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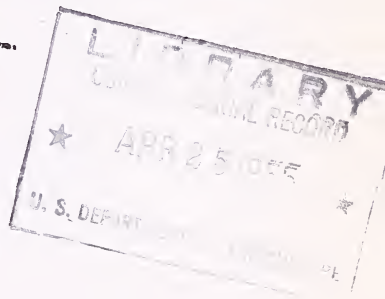
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# PRICES AND OTHER PAYMENTS FOR MILK

by manufacturers in  
Kansas, Missouri, and  
Oklahoma Markets



ALEXANDER SWANTZ  
*Agricultural Economist*

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## PREFACE

This report analyzes an important factor involved in the pricing of "surplus" milk in the larger fluid milk markets in Kansas, western Missouri, and Oklahoma--the level and structure of prices announced as paid and prices plus other payments actually made for ungraded whole milk at unregulated milk processing plants. It is one of a series of inquiries to provide a basis for developing some criteria and practicable methods for determining equitable prices for surplus milk in these areas.

Other studies contributing to the overall problem will include such considerations as: (1) The organization and the operating and pricing practices of the present marketing system for reserve and surplus milk; (2) prices received by handlers and nonhandlers for products which may be made from reserve and surplus milk; (3) prices and other costs of emergency supplies that might be used in lieu of carrying a seasonal reserve; (4) costs incurred by handlers and nonhandlers in processing reserve and surplus milk; (5) accessibility of facilities, other than handlers' own plants, for processing reserve milk, together with costs and problems involved in their use; and (6) response of handlers and potential handlers to changes in price levels for reserve and surplus milk. Findings on these separate aspects, brought into proper relationship with one another and with the major objectives of pricing milk in the fluid markets of this area, provide the basis for improvements in the pricing of this class of milk.

Thanks are due the managers and personnel of the plants studied for cooperation and interest. Manning J. Black assisted in the field work of interviewing the plant personnel and Irene B. Poston assisted in making many of the statistical computations.

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The study on which this report is based was made under authority of the Agricultural Marketing Act of 1946 (RMA, Title II).

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## SUMMARY

Every fluid milk market regulated by a Federal milk order in Kansas, western Missouri, and Oklahoma uses an average of prices paid by unregulated plants as the basis, or as one of two or more alternative bases, for setting minimum prices to producers for reserve and surplus (Class II) milk. This study covers the practices of 33 unregulated milk processing plants in the area mentioned. It was made to determine (1) how accurately the announced paying prices reflect prices actually paid for ungraded whole milk f. o. b. the plants, and (2) the composition, size, characteristics, and effects of supplemental payments made in the form of premiums for quality and volume, patronage refunds, bonuses, hauling subsidies, etc.

Only one plant reported not making supplemental payments of any type or size during the 34-month test period between January 1951 and October 1953.

The value of all supplemental payments made during the test period averaged 10.7 cents a hundredweight for ungraded whole milk containing 4.0 percent butterfat. There was a tendency for such payments to increase in size each year--from 9.9 cents in 1951 to 10.8 cents in 1952 and to 11.4 cents in January-October 1953.

The rate of payment varied widely between plants, ranging from none to more than 55 cents a hundredweight.

Supplemental payments persisted in number and size each year, suggesting that the practice is well-established.

More plants made supplemental payments to subsidize the hauling of milk from farm to plant than for any other reason; these accounted for 59.4 percent of the value of all payments. Patronage refunds comprised another 35 percent and premiums the remaining 5.6 percent. Hauling subsidies tended to decrease in importance during 1952 and 1953; offsetting this was an increase in the importance of patronage refunds and premiums.

The amount of payments varied by type of plants and by location. Multiple-product plants made the largest payments by far, averaging 17.3 cents a hundredweight over the entire area. Although cheese plants paid an average of 3.4 cents a hundredweight compared with 4.1 cents for condenseries, these plants paid 1.3 cents a hundredweight more than condenseries when the two types of plants competed directly in an area.

During the 34-month period covered by the study, announced prices (prices which buyers said they would pay) in the south-central area understated the total payment for milk f. o. b. plant by amounts equal to about 3 percent of the average announced paying price for 4.0 percent ungraded whole milk.

Location of plant was more closely related to the level of prices announced for ungraded milk than was type of plant.

A number of regulated handlers sold surplus Grade A milk to plants covered in this survey. In the great majority of cases, handlers received either (1) the Class II price of the Federal order market or (2) a premium of 10-15 cents a hundredweight more than the announced paying prices of buying plants.

