	17.1
All others	19.2	15.4
Weighted average	19.2	16.4

ing programs. Apparently these growers were not greatly concerned over the income producing potential of their orchards. A fourth of the growers expressed concern over present inefficiencies in production and marketing but did not plan any changes. The remaining growers expressed concern with present production and market situations. This group would be receptive to making changes to offset production variability and marketing inefficiencies.

Production Potential

Records of Alabama's annual production indicate opportunities for improving pecan production. Average production, if considered in 5-year periods, reveals a steady increase, Figure 3. This increase has occurred despite a gradual decrease in the number of trees in the State since 1945. The 5-year period, 1934-38 had an average annual production of only 3 million pounds as compared to the annual average of 30 million pounds produced in the 5-year period, 1959-63. Although average annual production increased by 10 times, the variability of annual production has not greatly changed.

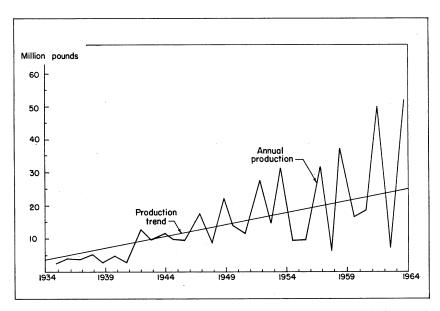


FIG. 3. The chart shows annual pecan production since 1934 and the trend in Alabama, 1934-63. Source: United States Department of Agriculture, Agricultural Statistics, annual numbers 1936-62, Government Printing Office, Washington, D.C.

Considering the size of some of the larger crops produced since the early 1950's, the potential of Alabama's pecan industry can be visualized. Average production per tree in the State is still far below that of well-managed trees. Moderate changes toward improved orchard management could increase annual production noticeably. For the 3 years included in the present study, the average yield per tree was 26 pounds. A high of 46 pounds per tree was recorded for the "bumper" crop of 1961. An average production per tree of 13 and 19 pounds was recorded in 1959 and 1960, respectively.

Attitudes Concerning Auction Sales

The auction method of selling was not used extensively by growers, but this kind of sale has increased in popularity in other pecan producing areas. Despite the lack of familiarity with the pecan auction, 80 per cent of the growers indicated they favored this method of selling. While a few growers who had used the pecan auction expressed a favorable attitude, these favorable attitudes could have resulted from using auctions as outlets for other farm products, notably livestock.

There were no real differences between farm and nonfarm producers concerning their attitudes toward selling pecans through auctions. Neither was grower size, based on tree numbers, an important factor. Differences in attitudes within areas were also slight.

Attitudes Toward Government Programs

In 1949, a Federal marketing agreement was in effect in the 5-state Southeastern pecan producing area as a step toward improving quality of pecan marketings.⁵ The main purpose of the agreement was to control quality of nuts shipped from the 5-state area. The agreement was not effective because of a lack of producer organization and control. In August, 1957, the agreement was terminated.

Because of this history of an attempt by pecan growers to obtain marketing assistance from the Federal government, growers were asked to give their opinions on the current needs for governmental assistance. More than 60 per cent of the growers stated that they were not in favor of governmental assistance of

⁵ Harry Willson, *President's Report*, Proceedings of the 51st Annual Convention, Southeastern Pecan Growers Association, 1958, p. 3.

any kind. Favorable opinions concerning a need for governmental aid were given by about a fourth of the growers. Remaining opinions were neither favorable nor unfavorable.

Size of grower operation had little affect on the attitudes expressed relative to governmental assistance. Among farm occupation groups, cattle farmers were the most opposed to Federal assistance. However, row crop farmers had attitudes that were relatively favorable. This latter group has had a rather long experience of producing other crops under a system of production controls.

Other Marketing Considerations

Pecan growers who sold clean, good quality nuts established favorable reputations with large pecan dealers. And, based on their replies, they enjoyed much higher incomes from pecans than did growers who did relatively poorer jobs of harvesting and handling pecans.

In some cases growers have not always been rewarded with higher prices for offering good quality, clean pecans, particularly where choices in selling have been limited.

The use of a pecan marketing cooperative has been suggested as a means of stabilizing or offsetting the effects of annual production variability. In years of large crops when pecan prices drop, a cooperative could store pecans for sale the next season. The season-to-season storage of pecans could possibly help stabilize the incomes of growers who are members of such producer groups.

As in the case of producer cooperatives, any type of marketing that tends to reduce the number of times the product is transferred in terms of ownership and physical handling should lead to a higher price for the grower. Retail sales, athough regarded as small operations at grower levels, were often the source of the highest pecan prices received by producers. But, retail marketing of pecans by growers accounted for less than 1 per cent of the pecan sales and, apparently, was not a feasible method for large growers.

SUMMARY

For a period of 16 years, pecan production in Alabama has followed a pattern that has allowed for no more than 2 larger-than-average crops out of any 5-year period.

Apparent factors that have contributed to this pattern include: (1) a shortage of plant food; (2) adverse climatic conditions; (3) the nature of the pecan tree; (4) diseases and insects; or (5) a combination of these and other related factors.

More than 60 per cent of the growers in the sample had fewer than 200 trees; 17 per cent had 400 trees or more; and only 5 per cent reported a thousand or more. The 10 largest growers in the sample produced over a third of the total production recorded.

The Stuart variety was grown by 97 per cent of the growers and accounted for 67 per cent of the trees. The three leading varieties, Stuart, Success, and Schley, and seedlings accounted for 90 per cent of the total trees.

The only disease reported to be of significant importance was pecan scab. Disease and insect spray programs were used principally by larger growers.

Pecan gathering was chiefly a hand labor operation. Less than 3 per cent of the growers stored pecans for periods longer than a month. Pecans were usually sold within 48 hours of harvest.

Pecan marketing at the grower level was usually a matter of selling to local dealers. Retail sales accounted for less than 1 per cent of the pecans sold.

Marketing procedures were simple and unorganized and lack of grading offered little incentive for growers to stress quality.

Despite gradual decreases in the total number of trees in the State since 1945, average annual production has continued to increase.