

MILK COOPERATIVES
IN
FOUR OHIO MARKETS.
By
WM. C. WELDEN & T. G. STITTS.

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FARM CREDIT ADMINISTRATION

Cooperative Division

WASHINGTON, D. C.

BULLETIN No. 16

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Director of Information,
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Summary

THE STATE of Ohio has offered a fertile field for the development of fluid-milk marketing associations. In January 1936 there were 46 milk cooperatives active in the State.

Four associations of the bargaining type were selected for study, with major attention directed to an analysis of their operating practices, their work with producers, and the attitudes of a sample group of their members. Those selected are operating in Akron, Columbus, Dayton, and Portsmouth. Each was formed before 1925, is apparently firmly established, and is performing a number of services for its members and various functions in its milk market. Data for the study were obtained from records of the four associations and from personal interviews with 652 milk producers.

Of these producers, close to 70 percent attributed improvements in prices and marketing conditions, such as hauling and butterfat testing, to their association's efforts. They felt that, on the whole, their cooperative membership had been worth-while. Less than 20 percent held exactly opposite views. The others were undecided.

These associations consider the milk price level and the price structure of the market their foremost responsibility and their producer-members support this consideration by mentioning price first and far more frequently than any other phase of marketing. The associations have used systems of class-use prices almost since they began operating. Such comparisons as are possible show that their market milk prices in recent years have fluctuated less; that they declined less during the depression than other farm prices; and that a substantially higher price has been received for fluid milk than for its equivalent sold as butterfat. A total of 360 producers gave their association credit for improving prices, and only 118 were disappointed in the results of their association's bargaining efforts.

Base-surplus plans have been used by each of the associations as its main attack upon problems of seasonal variations in supply, but surplus problems were still acute in 1935. In Akron and Portsmouth seasonal variations and the total quantity of the surplus have been reduced in recent years. Similar data by which to measure the change in Columbus and Dayton were not available. About 60 percent of the association members felt that the base-surplus plan had helped market conditions, and 40 percent felt that it had not.

Special attention has been given to hauling arrangements by each of the associations, the most detailed work having been done in Dayton. Hauling rates have been reduced in recent years in each market.

Many members gave credit to their association for improvements along this line. Over two-thirds of the members interviewed were in favor of complete control of hauling by the association.

Butterfat testing is done by the associations in Dayton, Columbus, and Portsmouth; sampling in Dayton and Columbus. Check tests are made on request in Akron. The satisfaction of members was much greater where more work along this line was done. Other activities included advertising, quality work, purchasing, and legislative work. Over 70 percent of the members interviewed favored the deduction made for advertising. Quality work has been a very minor activity, but except in Columbus over half of the members felt that their association had been of some help along this line.

Association literature, farm visits, local and annual meetings are the chief methods used to maintain contacts with and disseminate information to members. Poor attendance at meetings and the lack of a regular field service, except in Dayton, however, have apparently affected this type of work adversely in many areas. On many of the questions asked, almost one-fourth of the members did not appear to have sufficient information to give a definite answer. In other cases the answers were obviously affected by rumors or biased opinions and many of the answers were directly opposed to actual conditions as indicated by data from the association offices.

These cooperatives appear to recognize that their strength as bargaining units hinges directly on loyal support and understanding on the part of producer-members. Especially during the last few years real cooperative success has involved the ability not only to arrange satisfactory market outlets and to improve marketing conditions, but also to make members feel that the results justify the costs. This means that the management of an association must divide its attention between the efficient performance of marketing services or functions on the one hand and, on the other, a program for keeping members informed at all times as to the nature of problems faced by the organization and efforts being made to solve them. True cooperation depends upon the effectiveness of such a program in helping to maintain satisfactory relations between the individual producer and the association.

Milk Cooperatives

in

Four Ohio Markets¹

COOPERATIVE associations for selling producers' milk to city distributors of fluid milk and cream, were in existence in Ohio as early as 1900. By January 1936 there were 46 milk associations in the State operating in at least 24 of the 26 Ohio cities which had a population of 25,000 or more, and in almost an equal number of smaller cities. These organizations have played an important part in the development of the present milk-marketing system in Ohio, and were active in the program of the milk commission under the Ohio milk-marketing control law, which was in effect from July 1, 1933, to June 30, 1935. The milk-marketing associations in Ohio represent all of the separate types usually recognized and vary considerably in membership and volume of business. The State of Ohio, therefore, affords an excellent field for study of the cooperative marketing of fluid milk.

Recent Problems of Milk Cooperatives

IN SEVERAL of the larger cities in Ohio, fluid-milk cooperatives have been in continuous operation for more than a decade. Between 1922 and 1929, the early period of operation for many of them, marketing conditions and prices of milk and other farm products were such that it was relatively easy for the cooperative with a substantial portion of the market under its control to maintain stable prices and a fairly satisfactory market for its members. Under these conditions, it was possible for officers, employees, and members

¹ The Ohio Agricultural Experiment Station cooperated in making this study. Special credit is due Ralph W. Sherman, Assistant in Rural Economics, Ohio State University, for assistance in collection and tabulation of the data on which this bulletin is based.

The writers also wish to express their appreciation to the officials of the Milk Producers' Association of Summit County and Vicinity, Akron; Scioto County Cooperative Milk Producers' Association, Portsmouth; Miami Valley Cooperative Milk Producers' Association, Dayton; Scioto Valley Cooperative Milk Producers' Association, Columbus; and Columbus Milk Producers' Association, Columbus; for assistance in making available their records for study and in arranging producer interviews; and to H. E. Lartzalere, who assisted in taking the producer records.

to direct their efforts toward perfecting organization structures, expanding membership, increasing their control of the milk supply to cover a larger proportion of the market, improving and adopting new and more effective operating practices and membership relations, and generally strengthening their bargaining position.

After 1929, however, the unsettled market conditions and low farm prices associated with the depression brought about a radical change in this situation. The prevalent economic forces asserted themselves in fluid-milk markets rather quickly and placed a severe strain upon milk cooperatives in all parts of the United States. Marketing programs which had been worked out under favorable economic conditions between 1922 and 1929 had to face the first real tests of their soundness and adaptability to continued low prices. These conditions tested also the effectiveness of past efforts to educate and maintain close relationships with members.

The problems of fluid-milk marketing cooperative associations which arose from the changed conditions of the period 1931 to 1933, had to do mainly with (1) handling of surplus milk over and above the fluid-milk and cream requirements of the cities, (2) competition between dealers and between producer groups, and (3) the attitudes and reactions among members of cooperative associations or the dairy farmers supplying the market with milk.

Equitable distribution of the surplus burden over the entire market is one of the most intricate and perplexing problems in the fluid-milk market even in normal times, and was more so during this period of low prices. The decreased consumption of fluid milk and cream which accompanied the decline in consumer income increased the quantity of surplus milk in the market. A further increase in surplus was caused by the fact that fluid-milk prices were slower to go down than either manufactured-milk prices or prices of other farm products. As a result, production continued at the same or a greater rate.³ Under these conditions, it was imperative that cooperative marketing associations make modifications in selling plans and adjustments in rules and policies concerning base-and-surplus plans.

In many markets small dealers who obtained their supply from new or disgruntled producers began operations. These dealers both refused to assume responsibility for marketing any surplus milk, and created chaos by cutting prices in order to gain volume of sales. Established dealers buying through the association pressed for release from equalization arrangements in order to give them freedom of action to meet competitive problems. Price cutting developed among producer groups when the class 1 price was not reduced in proportion to other milk prices and other farm prices. Minority groups of pro-

³ Stitta, T. G. and Welden, W. C. *ECONOMIC ANALYSIS OF BARGAINING PROBLEMS OF MILK COOPERATIVES*. FCA, Coop. Div. Circ. C-104.

ducers and dealers became much more important in determining the prevailing price level.

Low prices with few, if any, indications of a return to the prices of 1925 to 1929, either for milk or for other farm products, caused acute and troublesome problems in the maintenance of morale and support among members of the associations. Members became dissatisfied with base and surplus plans because higher bases were impossible. In many instances they came to believe their associations were ineffective in handling their marketing problems.

The difficulties encountered in meeting the resultant problems were undoubtedly responsible in large measure for the support given by milk associations in Ohio to the act to set up a milk commission which would have powers and duties to supplement their efforts to regulate competition and stabilize market conditions and prices.

During 1934 and 1935 there was some measure of price recovery, both for milk and other farm products, which brought at least a partial alleviation of the pressure upon operating plans and membership morale. Milk cooperatives now have an opportunity, therefore, to appraise their organizations in the light of the experiences of the last few years. They can take steps to eliminate the weaknesses of the economic strain of the period revealed; to regain whatever strength in bargaining has been lost, and to make the changes which may be necessary in order to redirect their activities toward the objectives for which they were originally organized. They should now be able to work out operating plans sound and applicable to their markets in periods of high as well as low prices, and to plan their work in membership relations in such a way as to insure constant loyalty and interest of members under any conditions.

For these reasons, it was believed that a study of the operating practices and membership attitudes of cooperative milk-marketing associations which have gone through these experiences would be very timely.

Purpose and Scope of Study

THE purposes of this study were to analyze, in as much detail as available data permitted, the organization, development, and present status of representative milk associations in Ohio markets in such a way as to allow an appraisal of a number of their operating practices and methods of attack upon problems of fluid-milk cooperatives. The study proposed to determine the effectiveness of cooperative performance of a number of marketing functions, not only in the light of market conditions but also as indicated by the attitudes

and responses of association members. In this way major attention would be directed to the methods used and to the effectiveness of the work of the associations in membership relations.

The results of such a study should be valuable not only to the associations directly involved but also to other fluid-milk cooperatives in Ohio and elsewhere in various stages of development.

It is hoped that one of the contributions this study can make to the problems of cooperative marketing of fluid milk will be the presentation of a new method of analysis of individual operating practices and membership problems in the experiences of these associations which were selected as representative milk cooperatives in the State.

It is important to emphasize at the outset that this study does not propose to measure, nor to reach conclusions concerning the success or failure of any of these cooperatives in their entirety, as marketing agencies for farmers in the fluid-milk market.

Method of Collecting Data

Field data on which the analyses in this study are based were collected during 1935. Contacts were made with associations operating in Akron, Columbus, Dayton, and Portsmouth. In addition, a representative sample of the members of each association was interviewed. Information was obtained altogether from 7 cooperative milk-marketing associations and from 652 dairy farmers. Three of the associations, one each in Akron, Columbus, and Dayton, have been operating for less than 4 years. For the purposes of this study, major attention is devoted to the older associations which have been in operation for a greater length of time and whose experiences have carried them through periods of major as well as minor fluctuations in price levels and marketing conditions. Nearly 100 of the individual producers from whom data were obtained were not members of the 4 older associations at the time they were interviewed, but approximately two-thirds of these had formerly been members. Information obtained from these contacts together with data already assembled by Ohio State University are used in the analyses on which the bulletin is based.

The data from individual producers were obtained by personal interviews with approximately 10 percent of the members of each association. In an effort to get a representative sample, all sections of each milkshed were visited, and each field worker, having selected a road or a section in which members' farms were located, interviewed each producer in order until five or six field questionnaires had been taken. The same procedure was followed again in a different section or along another road. Very few of the members with whom contacts were made refused to answer the questions, so that it is believed that

a fairly representative sample was obtained. Over 95 percent of the contacts with producers were made by one of three field workers.

Group Classifications of Producers

For purposes of analytical comparison, each producer from whom information was obtained was classified in one of three groups by the worker taking the record. Each worker was asked, in making these groupings, to take into consideration the rating of the producer in relation to others in the milkshed, giving particular attention to the position of each as (1) a general farmer, (2) a commercial dairyman, and (3) a member of a cooperative marketing association.

On this basis, the producers placed in group I are those who, in the opinion of the worker taking the record, were above the average for the milkshed. As general farmers, they appeared to be of a high type. Their farms were well kept, their buildings usually painted and in good repair, and the entire producing unit above average in general appearance. As milk producers, the farmers in this group apparently kept their dairy barns, milk houses, and other dairy equipment exceptionally clean, and their dairy herds sleek and well cared for. As members of the association they were not visibly influenced in their entire point of view by a single incident, were not indifferent, and appeared to have more than the average knowledge of the activities in the market and of the association. They answered "do not know" to very few of the questions.

By the same standards, producers in group II represent just about the average for the milkshed, while those in group III are below the average. There are definite limitations to the uses which can be made of these groupings because not only were they made by different workers whose opinions were undoubtedly different, but they are purely arbitrary from every angle. In view of these limitations, very little use is made of the groupings except where differences between the responses and attitudes of producers in different groups are striking and conclusive.

Cooperative Marketing of Fluid Milk in Ohio

COOPERATIVE milk marketing made little more than a beginning either in Ohio or in any part of the United States before the World War.³ Less than 10 percent of all the fluid milk associations now reporting to the Cooperative Division were formed before 1915. There are records of four associations having been formed in Ohio before this

³ Metzgar, H. COOPERATIVE MARKETING OF FLUID MILK. U. S. Dept. Agr. Tech. Bull. 179, 91 pp., illus. 1930.

date—two of them before 1900, but only one of the four is still in operation, and it was inactive for several years after its original organization. The number in operation in Ohio had increased to 46 by January 1, 1936.

Marketing Outlets and Supply Conditions

Conditions in Ohio make that State a relatively fertile field for the development of cooperative milk-marketing associations. From the standpoint of market outlet, Ohio has 8 cities of over 100,000 population and 18 with a population of between 25,000 and 100,000, this number being greater in each case than in any State except Massachusetts.⁴ Operation of a milk-marketing association, particularly of the bargaining type, is more feasible in cities with a population of at least 25,000, because in a smaller city there is a tendency for a large share of the market to be supplied by individual producers distributing their own milk or for the number of producers selling at wholesale to be so small as to make the costs of the association's activities excessive on a per member basis.

Ohio is also one of the leading commercial dairy States. Cash income to farmers in the State from dairying is normally much greater than that from any other single farm enterprise, and in 1934 amounted to \$52,501,000, or 22.8 percent of the total cash income to farmers from all sources.⁵ With a total of 952,000 milk cows and a production of 4,094,000,000 pounds of milk on farms in 1934, Ohio ranked eighth among the 48 States. Almost 1 billion pounds of this volume of milk was used on the farms or made into farm butter. Approximately 2 billion pounds or its equivalent in butterfat was used in the State in making creamery butter, cheese, evaporated milk, ice cream, and other manufactured dairy products. This left slightly over 1 billion pounds as the quantity apparently consumed by the nonfarm population as fluid milk or fluid cream. About 35 percent of this quantity was sold to the consumers directly by the producers themselves.⁶

An analysis of data from the census of agriculture in 1930 shows that 87.5 percent of the farms in the State reported milk cows. Milk production per acre of farm land averaged 21.1 gallons, and was highest in the northeastern counties and lowest in the southeastern counties. (See fig. 1.) Only 34 percent of the farms in Ohio on which milk was produced reported sales of whole milk in 1929, and 45 percent reported sales of cream as butterfat. Butterfat sales were heaviest in the north

⁴ U. S. Department of Commerce, Bureau of the Census. CENSUS OF POPULATION, 1930.

⁵ U. S. Department of Agriculture. INCOME FROM FARM PRODUCTION IN THE UNITED STATES. Crops and Markets 12 (7). 1934.

⁶ U. S. Department of Agriculture. YEARBOOK, 1934; and U. S. DEPARTMENT OF AGRICULTURE, BUREAU OF AGRICULTURAL ECONOMICS, MILK EQUIVALENT OF PRODUCTION OF MANUFACTURED DAIRY PRODUCTS BY STATES, 1934. December 1934.

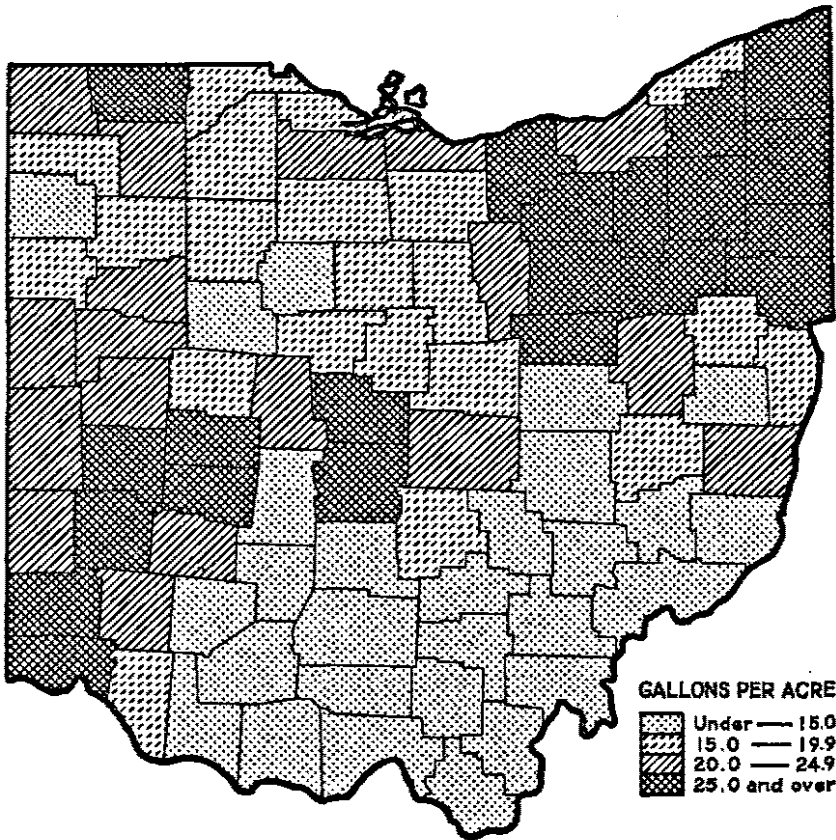
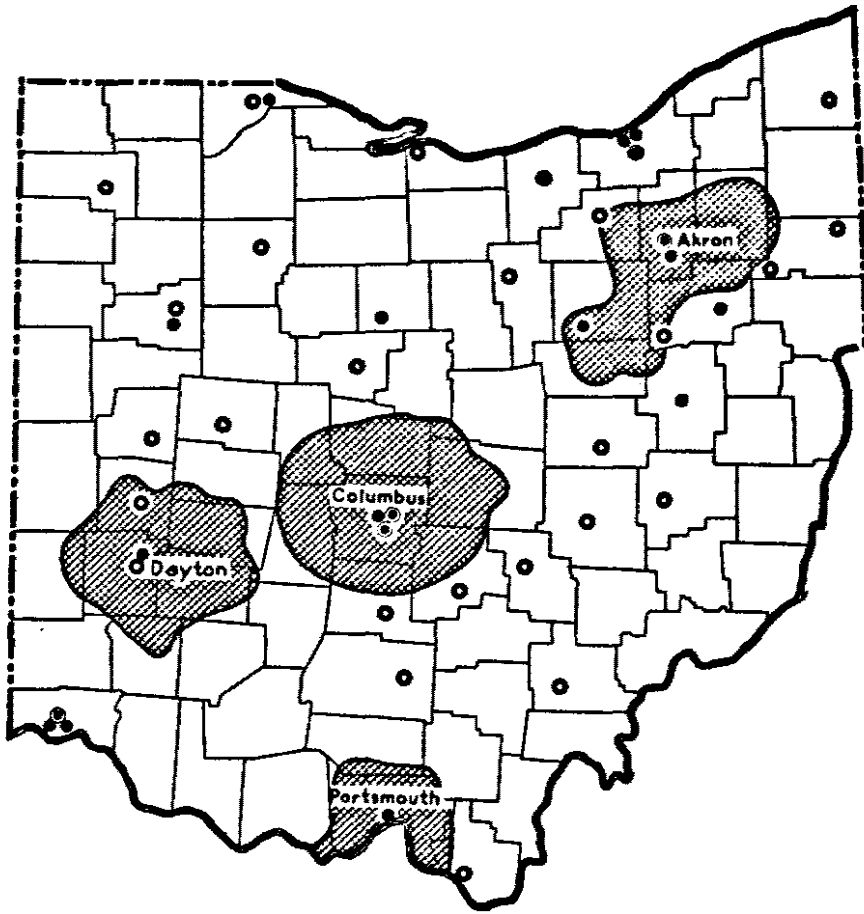


FIGURE 1.—PRODUCTION OF MILK PER ACRE OF FARM LAND IN OHIO, 1934.

Production is heaviest in the northeastern and southwestern counties of the State.

central and western counties. Whole milk sales were highest in the northeastern, southwestern, and in small areas in the central and northwestern sections of the State.

As would be expected, sales of whole milk were heaviest in the areas adjacent to the larger cities. Four of the eight larger cities—Cleveland, Akron, Youngstown, and Canton—are in the northeastern section. Cincinnati and Dayton are in the southwestern section, Toledo, in the northwestern, and Columbus, in the central part of the State. Practically all of the early attempts at formation of cooperative milk-marketing associations in Ohio were in these areas. Thirteen of the sixteen cooperative milk-marketing associations set up before 1920 were located in one of these eight cities. Only within the last 3 or 4 years have milk associations been organized to any appreciable extent in other areas or in smaller cities (fig. 2).



- Approximate production area or milkshed
- Associations organized before 1930
- ◐ Associations organized between Jan 1930 and July 1933
- Associations organized since July 1, 1933

FIGURE 2.—LOCATION OF 46 COOPERATIVE MILK-MARKETING ASSOCIATIONS IN OHIO, JANUARY 1, 1936; AND PRODUCTION AREAS FOR AKRON, COLUMBUS, DAYTON, AND PORTSMOUTH, 1935.

With the organization of a number of new associations since 1930, milk cooperatives are operating in practically all parts of Ohio. In a number of cases recently organized associations are operating in the same markets as older associations.