# PRICES AND OTHER PAYMENTS FOR MILK BY MANUFACTURERS IN KANSAS, MISSOURI, AND OKLAHOMA MARKETS

By Alexander Swantz, Agricultural Economist

## INTRODUCTION

Every Federal milk order in the area covered by this study uses an average of basic prices paid farmers for ungraded milk by unregulated plants as the basis, or as one of two or more alternative bases, for setting minimum prices to producers for reserve and surplus (Class II) milk. This pricing basis also is very popular in other areas. A principal argument for using announced paying prices for this purpose is that they tend to equalize the costs of manufacturing milk as between regulated and unregulated plants. This is held to be equitable, since Class II products of the regulated markets must sell in competition with similar products manufactured by unregulated plants. However, if unregulated plants also pay producers premiums, subsidize the hauling by absorbing some of the cost, etc., two complications arise. First, the value of milk for manufacturing is understated. Second, variations in the value of milk for manufacturing may be reflected in the supplemental items rather than in the announced price--hence may not be reflected in the Class II price. Thus, it is possible for the cost of milk at unregulated plants to fluctuate significantly at the same time announced price levels give an appearance of stability.

This report analyzes data collected to determine the relationship between the "quoted" or "announced basic paying prices" of processing plants for whole milk of manufacturing quality in areas of the South-Central United States (Kansas, Missouri, and Oklahoma) and the level of prices actually received by farmers. The exact area surveyed includes eastern Kansas, western Missouri, and central and eastern Oklahoma (fig. 1). This analysis is one phase of a broader study designed to determine and evaluate the important factors involved in pricing reserve and surplus supplies of milk<sup>1</sup> in Federally-regulated fluid milk markets within that area.

## Purpose of This Study

The present phase of the broader study is designed to determine (1) the exact structure of announced basic prices for manufacturing milk paid by unregulated milk processing plants in the surveyed area, and (2) how this price structure is changed when allowance is made for the value of hauling subsidies, premiums, patronage refunds, bonuses, and other price benefits paid by the plants over and above the announced prices. Such extra payments for milk are a competitive device long used in the dairy industry. However, very little information is available as to how much these payments affect the net returns that farmers receive for milk. Conversely, little is known about how much more plants pay for milk f. o. b. plant basis than is indicated by the basic prices.<sup>2 3</sup> A knowledge of the basic price structure, combined with data on prevalence and size of supplemental payments, should help resolve the following questions:

(1) How do announced paying prices to producers for ungraded milk vary among plants manufacturing different products and among plants located in different sections of the area?

<sup>1</sup> Reserve milk means milk not sold for fluid purposes but needed to cover day-to-day fluctuations in Class I (fluid) sales and seasonal fluctuations in production. Surplus milk means milk in excess of a market's normal fluid and reserve requirements.

<sup>2</sup> Throughout this study the distinction between these two price levels will be maintained by referring to the generally-known prices as "announced paying prices" and the payments made by plants after inclusion of supplemental payments as "actual" prices.

<sup>3</sup> One report which contains information on such practices is "The '18 Condensery" Milk Price Series, "USDA, Prod. and Mktg. Adm., Dairy Branch, October 1952, 19 pp., illus.

(2) How accurately do announced paying prices reflect the actual cost of milk to unregulated processing plants?

(3) What kind of supplemental payments do farmers receive? How do payments vary in composition, size, and regularity among areas, and within areas among different types of plants?

(4) What is the relationship between prices for Class II milk<sup>4</sup> in the Federal order markets of this area and the announced and actual levels of prices paid by unregulated plants?

### Scope and Method of This Report

Information for this report was obtained from a survey of 39 unregulated milk processing plants in the areas outlined in figure 1. Subareas were drawn to include the major sources of supply of the Federally-regulated fluid milk markets in the South-Central United States. All important processors of ungraded whole milk operating therein were contacted. Personnel of each plant or company were interviewed in the fall of 1953 on all operations from January 1951 through October 1953. This 34-month period includes situations ranging from relative scarcity to abundant supplies of milk, and illustrates long-run as well as emergency pricing circumstances.

Detailed data were obtained as to the kind and capacity of processing facilities; the existence of any health department approvals or fluid milk operations; whether the plant or company was associated in any way with other plants or companies; the announced paying prices to producers; the kind and extent of any supplemental payments for such reasons as size of milk shipments, quality of milk, location of producer, patronage refunds, bonuses, or any other reasons; the ownership and operation of trucks hauling producer milk from farm to plant; the kind and extent of any means whereby a plant or company paid for or subsidized the cost of hauling milk from farm to plant; and kind and extent of other services rendered farmers that directly or indirectly affected the farmers' net returns for milk, f. o. b. plant basis.

