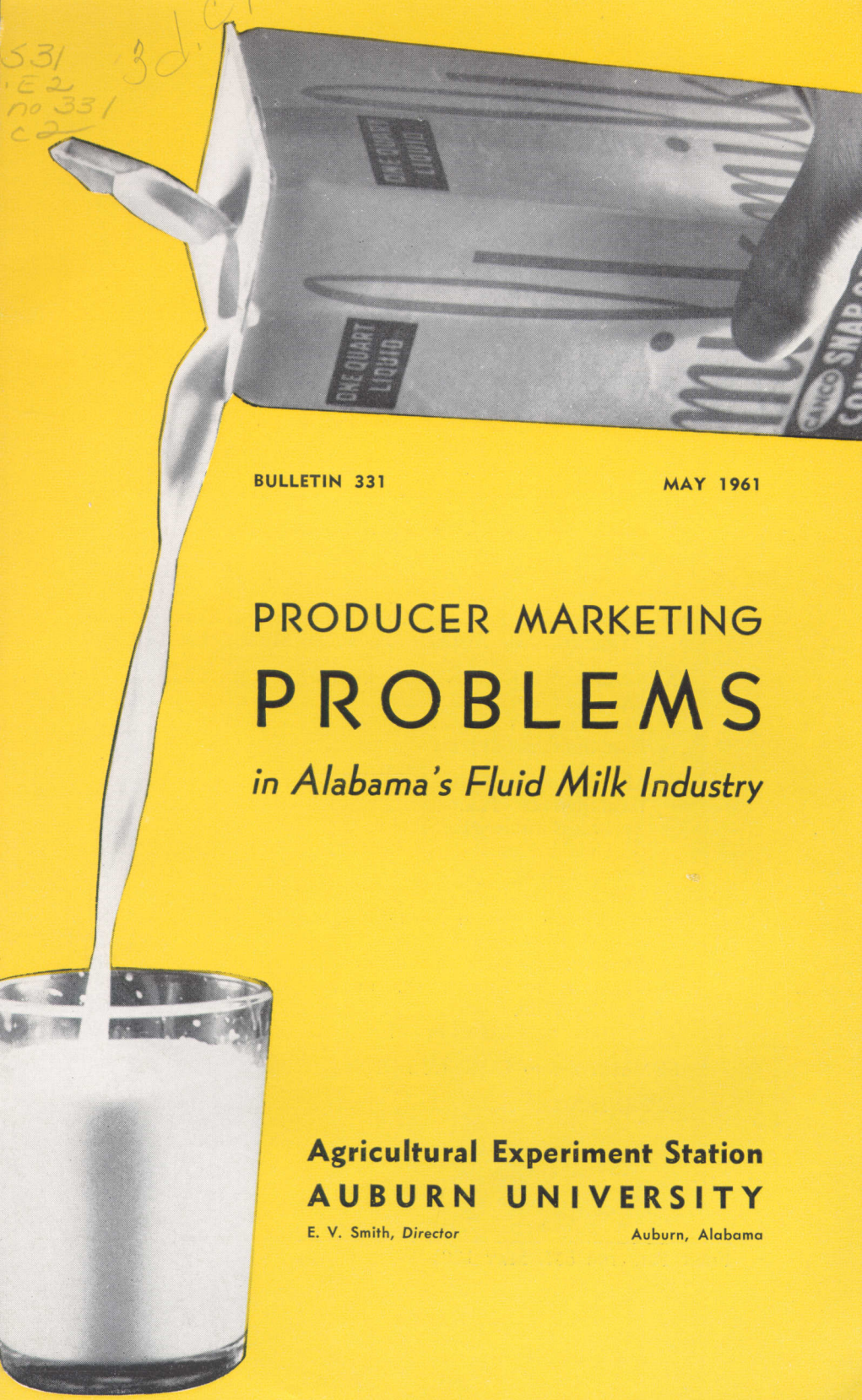

BULLETIN 331 MAY 1961

PRODUCER MARKETING PROBLEMS

in Alabama's Fluid Milk Industry

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

CONTENTS

FIRST PRINTING 5M, MAY 1961

PRODUCER MARKETING PROBLEMS

*in Alabama's Fluid Milk Industry**

LOWELL WILSON, Assistant Agricultural Economist
J. H. BLACKSTONE, Agricultural Economist
VERNON L. HARNESS, Assistant in Agricultural Economics**

DAIRYING IS AN important agricultural enterprise in Alabama. In 1959, dairying ranked fourth as a source of cash farm income in the State, with sale of milk accounting for 7.4 per cent of all cash farm receipts. Income from the sale of milk and milk products has risen in almost every year since 1925, reaching 38 million dollars in 1959, Appendix Table 1.

Many technological changes have taken place in the dairy industry in recent years, both in Alabama and the nation. These changes have been in production, marketing, and distribution. On-the-farm bulk tanks have replaced cans in many parts of the State and a large number of farmers have installed pipe line milkers. Such innovations require increased capital investments by dairymen. The overall result has been that units of production have become fewer and larger. Also, production per cow has increased as a result of improved management, feeding, and breeding programs.

With adoption of bulk tanks on the farm, methods of assembly have changed. An increasing proportion of milk is being assem-

* The study reported was supported by funds provided by the Research and Marketing Act of 1946 and by State Research funds. Carried out as Alabama Research Project 583, it is a contributing project to the Southern Regional Dairy Marketing Project SM-10 Revised, "Establishing Guides for Efficient Organization of the Dairy Industry Under Changing Conditions in the South."

** Resigned.

bled in bulk tank trucks. As routes have gone to bulk assembly, volume per route has increased. In some cases, this has necessitated lengthening routes to get sufficient volume; however, improved road conditions have facilitated transportation. As a result of the changes in assembly methods, whole milk is pooled in bulk tank trucks and hauled long distances to be processed.

Equally significant technological changes have occurred in the handling, processing, and bottling of milk in the plant. Generally, plants have become fewer in number, but handle larger volumes. Acceptance of the single service paper container by consumers has resulted in more milk being sold in stores and less to homes. With milk distributed over wide areas from processing plants, some plants have had to compete for sales in several of the major marketing areas of the State.

These changes in production and marketing are economically significant both to the dairy industry and to consumers of dairy products. As innovations are made in the dairy industry, many problems are resolved, but new problems often arise. One problem that has long affected the well-being of the dairy industry in Alabama is the need of equating Grade A milk supplies with market demand for fluid milk products. Commercial milk production in Alabama, as in most southern states, has been primarily for fluid use. The problem has been one of producing enough milk to supply year-round needs. A large share of the fluid milk and most of the manufactured products utilized in Alabama are imported from other states. Although in-state supplies of milk are short of market demand, many individual producers have surplus milk problems. These arise during peak production periods, whereas during late summer and winter a sizeable proportion of plant needs must be obtained from out-of-state sources. The seasonal variation in milk production in Alabama results in unstable income for dairy farmers as well as inefficient use of plant facilities and equipment for processing.

PURPOSE AND METHOD OF STUDY

Since the dairy industry has undergone rapid growth and development in Alabama in recent years, there is a need for information on the present status of the industry in the State. These data will serve as a basis to develop guides for making long-run adjustments consistent with the best interests of the industry. To determine the status of Alabama's dairy industry, a study was be-

gun in 1958 by the Auburn University Agricultural Experiment Station. The study was centered mainly on producer marketing problems. More specifically, the objectives were:

1. To provide a description of the producers of fluid milk in the State.

2. To relate supplies of fluid milk to sales of fluid milk.

3. To outline the operation of the State Milk Control Board as applied to producer marketing problems.

4. To analyze producer reactions to changes in the base-surplus system and to other market conditions.

5. To determine possible alternative methods of solving certain problems associated with the base-surplus system.

The main source of supply and utilization data was the Alabama Milk Control Board's annual statistical summaries. This report covers all fluid milk marketed in seven milk sheds under supervision of the Board in 1958. Supplementary supply data were obtained from annual releases of the Alabama Department of Public Health. Data on trends in milk supply were from the annual editions of *Alabama Agricultural Statistics* and from Auburn University (Alabama Polytechnic Institute) Agricultural Experiment Station Bulletin No. 282, *Supplies and Use of Milk in Alabama (1,9)*. Information relating to the Alabama Milk Control Board was obtained from official rules and regulations issued by the Board.

Producer information was obtained by means of a mail survey of all Alabama fluid milk producers under supervision of the Milk Control Board. A total of 1,001 questionnaires were used in the analysis; this represents a 61 per cent response. The purpose of the mail survey was to obtain information on production characteristics and producers' reactions to the base-surplus plan and other marketing conditions.

PRODUCTION OF FLUID MILK

CHANGES IN PRODUCTION OF MILK

Although the volume of commercial milk production in Alabama has increased steadily since 1925, total milk production in 1958 was at its lowest level since the late 1920's, Table 1. The quantity of milk sold in 1958 was 625 million pounds, almost four

TABLE 1. MILK COWS ON FARMS, MILK PRODUCTION PER COW, TOTAL MILK PRODUCTION, MILK FED OR USED ON FARMS WHERE PRODUCED, AND MILK SOLD OR USED IN PRODUCTS SOLD, BY 5-YEAR PERIODS, ALABAMA, 1925-58

Period	Milk cows on farms	Milk production		Milk fed or used on farms where produced	Milk sold or used in products sold
		Per cow	Total		
	No.	*Pounds*	*Mil. lb.*	*Mil. lb.*	*Mil. lb.*
1925-29	337,000	3,090	1,048	885	163
1930-34	395,000	3,030	1,194	980	213
1935-39	376,000	3,198	1,200	953	247
1940-44	391,000	3,236	1,266	915	351
1945-49	379,000	3,432	1,300	896	403
1950-54	371,000	3,410	1,264	763	501
1955	353,000	3,430	1,211	625	586
1956	344,000	3,530	1,214	605	609
1957	332,000	3,550	1,179	544	635
1958	324,000	3,440	1,115	490	625

times the average sales in 1925-29 and 50 per cent above sales in 1945-49. Volume of milk fed or used on farms where produced showed little change prior to 1950. Since then, production from family cows has declined almost 50 per cent. In 1956, for the first time, marketings of milk in Alabama exceeded farm consumption.