Organization of Milk Cooperatives

The period of most rapid increase in the number of milk cooperatives in Ohio, except for the 2 years from July 1, 1933, to June 30, 1935, when operation of the Ohio Milk Marketing Commission encouraged many new organizations, was the decade from 1915 to 1924. The

data in table 1 indicate that 21 of the 32 associations formed before July 1, 1933, were originally organized between 1915 and 1925. From 1925 to 1929, when prices were relatively high and stable, the greatest number of associations went out of business. These facts indicate that dissatisfaction with market conditions is an important influence motivating collective action by producers.

There were fewer new organizations during the 5 years from 1925 to 1929 than in any other 5-year period, but there were a number of reorganizations. Available records show that 57 cooperative milk associations have been organized in Ohio. On January 1, 1936, 46 were still active, 9 had gone out of business, and 2 had consolidated with other associations. (See table 1 and fig. 2.) Of those in operation January 1, 1936, only 15 were organized before January 1930, 6 were organized before July 1, 1933, and the remaining 25 since that date.

TABLE 1.—ORGANIZATION OF COOPERATIVE MILK-MARKETING ASSOCIATIONS IN OHIO ¹

Period	Number of associations—					
	Operating at beginning of period	Organized during period	Reorganized	Consolidated	Out of business	Operating at end of period
Prior to Jan. 1, 1915.....		4			1	3
Jan. 1, 1915, to Dec. 31, 1919.....	3	12		1	2	12
Jan. 1, 1920, to Dec. 31, 1924.....	12	9	2		2	19
Jan. 1, 1925, to Dec. 31, 1929.....	19	1	5	1	3	16
Jan. 1, 1930, to Dec. 31, 1934.....	10	29	6		1	44
Cumulative to Jan. 1, 1930.....		26	7	2	8	16
Jan. 1, 1930, to June 30, 1933 ²	16	6	4			22
July 1, 1933, to June 30, 1935 ³	22	25	2		1	46
Total on Dec. 31, 1935.....		67	13	2	9	46

¹ Compiled from records of the Cooperative Division, Farm Credit Administration, and of the Department of Rural Economics, Ohio State University. See also Metzger, H. COOPERATIVE MARKETING OF FLUID MILK. U. S. Dept. Agr. Tech. Bull. 179, 91 pp., illus. 1930. Young, P. A. DAIRY MARKETING ASSOCIATIONS—SOME CHANGES AND DEVELOPMENTS. Ohio Agr. Expt. Sta. Bull. 63, 1933 [mimeographed].

² Period of operation under conditions of low prices but without a control board.

³ Period during which control board was in operation.

Types of Associations

Fourteen of the twenty-one associations in Ohio organized before July 1933 are of the strictly bargaining type of milk cooperative; that is, they act as agent for their members and negotiate with dealers regarding price and other terms of sale. As a rule these associations do not, in their membership agreements, take title to the milk, and do not handle any of it physically. All of the milk of their members is delivered direct to the dealers. Although complete data are not available, it is probable that most of the more recently organized milk cooperatives in the State are also of the strictly bargaining type.

Three of the twenty-one older associations are also primarily bargaining cooperatives but, as differentiated from the strictly bargaining type, they either operate their own plants for processing surplus or dispose of it independently of the local dealers. This type of milk cooperative usually takes title to the milk, and in some cases, collects for its sale to dealers and writes the checks for the milk of members at each pay period. Its scope of operations, on the whole, is wider than that of the strictly bargaining cooperative.

The remaining associations are engaged in retail distribution. They perform or supervise the performance of all the functions necessary to carry the milk to the ultimate consumer. Their operations are necessarily complex, and a relatively heavy capital investment is required for their plants and other facilities.

Development of Cooperative Milk Marketing in Akron, Columbus, Dayton, and Portsmouth

THIS STUDY concerns itself mainly with four associations operating respectively in Akron, Columbus, Dayton, and Portsmouth. The associations in Akron, Columbus, and Portsmouth are of the strictly bargaining type; while the one in Dayton, in addition to bargaining, owns and operates facilities for processing a part of the surplus milk or cream.

An association engaged in retail distribution was not included in this study because much more time would have been necessary for an adequate analysis of its operating practices, because the results would have been applicable to only a small group, and because the association's problems as well as its method of attack upon problems were entirely different from those of bargaining associations. By limiting the study to associations whose operations are primarily bargaining, the results in their entirety will be applicable to a much greater number of milk cooperatives in Ohio and elsewhere.

In an effort to make the results of the study as representative of conditions in the State as possible, selection of the associations was conditioned by the location and size of the market, the age of the association, and the scope of its operations. Akron, Dayton, and Columbus are among the eight cities in the State with over 100,000 inhabitants, while Portsmouth has a population of about 40,000. Each is located in a different section of the State—Akron in the heavy milk-producing area in northeastern Ohio; Columbus in the central part of the State; Dayton in the southwestern section; and Portsmouth on the southern border (fig. 2).

The complete history of cooperative milk marketing in Akron, Columbus, and Dayton now covers approximately two decades, and in

Portsmouth, about 12 years. The present organizations, except in Akron, have not actually been in operation all of this time; but the idea of cooperation had been suggested to and tried by farmers in their milksheds several years before the present cooperatives were formed.

An association operated as early as 1887 in Cleveland, whose milkshed is, in part, the same as that of Akron, and in 1910 an association was formed in Canton, with a milkshed also closely adjacent and partly overlapping the Akron milkshed. An association was set up in Dayton as early as 1912 and another in Columbus during 1916, both primarily for bargaining. In each of these two markets small groups of producers also formed cooperatives for retail distribution in 1918-19. Most of these early associations were relatively weak and ineffective, but they undoubtedly gave valuable experience in cooperative marketing to local dairymen.

The four associations with which this study specifically deals were formed somewhat later. The Milk Producers Association of Summit County and Vicinity was organized in Akron in February 1917. The Miami Valley Cooperative Milk Producers Association was formed in Dayton in 1921, and began operations in 1922. The Scioto Valley Cooperative Milk Producers Association, in Columbus, was organized in 1922 and began operating in 1923. The Scioto County Cooperative Milk Producers Association, in Portsmouth, was organized in 1924, reorganized formally in August 1930, and began operating in February 1931. None of the four had any direct connection with earlier organizations in the areas, although some of the first members in Dayton and Columbus had been members of earlier associations.

Conditions Leading to Organization

The marketing procedure in these cities before the association began operating appears to have been for dealers to buy milk on a flat price basis, that is, the dealers agreeing to pay producers one price for all of the milk shipped. Some producers, particularly those with low volume and those on the outer edges of the milkshed, had no assurance of a year-round market, and often received a substantially lower price than other producers. Variations in price between dealers and wide seasonal variations in prices were also frequent. The larger dealers established the price level for the market. Where milk was bought from producers on the basis of butterfat content—which was not a universal practice at that time—there was dissatisfaction with the butterfat tests, and no check was made to determine their accuracy.

Formation of the associations in Columbus and Portsmouth was sponsored by the dairy department of the Ohio Farm Bureau Federation. Those in Akron and Dayton had no such backing but were organized earlier and during years of lower milk prices. Contacts

with early members and examination of articles of incorporation and preambles to bylaws indicate that the reasons for organizing were much the same in all markets—dissatisfaction with existing market practices, sales methods, and prices.

The prime objectives in organizing, apparently, were to correct unsatisfactory market practices by collective or cooperative action, and to work toward higher prices. The broad purpose of the associations and the type of work to be done by them, as indicated in articles of incorporation, was to encourage better methods of marketing and more economical production. The associations proposed to provide for the collection, processing, preparation for market, handling, and marketing of all milk and cream of members; and to do all of the things necessary or incident thereto, that is, make the necessary agreements and contracts or perform the services themselves. As an example of the all-inclusive nature of some of these statements, the articles of incorporation of the Portsmouth association state,

* * * the objects of this association shall be: * * * to provide better methods, facilities, and agencies through which the products of its members may be gathered, stored, analyzed, tested, pasteurized, manufactured, canned, dried, processed, advertised, shipped, marketed, distributed, and sold.

Each of these associations has been in continuous operation since the date of organization. The Wayne-Medina Milk Producers Association was formed in Akron at about the same time as the Milk Producers Association of Summit County and Vicinity, but it became an auxiliary of the latter association in 1919 and was legally absorbed in it when the association was incorporated in 1933. The Scioto Valley association accepted a number of cream stations in counties around Columbus as a part of its organization soon after it began operating, but otherwise there have been no changes in its operating structure. The Miami Valley association has had a number of cream stations in the area and a creamery in Dayton as a part of its structure since its beginning. Changes needed to improve its financial structure and to permit certain changes in operating procedure were made in its articles of incorporation in 1926 and again in 1933 and 1934. The Scioto County association in Portsmouth, after a few informal meetings from 1924 to 1930, was reorganized in August 1930 without a change in corporate structure. A few of its early members set up a corporation for distributing milk late in the period of inaction, 1924 to 1930, but it had no connection with the association, was not cooperative, and was soon taken over by nonproducers.

Important Problems of Associations in the Four Markets

Problems which these four cooperatives have encountered during their development have been much the same in each case, with the differences largely a matter of degree rather than kind. Problems in

membership relations, in competition, and in the handling of surplus milk were most prominent in the minds of association officials, because these problems were particularly serious during a comparatively recent period. Over the longer period, however, other problems have been equally if not more serious. Low operating income, opposition from established dealers, and indecision as to the marketing services or functions the cooperative should perform are among those which the associations have had to meet from the outset.

Limitations of Financial Arrangements

Operating income has been a factor definitely limiting the scope of activities of at least three of these associations since they first began operations. The Milk Producers Association of Summit County and Vicinity in Akron derives its income from a commission of 1 cent per 100 pounds of milk sold and an annual membership fee of \$1 per producer. The association in Columbus is supported by a commission of 2 cents per 100 pounds with no membership fee. Producers pay the association in Portsmouth 2 percent of gross value and an initial membership fee of \$2.50. The Miami Valley association in Dayton—the exception referred to above—deducts 4 cents per 100 pounds for operating expenses, 2½ percent of gross value for capital purposes, and charges an initial membership fee of \$3 per producer.

With a volume of less than 100,000,000 pounds of milk marketed per year in Akron and Columbus, about 55,000,000 pounds in Dayton, and of only about 12,000,000 pounds in Portsmouth, the total income from commissions of this size is relatively low. Operating income for 1934 was approximately \$5,000 in Portsmouth, \$12,000 in Akron, \$20,000 in Columbus, and \$31,000 in Dayton. With only 250 members or patrons as compared with close to 3,000 in the other 3 markets, the Portsmouth association had a larger income per member, notwithstanding the small amount of the total.

The amount of the commission per 100 pounds in Akron is among the lowest for milk cooperatives of any type in the United States. Contacts with 15 other associations in another study by the Cooperative Division⁷ in 1936 revealed that the total commission for bargaining associations ranged from 3 to 12 cents per 100 pounds, and in no case was below 2 cents for operating and administrative expenses. Deductions of 4 and 5 cents were more common.

It is also important that, except in an emergency, such as a dealer's going bankrupt, there is no provision for increasing the commission in Akron except by a direct vote of the members themselves. The amount is fixed in the association's bylaws. The present rate of check-off in Columbus can be increased 50 percent by the advisory

⁷ Stitts, T. G., and Welden, W. C. (See footnote 2, p. 2.)

council of the association to the limit provided in the marketing agreement. Bylaws of the Portsmouth association provide an upper limit twice as high as the present rate, with the board of directors authorized to set the amount within this limit. The board also sets the commission in Dayton, and the only condition of its authority is that the rate be the same to all members for a given quantity of milk.

Financial arrangements have not only limited the operations of these associations from the beginning, but have prevented the accumulation of reserves, have resulted in the producers having no real equity in the association, and have undoubtedly affected the ability of the associations to adapt their operations to changes in market conditions.

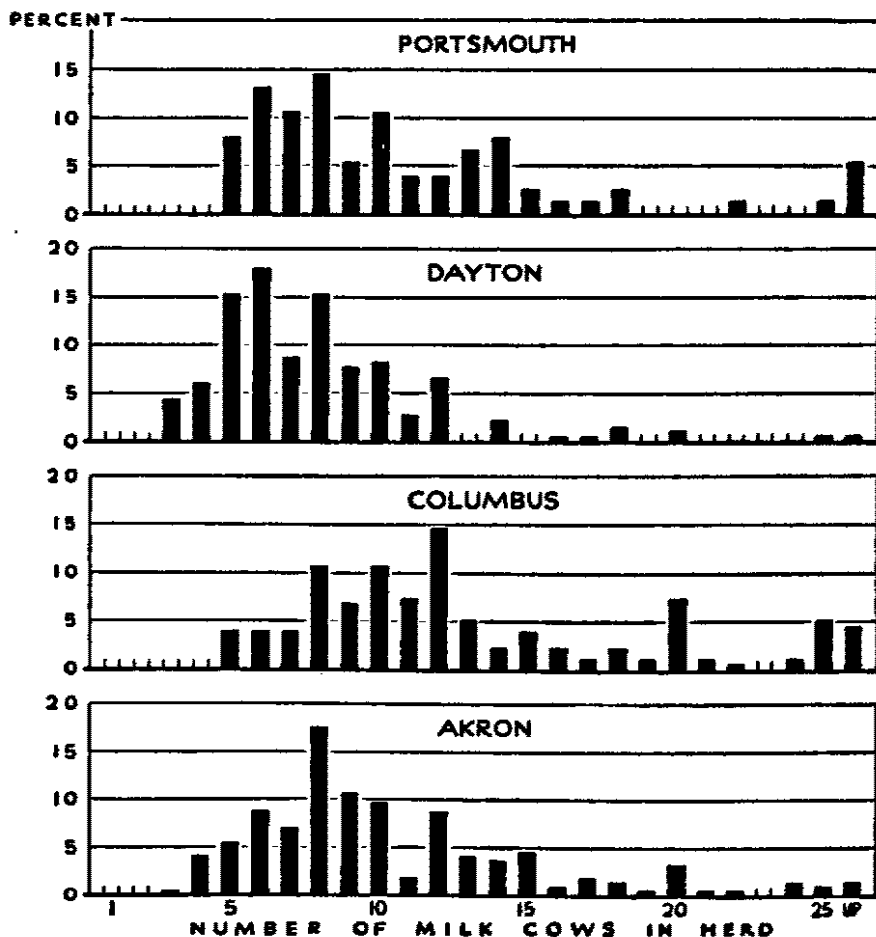


FIGURE 3.—FREQUENCY DISTRIBUTION OF PRODUCERS INTERVIEWED IN FOUR MARKETS IN OHIO, ACCORDING TO NUMBER OF MILK COWS IN THEIR HERDS.

The average number of cows in the herds of the producers interviewed was highest in Columbus and lowest in Dayton.

Maintaining Satisfactory Relations with Members

Considerable difficulty has been experienced by each of the associations in generally maintaining satisfactory relations with members. The Associations in Akron, Columbus, and Portsmouth are not in position financially to employ regular fieldmen, publish house organs, or do a great deal of membership work. Their offices are not equipped or manned to collect, analyze, and disseminate market information to members, except on a small scale. A lack of understanding on the part of producers of the causes of price declines and a loss of confidence in their association are likely to grow out of these conditions.

Work with members is also complicated by the fact that the small size of the average member's herd of cows and the low production per member has resulted in a relatively large number of producers in relation to the volume of milk handled. Total receipts of milk per day per producer average less than 90 pounds in Dayton, about 115 pounds in Akron, 130 pounds in Portsmouth, and 145 in Columbus. The figures may be compared with an average of approximately 170 pounds in Boston, close to 200 pounds in New York, and over 400 pounds in Washington, D. C. For the 652 producers from whom records were obtained, the average size of herd was 8 cows in Dayton, 10 cows in Akron, 12 cows in Portsmouth, and close to 14 cows in Columbus (fig. 3).

Most of the services which a bargaining association performs, such as testing, auditing, supervising marketing programs, keeping records, disseminating information, and making field visits, require about the same amount of work for each shipper regardless of the volume of his milk. When operating income from each shipper is based directly on the volume of milk, as is the case in most markets, a large number of members with a small volume of milk becomes a definite handicap.

Number of members.—The apparent trend in total number of members of the older associations in the four markets is shown in table 2. Complete data for the cooperatives serving Columbus and Dayton are difficult to obtain because of the uncertain status of patrons of cream stations affiliated with the associations. In Dayton, for example, the cream shippers did not sign the new membership agreements in 1931. One of the affiliated cream units of the association in Columbus with close to 1,000 patrons severed its connections in 1933.

Each of the associations has lost some members during the last few years with the organization of new cooperatives in three of the markets, but only since 1933, and then, only in Dayton and Columbus, has the number of fluid-milk member-shippers lost been a serious problem. Even during this period, however, the more serious mem-

bership problems have centered around methods of handling surplus, the attitudes and activities of dealers, and around the level of milk prices, rather than around members leaving the association.

TABLE 2.—TOTAL NUMBER OF MEMBERS OF COOPERATIVE MILK-MARKETING ASSOCIATIONS IN AKRON, COLUMBUS, DAYTON, AND PORTSMOUTH

Year	Number of members of association at —				Year	Number of members of association at —			
	Akron ¹	Columbus ²	Dayton ³	Portsmouth ⁴		Akron ¹	Columbus ²	Dayton ³	Portsmouth ⁴
1921.....	4 742				1929.....	2 952	(⁵)	(⁵)	
1922.....	4 943				1930.....	2 125	2 100	(⁵)	
1923.....	4 874	3 000	3 800		1931.....	2 093	3 000	2 000	226
1924.....	4 1,393	3 300	4 200	88	1932.....	2 960	2 000	2 400	281
1925.....	1 786	(⁵)	4 200		1933.....	2 832	3 100	2 130	276
1926.....	2 076	3 572	(⁵)		1934.....	2 714	3 000	(⁵)	254
1927.....	2 233	(⁵)	(⁵)		1935.....	2 741	(⁵)	2 200	243
1928.....	2 636	3 260	2 500		1936.....	2 732	(⁵)	2 000	(⁵)

¹ Milk Producers Association of Summit County and Vicinity began operations in 1917.

² Scioto Valley Cooperative Milk Producers Association began operations in 1922.

³ Miami Valley Cooperative Milk Producers Association began operations in 1923.

⁴ Scioto County Cooperative Milk Producers Association began operations in 1924, inactive 1926 to 1930.

⁵ Number who paid the annual membership fee.

* Data not available.

Surplus and Competitive Problems

An organization which agrees to meet dealers' requirements for milk to be sold as fluid milk and cream will need as much as 20 percent more milk on some days than on others because of the variation in dealers' sales.⁶ Likewise, inevitable and uncontrollable fluctuations in production bring into the market a varying quantity of milk. The cooperative must market all of the milk of its members and, if it has a "full-supply" contract, must have enough members so that their production is at all times at least enough to meet dealers' requirements.

For these reasons, there is in every milk market at all times a quantity of milk to be marketed over and above that necessary for fluid-milk and fluid-cream sales. Such excess milk is known as surplus, and the handling or marketing of it in such a way as to minimize its effect on fluid-milk and fluid-cream prices is important to the stability of the market. Problems associated with surplus milk are inescapable responsibilities of a cooperative with a substantial proportion of the market under its control or supervision.

For the entire State of Ohio the quantity of milk or its equivalent of butterfat used in manufacturing is almost twice as great as the quantity sold to urban consumers of milk and cream. (See p. 6.)

⁶ Ross, H. A. SOME FACTORS AFFECTING THE DEMAND FOR MILK AND CREAM IN THE METROPOLITAN AREA OF NEW YORK. U. S. Dept. Agr. Tech. Bull. 73, 66 pp., illus. 1926.

Akron, Columbus, and Dayton are each located in relatively heavy-producing areas with milk available in large quantities. Market records show that in 1935 approximately 59 percent of the total milk receipts in Akron was sold as fluid milk, leaving 41 percent surplus. For the same year the percentages of fluid milk and surplus in Dayton were 54 and 46 percent, respectively; in Portsmouth, 67 and 33 percent; and in Columbus, 59 and 41 percent.

If the effect of surplus milk on fluid-milk prices and general market stability is to be minimized, it is desirable that the surplus burden be distributed equitably over the entire market; that seasonal variations in total market receipts be reduced, and in many cases that the quantity of surplus be reduced. Most of the difficulties which cooperatives encounter with reference to surplus milk grow out of their efforts to work out and put into operation market schemes which will accomplish these objectives.

Surplus problems in these markets are complicated by transportation arrangements, local health-department regulations, and the volume of milk shipped by the average producer. Hauling arrangements are such that producers close to market pay almost as much to have their milk hauled into market as those whose farms are on the outer limits of the milksheds. Thus, differences in hauling costs are not great enough to exclude the volume supplied by relatively far-out producers.

Regulations or requirements of city health agencies do not in any of these markets act as a very definite limiting factor on the size of the milkshed or the number of shippers within the milkshed. In no case are the requirements particularly stringent, and, according to association officials, in no case have they acted as a strong deterrent to new shippers.

The small number of cows and small volume of milk of many shippers also affect the surplus problem in these markets. The farmer with only four or five cows undoubtedly has more difficulty in adjusting breeding and feeding programs so as to have the same number of cows fresh, and about the same milk supply throughout the year. The fact that relatively small herds are characteristic of these markets tends, therefore, to increase the quantity of seasonal surplus, and to make it more difficult to work out and administer a marketing plan which will not work undue hardships on many producers.

Probably the most serious competitive problem of milk associations involves the sales practices of nonmember producers and of dealers who handle little or no surplus, and sell milk to consumers at prices below the established level in order to gain volume. In this way the fluid-milk price level is endangered and the bargaining position of the association weakened. Competition of this sort was particularly

keen in the period 1931 to 1933, especially in the markets where the fluid-milk price was not lowered as much nor as rapidly as other dairy-products prices or other farm prices.