Three of the 39 plants originally included in the sample of respondents were omitted from this analysis because of their failure to give complete information on all operations. Three other plants were excluded because their survey forms, as returned, were internally inconsistent or of doubtful accuracy.

<sup>4</sup> All Federal order markets in this area except one classify reserve and surplus milk as Class II. Throughout the remainder of this report the term Class II milk shall be used to mean reserve and surplus supplies of Grade A milk, produced for but not used in fluid milk or fluid milk products.

# LOCATION OF MILK PLANTS, BY AREAS

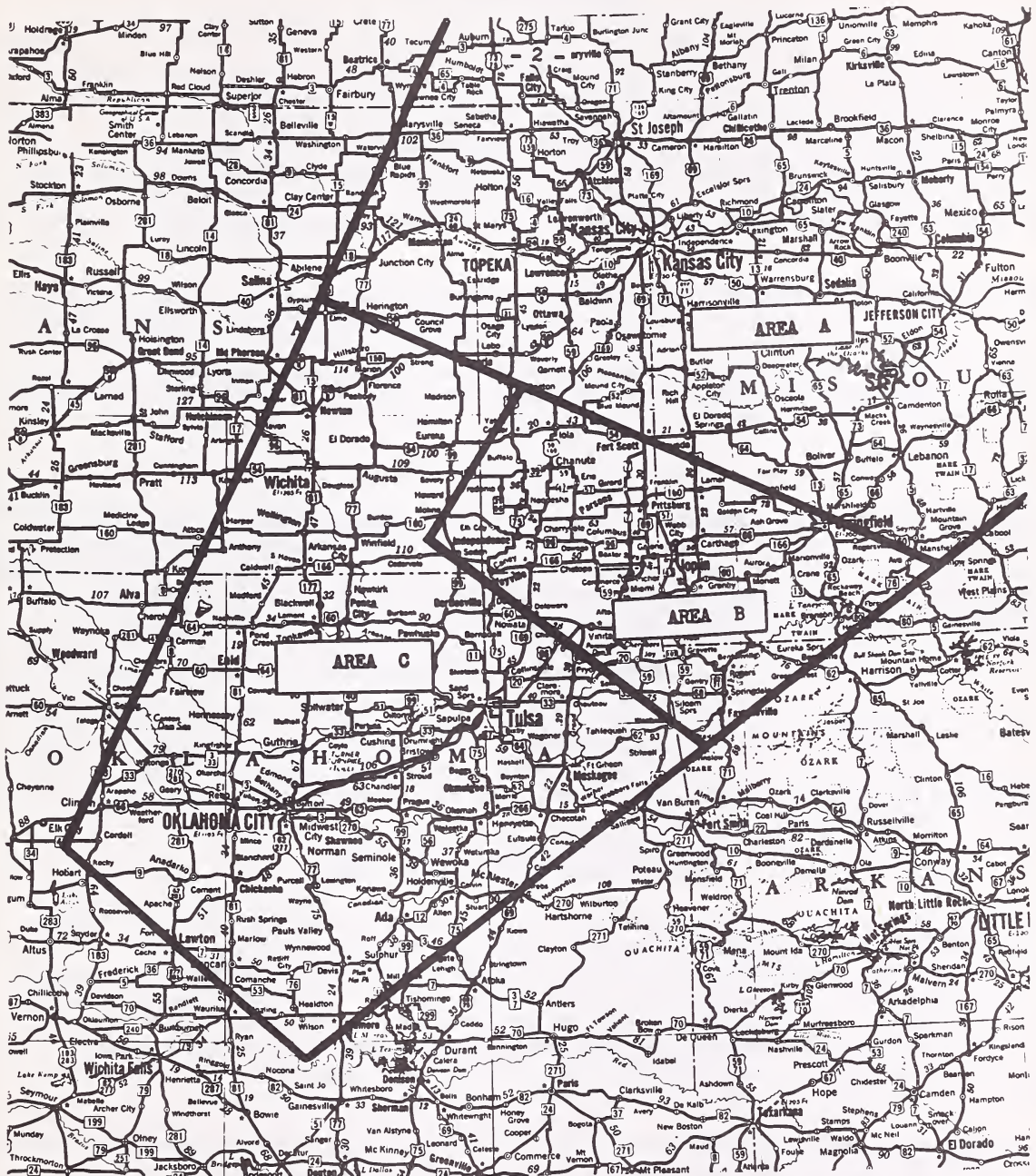


Figure 1

# PRICING PRACTICES OF MILK PROCESSING PLANTS

## Method of Payment

About 60 percent of the plants in the survey announced prices to farmers in terms of cents per pound of butterfat contained in whole milk. The other 40 percent announced a price per hundredweight of milk of specified butterfat content (usually 4.0 percent), with adjustments for variations from the standard by means of butterfat differentials. There was a definite geographical pattern formed by plants using one method or the other. For example, all plants (of whatever type) that announced prices on a hundredweight basis were located in contour 1 (fig. 2, page 15). The fact that all the condenseries included in the survey were located here may indicate their influence on pricing practices within their areas.