Commercial milk in Alabama, as in most southern states, is marketed primarily for fluid use. Of the total cash income from dairying in 1958, 84 per cent was from the sale of Grade A milk, Table 2. Although family cow numbers comprised 60 per cent of the total dairy cow population, only 2 per cent of the sale of milk and milk products was from family cows. Manufacturing milk sales accounted for 14 per cent of total sales of milk.

TABLE 2. NUMBER OF COWS, POUNDS OF MILK SOLD, AND CASH RECEIPTS, BY TYPE OF UNIT, ALABAMA, 1958[1]

Type of unit	Number of cows	Pounds of milk sold	Cash receipts
	Number	*Pounds*	*Dollars*
Grade A herds	91,000	482,390,000	28,654,000
Manufacturing herds	39,000	131,040,000	4,783,000
Family cows	194,000	11,570,000	771,000
TOTAL	324,000	625,000,000	34,208,000

[1] Based on preliminary estimates by Alabama Department of Agriculture and Industries cooperating with U.S.D.A., A.M.S., as published in *Alabama Agricultural Statistics*, Bulletin 9, July 1959. For the revised estimates see *The Farm Income Situation*, U.S.D.A., A.M.S., F.I.S.-179 (Supplement) August 1960 and Appendix Table 1.

Geographic Location of Fluid Milk Producers

A total of 1,977 Grade A dairy herds were located in Alabama in 1958. Of this number, 1,637 producers were licensed by the Alabama Milk Control Board. The remaining 340 producers (not licensed by the Milk Control Board) included those who sold milk to handlers located in the eight counties not included in the study and producers who sold to out-of-state handlers.[1]

Although Grade A milk producers were located in 65 counties (all but Choctaw and Wilcox), the number of producers varied greatly among counties, Figure 1. Most of the milk producers were located in a relatively small number of counties. Except for those in the Black Belt counties, producers were concentrated around the larger markets.

Description of Producers

The mail survey furnished information on individual milk producers licensed by the Milk Control Board. A questionnaire was mailed to each licensed producer in Alabama in November 1958. Follow-up questionnaires were sent to the non-respondents in January and February 1959. Total number of producers and number returning usable questionnaires are shown by milk sheds in Figure 2. Respondents returning questionnaires represented 61 per cent of the producers licensed by the Milk Control Board and approximately 50 per cent of all fluid milk producers in the State. To facilitate description and as a basis for analysis, the producers returning usable questionnaires were classified according to milk shed, farming area, and herd size.

Rules and regulations of the Milk Control Board are enacted for milk sheds throughout the State. These milk sheds are "natural" marketing areas made up of counties with similar problems and economic conditions. In recent months, all of Alabama has been brought into milk sheds under control of the Board, but with only partial control of the Northwest Shed. Names of producers were not available for the West Milk Shed when data were being obtained for this study. Therefore, only those producers shipping milk to distributors located within the seven milk sheds indicated in Figure 2 were included in the study.

[1] In 1959, Choctaw, Clarke, Greene, and Marengo counties were included in the Consolidated Milk Shed. During that year, the number of milk sheds was reduced from seven to four.

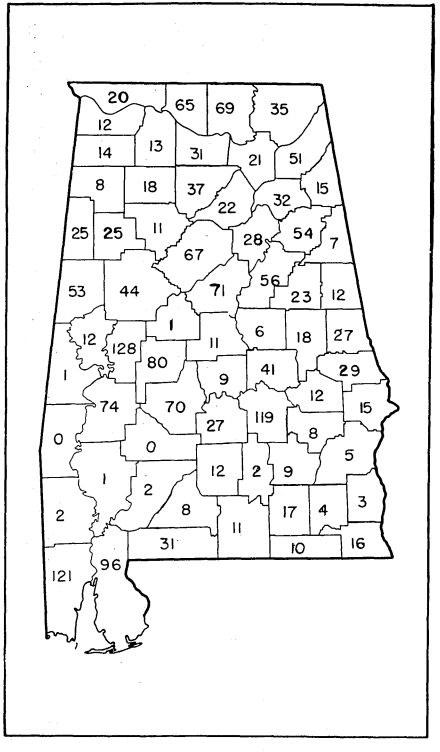

FIG. 1. Number of Grade A dairies are shown above for each Alabama county when the survey was begun in 1958.

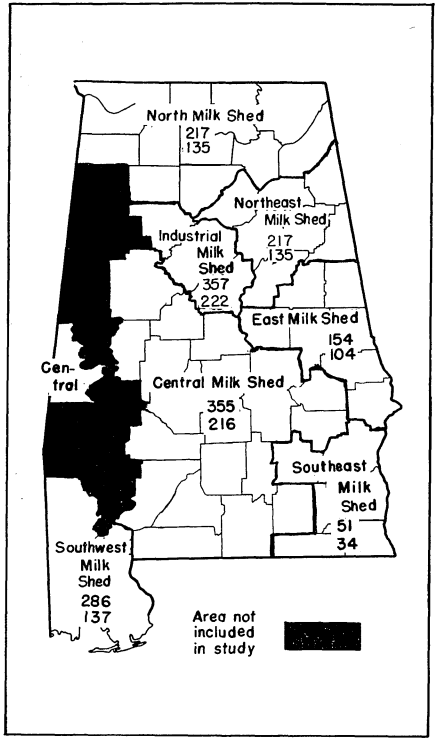

FIG. 2. Numbers are total producers and those returning usable questionnaires by milk sheds. (Shed area is approximate.)

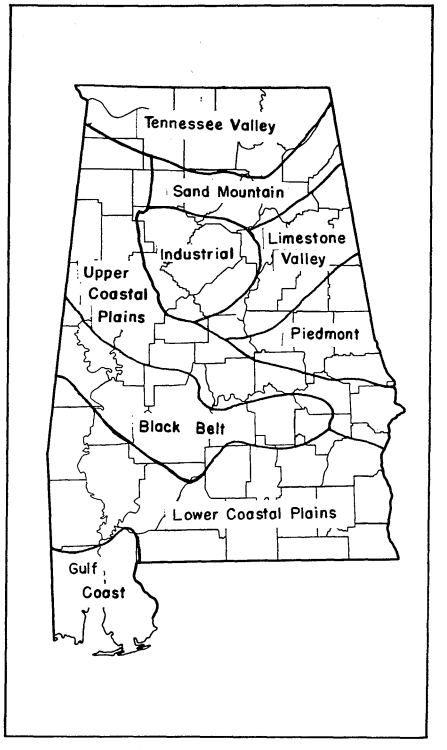

FIG. 3. Farming areas of the State were reduced to the nine shown above to simplify calculations in the study.

Analyzing data by milk sheds presented certain problems. Often, development of controlled milk sheds has been somewhat irrational from the standpoint of location of major markets or points of assembly and processing. In some cases there was overlapping of handlers both in assembly and distribution. Some distributors purchased milk from producers in two or more milk sheds. Milk produced in one shed may be shipped through another, and processed in a third. Also, it may be processed in one shed and consumed in another.

In analyzing producer data by farming areas, the number of areas was reduced to nine to simplify calculations, Figure 3. In Alabama, milk is shipped to distributors from even more farming areas than from milk sheds. Producers living in eight of the State's major farming areas shipped milk into the Industrial Milk Shed; this shed is almost synonymous with the Industrial farming area. At the other extreme, producers from only two areas shipped milk into the Southeast Shed, located in the Lower Coastal Plains. The Limestone Valley, Upper Coastal Plains, and Black Belt areas are the most important from the standpoint of producer numbers.

TABLE 3. TOTAL NUMBER OF FARMS REPORTING, TOTAL NUMBER OF COWS, AND AVERAGE HERD SIZE, BY MILK SHEDS AND FARMING AREAS, ALABAMA, 1958

Item	Total farms[1]	Total cows	Average herd size
	Number	*Number*	*Number*
Milk shed			
Central	212	12,542	59
East	99	5,180	52
Industrial	214	11,869	55
North	134	4,683	35
Northeast	153	5,424	35
Southwest	135	8,010	59
Southeast	34	2,171	64
TOTAL	981	49,879	51
Farming area			
Tennessee Valley	127	4,529	36
Sand Mountain	81	2,371	29
Limestone Valley	154	5,620	36
Industrial	61	4,641	76
Upper Coastal Plains	126	5,790	46
Piedmont	61	2,769	45
Black Belt	228	17,440	76
Lower Coastal Plains	59	3,022	51
Gulf Coast	84	3,697	44
TOTAL	981	49,879	51

[1] Not every producer answered every question in the questionnaire. Throughout this report, tables and percentages are based on the number of producers answering the question under discussion.

These areas contained half of the producers in Alabama, with the producers about equally divided among the three areas. The Industrial area is one of the less important dairy production areas of the State, but is the most important consuming area.

By milk sheds, dairy herd size ranged from an average of 35 milk cows in the North and Northwest Sheds to 64 in the Southeast, Table 3. When classified by farming areas, herd size ranged from an average of 29 in the Sand Mountain area to 76 in the Black Belt and Industrial areas. The average number of dairy cows per herd for the entire State was 51, with herds ranging from less than 10 to approximately 600 cows.