Performance of Marketing Services

Most of the other problems which these associations have encountered in their development have related to the marketing functions or services which they might perform for members. Complaints from producers and demands for more accurate butterfat testing, better control of hauling, a lower dealers' spread, a more detailed audit of dealers' reports, a better means of handling surplus, field visits, a publication, and other similar items, on the one side, have been weighed against the cost of such services in relation to operating income, the loss of the good will of their buyers, and the weakening of bargaining power which might result from too-aggressive action by the association, on the other.

Position of Association on Market

At the time of this study, each of the four older associations, despite the existence of new associations in three of the markets, and despite some difficulties in bargaining, appeared to be fairly well established. Each had contracts with all of its producers—contracts which have been signed within the last few years and which continue in effect for several more years unless canceled during a stated period each year.

Each was selling milk to the larger and older dealers and was selling a majority of the milk in the market on which it operated. The association in Portsmouth has had 100 percent of the milk in its market since 1932, exclusive of that sold by producer-distributors. The Milk Producers Association of Summit County and Vicinity, in Akron, sold in 1935 approximately 90 percent of the market total, leaving 10 percent to the new association. The percentage controlled by the older association was back up after falling to 60 percent in 1933 from close to 98 percent in 1928. In Columbus the Scioto Valley association sold about 67 percent of the total in 1935, leaving approximately 33 percent for the new association. The older association had around 80 percent of the total in 1928. The Miami Valley association, in Dayton, marketed approximately 70 percent of the total in 1935—not all of which was the milk of members—and the new association, about 20 percent. The Miami Valley association has in recent years handled as high as 80 percent and as low as 50 percent of the market total and, for purposes of comparison with the other markets, had about 60 percent in 1928. Apparently the

Columbus Milk Producers Association had gained a stronger foothold by 1935 than the other two new associations. It was still in a minority position, however, in its market.

Each of the associations was using a base-and-surplus plan for regulating seasonal production and operating a market pool as a means of distributing the surplus burden over the entire market. The association in Akron permitted members to sell milk to cheese plants and to other outlets not in direct competition with fluid-milk outlets in the city, and had an agreement with a condensery in its area under which all of the milk of designated members, as well as

TABLE 3.—EXTENT TO WHICH THE ASSOCIATIONS IN FOUR OHIO MARKETS PERFORMED SELECTED FUNCTIONS AND SERVICES FOR THEIR MEMBERS, 1935

Function or service	Extent to which performed by association employees in—			
	Akron	Columbus	Dayton	Portsmouth
Sampling milk for butterfat testing.		Entirely ¹	Entirely.....	
Testing milk for butterfat content.	Check-testing on request only.	do.....	do.....	Entirely. ¹
Auditing the sales reports of dealers.	Partial check by secretary.	Private firm paid by producers. ²	do.....	Entirely.
Calculating pool prices and handling pool adjustment accounts.	Entirely.....	do ²	do.....	Do.
Working out base and surplus rules and adjusting bases.	do.....	Jointly with the other association and dealers.	Jointly with the milk dealers.	Do.
Controlling the hauling of milk.	Contracts with all haulers—rates set by locals by bids.	Jointly with dealers. Contracts with 18 of 63, rates by agreement with locals.	Contracts with all haulers—rates set by association on actual cost basis. (?)	Contracts with all haulers—rates by agreement and bid.
Collecting from dealers and paying members for milk.				
Guaranteeing payment for milk of members.	Specifically provided for.		In practice only....	
Advertising of milk.	Dairy council.....	(?)	Dairy council.....	
Cooperative purchasing of supplies.			Disinfectant, cans, disks, etc.	Disinfectants, cans, disks, etc.
Keeping market records and economic data.	Very incomplete records.	Very incomplete records.	Fairly complete records.	Sales reports and pay roll sheets.
Disseminating economic information.	Price cards, meetings, and letters.	Column in Farm Bureau paper, meetings, and letters.	House organ, meetings, and letters.	Letters and meetings.
Field visits and service.	Part-time duty of officers.	Part-time duty of manager.	Full-time employee.	Part-time duty of manager.
Representation of producers' interests.	Member of State and National milk federations. ⁴	Member of State and National milk federations. ⁴	Member of State and National milk federations. ⁴	Member of State milk federation. ⁴

¹ Part of the expenses of association employees is paid by the dealers.

² Under an agreement between the parties concerned, the producers pay 2 cents per 100 pounds to defray the expenses of a committee set up under State control and continued after control, which committee audits, calculates prices, and handles pool adjustments; and the dealers contribute 2 cents per 100 pounds to the dairy council for advertising.

³ This function was taken over by the Miami Valley Association in Dayton late in 1935 after data for the study had been collected.

⁴ The Ohio Milk Producers Federation with offices in Columbus; and the National Cooperative Milk Producers Federation with headquarters in Washington, D. C. Each of the associations is also a member of the local chamber of commerce in its market.

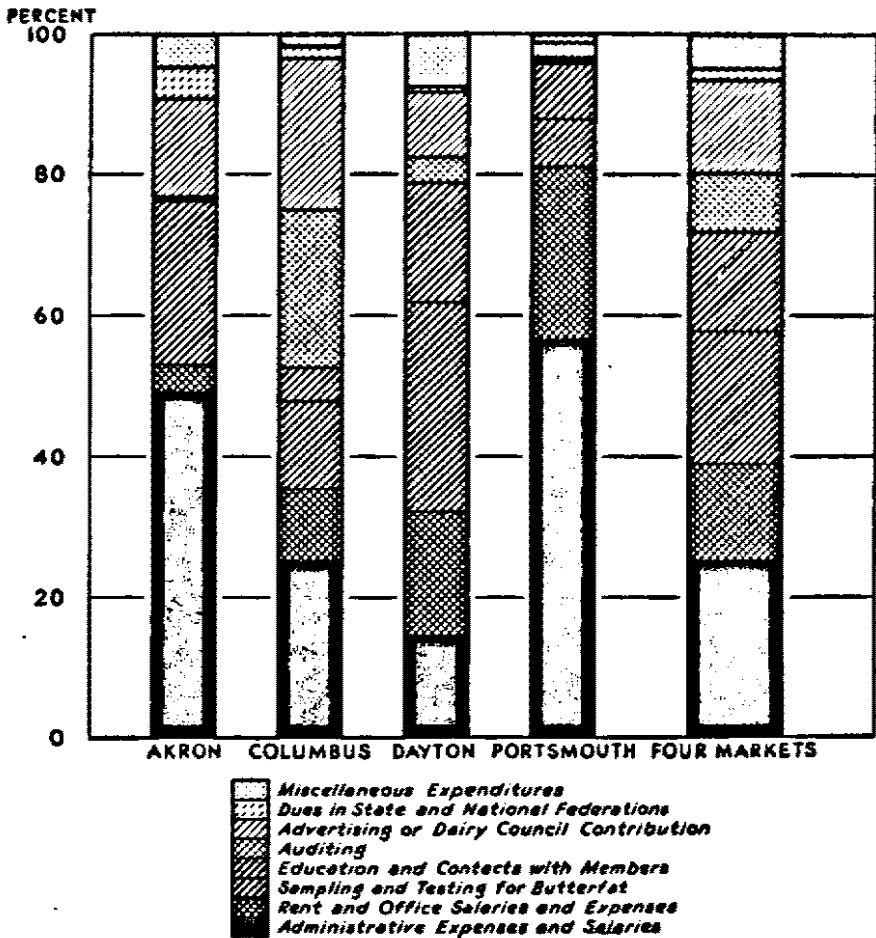


FIGURE 4.—PERCENTAGE DISTRIBUTION OF OPERATING EXPENDITURES OF THE OLDER MILK ASSOCIATIONS IN AKRON, COLUMBUS, DAYTON, AND PORTSMOUTH, OHIO, 1935.

More than 60 percent of the combined operating expenses of the four associations was for direct marketing functions or services.

part of the surplus of Akron dealers, might be shipped to the condensery for sale. Affiliated cream stations gave the association in Columbus a partial degree of control over the marketing of surplus in that area; while in Dayton the Miami Valley association operated a creamery for the manufacture of surplus milk and of cream. As originally formed, this organization included cream-station patrons as an important part of its membership.

The extent to which the older cooperatives in Akron, Columbus, Dayton, and Portsmouth were performing marketing functions and services for their members in 1935 is shown in table 3. The distribution of their operating expenses is illustrated in figure 4. The handicap under which the associations in Portsmouth and Akron are

operating because of a relatively low income is obvious. In each of these markets more than half of the total operating income is required to defray the costs of administration and of maintaining an office. As a result expenditures for membership relations and for other services and activities which the association might undertake are seriously curtailed.

Actual costs of administration and office maintenance are much higher for the Miami Valley association, in Dayton, than for any of the other three associations, but as a percentage of the larger total, they are lower than in any of the other three markets.

General Appraisal of Associations by Members

THE SERVICES rendered and the activities undertaken by cooperative milk-bargaining associations are such that a quantitative measurement of the success of such organizations in their entirety is almost impossible. Their work cannot be appraised by the means commonly used for cooperatives which operate facilities for the processing of milk or other farm products. An analysis of the financial balance sheet and of the income and expense statements, for example, is an unsatisfactory guide, although the better-financed bargaining associations in most instances, have been able to render greater services to their members.

Because of the lack of a tangible and quantitative measure of the progress made by these associations in their entirety, the larger portions of this study must be given over to analyses of separate and various services rendered and individual operating practices. In addition, the opinions of a representative group of dairymen in each of the markets concerning the work of their association, are presented in the hope that in this way some idea of the general success or failure of the associations may be indicated.

In their capacity as sales agents, the primary function of milk-bargaining associations is to arrange the most desirable terms and conditions of sale for the milk of their members. It is not surprising, therefore, that producers generally appraise their organization in terms of price received for milk at the farm. Price at the farm is affected by many factors in the market, among which are the volume of milk, quality standards, transportation rates, butterfat tests, seasonal variations in supply, prices of butter and other manufactured dairy products, and the demand for milk by consumers.

Some of these factors can be influenced or controlled by the association; others are entirely out of its control. For example, the supply of milk may be influenced to some extent by limitation on the size of

the milkshed, or by intelligent and vigorous use of the base-and-surplus plan whereby the wide seasonal variations in production may be modified. The association, by consolidation of milk routes, may force adjustments in hauling rates. On the other hand, prices are directly influenced by, and must be adjusted to, changes in economic conditions and shifts in the general price level. Unless these factors are considered, the results of a price study and of a price comparison, especially by association members, are likely to be entirely misleading. Except where a continuous and practical educational program has been followed, producers do not generally recognize these limitations upon the influence their associations can exert on price levels.

Direct services are rendered and functions performed or supervised by the bargaining association in connection with many of the individual factors, such as butterfat tests, hauling rates, quantities of surplus, marketing plans, and quality of milk, which directly affect the net price to the farmer. The results of some of the work of milk cooperatives along these lines can be measured in quantitative terms to the extent that statistical data are available. Such measures as are possible are of considerable value as indications of results achieved.

In this study, therefore, an attempt has been made to evaluate certain of these activities by means of statistical analyses. Comparisons of actual results with member attitudes indicate the effectiveness of the association's program for acquainting members with local problems in milk marketing, and the steps which members recognize as having been taken in the solution of these problems.

If the older associations in these four markets were appraised on the general reaction of their producer-members, and their success measured by the replies of members to direct questions as to changes they have brought about in marketing conditions for milk and as to whether or not they have benefited producers enough to make them worth the cost, they would be declared successful by a vote of about 3 to 1. Between 70 and 75 percent of the members who were interviewed apparently felt that their cooperative effort had brought beneficial results. Slightly less than 20 percent had directly contrary opinions. The remainder were undecided.

A number of limitations must be placed upon these general attitudes of members. In many instances the producer does not have sufficient knowledge of the workings of his association to evaluate it properly. In the older associations particularly, many of the present active members were not selling milk before the association was formed and do not know what conditions were in the preorganization period. They are thus unable to make comparisons between present and former market conditions. The attitudes of all members are subject to the effects of rumors and biased opinions of those not favorable to the association. These limitations should temper the extent to

which membership attitudes are taken as indicative of actual conditions. The amount of cooperative experience the member has had and the extent to which the membership-relations work of the association has given him sufficient information to formulate a weighted opinion are probably the most important factors affecting his ability to pass reliable judgment.

Almost one-half of the producer-members with whom contacts were made had been members of their associations since it began operating; and nearly 75 percent, for as much or more than half the period in which their respective associations had been active. Only 27 percent had joined within the last 5 years.

In terms of years, 49 percent of the members had been with their association for 10 years or more, and an additional 24 percent had been members for 5 to 9 years (table 4 and fig. 5). Producers in Akron had had more experience because their association was older, but a greater proportion of its members had joined the association since it began to operate than was the case in the other markets. This means that a smaller proportion of the members in Akron were in position to make direct comparisons between present conditions and conditions before their association was in operation. Such a comparison could be made by almost 80 percent of the members interviewed in Portsmouth as compared with only 27 percent in Akron.

TABLE 4.—LENGTH OF TIME MEMBERS STATED THAT THEY HAD BELONGED TO THEIR ASSOCIATION

Period of membership (years)	Akron		Columbus		Dayton		Portsmouth		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
0-4.....	56	25.9	55	31.8	45	25.2	17	22.4	¹ 175	27
5-9.....	58	26.85	22	12.5	36	20.1	39	51.3	² 155	24
10-14.....	44	20.4	98	55.7	98	54.7	20	26.3	³ 259	40
15-19.....	58	26.85	-----	-----	-----	-----	-----	-----	⁴ 58	9
Total.....	216	100.0	176	100.0	179	100.0	76	100.0	647	100

¹ 83 of this number are members of the new associations, and 50 of these stated that they formerly had been members of the older organizations. One new association member and 7 old association members have had experience in other milk cooperatives.

² 9 of these have had other milk-association experience.

³ 14 of these have had other milk-association experience.

⁴ 3 of these have had other milk-association experience.

For all of the markets it appears that approximately 70 percent of the producers interviewed were members of cooperative milk-bargaining associations during at least a part of the period of steady markets and relatively high prices prior to 1931-33 and also during the later period of low prices and unsettled conditions. Their attitudes should not be too greatly influenced, therefore, by recent conditions to permit a reasonable appraisal of their association.

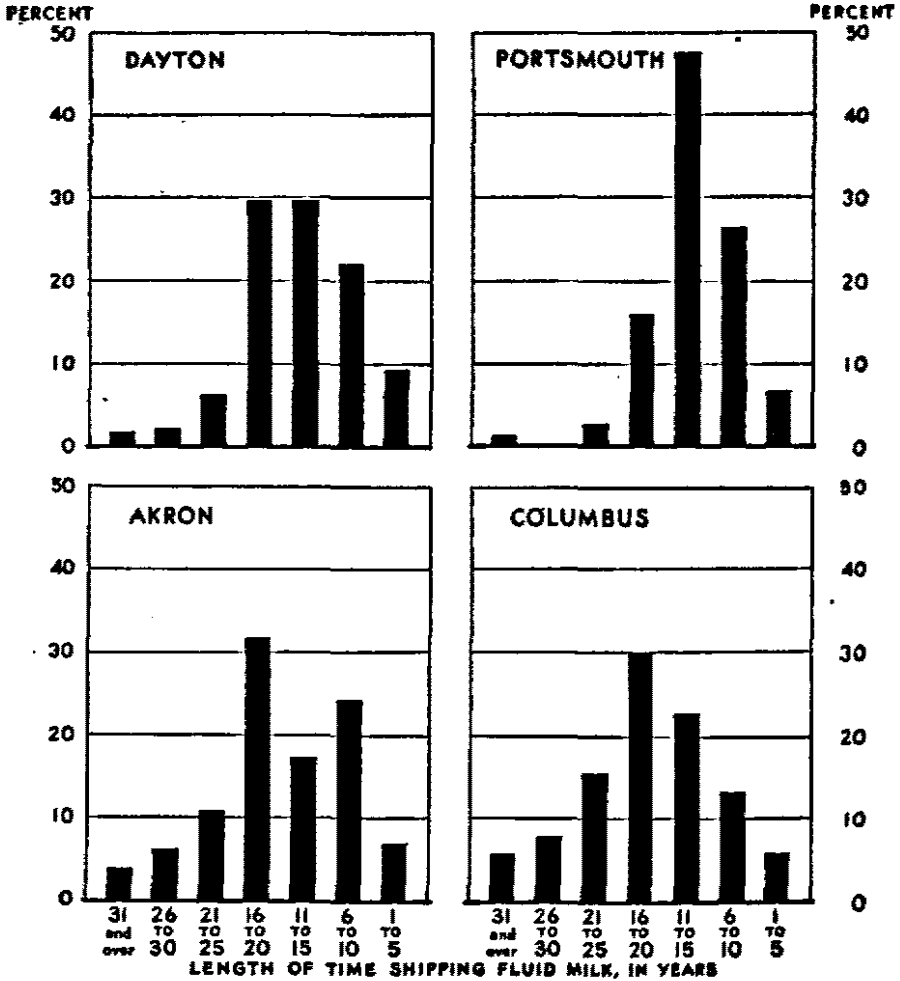


FIGURE 5.—FREQUENCY DISTRIBUTION OF PRODUCERS INTERVIEWED IN FOUR MARKETS IN OHIO ACCORDING TO LENGTH OF TIME SHIPPING FLUID MILK.

Most of the present members of the four older associations began shipping fluid milk between 1915 and 1925.

Changes in Market Conditions

In order to obtain an opinion as to the effect of the associations' activities on marketing conditions from both the producers who had been selling milk before the association was organized and from those who had been selling only since the association began operations, the following question was asked: "Do you believe market conditions are any better now than before the association was organized, or are better than if there were no association?" Over 400 or about 63 percent of the 652 producers interviewed stated definitely either that

marketing conditions were better than before the association was organized or that they were better than if there were no association. Of the remaining 37 percent, one-half were uncertain and the other half indicated that conditions were not better (table 5).

TABLE 5.—OPINIONS OF 652 PRODUCERS AS TO WHETHER MARKETING CONDITIONS WERE BETTER THAN BEFORE THEIR ASSOCIATION WAS FORMED

Reply to question ¹	Producers replying from—									
	Akron		Columbus		Dayton		Portsmouth		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Yes.....	121	56.0	114	64.4	125	68.3	50	65.8	410	62.9
Uncertain.....	35	25.5	25	14.1	31	16.9	10	13.1	121	18.55
No.....	40	18.5	36	21.5	27	14.8	16	21.1	121	18.55
Total.....	216	100.0	177	100.0	183	100.0	76	100.0	652	100.0

¹ Do you believe market conditions are any better now than before the association was organized, or are better than if there were no association?

These replies should be appraised in the light of the limitations discussed earlier in this section. Recent events are undoubtedly clearer than those happening several years ago. This fact might well influence the replies from producers in the Akron area where the association has operated for almost 20 years. Such an influence is apparent from the relatively high proportion of "uncertain" answers in Akron and the much lower proportion in Portsmouth where the association has had only 5 years of operating experience.

Changes in Producers' Attitudes

Another indication of the general attitudes of members is revealed by a tabulation of answers to a question as to whether the producer was more favorable or less favorable to the association than when he first became a member. This question is equally applicable to old and new members although a little less direct than the question on market conditions.

The answers indicate that 34 percent were more favorable, 19.3 percent less favorable, 39.4 percent unchanged, and that 7.3 percent had no definite opinion (table 6). It is reasonable to assume that those whose opinions have not changed since joining were for the most part favorable to the association—otherwise they would not have joined. Those whose opinions had become less favorable constituted about one-fifth of the total—about the same proportion as those who believed there had been no improvement in marketing conditions. The only significant variation between members of associations on the individual markets was in Portsmouth where only

8 percent of the members were less favorable and almost 90 percent either more favorable or unchanged.

TABLE 6.—CHANGES IN THE GENERAL ATTITUDE OF 647 MEMBERS TOWARD THEIR ASSOCIATION SINCE THEY JOINED

Change in attitude ¹	Members reporting from—									
	Akron		Columbus		Dayton		Portsmouth		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
More favorable.....	68	31.6	37	21.0	67	37.4	46	62.2	220	34.0
Attitude un- changed.....	80	37.0	94	53.4	61	34.1	30	26.3	265	39.4
Indefinite answer.....	21	9.7	9	5.1	15	8.4	2	2.6	47	7.3
Less favorable.....	47	21.8	36	20.5	36	20.1	6	7.9	125	19.3
Total.....	216	100.0	176	100.0	179	100.0	76	100.0	647	100.0

¹ "Are you more favorable or less favorable to the association now than when you first became a member?"

Reasons given by producers for their change in attitude were not suited to tabulation. Most of them were rather general in nature, indicating that the association was doing a better job or had failed to do a good job, as the case might be, or that changes in price levels and marketing conditions had caused their change in attitude.

Direct Benefits of Associations to Producers

Almost 75 percent of the members with whom contacts were made listed one or more specific things their association had accomplished which, to them, made it worth-while to be a member, or mentioned particular phases of the market which they gave the association credit for improving. Only about 15 percent stated definitely that they believed there had been no improvements creditable to the association and that they had derived no benefit from association membership. Another 4 percent answered "not much", without listing any specific factors (table 7).

TABLE 7.—EXTENT TO WHICH MEMBERS HAVE BENEFITED FROM THE ACTIVITIES OF THEIR ASSOCIATION, AS LISTED BY 647 MEMBERS

Indicated reply ¹	Members reporting from—									
	Akron		Columbus		Dayton		Portsmouth		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Benefited in one or more ways.....	133	61.6	136	76.7	143	79.9	61	60.3	472	73.0
Do not know.....	22	10.2	2	1.1	11	6.1	2	2.6	37	5.7
No answer.....	7	3.2	5	2.8	—	—	3	4.0	15	2.3
Not much benefit.....	13	6.0	4	2.3	7	3.9	1	1.3	25	3.9
No benefits in any way.....	41	19.0	30	17.1	18	10.1	9	11.8	98	15.1
Total.....	216	100.0	176	100.0	179	100.0	76	100.0	647	100.0

¹ Combined answers to the following questions: (a) "What has the association done for you which has made it worth-while to belong to the association?" and (b) "What conditions do you give the association credit for improving?"