About half of the plants paying on a hundredweight basis used the same butterfat differential for milk testing above or below the standard butterfat test. The other plants paid a smaller butterfat differential for milk testing over the standard than was deducted from the basic price for milk testing less than the standard test. The usual difference between the "above" rate and the "below" rate was 2 to 3 cents a point of butterfat. The smallest difference was 1 cent a point; the largest difference was 3.4 cents a point.

## Ownership of Plants

Only 5 of the 33 plants stated that they were not associated in any way with other dairy companies or plants. At least 2 of these 5 plants have ungraded milk operations integrated with Grade A fluid milk operations. Nine plants were cooperative associations; the remaining were financially related in some manner to other dairy companies and plants, including most of the nationally-known dairy chains.

## Number of Milk Routes

An average plant, in the fall of 1953, had 24 truck routes for bringing milk from farms. The lowest number of routes servicing a plant was 2, the highest 85. A large number of farmers delivered their own production directly to each of several plants. Ninety percent of all the routes were owned and operated by contract haulers; the remainder were company-owned and company-operated.

## Supplemental Payments for Milk

Plants made supplemental payments for milk in many different ways. In addition, nearly every plant used different combinations of the various methods, or put varying degrees of importance on particular methods. An extremely important point to remember is that it was impossible, in the course of this survey, to put a monetary value on a great number of practices or payments. Thus, to whatever degree the data in this study are in error, the error is on the side of understating the extra costs incurred by plants in obtaining milk supplies over that reflected by analyzing only the announced paying prices to farmers.

The following examples indicate practices used by plants in the procurement of milk supplies from farmers.

1. Subsidized the hauling of milk from farm to plant.
  - a. Paid all the costs of hauling milk from farm to plant.

b. Paid a permanent subsidy to all or part of the contract haulers on a year-around basis, usually a specific rate for each hundred pounds of milk hauled.

c. Paid permanent and temporary subsidies for hauling the milk of particular producers.

d. Guaranteed all or some haulers a minimum daily or monthly salary, and made up the difference between this sum and the amounts deducted from producers' checks.

e. Paid all or some haulers a Christmas bonus.

f. Loaned or used company-owned trucks to haul milk when regular trucks were being repaired, or until a regular hauler was hired after one had quit.

g. Bought outright, or loaned money to haulers for the purpose of buying truck beds or covered bodies.

h. Loaned money to haulers (at nominal or regular rates of interest) to finance the purchasing of trucks or supplies.

i. Issued purchase orders on merchants to give haulers groceries, gasoline and oil, and other supplies when the quantity of milk hauled was low.

2. Paid premiums (over the announced basic price level) directly to some or all farmers for ungraded milk that met specific quality standards (generally an ability to stand up under a methylene blue test), installation and use of mechanical coolers and the delivery of milk of specified temperatures or lower, and delivery of at least specified quantities of milk during each delivery period.

3. Paid patronage refunds (by cooperative associations) or bonuses (by privately-owned companies) at or near the end of each fiscal year. The amount of the patronage refund usually depended on the profitableness of operations during the expiring year. The amount of bonus paid was influenced in many cases by the amount of patronage refund paid out by cooperative associations serving the same general area.

4. Provided a wide variety of services for farmers.

a. Furnished some of the milk cans. One plant furnished as much as half of all cans used; some plants furnished all the cans needed by certain producers; and nearly all plants furnished cans on a short-run basis to new or prospective producers and to regular producers having cans retinned or who, for any number of reasons, were short of cans for a time.

b. Maintained a field staff to help farmers with production and quality problems. This built good will and in a good many cases assisted in the procurement of new producers.

c. Published and distributed to producers a newsletter or house organ.

d. Loaned money to producers, generally at nominal or regular rates of interest, to purchase cattle, supplies, or equipment.

e. Endorsed notes of indebtedness to ease the granting of credit by regular sources.

f. Bought on individual order, or kept on hand, varying amounts of production and farm supplies for sale to farmers at first cost to plant, at wholesale prices, or

at prices slightly higher than wholesale or plant cost basis. Many plants incur, at their own expense, costs of purchasing, handling, billing, and delivering supplies to farmers.

g. Supplied farmers with plant byproducts, such as whey, without charge.

h. Allocated income from all operations to maintain predetermined levels of prices for and differentials between Grade A and ungraded milk.

i. Conducted campaigns to encourage the use of dairy-type bulls or the services of an artificial insemination group. In some cases plants paid farmers a set sum (\$2, for example) for each cow serviced by artificial insemination.