Indications were that producers' opinions were influenced more by herd size than by the milk shed or the farming area in which they lived. Producers are licensed in the milk shed where their distributor is located, even though they may live in different sheds. Therefore, opinions of producers listed within a milk shed would seldom be representative of producers actually located within the shed. The same thing holds true for farming areas. Because of this, throughout the study, producer reactions to various questions were analyzed by herd size and, when necessary, analysis was also made by milk sheds or farming areas.

Importance and Size of Dairy Operation

Dairying was the major source of income on 89 per cent of the farms in the sample. Although size of individual herds varied greatly among herd group classifications, 89 to 92 per cent of the farmers received the major share of their income from the dairy enterprise, Table 4. A total of 614 producers (63 per cent) had herds of less than 50 cows. Based on producers' estimated production per cow, these herds produced 35 per cent of total production. The remaining 367 producers (37 per cent), with herds in excess of 50 cows, produced 65 per cent of the milk. Twelve per cent of the herds had 90 cows or more, but these produced 33 per cent of the total volume of milk. Size of farm increased with herd size – from an average of 142 acres for herds less than 30 cows to 751 acres for the largest herd group. The State average was 365 acres per dairy farm.

If producers in this sample are representative of all producers in the State, then Alabama markets are heavily dependent on a relatively small number of large producers for a large share of the State produced milk.

TABLE 4. NUMBER OF HERDS, NUMBER OF MILK COWS PER HERD, AVERAGE ANNUAL PRODUCTION PER COW, TOTAL ANNUAL PRODUCTION, AND PERCENTAGE OF TOTAL PRODUCTION, BY HERD SIZE IN PRODUCER SAMPLE, ALABAMA, 1958[1]

Milk cows per herd	Number of herds	Average number of cows in milk	Average annual production per cow[2]	Total annual production	Percentage of total production
	Number	*Number*	*Pounds*	*Million lb.*	*Per cent*
Under 30	300	20	6,643	40	12
30 to 49	314	37	6,836	79	23
50 to 69	166	56	6,818	63	19
70 to 79	84	77	7,041	46	13
80 and over	117	140	7,055	116	33
TOTAL OR AVERAGE	981	51	6,829	344	100

[1] Data based only on producers who answered appropriate questions.
[2] Average annual production per cow based on production records and estimates of producers.

For replacement purposes, a producer normally needs 40 to 50 per cent as many heifers of all ages as cows. In a 1945 study of 90 dairy herds in Alabama, Blackstone found that producers grouped by farming area had from 31 to 50 per cent as many replacement heifers as cows (3). Producers in the sample had almost half as many heifers for replacement as they had cows in the milking herd. The proportion of heifers to cows varied somewhat among herd groups. Herds with less than 30 cows averaged 20 cows and 12 heifers, or 60 per cent as many heifers as cows. It appears from the sample that expansion in herd size is coming from the smaller herds.

Use of Production Testing and Artificial Breeding Programs

An average of 45 per cent of the producers engaged in some type of production testing, including their own testing program, Table 5. More producers with larger herds had testing programs than did smaller producers. Only a third of the herds with less than 30 cows were using production testing as compared with over half of the larger producers. The DHIA (Dairy Herd Improvement Association) program was the most widely used, with 54 per cent of the herds on test. DHIA testing was most popular in the large herds. About a fourth of the herds on test were on WADAM (weigh-a-day-a-month). This program was developed by the U.S. Department of Agriculture to encourage production testing and record keeping. WADAM was the most popular in small herds because of its low cost. Some producers with pure-

TABLE 5. PERCENTAGE OF PRODUCERS USING PRODUCTION TESTING, BY TYPE OF PROGRAM AND HERD SIZE IN PRODUCER SAMPLE, ALABAMA, 1958[1]

Milk cows per herd	Producers using testing program	Type of testing program			
		DHIA[2]	WADAM[3]	Breed testing[4]	Personal testing
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*
Under 30	34	22	43	6	29
30 to 49	42	53	30	2	15
50 to 69	57	64	18	8	10
70 to 89	55	74	14	0	12
90 and over	53	63	10	6	21
AVERAGE	45	54	24	5	17

[1] Data based only on producers who answered appropriate questions.
[2] Dairy Herd Improvement Association.
[3] Weigh-a-day-a-month.
[4] Register of Merit and Herd Improvement Registry.

bred herds were using breed testing programs. Remaining producers reporting herds on test used a personal testing program.

Half of the producers in the survey reported using artificial breeding. Producers with herds larger than the State average made more use of artificial breeding than did those with smaller herds. Forty-four per cent of the producers with herds under 30 cows used artificial breeding as compared with slightly over half of the larger herds.

Bulk Tanks and Pipe Line Milkers

As indicated in Table 6, the percentage of producers having bulk tank and pipe line facilities increased as herd size increased. Producers having bulk tanks ranged from 42 per cent for the 30-cow and less group to 76 per cent for the group having 90 or more cows. Those with larger size herds more often had a pipe

TABLE 6. PERCENTAGE OF PRODUCERS REPORTING USE OF BULK TANKS AND PIPE LINE MILKERS, BY HERD SIZE IN PRODUCER SAMPLE, ALABAMA, 1958

Milk cows in herd	Bulk tank	Pipe line milkers	Both pipe line milkers and bulk tank
	Per cent	*Per cent*	*Per cent*
Under 30	42	9	5
30 to 49	56	21	15
50 to 69	61	27	21
70 to 89	69	40	30
90 and over	76	50	47
AVERAGE	56	23	18

line milker. Although 23 per cent of the producers in all groups used pipe line milkers, 50 per cent of the group with 90 or more cows reported use of such equipment. Almost half of the producers in this group had both a pipe line and a bulk tank, and the average for all groups was 18 per cent.

The percentage of producers having bulk tank and pipe line facilities varied by milk sheds and by farming areas, Appendix Table 2. The range in percentages of producers having bulk tanks was from 14 per cent in the Industrial Shed to 100 per cent in the East Milk Shed. Producers shifted to bulk tanks as a result of their handlers installing facilities for bulk receiving. The percentage range for pipe lines was from 9 per cent in the Industrial to 35 per cent in the East Milk Shed. Whereas only 20 per cent of the Tennessee Valley producers reported bulk tanks, all producers in the Piedmont farming area reported their use.

Years in the Dairy Business

Almost half of the producers had been in the dairy business less than 10 years and 76 per cent less than 15 years. The State average was 11 years. In general, producers with larger herds had been in the dairy business longer than had smaller producers. Time in dairying varied from an average of 10 years for producers with herds under 30 cows to 15 years in the largest group. Percentage of producers by years in dairying is shown below:

Years in dairying	*Percentage of producers*
Under 5	18
5 to 9	30
10 to 14	28
15 to 19	9
20 and over	15

An analysis of producer reports by the number of years in dairying revealed where recent expansion has occurred. From 21 to 23 per cent of the producers in the Tennessee Valley, Upper and Lower Coastal Plains, and the Limestone Valley reported being in the dairy business less than 5 years. Also, average size herd for those who had been in the business a relatively short time was smaller than the average.

Because dairying requires a high capital investment and specialized equipment, producers find it difficult to enter the dairy business. A milking herd of 100 cows requires an investment ranging from $75,000 to $100,000, and capital requirements likely

will further increase in the next few years. Most dairymen (60 per cent) in the sample planned to stay in the business an indefinite period. This was especially true among the larger producers.

UTILIZATION OF FLUID MILK

SOURCES

During 1958, milk for fluid use in Alabama came from two regular sources. About 80 per cent of the total supply was produced by dairymen in the State, with imports from bordering states supplying most of the remaining needs. During months of short supplies from regular sources, supplementary imports were received from surplus producing states, Figure 4.

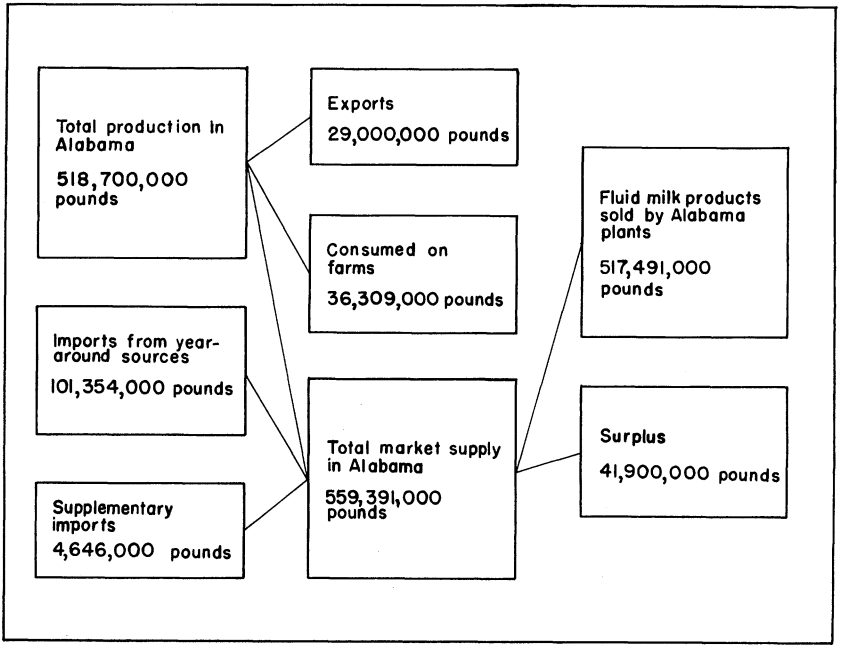

FIG. 4. Disposition of all Grade A milk produced in Alabama and imported into the State from year-round and supplementary sources in 1958 is shown above.