The proportion listing one or more benefits was highest in Portsmouth and lowest in Akron. Those listing no benefits were the smallest percentage of the total in Portsmouth and the largest percentage in Akron. Here again, however, the fact that some of the work of the association in Akron was done over 15 years ago while all of that in Portsmouth has been done since 1931 must be considered in weighing these results. The number listing no benefits is almost the same as the number who have become less favorable and the number who felt that marketing conditions were no better—123, 125, and 121, respectively, in each case about 19 percent of the total.

The replies of the 472 members who listed one or more accomplishments or market improvements which should be credited to their association are summarized in table 8 according to the nature of the benefit the member received. "Better milk prices" and "generally improved market conditions" were listed much more frequently than any other benefit. Over 75 percent mentioned price, illustrating the importance attached to it by producers. Weighing and testing were prominent as benefits in Columbus and Dayton, hauling rates in the same two markets, and guaranteed pay largely confined to Akron. An examination of table 3 and figure 4 in the preceding section shows that this emphasis coincides to a large extent with the relative amount of work done by the associations along these particular lines.

TABLE 8.—NATURE OF THE RESULTS OF ASSOCIATION ACTIVITIES, AS LISTED BY 472 MEMBERS

Indicated result	Members reporting from—									
	Akron		Columbus		Dayton		Portsmouth		Total	
	Number	Percent ¹	Number	Percent ¹	Number	Percent ¹	Number	Percent ¹	Number	Percent ²
Better milk prices.....	89	66.9	105	77.8	112	78.3	54	86.5	360	78.3
Generally improved market.	82	61.7	38	28.1	65	46.2	37	60.7	223	47.2
More satisfactory testing or weighing.....	4	3.0	69	51.1	58	37.1	3	4.9	129	27.3
Better hauling arrangements.	17	12.8	50	37.0	56	39.2	5	8.2	128	27.1
Producers' interests represented.....	22	16.5	11	8.1	9	6.3	7	11.5	49	10.4
Payment guaranteed.....	12	9.0	—	—	1	.7	—	—	13	2.8
Miscellaneous.....	9	6.8	5	3.7	11	7.7	4	6.6	29	6.1
Total replies.....	235	—	278	—	308	—	110	—	931	—

¹ Based on 133 members replying to question. (See also table 7.)

² Based on 135 members replying to question.

³ Based on 143 members replying to question.

⁴ Based on 61 members replying to question.

⁵ Based on 472 members replying to question

The nature of the benefits derived from the associations' activities listed by members also coincided fairly closely with the opinions of producers as to unsatisfactory marketing conditions before the associations were formed. Low prices were listed by about half of those who remembered preassociation conditions; unsettled markets, by 30

percent; dealer control, by 30 percent; poor tests, by 24 percent; and poor hauling arrangements, by 4 percent. The fact that producers feel that their benefits from the association have also been along these lines might indicate that these are the most important aspects of the market to the producer, that the association has concentrated its work along these lines to correct the unsatisfactory conditions, or that producers formulate their opinions of present conditions by comparison with conditions in the past. All three are probably true to a large extent.

Additional Services Suggested

Although, as stated previously, over 70 percent on the whole were definitely favorable to their associations and considered its past efforts well worthwhile, many producers felt that their association should perform more of the marketing functions. Approximately 200 or about 31 percent of the members suggested one or more services or lines of activity to which they thought their association should devote more attention (table 9).

TABLE 9.—LINES OF ACTIVITY TO WHICH 199 MEMBERS INDICATED THAT THEIR ASSOCIATION SHOULD DEVOTE MORE ATTENTION

Line of activity	Number of members reporting from—				
	Akron	Columbus	Dayton	Portsmouth	Total
Testing or checking butterfat content or weights.....	42	1	5	17	65
Membership relations—education and service work.....	22	17	6	2	47
Distribution of milk at retail.....	2	7	22	1	32
Physical handling of surplus milk.....	3	11	3	5	22
Control or supervision of hauling.....	5	9	2	2	18
Bargaining.....	13	5	2	—	20
Advertising milk.....	7	2	2	3	14
Auditing dealers' sales records.....	9	—	1	1	11
Miscellaneous.....	2	4	4	1	11
Total answers.....	105	56	47	32	240
Total members.....	78	49	46	26	199

There is a noticeable relationship in each case between the suggested activities mentioned and the type of work already being done by the association. Most of the requests for more work in testing and sampling were in Akron where no testing was done by the association. More work in membership relations was suggested in Akron and Columbus where there were no field men nor house organs, and fewer field visits were made by association officials. Requests for retail distribution were most numerous in Dayton where the association is selling at retail in two of its secondary markets. Retail co-operatives have operated in the past in both Dayton and Columbus.

Market Price Structure

ONE OF the most significant facts brought out concerning the attitudes of members toward their milk-marketing association is the prominence which members attach to the price they receive for milk and to producer-dealer relationships. Over 75 percent of the members who listed benefits from the association's work included a better milk price as an important result.

The prominence which members gave to price in their appraisal of the objectives and results of cooperative milk marketing (table 8) is a rather logical reaction. The principal function of these associations is to negotiate with dealers regarding price, terms, and conditions of sale. In the final analysis they act in much the same way as a broker in arranging for the sale of members' milk to distributors and processors. Thus, if price or any of the terms or conditions of sale are not satisfactory, or if they appear to be more advantageous to distributors than to producers, the association, in the minds of members, is at fault and has been ineffective in its bargaining.

Price Objectives and Problems

In the mind of the association member, the chief responsibilities of his bargaining cooperative in matters pertaining to price are to get as high a price as production and consumption conditions will warrant, to get as high a percentage of the "consumer's milk dollar" as possible, to check or audit dealers' records under class-price systems so as to prevent usage of surplus milk for fluid milk or fluid cream and, in some cases, to guarantee members that they will be paid for milk delivered. They believe that every effort should be made to control or regulate supply and to increase consumption so that a higher price will be possible or the existing price level can be maintained.

In addition, the association management must take upon itself the responsibility for working toward economic soundness in the price structure and for weighing the effect of prices upon production, consumption, and firm market conditions over the longer period. It must also disseminate information to its members in order to prevent misunderstanding as to the associations' price objectives. The problem for the cooperative, therefore, involves not only justifying its actions to members and to milk consumers, but also the establishment of a sound price structure.

Class-Use Price Structures

Milk is sold to dealers by the association in each of these markets at prices based on the use to be made of the milk. This practice has

been followed since 1920 in Akron, 1923 in Columbus, 1925 in Dayton and since February 1931 in Portsmouth. The different classifications, the uses to be made of the milk, and the prices paid by dealers f. o. b. city, in each case, as of December 1935, are shown in table 10

TABLE 10.—PRICES AND CLASSES OF MILK SOLD BY THE ASSOCIATIONS AND DISTRIBUTORS, DECEMBER 1935

Market and use of milk	Class of milk	Price per 100 pounds f. o. b. city	Market and use of milk	Class of milk	Price per 100 pounds f. o. b. city
Akron: ¹			Dayton: ²		
Fluid milk.....	I	\$2.10	Fluid milk.....	I	\$2.00
Charity.....	Ia	1.68	Fluid cream.....	Ia	1.80
Fluid cream.....	II	1.85	Ice cream.....	Ib	1.70
All other uses.....	III	1.66	Buttermilk, etc.....	II	1.80
Columbus: ²			Condensed milk.....	IIa	1.82
Fluid milk.....	I	2.10	Butter.....	III	1.40
Charity.....	Ia	1.70	Portsmouth: ¹		
Fluid cream.....	II	1.80	Fluid milk.....	I	2.30
Ice cream, etc.....	IIIa	1.67	Fluid cream.....	II	1.90
Butter.....	IIIb	1.47	Ice cream.....	IIa	1.64
			All other uses.....	III	1.68

¹ 2.5 percent milk.

² 4.0 percent milk.

Determination of Class Prices

In practically all classifications other than those for fluid milk, fluid cream, and special milk, the prices are calculated each month by the use of a formula with the average price of Chicago 92-score butter as the basis. Thus the price for class IIIb in Columbus in December 1935 was four times the average price of Chicago 92-score butter plus 15 cents per 100 pounds. This price basis for class IIIb milk and for all other classes in each market reflects competitive conditions in that market for milk for that particular use. In other words, milk used for making butter in Columbus is in direct competition with milk going into butter in all parts of the United States and the price for such milk must be fairly closely related to prices in the United States as a whole. The same is true, generally speaking, of milk used in other manufactured products such as cheese and evaporated milk.

On the other hand, neither fluid-milk nor fluid-cream prices are calculated by such a formula. Prices for fluid milk and milk to be used for fluid cream are affected less directly by outside competition. Cream is more bulky than butter, hence transportation costs are higher. In addition, milk for use as fluid cream, in a number of market areas must be produced under known and designated sanitary conditions. Fluid-cream prices, though somewhat lower than those for fluid milk, are nevertheless higher than those for milk going into butter, cheese, and other manufactured products. Fluid milk is even more bulky than fluid cream, and must also be produced under

sanitary regulations prescribed by local authorities. Dealers and consumers want a fairly even supply of fluid milk, fresh and of good quality throughout the year. For these reasons fluid-milk prices are consistently higher than those of milk for other uses.

Price-Bargaining Procedure

Bargaining activities of the older associations in Akron, Columbus, and Dayton are under the direction of sales committees chosen by the boards of directors. In Portsmouth the board of directors is itself the sales committee. The number of members on these committees is 7 in Portsmouth, 8 in Columbus, 10 in Akron, and 14 in Dayton. Producers' marketing agreements and association-dealer contracts provide specifically that the prices shall be those determined by mutual agreement between dealers and the sales committees meeting in joint conference. Such conferences may be called by either party—usually by the one wishing to initiate a price change. Provisions are made for arbitration by jointly selected committees when the dealers and the sales committee fail to agree on prices to be paid.

Results Achieved Through Bargaining

There can hardly be a quantitative measurement of the results which the older cooperatives in Ohio have obtained in their bargaining operations. Prices paid producers in the different markets and in different years are not directly comparable because of real and important differences in market organization, competition, and in other local factors affecting production and demand for milk. The price of milk in any market at any time is the result of a vast number of factors, of which the associations' bargaining influence is only one.

To the extent that data are available, there are two or three types of comparisons which can be made with reference to the changes in milk prices which may be of some value in a discussion of price. It is possible, for example, to compare the changes which have taken place in milk prices in Akron, Dayton, and Columbus since about 1923 with the changes during this same time in butterfat prices and in other farm prices in the State. It is also possible to measure the amount by which fluid-milk or class I prices and weighted-average prices for milk have exceeded butterfat values.

Comparison of Price Levels

Index numbers of milk, butterfat, and of the other farm prices (table 11) show that milk prices over this period have been a little less flexible than either butterfat or other farm prices; and that in none of the three markets did milk prices go down as rapidly, or reach as low a level as either butterfat or other farm prices. By 1935

milk and butterfat prices had recovered about 20 points or about 40 percent from the low point reached in 1932-33; while, due largely to high meat-animal prices, the index of the other farm prices in 1935 was 36 points or 90 percent above that of 1932. (See fig. 6.)

TABLE 11.—RELATIVE PRICES OF MILK F. O. B. AKRON, COLUMBUS, AND DAYTON AND OF FARM PRICES OF BUTTERFAT AND SELECTED FARM PRODUCTS IN OHIO, 1923 TO 1935¹ (1925-27=100)

Year	Index of class-I milk prices			Index of average prices of all milk			Index of farm prices of 7 selected farm products ²	Index of farm price of butterfat
	Akron ³	Columbus	Dayton	Akron ³	Columbus	Dayton		
1923.....	102			106	102	105	81	102
1924.....	101			99	92	101	91	95
1925.....	99	96	99	100	99	100	103	98
1926.....	101	96	100	99	99	98	103	98
1927.....	100	106	101	100	106	101	93	105
1928.....	100	103	106	99	104	109	90	105
1929.....	102	108	103	101	109	106	97	102
1930.....	97	98	91	87	97	94	83	77
1931.....	89	74	78	59	74	58	54	55
1932.....	47	52	63	46	55	56	40	40
1933.....	49	54	55	49	54	52	47	41
1934.....	52	69	73	64	69	64	56	50
1935.....	66	73	78	65	68	70	78	61

¹ See appendix tables 28 and 29.

² Akron index numbers on basis of 3.5 percent milk instead of adjusted 4-percent price as shown in table 28.

³ Calculated by use of prices shown in appendix table 29 and of the average annual quantities of these products sold in 1930-34 as indicated in data published by the U. S. Department of Agriculture: Corn, 15,230,000 bushels; wheat, 21,050,000 bushels; hay, 295,000 tons; beef cattle, 1,801,550 hundredweight; veal calves, 606,440 hundredweight; hogs, 5,233,960 hundredweight; and eggs, 112,940,000 dozen.

In each of the three markets class I milk prices varied during this period within a range of 51 to 56 percentage points. Weighted average milk prices showed about the same range. As compared with this, there was a range of 66 points in butterfat prices and of 63 points in prices of other farm products. The disparity between milk prices and other farm prices was greatest in 1930 and 1931 when milk prices did not go down as rapidly at the beginning of the depression. The level of milk prices in terms of 1925-1927 prices was higher than either butterfat or other farm-product prices during each of the 5 years from 1930 through 1934. This was true despite the fact that milk prices were the lowest in the history of these associations.

Fluid-Milk and Butterfat Prices

Milk prices in the four markets in Ohio as shown in table 28 can also be compared directly with the value of butterfat in milk, as indicated by farm butterfat prices, to determine the extent to which they have been kept above the manufacturing or competitive level over this period. It is to be assumed that each dairy farmer could have secured readily the average butterfat price for all milk produced. The whole milk price level, then, may be compared with this by measuring the

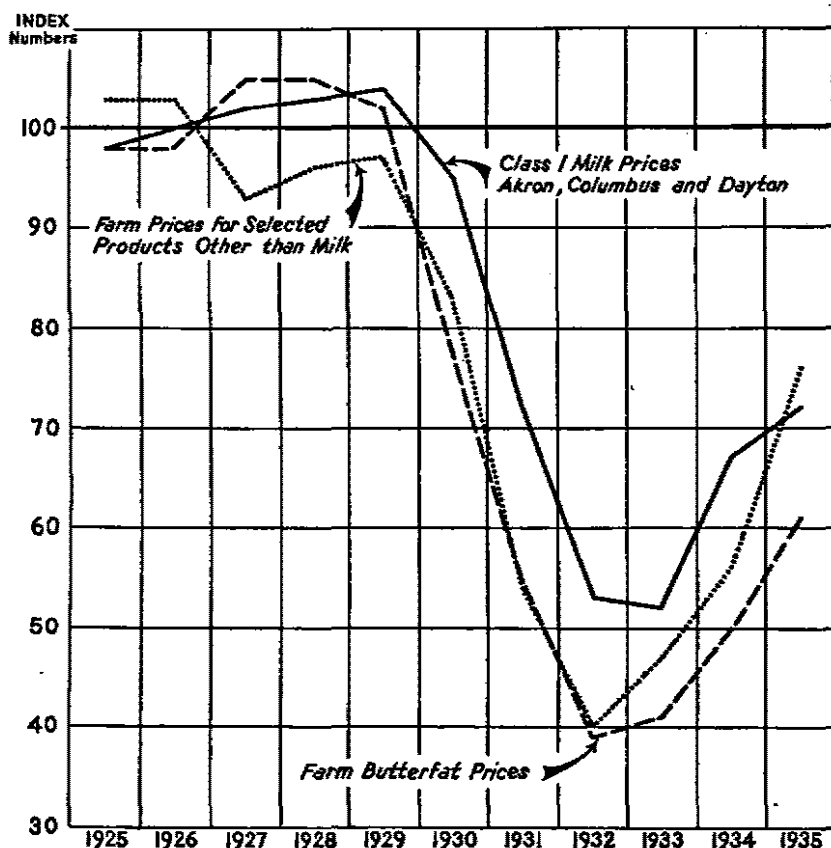


FIGURE 6.—INDEX NUMBERS OF MILK PRICES IN AKRON, COLUMBUS, AND DAYTON AS COMPARED WITH INDEX NUMBERS OF PRICES OF BUTTERFAT AND OTHER FARM PRICES IN OHIO, 1925 TO 1935.

Fluid milk prices were slower to go down and, as compared with the period 1925 to 1927, did not decline to as low levels as either butterfat prices or other farm prices.

amount by which it exceeds the butterfat value. This has been done to obtain the figures shown in table 12.

In each market, a fairly substantial, though by no means uniform spread over butterfat value was maintained. Especially in Akron the amount of the spread showed a tendency to decline from the high point in 1930. A steady decline in the amount may be noted in Portsmouth since 1931. It might well be, however, that spreads maintained in earlier years in these markets were greater than justified by differences in costs of production and marketing; or it may be that competition and increases in supply, brought on in part by the high spreads at the beginning of the period 1930 to 1933, forced lower prices and spreads in the last 2 or 3 years.

TABLE 12.—PRICE SPREAD BETWEEN MARKET MILK IN AKRON, COLUMBUS, DAYTON, AND PORTSMOUTH AND MANUFACTURED MILK IN OHIO, 1923 TO 1935.¹

Year	Price spread per 100 pounds between manufactured milk and—							
	Class I milk				Weighted average of all classes—			
	Akron	Columbus	Dayton	Portsmouth	Akron	Columbus	Dayton	Portsmouth
1923.....	\$1.53				\$1.11	\$0.63	\$0.28	
1924.....	1.60				1.05	.48	.43	
1925.....	1.50	\$0.71	\$0.43		1.03	.55		
1926.....	1.55	.77	.45		1.00	.63	.72	
1927.....	1.42	.85	.32		.91	.69	.34	
1928.....	1.40	.77	.45		.87	.62	.45	
1929.....	1.51	.95	.42		.96	.82	.42	
1930.....	1.32	1.19	.65		1.02	1.02	.60	
1931.....	1.31	.98	.75	\$1.67	.67	.60	.51	\$0.97
1932.....	.85	.66	.76	1.52	.56	.67	.55	.83
1933.....	.88	.69	.51	1.19	.64	.61	.40	.67
1934.....	1.14	.92	.77	1.15	.88	.73	.60	.73
1935.....	1.09	.81	.87	1.06	.71	.57	.40	.78

¹ See tables 28 and 29. Butterfat prices times 4 plus 20 percent subtracted from 4 percent milk prices in Columbus, Dayton, and Portsmouth; and butterfat price times 3.5 plus 20 percent subtracted from 3.6 percent milk prices in Akron.

The fact that these price spreads varied between markets results in a large measure from varying competitive conditions. Thus, in 1929, in the six counties comprising the Dayton milkshed, where the spreads were lowest, whole-milk sales averaged 11.2 gallons per acre of farm land and the milk equivalent of butterfat sales was 5.2 gallons per acre of farm land. In Columbus, where the spread was also low, the figures were 14.9 gallons and 5.9 gallons; in Portsmouth, 7.3 gallons, and 2.3 gallons; and in the five counties comprising the Akron milkshed, 28.4 gallons and 3.8 gallons, respectively.²

In Akron and Portsmouth, where butterfat sales are lower per gallon of milk sales, a greater spread can be and has been maintained. The differences in spreads between the markets, therefore, do not necessarily indicate the relative bargaining influence among these cooperatives.

These data are not conclusive evidence that the associations have been the cause of higher milk prices during the last few years in these markets. There is no way to determine what the trend in prices would have been without the existence of the cooperatives. The data do offer some explanation, however, of the reason why 360 of the 472 members who stated that their associations had been of direct benefit to them, listed a better milk price as one of the benefits.

² U. S. Dept. of Commerce, Bureau of the Census. Fifteenth Census of the United States. AGRICULTURE—OHIO. 1930.

Other Phases of the Price Problem

As indicated above, three other matters are involved in the question of market prices and selling plans. These are: (1) the margin between the prices paid to producers by milk distributors and the price received by the distributors from consumers, or the "dealers' spread"; (2) the degree to which distributors, buying at use-class prices actually pay for the milk according to its use or the procedure in auditing dealers' books; and (3) the guaranty of payment to producers by the association.

Dealers' Spread

For a complete analysis of dealers' spread in these markets it would be necessary to have, among other things, detailed statistics on prices paid and received by dealers and on the volume of each product sold in containers of each size in both wholesale and retail channels. Available data permit a measure only of the spread on the quarts sold at retail off delivery wagons. Prices paid by distributors for class I milk f. o. b. city (see table 28), adjusted to the average butterfat content of the retail quart and divided by 46.53 (the number of quarts per 100 pounds), are subtracted from the average price received by distributors for quarts sold at retail to determine the amount of this part of the spread. (See tables 13 and 30.)

TABLE 13.—SPREAD BETWEEN THE AVERAGE RETAIL PRICE PER QUART OF MILK AND THE CLASS I PRICE PAID BY DEALERS F. O. B. CITY, 1923 TO 1935¹

Year	Spread between retail price and f. o. b. price of class I milk				Year	Spread between retail price and f. o. b. price of class I milk			
	Akron	Columbus	Dayton	Portsmouth		Akron	Columbus	Dayton	Portsmouth
	Cents	Cents	Cents	Cents		Cents	Cents	Cents	Cents
1923.....	5.37				1930.....	5.11	5.90	6.91	
1924.....	5.10				1931.....	5.01	5.46	5.92	6.85
1925.....	4.94	5.22	6.85		1932.....	5.30	5.48	5.80	6.05
1926.....	5.00	5.50	6.19		1933.....	5.13	4.98	5.31	6.34
1927.....	5.25	5.42	6.56		1934.....	5.90	5.24	5.40	6.25
1928.....	5.21	4.93	6.95		1935.....	5.54	5.47	5.60	5.95
1929.....	5.41	5.32	6.78						

¹ Class I prices (appendix table 28) divided by 46.53 and subtracted from average retail prices per quart as shown in table 30. Akron prices adjusted to 3.8 percent butterfat, others to 4 percent.