The data presented in this study do not include (with one slight exception) any costs incurred by plants for any of the services listed under section 4 and "f" through "i" of section 1 above. In addition, several plants incurred hauling subsidies of varying (but small) amounts which could not be ascertained accurately, and therefore are not included in the computations. Moreover, some plants reported amounts paid for supplemental purposes of a regularly recurring nature, but could not give data on additional or special subsidies or payments. Furthermore, farmers patronizing cooperatives also receive financial returns through savings retained and used in the business to increase net worth. Such returns are not included in this study. For these reasons, the average rates of supplemental payments revealed in this report tend to understate the prevalence and importance of these actions and their effect on prices actually paid for ungraded whole milk by plants in this area.

### Prices Paid Other Plants for Diverted Milk

During this survey it was found that several plants also purchased surplus milk from distributors and handlers in some of the markets in this area regulated by Federal milk orders. Because these buyers made common use of their ungraded whole milk and the surplus milk diverted from handlers in fluid markets, it is of value to analyze briefly the methods and pricing plans used. In each transaction the price seemed to be influenced greatly by the accessibility of other manufacturing plants, the amount of surplus milk involved, and the degree to which the purchasing processors wanted the diverted milk to bolster the volume going through their plants.

Plants buying surplus milk from handlers followed two general methods in paying for such milk. In the southern part of the surveyed area, plants generally paid handlers only their own local paying price for ungraded milk. In one instance, a producers' cooperative association received the Class II price of the regulated market plus a small sum to cover the assessment collected by the market administrator for administering the Federal order. Generally speaking, an apparent shortage of manufacturing facilities in this area gave a slight bargaining advantage to the purchasing plant.

Plants, in the central and northern parts of the surveyed area, purchasing surplus milk from handlers, reported a general practice of paying handlers a premium over the purchaser's regularly announced paying prices for ungraded whole milk. The smallest premium reported was 2 cents a pound for the butterfat in whole milk; in some cases, the premium was reported as 4 cents a pound butterfat. Three cents a pound of butterfat seemed to be the usual and average premium. In other instances purchasers paid the Class II price required of the handler.

Purchasing plants gave several reasons for paying premiums (over announced paying prices) for Grade A milk diverted from handlers. In many cases the milk was stopped en route to the fluid milk market and processed in the country. Two economies resulted--one, because the purchasing plant had no procurement or hauling expenses, and the second, because the selling plant did not take delivery in the city market. The sellers saved

handling and diverting expenses and their haulers saved a truck trip into the markets. (In this situation sellers might gain revenue without recovering all of the Class II price from the purchasing plant.)

In at least two instances the purchasing plants reported that blending surplus Grade A milk with regular receipts of ungraded milk raised the level of quality of processed products. The extra volume of milk also helped to lower the unit cost of processing various milk products and provided leeway for the payment of premiums. Whenever the divertor was a cooperative association, purchasing plants paid them either the Class II price stipulated by the Federal milk order, or their announced price plus a sizable premium. In certain cases where the purchasing plant was a cooperative association, managers reported the value of the patronage refund (that would have been paid to individual producers) provided an additional leeway in bargaining over price. In any event, it is clear that in a number of instances handlers actually received more money for diverted surplus Grade A milk than indicated or than would be indicated by analyzing the announced paying prices of buying plants.



# THE PRICE SURFACE FOR UNGRADED WHOLE MILK IN THE SOUTH-CENTRAL AREA

## Announced Paying Prices to Farmers

On the basis of announced paying prices for 4.0 percent ungraded whole milk, there was a range of 48.5 cents a hundredweight between the highest and lowest average prices paid by different plants during the 34-month test period (January 1951-October 1953). The plant with the lowest average price paid \$3.393; those with the highest paid \$3.878. This 48.5 cents range is equal to 14.3 percent of the lower price level.