Alabama Supplies

Total production of Grade A milk in Alabama in 1958 was 519 million pounds. Eighty-seven per cent of this (453 million pounds) was sold to fluid milk distributors located in Alabama

and licensed to sell milk by the Alabama Milk Control Board. About 7 per cent of the production (36 million pounds) was used on farms where the milk was produced. The remaining 5 per cent (29 million pounds) of Grade A milk produced in Alabama was sold to markets in bordering states.[2]

Imported Supplies

Fluid milk handlers in Alabama received 106 million pounds of milk from out-of-state producers in 1958. This amounted to 19 per cent of the total supplies of milk available in the State. Most of the imported milk was shipped in from regular year-round producer sources. Several distributors in northern Alabama markets received milk from producers located in Tennessee. Likewise, distributors in Birmingham, Mobile, and other cities had regular producer sources located in Mississippi.

During months of short supply in the fall and winter, some distributors had to purchase emergency supplies. Some of these purchases were made from other distributors in the State. The remaining volume, however, was imported from out-of-state surplus areas.

Relationship Between Milk Supplies and Sales

Data from two previous studies, covering 1930 to 1949, indicated that distributors in Alabama received enough milk from regular sources to supply bottled milk and cream needs, but not enough for all other bottled milk products (9). Since 1949 the supply has increased in relation to sales of bottled milk products. In 1958 regular supplies of milk, including year-round imports, exceeded sales of all bottled milk products during each month, Figure 5. However, a number of distributors had shortages and had to purchase supplementary supplies. Although supplementary purchases were made during 10 months of 1958, most were in February, September, and October.

In Figure 5, sales of bottled products are considered in only two categories: (1) sales of bottled whole milk and cream or Class I sales, which includes some other bottled whole milk products; and (2) sales of all bottled milk products, which includes Classes

[2] An estimated 200 producers in Alabama were selling milk to out-of-state markets in 1958, mainly in Chattanooga, Tennessee; Columbus, Georgia; and Pensacola, Florida. The dairies producing milk for out-of-state sales operate under health regulations of the states where the markets are located.

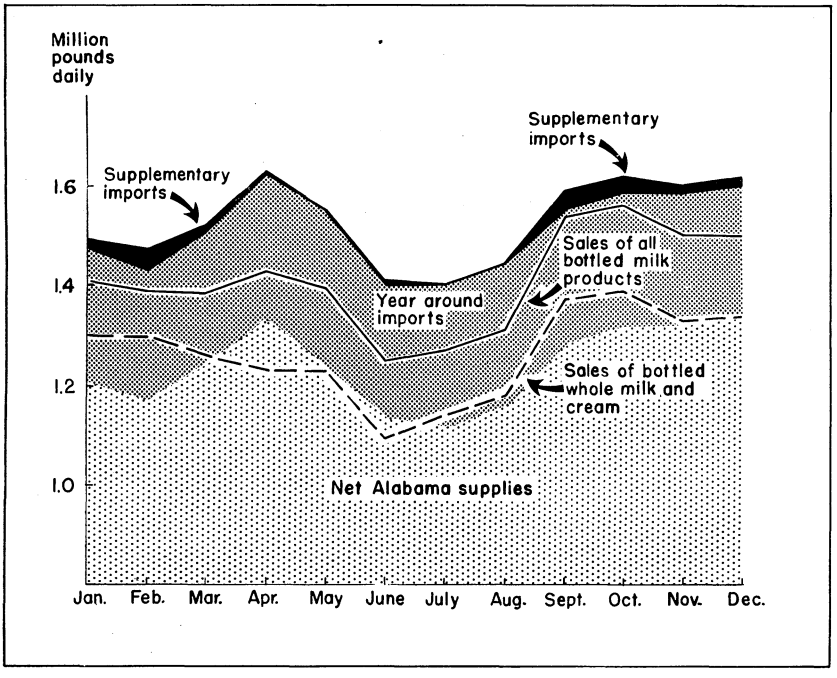

FIG. 5. The graph shows seasonal variation in supplies and sales of fluid milk in Alabama during 1958, as calculated from data in Appendix Tables 3 and 4.

I, II, and III. These classifications of bottled milk sales indicate the adequacy of total Alabama-produced supplies in relation to class utilization.[3]

Alabama supplies were short of all bottled milk sales throughout the year. The amount of this deficit varied with seasonal fluctuations in supplies and consumption. During April, May, and June, in-state supplies were adequate to meet Class I uses. Alabama supplies varied from 91 per cent of Class I sales in February to 104 per cent in April. During the first 4 months of the 1959 producer-base-building period, beginning September 1, 1958, in-

[3] Definition of class uses in effect in regulated markets in 1958 were:

Class I—raw milk; pasteurized creamline milk; homogenized milk; dispenser milk; 12½ per cent of sales of fortified skim milk; whole milk buttermilk; clabbered whole milk; milk equivalent of half and half blend, coffee cream, and whipping cream; and 33⅓ per cent of sales of chocolate or flavored drinks.

Class II—whole fluid milk used in the processing or manufacture of chocolate milk.

Class III—skim milk used in the processing or manufacture of buttermilk.

Class IV—the quantity of milk in excess of Classes I, II, and III.

state supplies were slightly below Class I sales and varied from 84 to 91 per cent of all bottled milk sales.

Utilization of Alabama-Produced Milk

Milk handlers in Alabama pay farmers for milk according to how it is used. This method of payment is called classified pricing and is used widely in fluid milk markets throughout the country. In 1958, handlers in the State paid on the basis of four use classifications plus a special regulation covering sales of milk to government installations. Utilization of Alabama-produced Grade A milk by classes is given in Table 7.

Table 7. Total Volume Sold, Percentage Utilization, and Average Prices, by Classes, Alabama-Produced Milk, 1958

Class	Volume	Percentage of total volume	Average price per hundred pounds
	Pounds	*Per cent*	*Dollars*
Class I	364,230,000	80.8	6.32
Class II	17,316,000	4.0	5.70
Class III	21,258,000	4.7	3.97
Class IV	41,693,000	9.2	3.61
Government sales	6.050,000	1.3	4.96
Total or average	450,597,000	100.0	5.91

Although in-state supplies of milk were short of sales of Class I products and almost 20 per cent of total supplies were imported, 19 per cent of Alabama-produced milk was utilized in lower value products. An average of 81 per cent went to Class I products, the highest value use. The average blend price received by farmers was $5.91 in 1958, which was $0.41 below the average Class I price of $6.32. Seasonal surplus, day-to-day operating surplus, and normal requirements for lower class products partially explain the apparent inconsistency of Alabama producers receiving an average price less than Class I while distributors are importing milk into the State.

ALABAMA MILK CONTROL BOARD

The dairy industry in Alabama operates within the framework of regulations established and supervised by the Alabama Milk Control Board. This Board was established on a permanent basis in 1939 by the Alabama State Legislature *(4)*.

Five members, appointed by the Governor, make up the Board. Membership consists of one producer-distributor, one producer,

one distributor, one consumer, and one member-at-large who is not connected in any way with the milk industry. The Commissioner of Agriculture and Industries serves as an ex-officio member with voting rights.

Personnel necessary to carry out the provisions of the Act may be employed by the Board. An executive secretary, who is in charge of the administration of regulations, orders, and rules of the Board, and other necessary office personnel maintain a permanent office in Montgomery, Alabama.

The Board also can call on the Attorney General of the State of Alabama and other state agencies to investigate, institute, and prosecute any violation of the Milk Control Law or any lawful order, rule, or regulation of the Board.

The Board has the power to designate any marketing area as a milk shed and at any time may designate new or additional sheds, change the area of an existing shed, or combine any designated sheds when deemed necessary to carry out provisions of the Act.

After a milk shed has been delineated and designated, a majority of the producers, producer-distributors, and distributors (all groups counted as one group) selling milk in the shed and under permit of the State or County Boards of Health may petition for the benefits and provisions of this Act. After the petition has been filed with the Board, all provisions of the Act shall apply in such milk shed. The Board, upon a petition signed by the majority of all producers, producer-distributors, and distributors licensed in the shed, shall have the power to discontinue the benefits and provisions of this Act in any designated milk shed.

Provisions of the Milk Control Law apply only in areas of Alabama from which applications have been made. In such milk sheds, the Milk Control Board is vested with the powers to supervise and regulate the fluid milk industry including production, processing, and distribution. All producers, producer-distributors, milk dealers, stores, and distributors of fluid milk in any milk shed under regulation must be licensed by the Board. Licensees must file reports of certain actions with the Board, which has rights of entry, inspection, and investigation to ascertain desired facts.

Price Setting

The major provision of the Milk Control Law gives the Board the power of price setting. Public hearings are conducted by the

Board in the various milk sheds to determine what costs and charges are reasonable for producing, hauling, bottling, packing, distributing, processing, and marketing milk and for other services performed in respect to milk. After determining what price will best protect the milk industry in the State and be most in the public interest, the Board may establish the following prices:

1. Minimum prices within the milk shed to be paid by milk dealers, producers, distributors, and producer-distributors to producers and others for milk in its various grades and uses.

2. Minimum and/or maximum prices to be charged within each milk shed for milk sold at wholesale or retail for fluid consumption.

3. Charges to be allowed for handling, transporting, cooling, processing, storing, and distributing milk in any transaction among producers, dealers, and distributors.

Fair Trade Practices

The Milk Control Board has the power to make and promulgate reasonable rules and regulations covering fair trade practices as they pertain to transaction of business among licensees. Trade practices regulated by the Board include prohibition of advertising or any misrepresentation that seeks to deceive or defraud consumers or other licensees. The Board may prevent any act by licensees intended to make the provisions of the Act inoperative. Any schemes that combine giving of prizes with the purchase of milk, which makes a lottery of the sale of milk, are prohibited. Fair trade practices are currently defined in 16 rules covering various phases of production, marketing, and merchandising of fluid milk in sheds under regulation by the Board. The current list of fair trade practices includes rules governing the delivery, purchase, and payment for producer milk; disposition of producer surplus milk; producer quota; and transfer of quotas.