² Not fully comparable, see footnote, table 28.

There have been no significant trends during the past decade in the amount of dealers' spread on the retail quart in Akron and Columbus. The spreads in 1935 were lower in these markets than in either Dayton or Portsmouth where the trend has been downward in recent years.

Without a more careful study, and data on the spread on other units sold in other channels, no conclusions can or should be made concerning the size of these spreads. It may be said without fear of error, however, that the spreads on this unit were fairly low as compared with other cities in the United States. A study by the National Cooperative Milk Producers Federation, for example, as of January 1935¹⁰ showed that the simple average of the spread on the retail wagon quart in 30 other cities was 6.16 cents, and in 19 of these cities the spread was higher than in either Akron, Columbus, Dayton, or Portsmouth.

Auditing Dealers' Sales Records

The associations provided in various ways for the auditing or checking of the "class-use" reports of distributors to whom members sold. The cooperatives in Dayton and Columbus at the time of this study employed certified public accountants to make regular audits, while in Akron¹¹ and Portsmouth, association officers did whatever work was done along this line. In Dayton the accountant was employed entirely by the association. In Columbus an accounting firm was paid by producers under an agreement whereby dealers in return financed entirely the work of the local dairy council in consumer education and advertising.¹² Sales agreements with distributors in Akron and in Columbus provided for an audit to determine class I sales and base requirements in connection with the base and surplus plans but made no provision for regular audits. Provision for regular audits was made in sales contracts between the association and distributors in Portsmouth.

Guarantee of Payment

The Milk Producers Association of Summit County and Vicinity in Akron was the only one of the four older associations specifically guaranteeing its members that they would be paid for milk delivered. No reserves were carried for this purpose but the association was empowered to levy an additional 1 cent per 100 pounds to cover such an emergency and to require bonds of distributors known to be in uncertain financial condition. In Dayton, payment was not specifically provided for although the individual producer contracts stated that the association would collect for the sale of milk and pay producers in proportion to the quantities delivered. These contracts also implied that "guarantees" might be one of the expenses covered by deductions

¹⁰ Service Bulletin No. 3, 1936, Nat. Coop. Milk Prod. Fed., Wash. D. C.

¹¹ In Akron public accountants have recently taken over auditing responsibilities and are paid by the association.

¹² Since the time of the study the association in Columbus has discontinued its practice of paying a private auditing firm.

made from proceeds of sales.¹³ The association in Portsmouth had the power to require bonds of its distributors if it deemed such a procedure necessary. No provisions of the three-way contract between producer, association, and dealer in Columbus could be construed as a guarantee of payment.

Attitudes of Members

Comments by members indicate that only a few give the associations special credit for improving these latter phases of the milk market. It is probable, however, that members were thinking partly of dealers' spread, auditing, and guarantee of price when they mentioned "better prices", "generally improved market", "more bargaining power", "more satisfied with results", and "more nearly representing producers' interests", as benefits they had received and as reasons why they were more favorable to their association. Guarantee of payment was listed specifically as a beneficial result of the associations' work by only 12 members in Akron and by 1 member in Dayton; a lower dealers' spread, by 1 member in Columbus; and auditing, by only 2 members in Dayton.

On the other hand, 37 members stated specifically that a lower dealers' spread should have been but was not a result of their association's work, and 12 members indicated that their association should do more auditing.

Market Stability and Control of Surplus

SECOND to, if not equal in importance to price and dealer relationships to association members as responsibilities of their milk marketing associations, are those relating to the maintenance of a stable or steady market. Members feel that the association should provide a continuous market outlet for all milk, and should control the marketing of surplus in such a way that it does not endanger fluid milk prices.

The terms "steady market" and "stable market", when used by producers, undoubtedly refer to price to a large extent. Even for purposes of analysis, therefore, it is difficult to draw a line of division between discussions of price and discussions of other market conditions. In the same way, the base-surplus plan, designed to affect the seasonal variations in shipments by producers and to distribute the proceeds from the sale of milk in a certain way, is confused with class-use price systems.

Thus, when 223 producers mentioned "generally improved market" as a benefit of the associations' work, some of them meant that prices were more satisfactory, fluctuated less, and so forth, while others were

¹³ In the spring of 1936 specific provision was made for guaranteeing payment to members in Dayton and a special reserve fund was set up for this purpose by the board of directors.

referring to a more even supply, a firmer market tone, a continuous outlet for all of their milk, a limited milkshed area, and to other conditions. The same interpretation must be given also to other general comments.

That some members are thinking in terms of market conditions other than actual prices paid farmers for milk, however, is evidenced by the fact that 22 members stated that their associations should handle surplus milk as a new marketing function. Over 30 members indicated that their association should have exercised more control over the supply as a whole; 20 stated that the tendency for producers to be deprived of a market unexpectedly was one of the unsatisfactory conditions before the associations were formed. Eight members listed the unlimited supply or milkshed area as one of the unsatisfactory conditions that should receive the attention of the association.

Guarantee or assurance of a market outlet for all of the milk of members is with these cooperatives, as with most milk-bargaining associations, an obligation assumed by the cooperative at the time the member's contract was accepted. Implied in all association-producer agreements is that the association will market the milk for each member at a price comparable to that received by other members. Along with this is an agreement by the producer to market all of his milk through the association, except in special cases. In Akron, at the present time, for example, members are permitted to market their milk above base allotments in any channel they may select as long as it does not compete directly with the fluid milk and fluid cream in the Akron market. In the other associations, members must market all of their commercial supply through the association unless otherwise instructed by the association.

Surplus Control Problems

The cooperatives in these four markets have attacked problems associated with surplus milk in several ways. Each of the associations is operating a base-surplus plan designed to decrease seasonal variations in supply by encouraging even production throughout the year. Each is also operating a market pool so that all members receive the same base and same surplus prices for milk of the same butterfat content. In addition to this, the association in Akron has made provision for marketing part of the surplus milk through a condensery in its area; and also permits members to sell surplus milk in other channels (see p. 43). The association in Dayton operated a manufacturing plant for processing cream, and the associations in both Dayton and Columbus include cream shippers as members. The cream plant operated by the Dayton association handles only from 2 to 5 percent of the whole milk delivered by members and does not attempt to handle all of the surplus milk of members.

The term "base-surplus" is applied to a method of distributing the proceeds from the sale of milk under a class-use system in such a way as to encourage even production throughout the year and, in some cases, to discourage the marketing of any large quantity of surplus.

Under such a plan, producers receive a higher price for their base quantity which has been allotted to them previously and a lower price for any milk delivered in excess of this base. The total of all bases allotted is, in theory, directly related to the total of fluid-milk sales and, in some cases, fluid-cream sales. Each individual's base quantity is his proportionate share of these sales. The base quantities are usually determined according to the relation between total shipments received from producers and class I sales during months of lowest receipts. That is, the average of each producer's shipments during the base-forming period, adjusted by whatever percentage class I sales were of total receipts during the same period, determines the base quantity of each producer for the next year or until such time as new base quantities are set. Thus, producers whose shipments are highest in the period when milk is most needed to meet market requirements receive the larger bases.

After bases have been determined or allotted, producers who ship just the quantity of their base receive base prices for all; those who ship more than this quantity receive surplus prices for such excess, while those who consistently ship less than the base quantity lose a proportionate share of their base. In this way the plan furnishes a price incentive for even commercial production throughout the year, rewards heavy production in otherwise low producing months, rewards even production, and penalizes producers whose production varies widely and is not in line with market needs.

A number of modifications may be made in various phases of the base-surplus plan in order to make it more easily adaptable to a particular market. There may be wide variation in the period used for determining bases, in the relationship between fluid-milk sales or fluid-milk and fluid-cream sales and base quantities, in the frequency with which bases are reestablished, in the provisions made for adjusting bases after they are set, in the penalties for under-base shipments, and in almost every other feature of the plan.

The degree of price incentive provided, or the difference between base and surplus prices, may be changed very readily; for example, without a change in class prices or in base quantities, if, as is usually the case, the total of all bases exceeds class I sales. The base price may equal the class I price but apply only to the proportion of all bases sold as fluid milk, or the base price may be the weighted average of the prices for the classes in which base milk is used. The latter practice, however, lessens both the differences in prices and the incentive to produce evenly.

Base-Surplus Plans in the Four Markets

A base-surplus plan has been in operation in Columbus since April 1925; in Dayton since December 1930, and before that from January 1925 through March 1928; in Portsmouth since February 1931; and in Akron since January 1932.

In Columbus base quantities as determined each year and for each producer "shall be his average daily sales of the lowest 4 months of the dealers' purchases for the preceding calendar year."¹⁴ Adjustments are made by a committee of five selected from the two bargaining associations in the market. Base rules are included in the marketing agreement and are administered by a control committee. (See table 3.) Prior to 1932 producers had the option of setting their own bases, with a specific penalty for underproduction; and from 1925 to 1929, a third option—that of selling on a flat price. The total of base quantities allotted to producers usually exceeds the quantity of class I sales. The monthly price in Columbus for base quantities, therefore, is not the same as the class I price but is an average of the prices for the classes in which base milk is used.

Prior to 1936 bases were set in Dayton according to the producers' average shipments for the 3-month period of the preceding year in which total market receipts were lowest. The average was adjusted according to the ratio between total receipts for that period and class I sales in the single month during the same year when sales were lowest. For example, if total market receipts were lowest for January, February, and March of any year and sales lowest in December, amounting to only 70 percent of average receipts for January, February, and March, the producers would receive 70 percent of their average shipments in these 3 months as their base quantity for the next year. This procedure was changed in 1936 and bases set according to each member's production in the last quarter of 1935 as related to the base he already had. Thus a producer whose production during this quarter averaged 25 percent or more over his 1935 base was allotted a new base equal to 80 percent of his average for the quarter; one whose shipments for the quarter averaged from 10 to 24 percent over his 1935 base kept the same base; and one who averaged less than 10 percent over the 1935 base was allotted a new base equal to 90 percent of his average for the quarter.

The monthly price for base milk in Dayton prior to August 1935 was the same as the class I price, but since that time bases have been raised and the price has been a weighted average which has included surplus prices to some extent. A base adjustment committee takes care of changes in bases and administers the rules and regulations having to do with the plan.

¹⁴ Agreement between producer, association, and dealer.

Bases were established in Portsmouth in 1931. The ratio of sales to receipts during the 3 months of lowest receipts was applied to each producer's average shipments for this period to determine base quantities. Since that time all bases have been raised or lowered with changes in sales. Individual base adjustments have been made but new bases have not been set. Part of the base milk is sold each month as class II or class III so that the base price paid producers is an average rather than a class I price. Base adjustments and the administration of rules are under the control of the board of directors.

Producers' bases in Akron are calculated from time to time as a percentage of their average shipments from September 1, 1930, to August 31, 1931. The percentage is determined by the proportion of total receipts which is required to meet market requirements for fluid-milk and fluid-cream sales. Applications for adjustment of individual bases are handled by a producers' committee of five members. Rules and regulations are made and administered by the sales committee. Base milk is supposed to be sold as both class I and class II—80 and 20 percent, respectively—so that, as in the other markets, the base price is a weighted average and is not equal to class I prices charged dealers.

Only in Dayton and Portsmouth do the associations have production records for individual members so that base adjustments may be made, changes in base-setting procedure worked out or studied, or new bases established, without recourse to the records kept by dealers. This fact, together with 3-way contracts between producers, the association, and the dealers, has had the effect of bringing dealers directly into base and surplus problems in Akron and Columbus. The new producers' agreement in Akron, effective in 1935, did not include dealers, but in Akron and Columbus as well as in Dayton, procedure under base-surplus plans, rules for the administration of bases, and similar matters, are under the joint control of the association and the dealers buying milk from association members.

Equalization Between Dealers

In connection with the base-surplus plans, a market pool and an equalization fund are maintained by each association on these markets so that each member may receive the same base price and the same surplus price for milk of the same butterfat content regardless of the dealer to whom his milk is sold. Association offices in Akron and Portsmouth, the control committee in Columbus, and the association accountant in Dayton receive receipts and sales reports from each dealer each month. From these reports and prevailing class prices they calculate the use made of the milk and the prices to be paid producers for base milk and for surplus milk. Each dealer is directed to pay these prices to producers whose milk he received during the

past month and is credited with such payments on the equalization account. Each dealer is then debited or charged with the milk he received according to the use he made of it and at the class prices for the separate uses. Balancing credits against debits show to what extent each dealer pays into or draws from the equalization fund in order that his account will balance.

The association in Dayton began, late in 1935, to collect in full from dealers for the sale of milk and to make the payments to producers. An equalization fund as such has been done away with by this procedure because all payments are made from a central source and receipts and disbursements automatically balance if all collections are made.

As contrasted with the market pool now in use, prior to November 1933 the Columbus association used the "individual dealer" pool. Under the dealer pool plan, base prices and surplus prices to a producer were calculated according to the use made of association milk delivered to the individual dealer to whom the producer was shipping, rather than the use by all dealers of all association milk. In this way association members shipping to different dealers might receive different base prices and surplus prices—actually did receive different prices unless the proportionate class-use made of their total receipts was the same for all dealers. There is no equalization fund under a dealer pool but an attempt is made to equalize the surplus burden among dealers by shifting producers from one to another. The market pool in Columbus at the present time covers both bargaining associations.

Other Surplus-Control Efforts

Other attempts to control surplus include: (1) Limiting the area beyond which new members are accepted; (2) cooperating with health authorities to limit the territorial extension of inspection services; (3) taking cream shippers and condensery patrons into the association as members; and (4) encouraging their members to sell a part of their excess over base to cheese factories, creameries, or condenseries, or to use it on the farm.

The milkshed of Portsmouth is limited by geographic conditions; that of Akron by other sizeable milksheds on the north, east, and south, closely adjacent to and partly overlapping the Akron milkshed. The Columbus milk-supply area almost touches that of Dayton-Springfield on the west. The Dayton milkshed approaches that of Columbus to the east, overlaps with the Cincinnati milkshed on the south, but is not limited by other markets on the north and west. Health agencies tend to limit boundaries by prescribing mileage limits beyond which free inspection will not be extended to producers. According to association officials, however, these mileages are greater than the present outer limits of the milksheds and have, therefore, little or no effect upon their size.

The associations exert some measure of control over the outer limits of the milksheds through base adjustment committees which pass on applications for membership, make allotments, and assign to dealers new producers entering the market through the association.

Within the milksheds the associations have been working constantly to further stabilize the market by gaining control over a larger proportion of the commercial milk supply. This tendency is apparent not only with reference to fluid milk shippers but also with cream shippers and in some cases condensery patrons. The older associations in Columbus and Dayton have included cream shippers as members and in Akron patrons of a condensery in the area are included.

During the last few years members, especially in Akron and Dayton, have been given every encouragement to deliver as whole milk only the extent of their base allotments. In all four markets, association committees have been relatively lax with reference to underbase shipments. The association in Dayton, in addition, has urged that excess over base be shipped to the association creamery in the form of cream, and has ruled that members be given credit for the milk equivalent of such cream in setting new bases. In Akron the membership agreement permits, and the association has urged, members to sell excess over base "in any manner provided it does not enter into competition with milk used for fluid-milk and fluid-cream purposes."¹⁵

Effects of Surplus-Control Efforts

Because of the lack of continuous series of comparable market statistics, it is not possible to examine with any degree of exactness the effects on market receipts of these various activities in the four markets. In Dayton and Columbus, available data permit almost no comparisons between different years with reference to supply conditions. Data are available since 1924 in Akron and since 1931 in Portsmouth.

TABLE 14.—MONTHLY AVERAGE OF TOTAL RECEIPTS, BASE RECEIPTS, AND FLUID-MILK SALES, BY MARKETS, 1935

Market	Total receipts	Base receipts	Fluid-milk sales	Base receipts as a percentage of total receipts	Fluid-milk sales as a percentage of total receipts	Fluid-milk sales as a percentage of base receipts
	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Akron ¹	7,749,964	5,714,584	4,571,667	73.7	69.0	83.0
Columbus ²	8,141,029	6,819,045	4,816,326	83.6	69.2	79.8
Dayton ³	4,529,533	3,118,785	2,437,787	68.9	63.9	78.1
Portsmouth ⁴	949,283	764,638	633,698	80.5	66.8	82.9

¹ Old association pool; base receipts estimated.

² Market pool; includes milk from members of both associations.

³ Old association milk receipts; partly estimated.

⁴ Association figures cover the entire market.

¹⁵ Agreement between producers and the association.

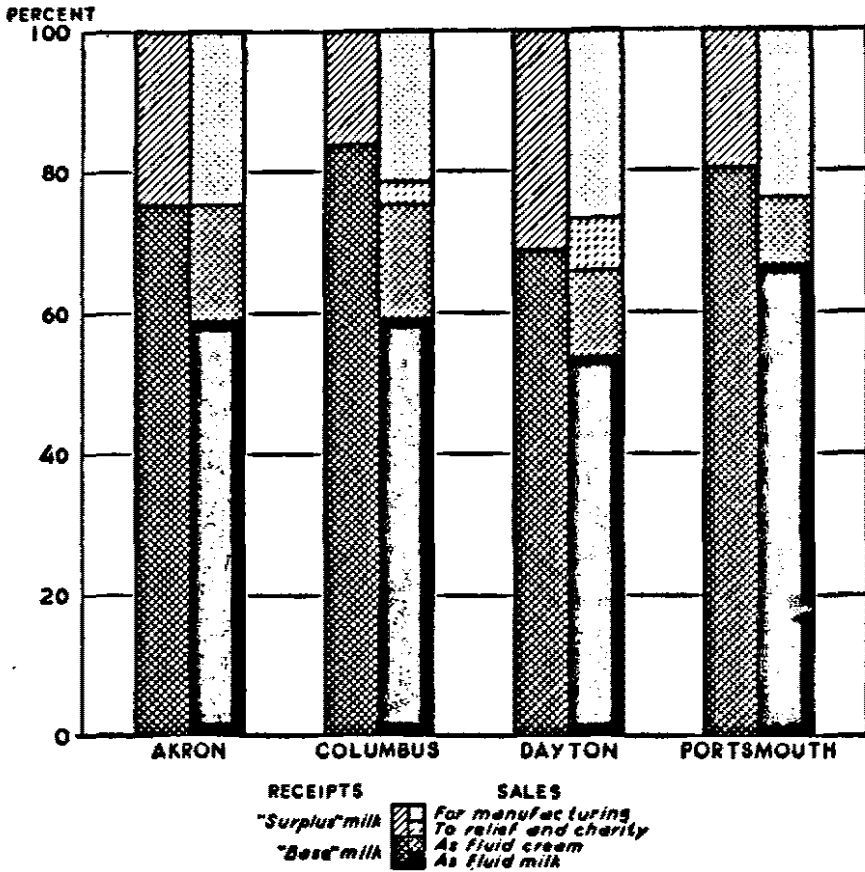


FIGURE 7.—PERCENTAGE DISTRIBUTION OF RECEIPTS AND SALES OF MILK IN FOUR MARKETS IN OHIO, 1935.

Base receipts average about 75 percent of total receipts and fluid-milk sales close to 60 percent of total sales.

Quantity of Surplus

Data in table 14 and in figure 7 show the relationship between market receipts, base allotments, and fluid-milk sales in the four markets during 1935. The data show that fluid-milk sales were 70 to 80 percent of allotted bases, forcing the base price to producers to be below class I prices. Fluid-milk sales amounted to only 55 to 65 percent of total market receipts, leaving 35 to 45 percent surplus over fluid-milk requirements. Available data for fluid-milk sales on the four markets as a percentage of market receipts for the years 1924 to 1935 are shown in table 15.

TABLE 15.—FLUID-MILK SALES AS A PERCENTAGE OF MARKET RECEIPTS, 1924 TO 1935

Year	Akron ¹	Columbus ²	Dayton ³	Portsmouth ⁴	Year	Akron ¹	Columbus ²	Dayton ³	Portsmouth ⁴
	Percent	Percent	Percent	Percent		Percent	Percent	Percent	Percent
1924.....	64.3				1930.....	47.5			⁵ 55.3
1925.....	60.6				1931.....	42.3			
1926.....	54.8				1932.....	51.0		60.7	48.4
1927.....	55.9				1933.....	54.8		63.7	49.4
1928.....	55.0				1934.....	61.2	⁵ 75.0	50.6	59.5
1929.....	55.8				1935.....	59.0	59.2	53.9	66.8

¹ Association pool figures.² Control committee figures for both bargaining associations.³ Association pool figures; apply to entire market in 1934 and first 6 months of 1935.⁴ Association pool figures for the market.⁵ Last 10 months only.

Seasonal Variations

As to the month-to-month variations in supply in these markets for 1935, the mean deviation from the average monthly receipts was 8.91 percent in Columbus, 9.15 percent in Portsmouth, 9.37 percent in Dayton, and 11.09 percent in Akron (table 16). A high percentage signifies that receipts in several months were considerably above or below the average; while a low percentage signifies that in only 1 or 2 months, if in any, were total receipts very much higher or lower than the average for the year.

TABLE 16.—SEASONAL VARIATION IN MARKET RECEIPTS, 1924 TO 1935

Item and year	Akron ¹	Columbus ²	Dayton ³	Portsmouth ⁴
	Percent	Percent	Percent	Percent
<i>Mean deviation as a percentage of monthly average:</i>				
1924.....	13.81			
1925.....	10.57			
1926.....	15.19			
1927.....	12.23			
1928.....	13.16			
1929.....	13.51			
1930.....	11.70			
1931.....	12.39			⁵ 9.05
1932.....	10.88		11.02	6.67
1933.....	7.79		6.74	7.15
1934.....	11.49	⁵ 7.73	11.70	13.46
1935.....	11.09	8.91	9.37	9.16
<i>Range between high and low month as percentage of monthly average:</i>				
1924.....	46.2			
1925.....	41.2			
1926.....	50.7			
1927.....	44.2			
1928.....	43.6			
1929.....	49.7			
1930.....	47.5			
1931.....	49.1			⁵ 36.0
1932.....	41.8		47.0	27.6
1933.....	30.5		26.5	30.6
1934.....	37.7	⁵ 25.0	43.6	40.8
1935.....	44.7	38.5	38.8	29.5

¹ Association pool data.² Control committee data for both associations.³ Association pool data.⁴ Entire market.⁵ Last 10 months only.