The range between the highest and lowest average price varied widely from year to year (table 1). In addition, the range each year tended to be wider than the average range for 34 months, indicating that the same firms were not highest payers or lowest payers each year. The highest price was paid by 1 condensery in 1951, by 4 condenseries in 1952, and 5 condenseries and 2 cheese plants in January-October 1953.<sup>5</sup> Multiple-use plants announced the lowest price each year, except that (1) it was a different plant each year and (2) a cheese plant had the identical lowest average price in 1953.

Plant location seems related to the level of prices announced for ungraded milk. When the 33 plants were arrayed from 1 to 33 according to average announced prices during 34 months, all plants in area B (fig. 1) were in the upper half (highest paying 16 plants). None of the plants in area C was in that group. Area A had a highest paying plant and the two lowest paying plants.

TABLE 1.--Announced paying price per hundredweight for ungraded milk and range between plants with the highest and lowest average price, 1951-53

Year	Average price			
	Highest-paying plant	Lowest-paying plant	Range between highest and lowest paying plant	
			Actual	Percentage of lowest price
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Percent</i>
1951-----	3.873	3.340	0.533	16.0
1952-----	4.263	3.525	0.738	20.9
1953 <sup>1</sup> -----	3.480	3.090	0.390	12.6
Average-----	3.878	3.393	.485	14.3

<sup>1</sup> See footnote 5.

During the 34 months, plants in area B announced prices that were 23.1 cents a hundredweight higher than plants in area A and 34.7 cents higher than plants in area C. Plants in area A outpaid those in area C by 11.6 cents a hundredweight. Area A plants paid higher prices relative to area C each year--beginning with a 6.8 cents hundredweight difference in 1951 and increasing it to 11 cents in 1952 and to 17.8 cents in 1953.

<sup>5</sup> Unless otherwise indicated, the year 1953 will refer to the 10-month period of January 1 through October 31, 1953.

## Supplemental Payments for Milk

Only 1 plant reported no supplemental payments during the 34-month period. The value of supplemental payments during the test period, when spread over the operations of all 33 plants, averaged 10.7 cents a hundredweight of 4.0 percent ungraded whole milk.

There was a tendency for supplemental payments to increase in size each year-- from 9.9 cents in 1951 to 10.8 cents in 1952, and again to 11.4 cents in 1953 (appendix, table 17).

The rate of payments varied widely between plants; average yearly payments ranged from less than 1 cent to more than 55 cents a hundredweight (table 2). Moreover, this wide range in size of payments persisted each year. There was a slight tendency for the number of plants making small payments (less than 5 cents a hundredweight) and large payments (15 to 55 cents) to increase each year at the expense of plants paying between 5 and 15 cents a hundredweight.

### Importance of Different Types of Supplemental Payments

More plants made supplemental payments to subsidize the hauling of milk from farm to plant than for any other purpose. Of the plants reporting supplemental payments of any kind during the 34-month period, only three reported no hauling subsidy. Nine plants (8 in 1951) paid patronage refunds, and 5 plants (4 in 1952) made extra payments for premiums and services--principally premiums for shipping specified quantities, or shipping milk that met certain quality standards.

Total payments, when spread over all 33 plants, averaged 6.3 cents a hundredweight for hauling subsidies, 3.7 cents for patronage refunds, and about 0.7 cent for premiums during the 34-month period. Percentagewise, a little more than 59 percent went for hauling subsidies, 35 percent for patronage refunds, and about 6 percent for premiums.

TABLE 2.--Number of plants making supplemental payments of specified amounts for 4.0 percent ungraded whole milk, 1951-53

Supplemental payments per hundredweight	1951	1952	1953	Average 1951-53
<i>Cents</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>
None-----	1	2	1	2
Less than 1.0-----	1 5	4	6	6
1.0-4.9-----	9	7	7	7
5.0-9.9-----	5	8	8	5
10.0-14.9-----	6	5	3	4
15.0-19.9-----	-	2	1	2
20.0-24.9-----	3	3	3	2
25.0-29.9-----	2	-	1	1
30.0-34.9-----	-	-	1	1
35.0-39.9-----	-	-	-	1
40.0-44.9-----	-	-	-	-
45.0-49.9-----	-	1	-	-
50.0-54.9-----	2	-	2	1
55.0 and over-----	-	1	-	1

<sup>1</sup> Includes 3 plants reporting small payments but not supplying actual data.

The changing importance of various types of supplemental payments are indicated in appendix, table 18. Readily apparent was the tendency for hauling subsidies to decrease in importance during 1952 and 1953 when generally abundant supplies of milk in the late summer and fall probably lessened the problems which hauling subsidies were used to remedy. Offsetting this was an increase in the importance of premiums (particularly between 1951 and 1952) and patronage refunds (particularly between 1952 and 1953).