Base-Surplus System

Owing to seasonal fluctuations in production and consumption and to other unstable market conditions, the Board is authorized to fix a lesser price for milk produced in excess of fluid milk needs. Upon a uniform system of plant usage, the Board classifies milk according to its various uses and establishes different prices to be paid for each classification. The Milk Control Law states that the

Board may establish a base-surplus system and has the power to establish uniform rules and regulations for the apportionment of this quota of base milk.

Producer quotas first went into effect in official Order No. 2 of the Milk Control Board issued May 24, 1939. Since that time, two methods of establishing a producer's base have been used. Most handlers have historically used the "plant usage" method of establishing bases. A few handlers use "winter production is the summer base" method.[4] In either case, the base-building period is from the first day of September through the last day of February. The new quota begins the first day of March and ends the last day of February in the following year.

Under the "plant usage" system, each producer's quota is determined by the percentage that his deliveries of milk during the base-building period was of total deliveries to his handler. As an illustration of the base-surplus system using the "plant usage" method, assume there are only four producers, A, B, C, and D, and that all four are shipping to a given plant during the base-building period. An assumed set of quotas earned by each producer is shown as follows:

Producer	*Total deliveries during base-building period, pounds*	*Quota, per cent*
A	160,000	40
B	100,000	25
C	80,000	20
D	60,000	15
TOTAL RECEIPTS FROM PRODUCERS	400,000	100

The quotas become effective at the end of the base-building period. Producer A, having shipped 160,000 pounds of milk or 40 per cent of the distributor's receipts, is entitled to 40 per cent of the distributor's sales of Class I milk in the new period. Each producer has earned a quota based on his proportionate share of total producer receipts in the new base-building period.

If, however, the regular producers during the base-building period shipped less than 110 per cent of the distributor's Class I

[4] In the early 1940's, about a third of the plants used "winter production is summer base" to establish quotas. This plan is best suited to plants that must supplement production for Class I sales during each pay period with other source milk. As surplus developed among plants using this system, the plants shifted to the method of calculating producer quotas from plant usage. In May 1960, only five producers in the State had "winter production is summer base" quotas.

sales, the distributor may earn a plant quota. The plant quota is calculated as the difference between receipts at the plant from regular producers and 110 per cent of Class I sales. The plant quota is computed and used in the same manner as producer quotas, but may be used only during March through August.

During a pay period, milk sold by the four producers in the example may be assumed to be allocated as shown in the following table:

Producer	*Milk delivered, pounds*	*Quota, per cent*	*Pounds entitled to receive base price*	*Unused base, lb.*	*Distribution of unused base, pounds*	*Total base milk, lb.*	*Surplus, pounds*
A	18,000	40	20,000	2,000	0	18,000	0
B	16,000	25	12,500	0	833	13,333	2,667
C	12,000	20	10,000	0	667	10,667	1,333
D	8,000	15	7,500	0	500	8,000	0
TOTAL	54,000	100	50,000	2,000	2,000	50,000	4,000

In the period illustrated, total producer receipts were 54,000 pounds, of which 50,000 pounds was used in Class I and 4,000 pounds was surplus. Allocation of the Class I milk is based on producers' quotas earned in the base-building period. Producer A was entitled to 40 per cent of the Class I sales or 20,000 pounds. During the pay period, Producer A shipped 18,000 pounds. Hence he received the Class I price for all of the milk, but had 2,000 pounds of unused quota. Producer B, entitled to 25 per cent of the Class I sales, or 12,500 pounds, shipped 16,000 pounds. This producer had a surplus of 3,500 pounds in excess of his quota. Both producers C and D delivered milk in excess of their quotas. However, since Producer A had 2,000 pounds of unused quota, each of the producers with a surplus received his allocated share of the unused quota. The remaining volume of milk sold by Producers B and C went into surplus uses. All of Producer D's surplus was allocated to base milk in this example. When there are more than two use classifications, the base milk is allocated to the lower class uses in a similar manner. Each producer receives his proportionate share of each class, beginning with Class I. In 1958, producers under the Alabama Milk Control Board were paid on the basis of four use classifications. Since then, the number of classes has been reduced to three.

Other major features of the base-surplus plan as used in Alabama are as follows:

1. Quotas are established on an "open market" basis. During the

base-building period, producers in a position to expand production may increase their share of their distributor's base allotments. New producers are not restricted in building bases.[5]

2. Milk cannot be purchased by producers to supplement or maintain quotas.

3. A producer quota at a licensee plant is the personal property of the producer and can be transferred by the producer in any manner. The main restrictions on quota transfers are: (a) the seller is not permitted to retain any part of the quota if a portion is sold, (b) the quota is valid only at the plant at which it was earned, and (c) all transfers must be approved by the Milk Control Board and the plant where the quota is held.

4. Producers have the right to sell surplus milk to anyone, provided it is not sold for less than the surplus price set by the Board and which is in effect in the milk shed where such sale is made. If the producer has signed a written agreement to deliver his surplus milk to the distributor, this agreement is binding on both parties.

5. No distributor may discontinue the purchase of a producer's milk except when the producer's milk has been degraded by the Health Department, without first obtaining the consent of the Board.

6. No wholesale producer shall discontinue the sale of his milk to a distributor, except when the distributor has been degraded by the Health Department, without first obtaining the consent of the Board.

7. Bases are not transferable between distributors.

8. The base is in effect from March 1 through the last day of February. The new base is determined during the base-building period from September 1 through the last day of February.

ANALYSIS OF PRODUCER PROBLEMS

Many of the major issues involved in marketing fluid milk in Alabama are closely related to the base-surplus system. Therefore emphasis here is placed on adjustments of producers, as well as adjustments of the base-surplus system to changing market conditions.

[5] In some out-of-state markets, a "closed market" system is used. New producers have restricted entry and limits are set as to the amount that bases may be increased in any one base-building period.

Base-Surplus Plans

A large number of base-surplus plans have been operated in milk markets throughout the country. Under various market conditions, these plans are used to achieve different objectives *(6)*. Primarily, base-surplus plans are conceived as a way to reward a producer for his efforts *(6)*. Thus, the producer who sets a large base during the fall, when the market tends to be short, has a larger claim to the fluid market in the following months than does the producer who has smaller sales during the base-building period. Seasonal producers are forced to bear the consequences of their own surplus production.

Base plans are used for any or all of the following objectives: (1) to adjust milk deliveries seasonally, (2) to control total production coming to the market, and (3) to allocate milk production among distributors so that each has enough milk to meet his needs while directing supplies to the highest value use *(2)*.

In Alabama's markets, the base-surplus plan attempts to perform primarily the first function, that of adjusting deliveries of milk seasonally. Recognizing that some distributors have surplus supplies while others need additional supplies, the Milk Control Board will authorize the transfer of surplus supplies to distributors in need of additional supplies. This will tend to equalize payment of Class I prices to producers in proportion to sales of milk on a state-wide basis *(7)*.

Base-Surplus Plan Preferred

In recent years, almost all plants have shifted from "winter production is summer base" to the plant usage plan. Many distributors used the winter production plan to determine bases as long as they had no surplus problem. As surpluses developed, these distributors were forced to pay the base price for some milk that was used in manufactured products. When this happened these distributors petitioned the Board to change to the plant usage system of determining quotas.

The price advantages of "winter production is summer base" is widely known to farmers, although this quota plan is almost out of use in the State. Because of the price advantage, it is not surprising that most farmers preferred the winter production plan. Little difference in opinions on base-surplus plans was noted among

herd sizes, milk sheds, or farming areas. Percentages of producers desiring various base-surplus plans were as follows:

Type of plan	*Percentage favoring*
Percentage of plant receipts	19
Winter production is summer base	62
Base builds base	6
Current month plant sales	5
Miscellaneous	2
No opinion	6
TOTAL	100

As production of fluid milk continues to increase in excess of fluid needs, fluid milk handlers and others in Alabama's dairy industry could do much to strengthen producer-handler relationships by increasing the amount of information available and by seeking a better understanding of these plans.

Should Present Plans be Changed?

A third of the responding producers expressed a desire for changes in their present plan, Table 8. Desire for change was more closely related to milk sheds than to herd size or farming areas. Over half of the producers in the Northeast Milk Shed wanted changes, while 60 per cent in the East and North Milk Sheds were satisfied with their present plan.

Of the producers who wanted changes in the present plan, 51 per cent wanted changes in the type of base plan or period from which bases are calculated. Most of these producers listed "winter production is summer base" as the desired alternative. Almost a fifth of the producers desired a change that would increase their Class I sales, or in effect reduce their surplus. Many producers

TABLE 8. PRODUCER RESPONSE WITH REGARD TO CONTINUATION OF PRESENT BASE-SURPLUS PLAN, BY MILK SHEDS, ALABAMA, 1958

Milk shed	Satisfied with present plan	Not satisfied with present plan	No opinion
	Per cent	*Per cent*	*Per cent*
Central	57	29	14
East	60	30	10
Industrial	45	38	17
North	60	18	22
Northeast	29	54	17
Southwest	54	29	17
Southeast	48	42	10
AVERAGE	50	34	16

wanting improved control were of the opinion that records and plant audits were not well handled.

Although only a third of the producers were dissatisfied with the present plan, 56 per cent indicated a willingness to try a different base-surplus plan. This implies that, even though most producers are satisfied with the present plan, they still feel that their position could be improved.

Sale of Base

Since the mail survey was made, the Milk Control Board has removed many of the restrictions affecting base transfer (7). Under these changes, a quota has become the personal property of the producer and may be sold or transferred by him in any manner, either with or without the milking herd. The main restrictions imposed on base transfers are that the seller of the base must dispose of the entire quota and that shipments by the purchaser are to the same distributors where the base was earned. The licensee producer may not retain any portion of the base if any part is sold.