The extent of seasonal variation in receipts may also be measured by the range between receipts in the month when they were highest and in the month of lowest receipts. In 1935 the range from high to low was 29.5 percent of the average in Portsmouth, 38.5 percent in Columbus, 38.8 percent in Dayton, and 44.7 percent in Akron (tables 15 and 16). This measure is not so complete as the mean deviation—taking account of only 2 months in the year instead of all 12 months.

Available data are such that only in Akron and Portsmouth may yearly comparisons be made, and only in Akron do the data apply to years before the base and surplus plan was used.¹⁴ In Portsmouth an increasing percentage of total receipts has been used as class I in each of the last 4 years—the surplus having been reduced from over 50 percent in 1932 to around 33 percent in 1935. No trends are apparent in the extent of seasonal variations.

The program of the Milk Producers' Association of Summit County and Vicinity in Akron appears to have caused reductions both in the quantity of surplus in recent years and in the extent of seasonal variations in receipts. The percentage of surplus over fluid milk sales decreased from almost 58 percent in 1931 to around 40 percent in 1934 and 1935. This percentage was lower in 1934 and 1935 than

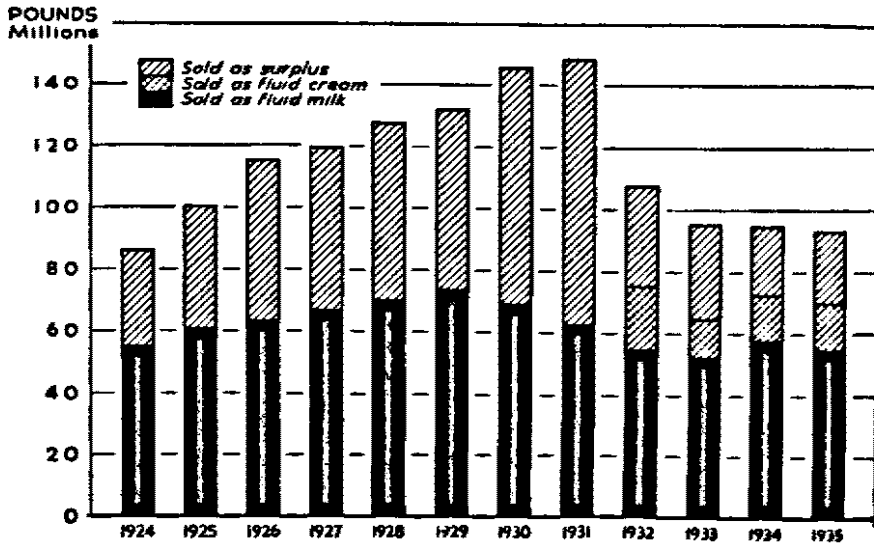


FIGURE 8.—DISPOSITION OF MILK RECEIVED FROM MEMBERS OF THE MILK PRODUCERS ASSOCIATION OF SUMMIT COUNTY AND VICINITY, AKRON, OHIO, 1924 TO 1935.

The quantity of surplus over fluid milk sales increased steadily from 1924 to 1931 but since that time has declined sharply.

¹⁴ Initiated January 1932 in Akron; February 1931 in Portsmouth. During 1926 in Columbus and Dayton. (See p. 40.)

in any year since 1925. (See fig. 8.) Seasonal variations have also been reduced in the last 4 years. The mean deviation has been lower than in any year of the period 1924 to 1931 except 1925. The range from high to low has also been reduced and was particularly low in 1933 and 1934 as compared with previous years.

Reactions of Members

Producers interviewed were asked specific questions concerning the base-surplus plan used by their association and the efforts of the association to limit the milkshed. The answers to these questions undoubtedly show, to some extent, the reactions of producers to recent supply conditions, and their attitude toward the methods being used. It is questionable whether or not the answers reveal their appraisal of changes in supply conditions since present methods were adopted.

In reply to the question "Is the base-surplus plan of any help in the market?", 334 producers answered "yes", 241 answered "no", and 77 gave an indefinite answer. For purposes of analysis, those who answered indefinitely—about 12 percent of the total—are excluded from further consideration. Most of them had no opinion on the subject—more because of lack of understanding than of a neutral position. The replies of the entire 575 producers and of the 496 members of the four older associations who answered "yes" or "no" are shown in table 17.

TABLE 17.—REPLIES OF 575¹ PRODUCERS, INCLUDING 496 MEMBERS OF THE OLDER ASSOCIATIONS TO THE QUESTION, "IS THE BASE-SURPLUS PLAN OF ANY HELP TO THE MARKET?"

Market	Replies from all producers				Replies from old-association members			
	Affirmative		Negative		Affirmative		Negative	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Akron.....	95	48.2	102	51.8	68	50.3	67	49.7
Columbus.....	112	71.8	44	28.2	91	79.8	23	20.2
Dayton.....	83	51.6	78	48.4	75	51.4	71	48.6
Fortsmouth.....	44	72.1	17	27.9	44	72.1	17	27.9
Total.....	334	58.1	241	41.9	298	60.1	198	39.9

¹ 77 producers, of whom 68 were members of old associations, gave indefinite answers.

² See footnote, p. 43.

For all markets, 58.1 percent of the producers indicated that the plan was of help to the market. The percentage of the members of the older associations approving the plan was two points higher, indicating that the members of the recently organized associations did not approve of the plan to the same extent as did those of the old associations. This was particularly true in Columbus.

The percentage of members of the old associations indicating approval of the base-surplus plan was highest in Columbus, only a little lower in Portsmouth, while in Dayton and Akron the percentage was considerably lower, with members about evenly divided. The differences between markets may be due to any one or several of a number of factors in addition to the actual effects of the operation of the plan.

Factors Influencing Member Attitudes

The number of cows owned by the member, the number of years he had been a member of the association, the amount of educational work done by the association and the length of time the plan has been in use, and a number of other factors might be expected to influence the attitude of an individual producer toward the base-surplus plan.

A cross tabulation of the percentage of "yes" answers with (1) number of cows reported, (2) number of years a member, and (3) group classifications, should indicate the influence of some of these factors. There is undoubtedly a joint relationship between the three factors; that is, group I members (see p. 5) are for the most part the farmers with relatively large herds who have been with the association for longer periods and are more familiar with its methods and objectives. (See table 18.) At any rate, it is significant that among the members with relatively large herds the percentage answering "yes" is above the average. The percentage answering "yes" is higher for members of long standing than for recent members; and is much higher for members classified in group I than for those in groups II or III.

TABLE 18.—PERCENTAGE OF ASSOCIATION MEMBERS EXPRESSING APPROVAL OF THE BASE-SURPLUS PLAN ACCORDING TO SIZE OF HERD, LENGTH OF TIME A MEMBER, AND GROUP CLASSIFICATION ¹

Item	Akron	Columbus	Dayton	Portsmouth	Total
<i>Number of cows reported:</i>	<i>Percent</i> ²	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
3-6.....	20.6	³ 50.0	47.1	50.2	42.3
7-10.....	51.2	53.3	58.9	57.7	59.0
11-14.....	66.7	81.8	58.6	96.2	73.7
15-18.....	66.7	72.7	⁴ 75.0	¹ 100.0	71.9
19 and over.....	⁴ 66.7	64.6	³ 0	³ 80.0	78.2
<i>Number of years a member:</i>					
0-4.....	35.7	57.1	50.0	55.8	46.2
5-9.....	46.2	64.2	52.9	73.2	59.2
10-14.....	53.8	80.7	51.2	83.3	65.5
15-19.....	69.3				⁴ 69.3
<i>Group classification:</i>					
I.....	78.0	80.3	77.3	92.3	82.6
II.....	35.9	79.4	44.6	73.0	50.4
III.....	37.5	58.3	21.1	45.5	41.0
Total.....	50.3	79.8	51.4	72.1	60.1

¹ See table 17.

² Percent of the total number of members in each subgroup who answered "yes" to the question.

³ Sample of less than 10 members.

⁴ Akron only.

Other factors which may explain in part the differences in the reactions of members as between the markets are shown in table 19. In Columbus, where close to 80 percent of the members answered "yes", the average size of herd was highest; close to 75 percent of the members had been members since the association began operating; the plan had been in operation much longer than in the other markets; the percentage of members classified in group I was higher than in other markets; the surplus over fluid milk sales in the 12 months preceding the date of the interviews was lower than in any other market; and market receipts from month to month were fairly even as compared with the other markets.

TABLE 19.—COMPARISON OF SELECTED FACTORS IN THE 4 MARKETS WHICH MAY HAVE AFFECTED THE REACTION OF ASSOCIATION MEMBERS TO THE BASE-SURPLUS PLAN ¹

Factor	Akron	Columbus	Dayton	Portsmouth	Weighted average of 4 markets
Members approving plan.....percent.....	50.3	79.8	51.4	72.1	60.1
Average size of dairy herd.....cows.....	10.1	13.8	7.9	12.0	10.5
Members belonging to association since it began operating.....percent.....	21.6	72.9	38.2	77.6	45.7
Length of time the plan has been operated in the market.....months.....	42.0	123.0	² 80.0	53.0	-----
Members in group I.....percent.....	34.5	46.7	28.5	17.1	33.0
Supply conditions July 1, 1934, to July 1, 1935:					
Surplus over fluid milk sales ³percent.....	41.0	35.8	51.0	36.6	41.8
Mean deviation in total deliveries ³do.....	11.4	7.9	10.4	10.9	9.8
Range from high to low month ³do.....	35.6	32.0	46.2	38.6	38.4

¹ Data apply to association members only.

² 55 months since 1930 plus 25 months at an earlier date.

³ See tables 15 and 16 for explanation.

In Akron and Dayton, on the other hand, size of herd was low; a lower percentage of the members had been with the associations since organization; the plan had been in operation for a much shorter period; and the surplus was greater and receipts more uneven than in the other markets. These factors may explain why the percentage answering, "yes", was barely 50 in these two markets and was lower than in the other associations.¹⁷

Producers were also asked what changes they would suggest in the base-surplus plan. The answers were by no means satisfactory. Of the 575 who stated definitely that they either did or did not approve the plan, only about 30 percent made any suggestions for changes. Approximately 40 percent had no suggestion whatsoever or did not answer, and the remaining 30 percent implied that they would prefer to see the plan discarded, and made no suggestions. The suggested

¹⁷ Following the contacts with members in the Akron area in August 1935, the association conducted a poll on the base-surplus plan in November 1935 and found approximately 75 percent in favor of the plan. At the time of the association poll there was little if any surplus, whereas in July 1935, surplus amounted to almost half of total receipts. Apparently, therefore, current supply conditions affected the reactions of a number of members.

changes had to do mostly with the time and the basis for determining base quantities and with the rules for adjustment of bases after they had been set. A number of producers suggested that more auditing be done and that the association operate a plan for processing surplus, in connection with the base-surplus plan.

The efforts of the associations to limit the size of the milkshed were touched upon only briefly in the producer interviews. All producers were asked whether or not their association should attempt to limit the supply area, and if so, by what method. Eighty-five percent of those who gave a definite reply indicated that the association should try to limit the milkshed. For the separate markets, approximately 80 percent in Columbus, 83 in Akron, 90 in Portsmouth, and 91 in Dayton, answered yes. For the entire group, those who answered no to the question were located about $1\frac{1}{2}$ miles farther from market than those replying in the affirmative. For the individual markets, however, this was true only in Akron and Columbus. There seems little reason for a conclusion, therefore, that answers were visibly influenced by distance from market.

As to suggested methods for limiting the supply area, approximately 50 percent stated that distance from market should be the only limiting factor. Almost 25 percent stated that there should be a distance limit as well as limitation on new producers entering the market. Only about 5 percent indicated that there should be a limitation on new members without regard to distance. The remaining 20 percent made no suggestion as to method.

Control of Farm-to-City Milk Transportation by the Associations

IN EACH of these markets milk is sold by the farmers at prices f. o. b. dealers' plants, with the cost of transporting the milk from the farm to such points being deducted from the quoted or calculated prices to farmers. Transportation is entirely by motor truck direct from farm to city with the milk carried in 5- or 10-gallon cans owned by the farmer and picked up each morning from the farmyard or a small platform at the roadside.

Economic Importance of Hauling Rates

In none of the markets are any producers located so far from market (fig. 9) as to make differences in transportation rates paid by farmers near the market and those on the outer limits of the milksheds a significant economic factor in the price system, as is the case in markets where some producers are 200 to 300 miles away. The

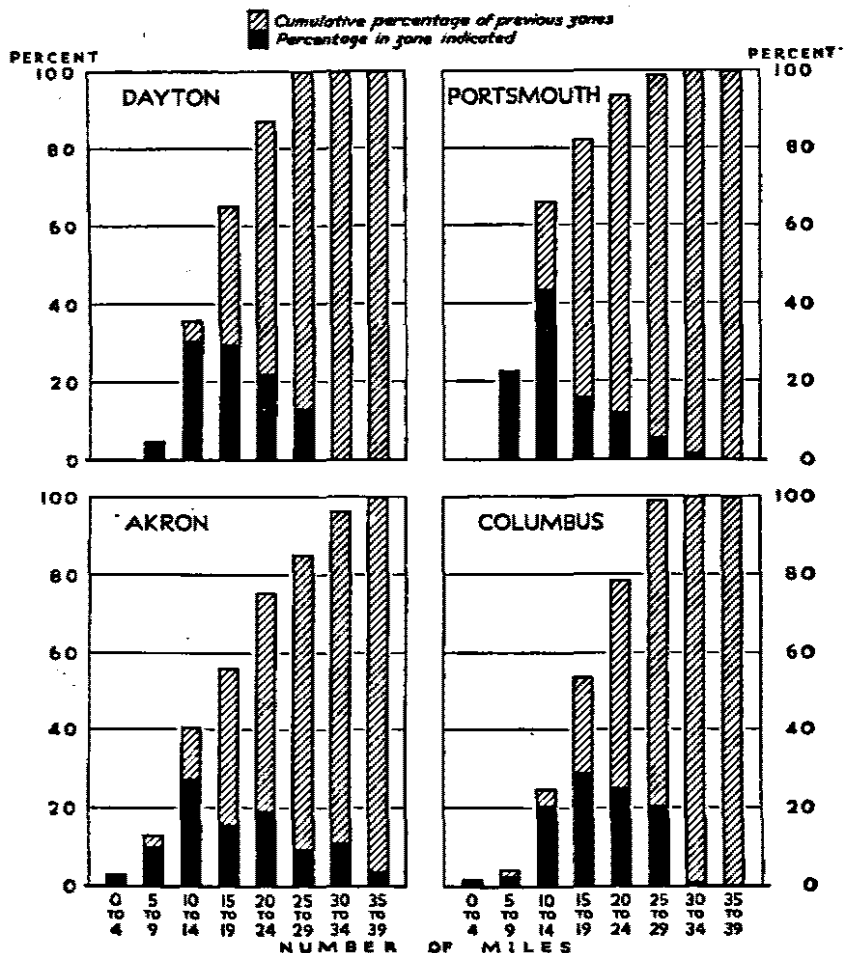


FIGURE 9.—FREQUENCY DISTRIBUTION OF PRODUCERS INTERVIEWED IN FOUR MARKETS IN OHIO, ACCORDING TO NUMBER OF MILES TO MARKET.

In each market close to 80 percent of the producers were within 25 miles of market, and except in Akron, none were more than 35 miles away.

amount which the average farmer has to pay for trucking, however, is vitally important, and has been much more so since 1930 when hauling rates did not decline with milk prices. In the Akron market, for example, before 1930 trucking rates were approximately 8 percent of the average milk price f. o. b. city, whereas in 1932 the rates amounted to about 16 percent of the f. o. b. city price.

The importance of hauling rates in these markets is illustrated further by the mention made of hauling arrangements by the producers interviewed in their general comments on marketing conditions and association activities. Approximately 27 percent of the producers

listing benefits from the association mentioned better hauling arrangements or lower hauling rates. About 9 percent of those who suggested more association activity along certain lines, referred specifically to hauling; and about 6 percent of those indicating that certain desirable results had not been accomplished, referred specifically to hauling arrangements. Only eight producers—3.6 percent of those answering—mentioned hauling as one of the unsatisfactory preassociation market conditions.

Association Activity in Hauling

The work which the older associations have done to improve hauling arrangements has all been done since 1930. Since that time trucks have been almost completely rerouted in Dayton, Akron, and Portsmouth and to some extent in Columbus, the number of routes reduced, and hauling rates materially lowered. At the time of this study the association in Dayton had the most complete control over hauling; those in Akron and Portsmouth had almost as much, while the Scioto Valley Association in Columbus has very little control as compared with the others. Specific authority to control hauling is given the association in Akron and is partially implied in Columbus in the marketing agreements with producers. In the other markets it comes apparently from the bylaws or articles of incorporation, which in most cases grant fairly broad powers.

The Miami Valley association in Dayton made a thorough study of rate structures, truck routes, and operating costs, in 1930 and 1931. On the basis of this study the association rerouted all trucks, reduced the number of trucks, reduced rates, acquired by purchase the equity of truckmen in established routes and took over complete control of hauling except for owning the trucks. Haulers were selected, routes planned, and rates determined by the association. All truckmen for milk sold through the association were placed under contract to the association.

The local units of the Milk Producers Association in Akron began in 1930 to exercise partial control over truck routings, to select haulers, and to determine rates by competitive bidding. Prior to that time the dealers exercised control in some parts of the area, but in most cases the truckers themselves had almost complete charge. The association as a whole has been prominent in the hauling set-up since 1932 when the first major rerouting project was undertaken. At the time of this study all the haulers in the territory were under contract to the association. Rates were determined and haulers selected jointly by the local units and the association. The locals arranged the routes and nominated one or more prospective haulers to the

association. The association made the final selection, taking into consideration both the hauling rate which had been offered, and the dependability of the trucker in question.

The association in Portsmouth first took charge of hauling operations in September 1932. At that time and again in 1935 all truckmen signed contracts with the association; the trucks were rerouted, and the rates revised. Rates were determined and hauling contracts made with truckmen on the basis of competitive bids provided the hauler in question was generally acceptable to the association and the producers on the route.

Hauling in Columbus in 1935 was apparently a joint responsibility of the dealers, the association, the producer committees on each route, and the truckers. The association had contracts with about 18 percent of the truckmen, and, according to association officials, had control of hauling only to this extent. The route committees and the dealers apparently exercised some degree of supervision or were consulted with reference to rates and organization of the other routes.

Determination of Rates

Rates were determined by agreement or by competitive bids in all of the markets except Dayton where the rate was set at actual cost, as determined by an association study, plus approximately \$4 per day per truckman. In addition to the unit hauling rate to the producers based on each 100 pounds of milk, there was a minimum charge per month per producer in three of the markets. In Dayton the minimum was \$3, in Akron \$2, and in Columbus it was the equivalent of the rate on 50 pounds of milk per day, or about \$3 per month at a rate of 20 cents per 100 pounds.



FIGURE 10.—MILK TRUCK OWNED BY THE MIAMI VALLEY COOPERATIVE MILK PRODUCERS ASSOCIATION IN DAYTON, OHIO.

The association in Dayton has given particular attention to the efficient planning of transportation arrangements.

Equipment

All of the trucks in the 4 markets, a total of about 210, were owned by the individual drivers, except three trucks owned by the association in Dayton (see fig. 10) and a few in Akron owned by private corporations. Contracts provide that trucks shall be equipped to conform to whatever regulations may be prescribed by Federal, State, county or city governments or health agencies, or by the association or dealers. Thus, in Akron trucks must have enclosed bodies, insulated, and refrigerated according to season—more stringent requirements than are in force in the other markets. In Columbus some of the individual dealers require special equipment, and the associations in Dayton and Portsmouth require either enclosed truck bodies or tarpaulin covers.

Hauling Contracts

The position of the haulers under the contract between them and the associations is that of independent contractors entirely responsible and liable for delivery of the milk to dealers' plants and for the return of empty cans and rejected milk to the farm. Bonds may be required at the discretion of the association to assure performance and to cover possible damages. Personal and property liability insurance for their trucks is required of all drivers, and in Akron the truckers must carry cargo insurance. The contracts are not transferable except as permitted by the association. They are made for periods of 1 to 3 years, but are usually allowed to run for longer periods unless there is cause to change their provisions or to invoke the 30-day notice cancellation clause. Payments to the haulers are made as a deduction from the return to the farmer. The amount is determined by the rate agreed upon, and the weights as recorded by the plant receiving the milk.

The association is a party to these contracts as an agent of producers. It has authority to name the producers whose milk the hauler shall transport, and to designate the plant or other point to which delivery shall be made.

According to association officials, the feeling is shared by all of them that the driver of milk trucks is either an important asset or liability to the association because of his frequent and direct contact with members. This is one of the reasons that close contact between haulers and the association is considered desirable. Especial attention is given to this relationship in Dayton, and a clause in the contract states that the trucker "agrees that he will not any time * * * make any derogatory remarks or statements that may in any way tend to injure the good reputation or standing * * *" of the association.

Results of the Work of the Associations

Lower Hauling Rates

Association officials believe that their activities in rerouting the tributary areas, with the resultant consolidation of routes and increased loads, have resulted in definitely lower rates. The trend in rates for hauling to three of the four markets for the years 1930 to 1935 is shown by table 20. Data are available for only 1934 and 1935 in Columbus and are not such as to prove or disprove the statement as to reductions in rates. In Portsmouth the rate in 1935 was higher than for either of the preceding 3 years, but was much lower than in 1931 and was lowered from 16.5 to 14.8 cents by the end of 1935. Significant reductions have been made in Dayton and in Akron, according to these figures, and the number of routes materially reduced.