### Supplemental Payments and Type and Location of Plant

Cheese plants made smaller supplemental payments than any other type of plant (3.4 cents a hundredweight during the 34-month period). Condenseries paid slightly more, an average of 4.1 cents. Multiple-product plants made the largest supplemental payments by far (17.3 cents a hundredweight). Part of this difference arises because many of the multiple-product plants were producer cooperatives paying patronage dividends in addition to other payments.

On a yearly basis, cheese plants and condenseries made supplemental payments at a steady rate in 1951 and 1952. The average rate was slightly lower in 1953, but the decrease is probably more apparent than real, because 1953 data do not include payments for November and December. During these months in 1951 and 1952, cheese plants and condenseries made payments at seasonally higher rates.

The relationships between payments made by different types of plants were not constant among competing areas (table 3). In area B, cheese plants made larger supplemental payments than condenseries each year. In area A, condenseries made larger payments than cheese plants. In each case, multiple-use plants made larger supplemental payments than other plants.

With respect to location, plants in areas A and C made payments at the same average rate of 13.3 cents, whereas those in area B paid only 4.8 cents. (table 3 and appendix table 17). These averages held fairly steady from year to year except that payments in area B tended to decrease in size, whereas those in area A, and particularly area C, tended to increase.

### Effect of Supplemental Payments on Prices Paid for Milk

Almost all milk plants made extra or supplemental payments of some type during the period studied. Furthermore, the amount of such payments varied by areas and types of plants within an area. These practices make it difficult to evaluate the exact price structure for milk and the competitive standing of different firms by analyzing only the announced paying prices. For example, announced prices indicated that area B plants outpaid area A plants by 23.1 cents and area C plants by 34.7 cents a hundredweight during the 34-month period. However, area A and C plants made supplemental payments averaging 8.5 cents higher than those made in area B. The net result is to narrow the range between actual prices paid in each area (table 4).

When the 33 plants are divided into two groups on the basis of announced prices, plants in the upper group paid 32.6 cents a hundredweight more for milk than plants in the lower paying group. However, the upper group paid only 4.8 cents a hundredweight as "extras," whereas the lower paying group made supplemental payments averaging 16.3 cents a hundredweight, or 3-1/2 times higher. Thus, what appears to be a difference of 32.6 cents a hundredweight in average paying prices actually is 21.1 cents.

Each year plants in the lower group made supplemental payments from 2-1/2 to 4 times larger than did plants in the upper group. In fact, the difference in amounts paid by each group widened from 1951 through 1953 (table 5).

TABLE 3.--Average prices and supplemental payments per hundredweight paid for 4.0 percent ungraded whole milk, by specified types of plants in designated areas, south central area, 1951-53

Area and type of price	Conden-series	Cheese	Multiple use	All plants
Area A	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Announced-----	( <sup>1</sup> )	3.783	3.547	3.638
Supplemental-----	( <sup>1</sup> )	.019	.187	.133
Actual-----	( <sup>1</sup> )	3.802	3.734	3.771
Area B				
Announced-----	3.877	3.871	3.844	3.869
Supplemental-----	.030	.043	.107	.048
Actual-----	3.907	3.914	3.951	3.917
Area C				
Announced-----	--	3.489	3.539	3.522
Supplemental-----	--	.046	.176	.133
Actual-----	--	3.535	3.715	3.655

<sup>1</sup> Insufficient number of plants.

TABLE 4.--Amount prices per hundredweight in Area B exceeded prices in Areas A and C, south-central area, 1951-53

Year	Area A using		Area C using	
	Announced prices	Actual prices	Announced prices	Actual prices
1951-----	<i>Cents</i> 19.8	<i>Cents</i> 12.3	<i>Cents</i> 26.6	<i>Cents</i> 20.8
1952-----	34.6	25.7	45.6	37.7
1953-----	13.4	4.3	31.2	19.2
Average-----	23.1	14.6	34.7	26.2

Data developed in this study indicated that the announced prices in the south-central area under stated the prices actually paid for milk, f.o.b. plant, by amounts equal to about 3 percent of the average announced paying price for 4.0 ungraded whole milk. The range for individual plants was very wide; in two cases, supplemental payments averaged more than 15 percent of the announced prices (table 6).