Under Milk Control Board regulations in effect in 1958, the sale of a base was permitted only under limited conditions. Base quota was sold in its entirety to the purchaser of not less than 50 per cent of the milking cows in the herd. Shipments of milk under this quota had to be to the same distributor, as is the case after the change in quota restrictions. Of the producers in the sample, 87 per cent expressed approval of the sale of base. Ten per cent did not think that a base was a salable asset and 3 per cent had no opinion.

Almost two-thirds of the producers approving base sales felt that all of the base should be sold at one time. Producers with small herds tended to favor partial sale of base, whereas those with large herds more often wanted total base sales.

Based on producers who felt that all base should be sold at one time (54 per cent of all producers), about half were of the opinion that the entire herd should be sold also. Remaining producers believed that the seller should be permitted to keep his herd, but not be allowed to re-enter the fluid market for some given period of time, usually 1 year.

Of the producers who said that base and cows should be sold together (29 per cent of all producers), 84 per cent believed more

than half of the herd should go with the base. Smaller producers more often favored the sale of the entire herd with the base, but larger producers favored the purchase of the base with fewer than all milk cows.

In order to transfer the base of an average size herd of 51 cows in 1958, an individual had to purchase a minimum of 26 cows to meet regulations. Under such regulations base transfer would become even more restrictive as herd size increased. Few dairymen could afford to make such large purchases. Hence, recent action of the Board in reducing transfer restrictions was in line both with producer opinions and with economic needs.

Purchase of Base

Amount of Base Needed

Data in Table 9 indicate that producers were equally divided in their needs for additional base. More of the smaller producers desired to expand bases, while more of the larger producers had adequate bases. Larger producers had been in dairying longer

Table 9. Producer Response in Regard to Adequacy of Base, by Herd Size, Alabama, 1958

Milk cows per herd	Present base is adequate	Present base is not adequate	No opinion
	Per cent	*Per cent*	*Per cent*
Under 30	38	51	11
30 to 49	41	53	6
50 to 69	50	41	9
70 to 89	49	44	7
90 and over	67	29	4
Average	46	46	8

Table 10. Number of Producers Reporting and Average Amount of Base Needed, by Herd Size, Alabama, 1958

Milk cows per herd	Number of farms[1]	Base needed
	Number	*Pounds*
Under 30	100	262
30 to 49	126	422
50 to 69	48	535
70 to 89	33	758
90 or more	26	910
Total or average	333	462

[1] Includes only producers who reported that base was not large enough and who indicated the amount that they needed.

than most small producers. Although fewer of the large producers needed additional base, those reporting that their base was not adequate needed more than did small herds, Table 10.

Fewer producers indicated a willingness to buy extra base than those who reported needing additional base. Most indicated a preference to build more base. Smaller producers apparently preferred to increase in size slowly. Except for the largest herd size group, producers were more willing to buy additional base as size of herd increased, Table 11. Producers with large herds who needed more pounds of base were in a more favorable economic position to buy.

TABLE 11. PRODUCER RESPONSE IN REGARD TO PURCHASE OF BASE, BY HERD SIZE, ALABAMA, 1958

Milk cows per herd	Would buy additional base	Would not buy additional base	No opinion
	Per cent	*Per cent*	*Per cent*
Under 30	28	57	15
30 to 49	30	59	11
50 to 69	41	52	7
70 to 89	48	41	11
90 and over	31	57	12
AVERAGE	83	55	12

Value of Additional Base

Only 10 per cent of the producers indicated how much they would pay for additional base. About half of those reporting said they would pay from $1.00 to $2.50 per 100 pounds of additional base daily (daily rate for remainder of the quota period). The daily value of additional base would depend on: (1) price of surplus milk, (2) price of other classes of milk, (3) probable utilization patterns of the distributor, (4) ability to maintain the new base, (5) interest on investment, (6) supply of base available and demand for base from other producers, (7) transfer costs, and (8) payment for risk and uncertainty.

An example to illustrate the possible value of an increase in base can be shown by assuming that there is no carry-over of base from year to year and that bases are established under the plant usage system. It may be also assumed that both the buyer and seller are producers for the same distributor in the Central Milk

Shed,[6] and that prices and utilization of the purchaser of base are as follows (average daily sales 1,000 pounds):

Class	*Price per cwt.*	*Class utilization, pounds*	*Value*
Class I	$6.33	600	$37.98
Class II	5.60	200	11.20
Class III	4.00	100	4.00
Class IV	3.13	100	3.13
TOTAL OR AVERAGE	$5.63	1,000	$56.31

In this example, the purchaser has milk utilized in each classification. Of the average daily sales, 100 pounds goes into Class IV or surplus uses for which the producer receives $3.13. Total income from sales is $56.31, with a blend price of $5.63. An additional base of 100 pounds to the same producer might be utilized as follows:

Class	*Price per cwt.*	*Class utilization, pounds*	*Value*
Class I	$6.33	667	$42.22
Class II	5.60	222	12.43
Class III	4.00	111	4.44
Class IV	3.13	0	.00
TOTAL OR AVERAGE	$5.91	1,000	$59.09

If the additional base were allocated to the purchaser's class utilization as shown above, daily value of sales without an increase in production would be $59.09 and a blend price of $5.91. Average daily income, therefore, would be increased $2.78 by the 100 pounds of additional base. This figure minus payments for interest, risk, and other costs would be the daily value of 100 pounds of additional base to the producer. Assuming that the base would be purchased for a full year, $2.78 multiplied by 365 days ($2.78 x 365) would result in an annual increase of $1,014.70. After taking a number of costs into consideration (interest, risk and uncertainty, transfer cost, availability of base, and others) the value of 100 pounds of base would be somewhat less than this figure. Using varying assumptions, other examples of the value of additional base may be determined.

A major risk connected with the purchase of base is the possible failure to deliver the full amount of the additional base in

[6] Since the data for this study were obtained, the Central Milk Shed has become part of the Consolidated Milk Shed.

future pay periods. The producer, however, has more control over this phase than he has over risks influenced by the distributor and by other producers. Purchase of additional base involves less risk than attempting to increase base during the base-building period.

Entrance of New Producers

Fluid milk producers in Alabama establish quotas under an open-base plan. In answering the questionnaire, many producers expressed a desire for a semi-closed plan. Producers were asked if they believed their distributor should take on more new producers under the current conditions at that time. Sixty per cent of the respondents were against admitting new producers; 28 per cent believed that new producers should be admitted; and 12 per cent expressed no opinion. Producers in the North Milk Shed were more favorable to admitting new producers than were those in other sheds.

A sizeable percentage of producers were willing to admit new producers, but only 5 per cent thought that handlers should be allowed to take new producers if the plant was running more than a 15 per cent surplus during the base period. Hence, most producers apparently would favor a closed or semi-closed base plan.

Producers were asked how a new producer should acquire a base if he were allowed to enter the market. Their replies were as follows:

Method of acquiring base	*Percentage favoring*
Make new base	47
Buy base from old producer	25
Either make or buy base	22
No opinion	6
Total	100

Producers with small herds more readily favored allowing new producers to make a base than did large producers, Appendix Table 5. More producers in the East Milk Shed (40 per cent) and in the Northeast Milk Shed (47 per cent) favored new producers buying existing bases, Appendix Table 6.

Records from respondents saying that new producers should be allowed to make new bases were analyzed to determine producer opinions on how new producers should make new bases and how they should be paid until a regular base is established.

Percentages of producers favoring specified methods were as follows:

Method of making new base	*Percentage favoring*
Plant receipts or plant sales	39
Average deliveries	37
Percentage of production	13
Estimated base	11
TOTAL	100

For producers to favor the plant receipts method of making a new base when nearly two-thirds preferred the "winter production is summer base" plan is inconsistent. Although producers preferred the winter production plan, many apparently realized that another quota plan must be used. The producers listing a percentage of production and an estimated base probably were thinking of these as temporary measures.

Methods of paying new producers until their regular base was established, as preferred by producers, were:

Methods of payment	*Percentage favoring*
Surplus	26
Surplus unless needed as Class I	19
A percentage of Class I	25
Plant sales	16
Agreement with distributor	14
TOTAL	100

Producers who wanted new shippers to receive the surplus price, or surplus price except the volume needed in Class I sales, apparently were in favor of old producers receiving first chance at unused, lapsed, or abandoned bases. Those who were of the opinion that new producers should be paid as determined by agreement with the distributor were probably expressing the desire for as little regulation as possible.

Under present regulations all producer licensees, regardless of current quota, shall share alike in unused, lapsed, or abandoned quotas. The shares are based upon the percentage of each individual producer's poundage of milk in relation to the total volume of milk delivered by all producer licensees within a particular pay period.

FREEDOM TO CHANGE DISTRIBUTORS

Under present regulations no producer shall discontinue the sale or delivery of milk to a distributor except when degraded by

TABLE 12. PRODUCER RESPONSE IN REGARD TO FREEDOM TO CHANGE DISTRIBUTORS, BY HERD SIZE, ALABAMA, 1958

Milk cows per herd	Free to change	Should have Board's consent	Assigned by Board	Free after notice to Board
	Per cent	*Per cent*	*Per cent*	*Per cent*
Under 30	53	42	3	2
30 to 49	47	45	3	5
50 to 69	49	39	3	9
70 to 89	41	49	0	10
90 and over	32	56	1	11
AVERAGE	47	45	2	6

the Health Department, without securing the consent of the Board; likewise, the same protection is provided the producer.

Producers were about evenly divided in their opinions as to whether they should be free to change distributors at any time or should have permission of the Board before making a change, Table 12. Few producers wanted the Board to assign producers to distributors. In general, those with smaller herds tended to want more freedom than did those with larger herds. It should be recalled that producers with larger herds have generally been in the dairy business longer than those with small herds. Therefore, the problems of market control are likely to be better understood by the more experienced group.