TABLE 20.—HAULING RATES PER 100 POUNDS AND NUMBER OF TRUCK ROUTES, 1930 TO 1935 ¹

Year	Akron		Columbus ²		Dayton		Portsmouth	
	Hauling cost	Truck routes	Hauling cost	Truck routes	Hauling cost	Truck routes	Hauling cost	Truck routes
	<i>Cents</i>	<i>Number</i>	<i>Cents</i>	<i>Number</i>	<i>Cents</i>	<i>Number</i>	<i>Cents</i>	<i>Number</i>
1930.....	26.0	85			37.4	54		
1931.....	26.0	85			32.0	44	27.6	17
1932.....	21.0	97			27.1	37	15.4	10
1933.....	18.4	67			26.2	37	15.2	10
1934.....	18.0	65	21.0		26.6	37	15.1	11
1935.....	20.3	61	21.0	102	26.6	37	* 16.5	* 11

¹ As estimated by association officials.

² Data apply to the entire market.

³ A reorganization in 1935 reduced the number of routes to 9 and the average rate to 14.8 cents.

The hauling rates at the time of this study were highest in Dayton, 5 to 6 cents per 100 pounds lower in Columbus and Akron, and still lower by about 4 cents in Portsmouth. The average rate as given by association officials for the entire market in each case compared very closely with the simple average of the rates as stated by the producers interviewed. In Dayton the association stated that the average rate was 26.6 cents, and the average based on the estimates of the 183 producers interviewed was 26.5 cents. In Columbus the two figures were 21 and 20.2 cents, respectively; in Akron 20.3 and 19.3; and in Portsmouth 16.5 and 16.5 cents.

Size of Loads

For 1935 the average trucker in Columbus and Portsmouth apparently had a daily load of from 2,500 to 3,000 pounds of milk; in Dayton, a load of slightly over 3,000 pounds; while the average in Akron was

close to 4,000 pounds per day. As compared with previous years these loads were relatively small. The reorganization of routes which ordinarily would have given haulers a larger load apparently was more than offset by reductions in the quantity of milk marketed. In Akron, for example, total receipts declined 55 million pounds per year or about 37 percent between 1931 and 1935; in Portsmouth, over 20 percent from 1932 to 1935. Changes in pool operations under State control in Dayton and Columbus prevent such comparisons for these markets, because available statistics do not apply to the same parts of the market.

Factors Affecting Hauling Rates

The rate in any market will tend to be influenced mainly by two factors—the costs of operating and the margin above cost which competition for routes enables the trucker to take. No attempt was made in this study to determine the costs of operating trucks or to justify differences between rates in the four markets on the basis of costs. Some of the statistical data obtained, however, has been compared in such a way as to reveal differences in hauling conditions which may affect hauling rates as well as total income from hauling (table 21).

TABLE 21.—SELECTED FACTORS PERTINENT TO OPERATING COSTS AND OPERATING INCOME FROM MILK HAULING, 1934 TO 1935

Item	Akron	Colum- bus	Dayton	Porte- mouth	Weighted average of 4 markets
Hauling rate:					
Average for all members.....cents per 100 pounds	20.3	21.0	26.6	16.5	21.5
Average for producers interviewed.....cents per 100 pounds	19.3	20.2	26.5	16.5	21.3
Length of average truck route ¹miles	60	66	66	70	63
Average distance from market of producers inter- viewed.....miles	18.2	18.4	15.9	13.7	17.4
Producers per route ¹number	26	18	42	22	26
Milk per truck per day ²pounds	4,199	2,606	3,200	2,864	3,184
Mean deviation in monthly market receipts July 1934-July 1935 ³percent	11.4	7.9	10.4	10.9	9.6

¹ Estimated by association.

² Akron estimated on the basis of 61 trucks, 2,220 Akron shippers and 83,500,000 pounds of milk per year. Columbus: 102 trucks, 1,850 shippers, and 97,000,000 pounds of milk per year; Portsmouth: 11 trucks, 240 shippers, and 11,600,000 pounds of milk per year; Dayton figures as revealed by 1934 survey of trucking by the association.

³ As a percentage of the monthly average. (See table 16.)

In addition to these influences, two other facts are important with reference to differences between markets. The first is that the requirements as to equipment and facilities in Akron—type of body, insulation, and refrigeration—undoubtedly increase the costs in that market to some extent as compared with the other markets where there are no such requirements. The second is that the practice of the association in Dayton of paying the haulers approximately \$4 per day in addition to certain costs other than labor probably gives Dayton truckers a

higher income. On the basis of association rates and average loads as shown in table 24, the hauler in Dayton has a daily gross income of \$8.56 as compared with \$8.52 in Akron, \$5.47 in Columbus, and \$4.73 in Portsmouth.

This comparison of hauling rates between markets indicates practically no relationship between mileage traveled and the rate or between average distance from market and the hauling rate. These factors would certainly affect the actual costs of operating the trucks. Under competitive bidding as practiced in these markets, it is apparent, therefore, that potential gross income is more important than costs of operation in determining rate structures.

Within each milkshed where other conditions are more nearly the same and as indicated by the rates paid by the producers interviewed, distance from market appeared to be of some importance as a factor affecting hauling rates. The extent to which this was true is shown by the data in table 22. Even in the separate areas, however, the influence of mileage, especially on the rate charged individual producers, was modified by the fact that all producers on a given route were charged the same rate, regardless of the fact that some were as far as 30 to 35 miles from market and others only 5 to 10 miles out.

TABLE 22.—DISTRIBUTION OF PRODUCERS AND AVERAGE HAULING RATE BY MILEAGE ZONES AS REPORTED BY 652 PRODUCERS, 1935

Miles from market	Akron		Columbus		Dayton		Portsmouth		Total	
	Producers	Hauling rate	Producers	Hauling rate	Producers	Hauling rate	Producers	Hauling rate	Producers	Hauling rate
	Number	Cents per 100 pounds	Number	Cents per 100 pounds	Number	Cents per 100 pounds	Number	Cents per 100 pounds	Number	Cents per 100 pounds
0-9.....	28	17.9	7	19.3	9	24.2	17	15.9	61	18.5
10-14.....	59	18.8	36	19.6	56	24.2	33	15.8	184	20.0
15-19.....	34	19.2	51	20.0	54	26.3	12	16.3	151	21.8
20-24.....	42	19.5	44	20.5	40	25.8	9	19.8	135	22.9
25-29.....	21	20.2	36	20.5	24	27.8	4	18.0	85	22.4
30 and over ¹	32	20.5	3	23.3	0	1	18.0	36	20.7
Total.....	218	19.3	177	20.2	183	26.5	76	16.5	652	21.3

¹ Only 9 producers, 8 of whom were in Akron, were more than 35 miles from market.

² Not fully comparable because of no sample in this zone for the Dayton market.

The combination of these various factors suggests that in Dayton the relatively large loads, the apparently well-planned routes, and the nearness to market of the average producer—all conducive to a low rate—are more than offset by the large number of stops necessary because of low production per member and by the association guarantee of a labor income to the trucker. In Portsmouth, on the other extreme, a relatively high production per member, necessitating fewer stops in order to get a fair load, apparently more than offsets the fact that the truckers have to travel a greater mileage than in the other markets to obtain their loads.

In Akron the large volume of milk per truck and the low mileage per route is partially offset by the lower production per member and by the heavy investment in trucks required. In Columbus the heavy production per member is a favorable factor but its effect is modified by the fact that the average truck hauls less milk than in the other markets.

Opinions of Members

Despite the fact that at the time of this study rates were higher in Dayton and Columbus than in Akron and Portsmouth as compared with 1930 and previous years, association officials believe that existing conditions in these two markets represent a very substantial improvement. This belief is supported, in part at least, by the fact that of the 128 producers in the four markets who listed hauling as a benefit from their association, 56 were in Dayton and 50 in Columbus. It is also important, however, that 6 of the 20 producers who stated that their association had not accomplished as much as might have been expected in the way of better hauling arrangements, were in Columbus and 9 were in Dayton; and 9 of the 18 who suggested that more attention be given to rerouting or otherwise improving hauling conditions were in Columbus. This type of reference to hauling by producers was made as a part of the answer to general questions in which hauling was not mentioned by the field workers, and for that reason may be considered largely spontaneous.

Producers were not asked specifically whether or not they had benefited from the association's work with hauling arrangements nor whether they approved of present procedure. They were asked "Do you think the association should handle all hauling?" (table 23). The question was not particularly pertinent to members of the new associations because these have done nothing with reference to hauling.

TABLE 23.—OPINIONS OF 564 MEMBERS OF OLD ASSOCIATIONS AS TO WHETHER THEIR ASSOCIATION SHOULD HANDLE MILK HAULING¹

Reply to question ²	Producers replying from—									
	Akron		Columbus		Dayton		Portsmouth		Total	
	Number	Per-cent ³	Number	Per-cent ³	Number	Per-cent ³	Number	Per-cent ³	Number	Per-cent ³
Yes.....	127	78.1	72	59.5	127	80.4	25	50.7	271	70.3
No.....	43	29.9	49	40.5	31	19.6	34	68.3	167	28.7
Total.....	180	100.0	121	100.0	158	100.0	69	100.0	428	100.0

¹ Do you think the association should handle all hauling?

² 26 producers, 14 in Akron, 8 in Columbus, 7 in Dayton, and 7 in Portsmouth gave indefinite answers.

Approximately 70 percent of those who gave a definite answer indicated that their association should handle the hauling. New

association members were about evenly divided on the question. The percentage answering, "yes," was considerably higher in Dayton and Akron and much lower in Columbus and Portsmouth.

More detailed examination of the answers, most of which were made without additional comment, shows that there was little relationship between a producer's reply and his present hauling rate, his group classification, or his distance from market.

Butterfat Testing and Sampling by the Associations

TESTING samples of the milk for butterfat content is one of the most important phases of the milk-marketing activities of these associations and one on which all, particularly those in Dayton and Columbus, expend a sizable proportion of their income (fig. 4). No premiums are paid for high-quality milk on any other basis, so that a high butterfat test for his milk offers the only way in which the price to the individual producer may be higher than quoted prices for the standard grade of milk. This increases the importance of butterfat tests to the producer, and makes for a keener interest on his part in the accuracy of the tests.

Price quotations in Columbus, Dayton, and Portsmouth are for milk testing 4 percent butterfat; in Akron, for milk testing 3.5 percent. (See table 10.) The price to individual producers then is adjusted up or down according to the amount by which the average butterfat content of his milk, as determined by laboratory tests, is above or below these percentages. The amount of the adjustment made for each point—0.1 percent—is set up in schedule form in each market, and usually varies directly with the price of 92-score creamery butter at Chicago. The amount per point usually corresponds very closely to one-tenth of this Chicago butter price.

Practices of Associations

The Miami Valley Association, in Dayton, now has full control over sampling and testing the milk of its members, having performed testing since 1922 and sampling since 1927. This work is done entirely by association employees and all expenses involved are paid out of the organization's operating income. Samples are taken in Dayton every 2 or 3 days and the tests made twice each month.¹⁸ Altogether

¹⁸ A small sample of each producer's milk is taken as the milk is emptied into dealers' receiving tanks, and the sample is placed in a container bearing that producer's name or shipping number. This sample may be tested for butterfat immediately or it may be combined with samples taken before or afterwards and one test made of the series of samples. The former is known as a "fresh" sample, and the latter a "composite" sample. "Composites" are usually tested before any single daily sample in the series is more than 15 days old.

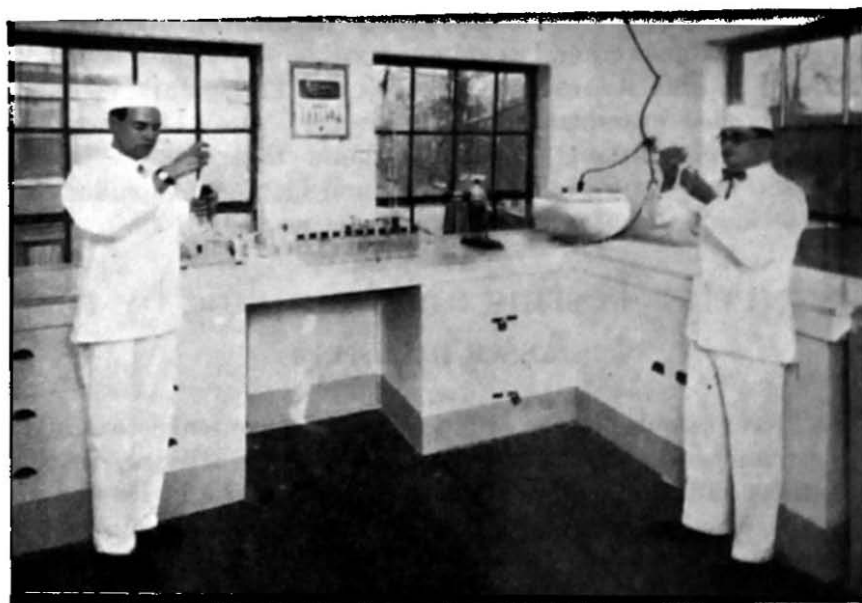


FIGURE 11.—INTERIOR VIEW OF THE ASSOCIATION BUTTERFAT TESTING LABORATORY IN DAYTON, OHIO, 1928.

The older associations in Dayton and Columbus have complete control of the sampling and testing of the milk of their members.

six men are employed in this work, one of them on a part-time basis, and the total cost amounts to approximately \$8,000 per year. (See fig. 11.) Prices to members are calculated on the basis of the association's test.

The Scioto Valley Association, in Columbus, began testing milk in 1924 and sampling in 1927. The extent of control over sampling and testing exercised at present by the association in Columbus is almost as complete as in Dayton, the only difference being that in Columbus approximately one-third of the salaries and expenses for the testers is borne by the dealers. Six men, one of them in a secondary market, are employed to do the work. The tests are made two or three times per month of composite samples made up of small samples taken daily from each producer's milk shipments. Tests made by the association have been used as the basis for calculating prices to producers since December 1924.

In Portsmouth, a part-time employee of the association spends about 4 days per month testing the composite milk samples made up of daily samples taken by the dealers from each member's milk. The cost of testing is paid entirely by the association and usually amounts to about \$140 per year for the tester plus the cost of the necessary supplies and equipment. Dealers have been paying producers on the basis of these tests since September 1932.

Very little work in testing is done by the Milk Producers Association in Akron, although check-tests and individual-cow tests are made on request. Equipment is maintained at the association office and the work done by the association secretary. The regular testing is done by the dealers receiving the milk, who test a composite sample for each producer twice each month.

Members' Attitudes Toward Testing by Associations

A direct measure of the results of the work of these cooperatives in sampling and testing is clearly impossible, since there is no way to determine the accuracy of the tests either before or since the associations have been active in this marketing activity. As is the case with many of the other services rendered by milk-bargaining associations, the attitudes of the members are probably about the best, if not the only, indication of the results achieved. Member attitudes are indicated in three ways: (1) The number of complaints regarding tests as reported by associations; (2) the unsolicited references to testing in the general comments of producers interviewed; and (3) the answers of producers interviewed to a specific question on testing.

According to officials of the respective associations, the number of complaints from members regarding butterfat tests during 1934 numbered about 50 in Columbus, 120 in Dayton, 145 in Portsmouth, and 550 in Akron. These officials also stated that the number of complaints had become less frequent as the associations assumed more control over sampling and testing the milk of members. In Akron, for example, the number per year decreased from 3,173 in 1930 to 2,200 in 1931, 1,500 in 1932, and 550 in 1934.

More satisfactory butterfat tests were listed as a specific market benefit creditable to their association by 129, or 27.3 percent, of the 472 members who mentioned such benefits. (See p. 27.) Of these, over half, or 69, were in Columbus, 53 in Dayton, 4 in Akron, and 3 in Portsmouth. On the other hand, 65 members, 42 of them in Akron and 17 in Portsmouth, indicated that their association should devote more attention to testing or to checking the dealers' tests and weights. Twenty members, thirteen of them in Akron, stated that their association had not accomplished all that might have been expected of it in the way of bringing about more satisfactory tests. About one-fourth of the members who listed unsatisfactory conditions in the market before the association was organized, mentioned tests. Most of these were in Dayton and Columbus.

Producers were asked directly whether or not their butterfat tests had been any more satisfactory since they became members of the association (table 24). They were also asked to give any criticisms they might have with reference to these tests. On the basis of definite

answers only, the percentage who felt that their tests were more satisfactory was slightly below 50 percent for all four associations. However, in Columbus and Dayton where more work had been done and the associations have full control, close to 60 percent felt that they were getting more satisfactory service.

TABLE 24.—ATTITUDES OF 564 MEMBERS OF THE OLDER ASSOCIATIONS AS TO WHETHER OR NOT BUTTERFAT TESTS HAVE BEEN MORE SATISFACTORY SINCE THEY BECAME MEMBERS OF THE ASSOCIATION

Indicated reply ¹	Number of producers replying from—				
	Akron	Columbus	Dayton	Portsmouth	Total
Yes.....	42	85	98	21	246
No.....	57	44	46	27	214
Indefinite.....	64	20	22	8	144
Total.....	194	129	166	76	564

¹ "Have your tests been more satisfactory since becoming a member of the association?"

The criticisms which were made by producers who answered either "yes" or "no" definitely were not such as to facilitate tabulation. Fully 80 percent of those who answered "yes" made no comment, and most of the remaining 20 percent merely amplified or qualified their answer. Very few of those who answered "no" made any criticism except in Akron and Dayton. In Akron about 30 percent of these producers indicated that the association should do more or should do all of the testing. Almost as many complained of low tests. In Dayton, about 20 percent complained of low tests.

It is significant that these indications of members' attitudes show in each instance a much more favorable reaction to the testing arrangements in Dayton and Columbus where a more comprehensive program was being undertaken by the association. The reactions of members were somewhat less favorable in Portsmouth where less is done, and even less in Akron where all of the work of sampling and testing is done by dealers.

In view of the interest shown by members in butterfat tests, the Milk Producers Association, in Akron, late in 1935 conducted a poll of its membership to determine whether or not the association should sample and test the milk shipped into market by producers. It was necessary in this connection that the members vote to increase the association commission to 2 cents per 100 pounds. Approximately 60 percent voted against the proposal.

Other Activities of the Associations

IN ADDITION to the activities described in earlier sections and to their work in membership relations, discussion of which is reserved for a later section, one or more other activities, such as quality work, advertising or consumer education, purchasing supplies for members, and participation in State and national legislative organizations, are carried on by the various older associations.

Quality Improvement

None of the older associations was directing much effort toward quality improvement at the time of this study. Most of their activities in this connection had been in cooperation with city health authorities and had consisted of helping health authorities to disseminate information representing producers' interests before the health authorities, issuing warnings to members in seasons when quality needs to be watched more closely, and helping individual members to meet health requirements. The time and effort expended on quality programs have not been increased within the last 5 years, according to association officials, except to some extent in Dayton.

Only 7 producers out of 472 listed quality improvement as a benefit from the association. Five producers, all in Akron, listed quality conditions as being particularly unsatisfactory before the association was organized. One producer in Columbus suggested that more be done in quality improvement, and three producers (two in Akron and one in Columbus) indicated that their association had not accomplished all that might have been expected of it in the way of quality. It should be clear from this that quality improvement is not a very prominent activity of the associations, according to producers.

All of the producers were asked specifically whether or not their association had helped to improve the quality of their milk. For the four markets as a whole, approximately 250 answered in the affirmative and 325 in the negative—43.5 and 56.5 percent, respectively. For the separate markets, however, the percentage indicating that their association had been of some help was well over 50 percent in Dayton, Portsmouth, and Akron.

Advertising Milk

Advertising is relatively important as an indirect activity of the associations in Columbus and Dayton, a little less so in Akron, while no advertising of any kind is done by the association in Portsmouth. (See fig. 4.) In the three former markets the work is carried on mostly by local units of the National Dairy Council, a Nation-wide organization set up specifically to do consumer educational work in

advertising milk and other dairy products. The Columbus unit is financed by 2 cents per 100 pounds of base milk, which is paid by the dealers as a reciprocal move to offset the 2 cents paid by producers to finance the control committee. (See table 3.) In Dayton association members contribute 1 cent per 100 pounds of base to cover advertising expense. In Akron the association contributes a nominal sum to the dairy council unit each year, and in addition has done some newspaper advertising jointly with dealers, and has financed the erection of 200 milk-bottle signs advertising milk.

No producers mentioned advertising either as an unsatisfactory condition before organization nor as a benefit or improved market condition since that time. It was mentioned by 14 producers, however (7 in Akron, 3 in Portsmouth, and 2 each in Columbus and Dayton), as one of the activities to which more attention should be given by the cooperatives. In answer to a direct question on the subject, 363 producers in Akron, Columbus, and Dayton indicated their approval of the dairy council deduction or contribution and 144 did not favor the idea. There was little difference between the three markets in the percentage favorable.

Cooperative Purchase of Supplies

The Miami Valley association, in Dayton, and the Scioto County association, in Portsmouth, were the only ones handling or purchasing dairy supplies for their members at the time of this study. The supplies handled included milk cans, pails, strainers, strainer disks, sterilizers, stirring rods, milk carts, stock spray, and thermometers. Sales to members averaged close to \$5 per year per member for each association. According to association officials, a substantial saving has been made for members on all of these purchases. No questions were asked of producers with reference to cooperative purchasing activities.