MARKET-WIDE POOL

Market-wide pools are used in more than three-fourths of the federal milk marketing areas of the county *(5)*. Under a market-wide pool, the total money value of all milk delivered by all producers to all handlers is combined in one pool and is divided by the total amount of producer milk that is priced *(5)*. All producers are paid the same "uniform" blend price for their milk that is adjusted for butterfat and location differentials. Market-wide pools are best adapted to areas where excess supplies are unevenly distributed among producer groups or dealers in the market. As supplies increase in Alabama above fluid uses, the need to change from an individual handler pool to a market-wide pool increases.

As shown in Table 13, less than a fourth of Alabama's producers favored a market-wide pool. Little difference in opinion existed among herd sizes. However, a slightly higher percentage of the large producers were unfavorable toward market-wide pooling arrangements.

TABLE 13. PRODUCER RESPONSE IN REGARD TO MARKET-WIDE POOLS, BY HERD SIZE, ALABAMA, 1958

Milk cows per herd	Favored market-wide pool	Opposed market-wide pool	No opinion
	Per cent	*Per cent*	*Per cent*
Under 30	27	49	24
30 to 49	22	58	20
50 to 69	21	59	20
70 to 89	21	64	15
90 and over	22	65	13
AVERAGE	23	57	20

Although the majority of producers were opposed to market-wide pools, 61 per cent favored a base-surplus plan designed for each milk shed, 26 per cent favored a statewide plan, and 13 per cent had no opinion. A plan for each shed is logical as long as production and marketing areas are developed to conform with economic conditions. If base plans for each milk shed were adopted, they probably would be similar. Conditions warranting minor changes could be more easily considered. Also, it is likely that fewer milk sheds would be needed. Some realignment of sheds might better reflect the movement of milk in the State.

NUMBER OF CLASSES OF MILK

Recent studies reveal a tendency toward fewer classes of milk. Much of the information about classification has been compiled by federal milk market order administrators. The number of milk classes in federal markets tended to increase during the first 20 years of the operation of federal orders, whereas in the last 10 years the number of classes within orders has declined *(8)*. In 1957, 56 of the 68 federal order markets had only two general classes of milk. Nine markets had three classes and the three remaining markets had four *(8)*. Important factors affecting decisions relating to the number of classes are local health regulations, accounting methods, and surplus disposal. In general, the major reason is closely related to surplus disposal. In markets where a large percentage of the annual production is used in manufactured products, more than two classes are advocated. In markets where surplus milk is of minor importance, the two-class system is desirable.

Percentages of Alabama producers reporting the desired number of classes of milk are as follows:

Number of classes	*Percentage favoring*
1	8
2	38
3	26
4	14
5	10
Other	4
TOTAL	100

Nearly three-fourths of the producers preferred three classes or less. At the time the study was made, producers were paid on the basis of four use classifications. Since that time, the number of general classes has been reduced to three. Under present supply-demand conditions in Alabama, consideration might be given to reducing to two classes.

In addition to the number of general classes, a provision is made for special sales of milk to government agencies. The resale price of the milk in this case is not controlled by the Milk Control Board. Reactions of producers in regard to permitting government sales on a year-round basis were as follows:

Opinion	*Percentage stating*
No opinion	35
Favor year-round sales	38
Did not favor year-round sales	27
TOTAL	100

The large "no opinion" group indicates a need for more information about government sales provisions. Many producers who favored government sales commented that all milk sold for fluid purposes should command Class I prices and that no price concession should be made to the government or to any other group.

SUMMARY AND CONCLUSIONS

The purpose of this study was to examine some of the major economic phases of the fluid milk industry in Alabama. Emphasis was centered mainly on producer marketing problems.

Commercial milk produced in Alabama is marketed primarily for fluid use. Of the total cash receipts from farm marketings of milk in Alabama, about 85 per cent is from Grade A milk. Like most southern states, Alabama does not produce enough milk to meet total fluid needs. About 20 per cent of total supplies is imported, mostly from regular sources in Mississippi and Tennessee. Although in-state supplies are short of market demand, many individual handlers have surplus problems during peak production periods. Thus, alternate periods of shortage and surplus create serious marketing problems for both handlers and producers.

In 1958, there were 1,977 producers selling milk for fluid use in the State. Of this number, 1,637 were licensed in seven milk sheds by the Alabama Milk Control Board. Remaining producers were selling to out-of-state handlers and to handlers in unregulated areas in the State. Although some Grade A producers were located in 65 counties, the major proportion of producers was located in a relatively small number of counties, primarily around the larger markets and in the Black Belt.

Questionnaires were sent to each of the producers under supervision of the Milk Control Board in 1958. The questionnaire had as its objectives to determine the production characteristics of individual dairy farmers and to obtain reactions to the base-surplus plan and other market conditions.

Based on this survey, dairying was the major source of income on 89 per cent of the farms. Herd size averaged 51 cows and 25 heifers for replacement; however, individual herds varied to great extremes.

The sample indicated that about two-thirds of total milk production was from herds with more than 50 milk cows. A high proportion of heifers to milk cows indicated that dairymen have a rapid turnover in their milking herds. Since herd size has been increasing in recent years, some of the heifers are used for expansion. Most producers, however, retain too many heifers for economical replacement purposes.

Slightly less than half of the producers engaged in a production testing program. DHIA testing was the most popular, especially

in larger herds. Some use of artificial breeding was reported by one-half of the producers. Benefits to be gained from the use of artificial breeding and production testing do not seem to be well understood, especially among producers with small herds.

Although pipe line milkers and bulk tanks are relatively new innovations, they were in use on a large number of farms in the sample. Over three-fourths of the large producers had bulk tanks. An average of 56 per cent of all producers used bulk tanks, and all producers in the East Milk Shed had converted to bulk tanks. Fewer farmers reported use of pipe line milkers.

The newness of the commercial dairy industry in the State was revealed by the fact that almost one-half of the producers have been in dairying less than 10 years and 76 per cent less than 15 years. Recent expansion has occurred most rapidly in the Tennessee Valley, Upper and Lower Coastal Plains, and Limestone Valley.

Approximately 519 million pounds of Grade A milk was produced in Alabama in 1958. Of this volume, 454 million pounds was sold to plants in the State. This volume was supplemented by 106 million pounds of imported milk, most of which came from regular year-round sources. About 92 per cent of total supplies was used in fluid products. Alabama-produced supplies were found to be short of bottled milk sales throughout the year. By months, in-state supplies varied from 91 to 104 per cent of Class I sales. However, an average of almost 20 per cent of Alabama-produced supplies was used in lower value products.

The Alabama fluid milk industry is regulated and supervised by the Alabama Milk Control Board. This Board has almost complete control over production, marketing, and distribution of fluid milk in the State. To bring a better balance between production and consumption, the Board was created with the authority to establish milk quotas. The base-surplus plan, which has evolved, has been a major feature of the Milk Control Law and affects every fluid milk producer in the State.

Almost all Alabama producers supervised by the Milk Control Board build quotas or bases with their distributor according to their proportionate share of plant receipts from producers during the base-building period. However, they prefer the winter production method of establishing bases. Although most producers favored the winter production base plan, they recognize that it is unworkable under present supply conditions. This plan is satis-

factory only as long as regular supplies must be supplemented during each pay period.

A third of the sample producers indicated that they were definitely dissatisfied with the present plan. Of producers wanting changes, 51 per cent desired a different type of plan, usually the winter production plan, or a change in the period from which bases are calculated. Several months during the present base-building period of September through February are months in which surplus is a problem for many distributors. For the State as a whole, however, shortages of Alabama supplies occur during these months. Producers shipping to distributors in the Industrial, North, and Northeast Milk sheds had the highest proportion of milk used in Class I products. Almost a fifth of the producers wanted some change that would help to reduce their surplus.

Sixty per cent of the respondents were against admitting new producers. Those willing to admit producers believed that the distributor should not be allowed to take on new shippers if the plant was running more than a 15 per cent surplus during the base period. Hence, almost all producers would favor a closed or semi-closed base plan. At present, however, Alabama does not have adequate supplies of fluid milk during several months of the year.

The right to sell a base was favored by 87 per cent of the sample producers. However, a sharp division appeared among producers as to the procedure to be followed in selling a base. The majority favored the sale of all the base at one time. Recent action of the Milk Control Board in permitting a more liberal transfer of bases (either with or without the milking herd) is in accord with the wishes of a majority of the State's producers.

Almost a third of the respondents desired additional base, especially the smaller producers. Most of them preferred to build more base. A third of this group said they would be willing to purchase base. These producers were generally uncertain of the value of additional base. This was expected because bases were sold under restrictive conditions at the time the survey was made. The value of an additional 100 pounds of base to the producer would, at the most, be the difference between surplus and blend prices. A number of factors would reduce this amount somewhat.

Most producers were against market-wide pooling arrangements, especially large producers, but many favored marketing plans designed to fit the needs of the market area. Market-wide pools are adapted to markets where milk supplies are unevenly

distributed among handlers. Uneven distribution of supplies to handlers in an individual handler pool results in widely varying blend prices received by producers. Market-wide pooling would eliminate this problem and would tend to encourage inter-handler transfers of milk in the market. Apparently producers need more information on the operation of individual handler and market-wide pools.

Two use classes of milk are considered adequate in most federal order markets where surplus is not a year-round problem for the market as a whole. As this situation exists in Alabama, consideration could be given to a two-price plan. A high percentage of producers in the survey preferred a reduction in the number of classes of milk. Since the survey was made, the number of classes of milk in Alabama has been reduced to three.

APPENDIX

APPENDIX TABLE 1. TOTAL CASH RECEIPTS FROM FARM MARKETINGS, CASH INCOME FROM DAIRY PRODUCTS, AND PERCENTAGE CASH FARM RECEIPTS FROM DAIRY PRODUCTS, ALABAMA, 1925-59

Year	Total cash receipts from farm marketing (less govt. payments)[1]	Cash income from dairy products[2]	Per cent of cash farm receipts from dairy products
	Mil. dollars	*Mil. dollars*	*Per cent*
1925	192.8	5.7	2.9
1926	165.2	6.6	4.0
1927	172.0	7.2	4.2
1928	159.3	7.7	4.9
1929	187.9	9.6	5.1
1930	119.5	8.8	7.4
1931	66.5	6.7	10.1
1932	62.5	5.5	8.8
1933	67.1	5.5	8.3
1934	119.1	6.1	5.1
1935	104.9	6.8	6.5
1936	128.6	7.5	5.8
1937	127.9	7.6	5.9
1938	104.1	7.8	7.5
1939	86.7	7.7	8.9
1940	87.3	7.9	9.1
1941	136.4	9.1	6.7
1942	191.3	12.7	6.7
1943	235.6	16.3	6.9
1944	277.1	19.0	6.9
1945	277.6	19.2	6.9
1946	308.8	22.7	7.4
1947	393.7	24.0	6.1
1948	431.6	25.0	5.8
1949	355.7	25.2	7.1
1950	359.5	25.7	7.1
1951	447.3	27.3	6.1
1952	436.1	30.3	6.9
1953	419.2	32.6	7.8
1954	399.9	30.4	7.6
1955	472.4	32.3	6.8
1956	465.5	34.2	7.4
1957	412.2	37.1	9.0
1958	486.8	36.9	7.6
1959	512.1	38.0	7.4

[1] Alabama Agricultural Statistics Bulletin 9, July 1959 and earlier issues.
[2] Dairy Statistics, U.S.D.A., A.M.S. Statistical Bulletin No. 218, 1957, p. 35.

APPENDIX TABLE 2. PERCENTAGE OF PRODUCERS REPORTING USE OF BULK TANKS AND PIPE LINE MILKERS, BY MILK SHEDS AND FARMING AREAS IN PRODUCER SAMPLE, ALABAMA, 1958[1]

Item	Bulk tanks	Pipe line milkers	Both pipe line milkers and bulk tanks
	Per cent	*Per cent*	*Per cent*
Milk sheds			
Central	64	30	27
East	100	35	35
Industrial	14	9	3
North	24	22	7
Northeast	99	24	24
Southwest	57	29	24
Southeast	68	15	12
AVERAGE	56	23	18
Farming areas			
Tennessee Valley	20	23	6
Sand Mountain	38	11	7
Limestone Valley	91	22	21
Industrial	29	10	6
Upper Coastal Plains	46	19	16
Piedmont	100	34	34
Black Belt	66	31	28
Lower Coastal Plains	38	19	8
Gulf Coast	46	30	20
AVERAGE	56	23	18

[1] Includes only those producers answering the question.

APPENDIX TABLE 3. ALABAMA-PRODUCED SUPPLIES AND IMPORTED SUPPLIES OF FRESH FLUID MILK FOR DISTRIBUTORS UNDER SUPERVISION OF THE ALABAMA MILK CONTROL BOARD, BY MONTHS, 1958[1]

Month	Purchased from Alabama producers	Imported supplies			Total supplies
		Regular sources	Supplementary supplies	Total imports	
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*
January	37,398,430	8,276,680	359,000	8,635,680	46,034,110
February	32,881,724	7,154,527	875,490	8,030,017	40,911,741
March	38,333,639	8,334,510	408,000	8,742,510	47,076,149
April	39,959,026	8,800,679	48,000	8,848,679	48,807,705
May	38,684,705	9,221,171	0	9,221,171	47,905,876
June	33,922,161	8,072,491	48,000	8,120,491	42,042,652
July	34,598,210	8,703,259	0	8,703,259	43,301,469
August	35,803,325	8,561,548	193,000	8,754,548	44,557,873
September	38,344,473	8,008,240	1,365,370	9,373,600	47,718,083
October	40,638,202	8,537,183	741,400	9,278,583	49,916,785
November	39,350,868	8,102,991	356,100	8,459,091	47,809,959
December	41,132,586	8,503,351	251,800	8,755,151	49,887,737
Year	451,047,349	100,276,630	4,646,160	104,922,790	555,970,139

[1] Data taken from the 1958 annual report of Alabama Milk Control Board. Data for supplementary supplies were released by Alabama Department of Public Health.

APPENDIX TABLE 4. UTILIZATION OF FRESH MILK SUPPLIES OF ALABAMA PLANTS UNDER SUPERVISION OF THE ALABAMA MILK CONTROL BOARD, BY MONTHS, 1958[1]

Month	Sources of Class I milk			Imported milk used in lower class products	Class II from Alabama producers	Class III from Alabama producers	Class IV from Alabama producers	Sales of milk to government agencies	Total utilization
	Alabama produced milk	Imported milk	Total Class I						
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
January	31,829,665	8,533,453	40,363,118	102,227	1,565,205	1,623,130	2,379,984	446	46,034,110
February	28,409,861	7,955,017	36,364,878	75,000	1,261,446	1,131,355	2,078,643	419	40,911,741
March	30,718,338	8,532,821	39,251,159	209,689	1,312,775	2,059,945	4,242,047	534	47,076,149
April	29,105,648	7,661,521	36,767,169	1,187,158	1,591,579	2,234,509	5,820,275	1,207,015	48,807,705
May	29,459,994	8,950,585	38,410,579	270,586	1,387,994	2,267,090	4,712,633	856,994	47,905,876
June	25,701,321	7,083,062	32,784,383	1,037,429	722,673	1,949,438	4,659,574	889,155	42,042,652
July	27,575,371	7,780,895	35,356,266	922,364	621,992	1,953,358	4,055,287	392,202	43,301,469
August	28,847,803	7,862,672	36,710,475	891,876	619,930	1,794,713	4,015,620	525,259	44,557,873
September	32,930,427	8,080,405	41,010,832	1,293,205	2,189,825	1,228,894	1,436,215	559,112	47,718,083
October	34,574,336	8,521,845	43,096,181	756,738	2,378,022	1,383,509	1,717,786	584,549	49,916,785
November	31,904,139	7,758,488	39,662,627	700,603	2,306,167	1,587,093	3,034,946	518,523	47,809,959
December	33,172,745	8,395,998	41,568,743	359,153	1,858,489	2,045,060	3,540,257	516,035	49,887,737
Year	364,229,648	97,116,762	461,346,410	7,806,028	17,816,097	21,258,094	41,693,267	6,050,243	555,970,139

[1] Data taken from the 1958 annual report of Alabama Milk Control Board.

APPENDIX TABLE 5. PRODUCER RESPONSE TO METHODS OF ACQUISITION OF BASE BY NEW PRODUCERS, BY HERD SIZE, ALABAMA, 1958[1]

Milk cows per herd	Methods of acquiring base			
	Make base	Buy base	Either make or buy base	No opinion
	Per cent	*Per cent*	*Per cent*	*Per cent*
Under 30	50	25	17	8
30 to 49	48	25	21	6
50 to 69	44	23	28	5
70 to 89	40	25	27	8
90 and over	47	23	24	6
AVERAGE	47	25	22	6

[1] Includes only producers answering the question.

APPENDIX TABLE 6. PRODUCER RESPONSE TO METHODS OF ACQUISITION OF BASE BY NEW PRODUCERS, BY MILK SHED, ALABAMA, 1958[1]

Milk sheds	Methods of acquiring base			
	Make base	Buy base	Either make or buy base	No opinion
	Per cent	*Per cent*	*Per cent*	*Per cent*
Central	51	18	24	7
East	23	40	28	9
Industrial	52	17	26	5
North	57	14	20	9
Northeast	31	47	15	7
Southwest	54	20	21	5
Southeast	56	32	9	3
AVERAGE	47	25	22	6

[1] Includes only producers answering the question.

LITERATURE CITED

(1) ALABAMA AGRICULTURAL STATISTICS. Div. of Agr. Stat., Ala. Dept. of Agr. cooperating with Bur. of Agr. Econ., U.S. Dept. of Agr. Selected Annual Issues.

(2) ARNOLD, CARL J. An Analysis of Virginia's Quota Plan for Milk. Va. Agr. Expt. Sta. Bul. 496. 1958.

(3) BLACKSTONE, J. HOMER. Cost of Producing Fluid Milk in Alabama. Auburn Univ. (Ala. Poly. Inst.) Agr. Expt. Sta. Bul. 265. 1948.

(4) CODE OF ALABAMA 1940 (As Amended) Title 22, Milk Control Board.

(5) FEDERAL MILK MARKETING ORDERS. U.S. Dept. of Agr., Agr. Mktg. Serv. Miscellaneous Publication No. 732. October 1956.

(6) KRAUSE, STANLEY F. Seasonal Milk Pricing Plans. U.S. Dept. of Agr. Farmer Cooperative Service Bul. 12. 1958.

(7) OFFICIAL RULES AND REGULATIONS, RULES OF FAIR TRADE PRACTICES, RESOLUTIONS, AND NOTICES TO THE INDUSTRY. Ala. Milk Control Board, Revised and Assembled January 1, 1960.

(8) PURCELL, M. R. AND HERRMANN, L. F. Experience with Classification of Milk in Federal Order Markets. U.S. Dept. of Agr., Agr. Mktg. Serv. Market Research Report No. 288. 1958.

(9) WILLIAMS, S. W. Supplies and Use of Milk in Alabama. Auburn Univ. (Ala. Poly. Inst.) Agr. Expt. Sta. Bul. 282. 1952.