Representation of Producers' Interests

Judging from the comments of members, one of the main functions of their associations is to "represent the interests of dairy farmers" at every opportunity. Such general comments usually referred, however, to representation in price negotiations with dealers and in other matters of local application having to do directly with milk prices or marketing arrangements. Each of the four cooperatives studied is a member of the Ohio Milk Producers Federation, organized in 1935 with headquarters in Columbus. The work of this federation includes representation of the interests of producers in various ways and the dissemination of information to its members. The State federation replaced the Central Dairy Producers' Council, a somewhat similar organization which had been in existence for several years prior to 1935.

The older associations in Akron, Columbus, and Dayton are also members of the National Cooperative Milk Producers' Federation, Washington, D. C., an organization made up of over 50 of the larger dairy cooperatives in the United States. This federation has been active since 1918. In addition to its general activities,¹⁹ the National publishes a price report each month with a summary of market conditions for all dairy products, and attempts to keep its members generally informed on matters of national interest to them as groups of dairy farmers.

Membership Relations

ALL OF the cooperative milk-marketing associations in this study are voluntary²⁰ membership organizations. According to their bylaws "all persons who own or control cows producing milk or cream or butter for the market shall be eligible for membership upon the payment of an initial membership fee by them, and upon entering into and becoming bound by contract to the association."²¹ Marketing agreements with producers are in force in each market, and except in Akron where a certificate of membership is issued and where the membership fee is on an annual basis, membership is represented by a duplicate copy of the signed agreement returned to the producer.

Since they are voluntary, the strength and the effectiveness of these associations depend at all times upon the extent to which members control, understand, and support the work of the association and its officers, directors, and committees. Under these conditions one of the most important activities of the associations is their method of approach to problems involving the relationship between members and the association. The objectives of membership work are to maintain membership control and support of the cooperative in actual practice, and to educate or disseminate information to members. The latter is particularly important because upon it depends the ability of members to control the association judiciously and to support it in a fair and unprejudiced manner.

Control by Members

Responsibility for the conduct of the various affairs of each of these associations is vested in boards of directors, duly elected by a direct vote of the members. In Columbus, Dayton, and Portsmouth, each

¹⁹ Annual report of Charles W. Holman, secretary, National Cooperative Milk Producers' Federation, 1934, 1731 Eye Street NW., Washington, D. C.

²⁰ Modified in some cases with respect to selling to individual dealers in the market because of association-dealer full-supply contracts.

²¹ Soloto Valley Cooperative Milk Producers Association, art. I, sec. I-a of regulations. Provisions are similar for the other three older associations.

member is given an opportunity to vote on the election of each director. Names of candidates are placed in nomination by the advisory council, a body of previously elected representatives of the various local branches. In Akron there is one director from each local, separately elected by the members of that local. A part of the authority of boards of directors is usually delegated to smaller committees of one kind or another. Actual control by directors is modified somewhat also by advisory councilmen or local chairmen elected by a direct vote of members to act in an advisory capacity.

Attendance at the meetings at which elections are held is in no one of these associations anywhere near 100 percent. In Columbus where no annual meeting of the entire membership is held, the association estimated the average attendance at local meetings at only 33 percent. In Akron the association estimated an attendance of 500 to 700 out of nearly 3,000 members at the annual meeting of the central association, and an average of 60 percent of the total at local meetings. Local meetings in Portsmouth average about 50 percent attendance and the annual meeting draws from 125 to 400, including families of members. In Dayton only 30 to 35 percent attend local meetings and 1,500 to 2,000, including families, attend the annual meeting. On the whole, therefore, control is exercised by less than half of the members.

Educational Activities and Contacts with Members

The voluntary support which members give their association depends largely upon a clear understanding of the objectives and the operating practices of their association. This fact was brought out by the producers themselves in their answers to general questions asked in the interviews. Among the many reasons given for a change to a more favorable attitude toward the association "understand it better" and "know more about it" were mentioned more frequently than any others except "the association is doing a better job." Over 20 percent of the producers answering the question as to which activities should be added or given more attention, listed membership relations or educational work. Each of these cooperatives emphasized educational work as an important service activity, although the methods used to maintain contact with and to disseminate information to members varied between markets.

Local Meetings

Local branches or local units are a part of the organizational structure of each of the associations. There are 54 locals in the Akron association, 42 in the old association in Columbus, 32 in the Miami Valley association in Dayton, and 13 in Portsmouth. Each of these locals holds an annual meeting for the election of officers and repre-

sentatives to the central association, and to transact other business. Most of them also hold one or more additional meetings to consider special problems, or for educational or social purposes.

Officials from the central associations usually attend each of these local meetings and appear on their programs. The Columbus area was exceptional in this respect, where only about 30 percent of the meetings were attended by an association official. The programs for the local meetings were not carefully planned in most instances. Attendance at these meetings, according to the associations, averaged 60 percent in Akron, 50 percent in Portsmouth, 30 to 35 percent in Dayton, and about 33 percent in Columbus. It would seem, therefore, that perhaps the best opportunity for personal contact and for information as to the association's activities is being wasted by a large majority of the members and, to a lesser extent, by association officials.

Producers were asked the number of local meetings held during the last year, the number they themselves attended (tables 25 and 26), and the purpose or value of such meetings. Replies indicated that on the average between two and three meetings were held in each local. The number held and the number attended was highest in Portsmouth.

TABLE 25.—ATTENDANCE AT LOCAL MEETINGS AS REPORTED BY PRODUCERS

Market	Producers reporting as indicated							
	Attended all meetings		Attended part of meetings		Attended no meetings		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Akron.....	138	67	28	14	40	19	206	100
Columbus.....	55	33	51	30	61	37	167	100
Dayton.....	59	34	44	25	71	41	174	100
Portsmouth.....	24	32	39	51	13	17	76	100
Total.....	276	44	162	26	185	36	623	100

TABLE 26.—AVERAGE NUMBER OF LOCAL MEETINGS HELD, NUMBER OF MEETINGS ATTENDED PER PRODUCER, AND AVERAGE PERCENTAGE ATTENDANCE AS REPORTED BY PRODUCERS

Market	Average meetings held per local ¹	Average meetings attended per producer ²	Indicated percentage of attendance
	Number	Number	Percent
Akron.....	1.75	1.35	77
Columbus.....	2.25	1.05	47
Dayton.....	2.00	.90	45
Portsmouth.....	5.39	2.95	56
Total.....	2.40	1.55	56

¹ As reported by 513 producers.² As reported by 623 producers.

Fewer local meetings were held in Akron but the percentage of producers interviewed who attended all meetings was much higher than in the other markets.²³ The average producer in Dayton and Columbus attended less than half of the local meetings held. Over 20 percent of the producers interviewed did not know how many meetings had been held during the past year, although most of them did know how many they had attended.

As to the value of local meetings, over 65 of the producers listed specific values; less than 10 percent indicated that the meetings were of little or no value; and close to 25 percent gave an indefinite answer (table 27). Of those listing specific values, about one-sixth stated that "elections" was the only value. The others mentioned a wide variety of reasons why they felt the meetings were worth-while; such as "educational", "discussion of association policies", "discussion of market conditions", and "meeting other producers."

TABLE 27.—EXTENT TO WHICH LOCAL MEETINGS ARE HELPFUL AS REPORTED BY 652 PRODUCERS INTERVIEWED

Indicated value to producers ¹	Number producers reporting from—				
	Akron	Columbus	Dayton	Portsmouth	Total
Little or no value.....	20	8	16	13	57
Indefinite answer.....	52	35	59	14	159
For election only.....	5	48	17	4	74
Other business, social, or educational value.....	176	96	92	45	369
Total.....	216	177	184	76	652

¹ "Of what value are local unit meetings?"

Annual Meetings

The associations in Akron, Portsmouth, and Dayton hold an annual meeting each year to which all association members are invited. In Portsmouth this meeting is entirely for business. The only part of the program that could be considered as devoted to educational work is the reading of annual reports. In Dayton and Akron, on the other hand, annual meetings are planned so as to allot a definite part of the program to business, to education, and to social contacts. Special outside speakers are frequently obtained as a part of the educational feature. Attendance at these meetings ranges from 20 to 50 percent of the members.

Association Literature

The second most important method of disseminating information to members is through association literature. Procedure in the

²³ In this connection, the Milk Producers Association in Akron returns to its locals one-half of the annual membership fees collected from producers, thus encouraging the development of local activity. This is the only one of the four markets in which this is done.

separate markets differs somewhat, but each association attempts to have some type of literature reach each member each month. In Dayton the association publishes a house organ—"The Miami Valley Dairyman"—in the form of a 4-to-8 page magazine or paper which has a circulation of approximately 3,400. Publication is scheduled each month though this schedule has not been maintained in recent years. This house organ is supplemented by 5 to 6 circular letters each year on special subjects of current interest.

The association in Columbus uses a page each month in the Ohio Farm Bureau News as an outlet for information. The News is sent to all of its members at the expense of the association. This information is supplemented by 6 to 7 circular letters per year, sent to all milk shippers in the market, dealing with special subjects. The association in Akron sends out to all members a monthly "price-card" carrying market statistics on one side and a message from the association management on the other. Letters are sent only to the board of directors and to local officers. In Portsmouth a regular mimeographed news letter is sent monthly to each member, and additional letters on special subjects are sent as necessary.

The producers interviewed were almost unanimous in stating that they read all of the association literature received. They indicated that the news of most interest to them was the summaries of market conditions, prices and other market statistics, general association news, notices of meetings, and changes in market practices. Fifty-nine producers (38 in Akron, 13 in Columbus, and 8 in Portsmouth), stated definitely that they were not getting enough information from their association and about the market.

Producers were also asked if they would favor a regular publication by their association, presumably a paper or magazine each month. In Dayton, replies to this question meant approval or disapproval of the existing procedure, whereas in the other three markets they indicated a desire for a change in the method of disseminating information. For all markets, 90 producers gave an indefinite answer and the remaining 562 were almost evenly divided on the issue. For the separate markets, producers in Dayton were 9 to 1 in favor of a publication, in Akron about evenly divided, and in Portsmouth and Columbus over 3 to 1 against the idea.

Field Visits

Visits to the farms of members are a definite part of the educational and service programs of each of these cooperatives. Only in Dayton does the association employ a man specifically for field work, but in each association numerous farm visits are made each year by association officials.

The full-time field man in Dayton and two of the association's officers together make 1,200 to 1,500 farm visits per year for the purpose of helping producers to meet quality requirements, to solve hauling problems and base problems, and to obtain new members. In Portsmouth the secretary-manager spends a considerable portion of his time in field work and apparently visits each member's farm about twice each year on the average. A small membership fairly well concentrated makes this possible. Field visits are less frequent in Akron and Columbus, where the association presidents or managers do the work and make about 200 visits per year for the purpose of signing members to marketing agreements and working out special or individual problems.

Other Contacts with Members

In these markets there are three other methods of contact between the individual member and the association: (1) Haulers, (2) local officials, and (3) visits to the office. Drivers of milk trucks meet the individual producers every day and are a potential asset to the association in its membership work. Recognition of this fact has resulted in an effort to maintain close and friendly contacts between the associations and the milk haulers. This has been particularly true in Dayton where the drivers are closely connected with the association (p. 52) and are now used by it to disseminate information and to obtain signatures of new members to marketing agreements.

Advisory councilmen or local chairmen take an active part in the affairs of each association. They are so located that no member's farm is more than a mile or two from that of such an official. Over two-thirds of the producers indicated that they were acquainted personally with the advisory councilman for their local organization. Farm visits are made by these officers only on special problems.

Visits to the association office can be made rather easily by the members of each of these cooperatives, since the average distance from producers' farms to market is not over 20 miles in any of the four markets. In Portsmouth where the average distance is shortest, the manager estimated that at least 60 percent of the members visit the office each year.

Further emphasis to the fact that loyalty to the association is more likely to be found among producers who understand its activities is given by comparing the attitudes of all producers with those of selected groups which for various reasons had a better understanding of their association. Such comparisons were made by segregating those producers interviewed who were either officers or advisory councilmen and segregating producers placed in group I (p. 5).

Forty-four of the producers were advisory councilmen and officers of their respective associations. Less than 5 percent of these were less favorable to their association than when they had first joined, as compared with 20 percent for the entire sample. About 66 percent were more favorable in this group as compared with 34 percent in the entire sample. None of the 44 felt that conditions were no better than before formation of the association, while nearly 20 percent of all producers interviewed held this opinion. Only 3 of the 44 felt that the base-surplus plan was of no help, as compared with over 40 percent for the entire group.

A comparison of the attitudes of group I producers with those of all producers interviewed shows about the same relationship. Differences between groups in the interest shown in the association are illustrated by the fact that the group I producers attended on the average 1.6 local meetings per year; group II, 1.3 meetings; and group III, 0.9 meetings. The percentage of full attendance at local unit meetings was 73 percent among group I producers, 51 percent among group II, and 42 percent among group III producers.

Of 496 association members expressing a definite opinion on the base-surplus plan, 60 percent felt that it did help the market. On the other hand, this belief was held by 83 percent of group I producers, 50 percent of those in group II, and 40 percent of those classified in group III. Only 12 percent of group I producers were less favorable to their association than when they first became members as compared with 21 percent in group II and 28 percent in group III. Those having a more favorable attitude were 46 percent, 31 percent, and 19 percent of the respective group totals. Approximately 77 percent of group I producers indicated that marketing conditions were better than before the association was formed or than if there were no association, and only 10 percent stated definitely that they were not better. Corresponding percentages for all producers interviewed were 63 and 19 respectively.

The striking differences between the attitudes of these separate groups of producers were found in each of the markets. They indicate that those members who know more about their association's work are more likely to be loyal to it, and to favor the steps taken to improve marketing conditions. Until there is more definite assurance that the associations have exhausted all reasonable means of educating and arousing the active interest of producers of the type classified as group III in this study, these data should not be interpreted as meaning that cooperative milk marketing should confine itself to the better educated and more progressive farmers. The conscious effort made by many fluid-milk bargaining cooperatives to include in their membership as large a proportion of the active shippers in the area as is possible makes the latter consideration particularly important.

Appendix

Basic Statistical Data

TABLE 28.—PRICES PAID BY DISTRIBUTORS FOR MILK OF STANDARD GRADE TESTING 4 PERCENT BUTTERFAT F. O. B. AKRON, COLUMBUS, DAYTON, AND PORTSMOUTH, OHIO, 1923 TO 1935¹

Year	Class I price per 100 pounds				Weighted average price per 100 pounds			
	Akron ²	Columbus	Dayton	Portsmouth	Akron ²	Columbus	Dayton	Portsmouth
1923.....	\$3.64				\$3.22	\$2.79	\$2.54	
1924.....	2.57				3.02	2.50	2.45	
1925.....	3.55	\$2.77	\$2.49		3.06	2.61		
1926.....	3.58	2.83	2.51		3.03	2.69	2.39	
1927.....	3.58	3.05	2.53		3.07	2.90	2.45	
1928.....	3.55	2.98	2.66		3.03	2.63	2.66	
1929.....	3.62	3.11	2.58		3.07	2.98	2.59	
1930.....	3.43	2.82	2.29		2.63	2.65	2.29	
1931.....	2.46	2.13	1.90	\$2.82	1.82	2.01	1.66	\$2.12
1932.....	1.66	1.50	1.57	2.34	1.40	1.49	1.35	1.66
1933.....	1.75	1.55	1.37	2.05	1.51	1.47	1.26	1.53
1934.....	2.19	1.96	1.83	2.11	1.93	1.79	1.56	1.79
1935.....	2.37	2.11	1.97	2.35	1.99	1.87	1.70	2.03

¹ As estimated from data obtained from association offices. Simple averages of monthly prices are used in several of the earlier years where data on sales are lacking.

² Prices are quoted in Akron for milk testing 3.5 percent. Adjustments are made by using 5 times 1/10 of the average price of 92 score butter at Chicago.

³ Pool prices—class I not available.

TABLE 29.—PRICES RECEIVED BY OHIO FARMERS FOR SELECTED PRODUCTS, 1923 TO 1935¹

Year	Corn per bushel	Wheat per bushel	Hay per ton	Beef cattle per 100 pounds	Veal calves per 100 pounds	Hogs per 100 pounds	Eggs per dozen	Butterfat per pound
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Cents	Cents
1923.....	0.86	1.00	15.90	8.90	9.90	7.40	28.3	45
1924.....	1.15	1.44	12.30	8.80	10.00	8.10	28.4	42
1925.....	.64	1.56	14.40	7.20	10.70	11.50	31.4	43
1926.....	.75	1.26	13.00	7.20	11.65	12.50	29.9	43
1927.....	.92	1.31	8.80	8.10	11.90	10.00	25.4	46
1928.....	.98	1.31	11.50	10.20	12.40	9.20	29.6	46
1929.....	.80	1.14	9.60	10.10	12.90	10.00	31.6	46
1930.....	.64	.78	16.50	8.30	11.20	9.40	24.3	34
1931.....	.30	.45	5.90	8.20	7.90	6.20	18.2	24
1932.....	.32	.47	4.50	4.65	6.60	3.70	14.1	17
1933.....	.50	.88	7.10	4.25	8.20	3.95	13.8	18
1934.....	.77	.89	13.50	4.60	8.60	4.65	16.8	22
1935.....	.50	.77	8.70	7.50	8.50	9.20	23.6	37

¹ Crop Reporting Board, U. S. Department of Agriculture.

² Preliminary.

TABLE 30.—RETAIL PRICE PER QUART OF STANDARD GRADE MILK IN AKRON, COLUMBUS, DAYTON, AND PORTSMOUTH, OHIO, 1923 TO 1935 ¹

Year	Akron	Columbus	Dayton	Portsmouth	Year	Akron	Columbus	Dayton	Portsmouth
	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>		<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>
1923.....	13.00				1930.....	12.33	11.95	11.83	
1924.....	12.58				1931.....	10.17	10.04	10.00	12.91
1925.....	12.33	11.17	12.00		1932.....	8.78	8.70	9.17	11.08
1926.....	12.60	11.58	11.58		1933.....	8.78	8.31	8.25	10.78
1927.....	12.75	12.00	12.00		1934.....	10.50	9.50	9.33	11.00
1928.....	12.07	11.33	12.07		1935.....	10.50	10.00	9.88	11.00
1929.....	13.00	12.00	12.33						

¹ Simple averages of monthly prices. Butterfat content averages 3.8 percent milk in Akron, and 4 percent milk in Columbus, Dayton, and Portsmouth.

TABLE 31.—DISTRIBUTION OF MEMBERS OF OLDER ASSOCIATIONS INTERVIEWED ACCORDING TO LENGTH OF TIME SHIPPING MILK, NUMBER OF COWS, GROUP CLASSIFICATION AND LENGTH OF TIME MEMBERS OF THEIR MILK COOPERATIVE

Item	Number of members of association in—				
	Akron	Columbus	Dayton	Portsmouth	Total
<i>Number of years shipping milk:</i>					
0-4.....	14	4	14	5	37
5-9.....	49	16	38	20	123
10-14.....	35	31	51	36	153
15-19.....	58	30	47	12	147
20-24.....	23	21	9	2	55
25 and over.....	15	18	6	1	40
<i>Number of cows reported:</i>					
3-6.....	39	10	74	16	139
7-10.....	92	42	84	31	259
11-14.....	35	38	20	17	110
15-18.....	16	12	4	6	38
19 and over.....	12	27	3	6	48
<i>Group classification:</i>					
I.....	67	50	47	13	177
II.....	100	40	96	49	285
III.....	27	30	22	14	93
<i>Number of years a member:</i>					
0-4.....	34	9	31	17	91
5-9.....	58	22	36	39	155
10-14.....	44	68	68	20	200
15-19.....	58				58
Total membership.....	194	129	165	78	566

Other Publications Available

In addition to this circular, the following publications on farmers' cooperative organizations are published by the Farm Credit Administration:

- Cooperative Purchasing of Farm Supplies**
Bulletin No. 1, *Joseph G. Knapp and John H. Lister*
- Accounting Principles for Cooperative Cotton Gin Associations**
Bulletin No. 2, *Otis T. Weaver*
- Cooperative Marketing of Agricultural Products**
Bulletin No. 3, *Ward W. Fetrow*
- Cooperation in Agriculture, a Selected and Annotated Bibliography**, Bulletin No. 4, *Christina Gardner*
- Organization and Operation of the Illinois Livestock Marketing Association**, Bulletin No. 5, *H. H. Hulbert*
- Statistics of Farmers' Cooperative Business Organizations, 1920-35**
Bulletin No. 6, *R. H. Elsworth*
- Cooperative Marketing of Range Livestock**
Bulletin No. 7, *L. B. Mann*
- Mutual Irrigation Companies in California and Utah**
Bulletin No. 8, *Wells A. Hutchins*
- Membership Relations of Cooperative Associations**
Bulletin No. 9, *J. W. Jones*
- Marketing Policies of the California Walnut Growers Association**
Bulletin No. 10, *Harry C. Hensley and Neil H. Borden*
- Organization and Operating Problems of Nebraska Cooperative Creameries**, Bulletin No. 11, *T. G. Stitts and Gordon C. Laughlin*
- Analysis of the Business Operations of Cooperative Cotton Gins in Oklahoma**, Bulletin No. 12, *Otis T. Weaver and Omer W. Herrmann*
- Transportation of Milk in the Philadelphia Milkshed**
Bulletin No. 13, *John J. Scardan*
- Cooperative Organization of Iowa Farmers' Creameries**
Bulletin No. 14, *Frank Rebatka and Gordon C. Laughlin*
- Loans to Farmers' Cooperatives**, Circular No. 6
- Early Developments in Cooperative Cotton Marketing**
Circular No. C-101, *O. W. Herrmann and Christina Gardner*
- Organization and Operation of Cooperative Irrigation Companies**
Circular No. C-102, *Wells A. Hutchins*
- Western Cattle and Sheep Areas**, Circular No. C-103, *L. B. Mann*
- Economic Analysis of Bargaining Problems of Milk Cooperatives**
Circular C-104, *T. G. Stitts and Wm. C. Walden*

These may be obtained free of charge as long as a supply is available from the

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