On a yearly basis, extra payments equalled 2.7 percent of the announced price level in 1951 and 1952, and 3.4 percent during 1953. Actual rates of payment increased from 10 cents a hundredweight in 1951 to 10.8 in 1952 and to 11.4 in 1953. The announced price level increased in 1952 and decreased in 1953. Thus, supplemental payments held steady at 2.7 percent in 1952, because announced prices increased at the same rate as the sup-

plemental payments. The percentage of understatement increased to 3.4 percent in 1953 because supplemental payments increased to 11.4 cents a hundredweight at the same time announced prices were decreasing.

There were important differences between areas in the amount by which announced prices understated prices actually paid for milk f. o. b. plant. Although all plants paid supplements that averaged 3 percent of the announced price, extra payments in area A equalled 3.7 percent; those in area B, 1.2 percent; and those in area C, equalled 3.8 percent.

Supplemental payments in area A averaged 3.5 percent of the announced price level in 1951-1952 and 4 percent in 1953; in area B, they varied between 1.2 and 1.4 percent each year; and those in area C increased in importance--from 3.1 percent of announced prices in 1951 to 5.2 percent in 1953.

### Contours in the Price Surface for Ungraded Milk

After the prices of each plant were averaged and analyzed, it became apparent that the announced paying prices fell into a geographic pattern of three distinct levels or contours. These are shown in figure 2. Every plant in contour 1 announced prices that averaged higher than any plant in contour 2. Likewise, every plant in contour 2 announced prices that averaged higher than any plant in contour 3. The prices in each contour fell within a range of 11 cents a hundredweight, as shown in the tabulation below:

Contour	Range between the average announced paying price per hundredweight of the highest and lowest paying plants, January 1951-October 1953
1-----	<i>Dollars</i> 3.781-3.878
2-----	3.516-3.625
3-----	3.393-3.503

There are more plants in contour 1 than in any other contour, and the number of plants decreases as the contours fan out from contour 1. This may explain the decrease in the level of announced paying prices as one moves away from contour 1.

The plants in contour 1 paid about 29 cents a hundred more for ungraded milk than the plants in contour 2. Plants in contour 2, on the other hand, paid about 11 cents a hundred more than those in contour 3. About the same relationships held true each year except that the range in prices paid by contours widened appreciably in 1952 over that in 1951 and 1953 (table 19).

### Relationship Between Supplemental Payments and Type and Location of Plant

Plants in contour 1 made supplemental payments averaging 4.4 cents a hundredweight. This compares with 12.3 cents paid in contour 2, and 21.7 cents in contour 3. Even among plants of the same type, those in contour 2 made larger payments than those in contour 1, and those in contour 3 made larger payments than those in contour 2. The example of multiple-product plants is most striking: those plants in the different contours made supplemental payments as follows:

Contour 1	8.4 cents a hundredweight
Contour 2	14.6 cents a hundredweight
Contour 3	27.6 cents a hundredweight

TABLE 5.--Average prices and supplemental payments per hundredweight paid for 4.0 percent ungraded whole milk, by specified groups of plants, south-central area, 1951-53

Year and group	Average price		
	Announced	Supplemental	Actual
1951	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Upper 16-----	3.798	0.053	3.851
Lower 17-----	3.546	.144	3.690
Difference-----	.252	-.091	.161
1952			
Upper 16-----	4.212	.047	4.259
Lower 17-----	3.754	.166	3.920
Difference-----	.458	-.119	.339
1953			
Upper 16-----	3.459	.042	3.501
Lower 17-----	3.203	.182	3.385
Difference-----	.256	-.140	.116
34-month			
Upper 16-----	3.844	.048	3.892
Lower 17-----	3.518	.163	3.681
Difference-----	.326	-.115	.211

TABLE 6.--Number of plants, by specified percentage that supplemental payment is of announced price, south-central area, period 1951-53

Supplemental payments as percentage of announced price	Plants	Supplemental payments as percentage of announced price	Plants
<i>Percent</i>	<i>Number</i>	<i>Percent</i>	<i>Number</i>
None-----	1	5.00 -5.99	1
Less than 0.99-----	11	6.00 -6.99	2
1.00 - 1.99-----	7	7.00 -7.99	1
2.00 - 2.99-----	3	8.00 -8.99	1
3.00 - 3.99	4	over 15.00	2
		Total	33

This comparison reveals that the size of supplemental payments increased as one moved from contour 1 toward contour 3. Cheese plants made smaller, and multiple-product plants made larger, supplemental payments than any other type of plants, regardless of location.

### Effect of Supplemental Payments on Prices Paid for Milk

Over the 34-month period supplemental payments equalled the following percentages of the announced price level:

Contour 1	1.14 percent
Contour 2	3.45 percent
Contour 3	6.28 percent

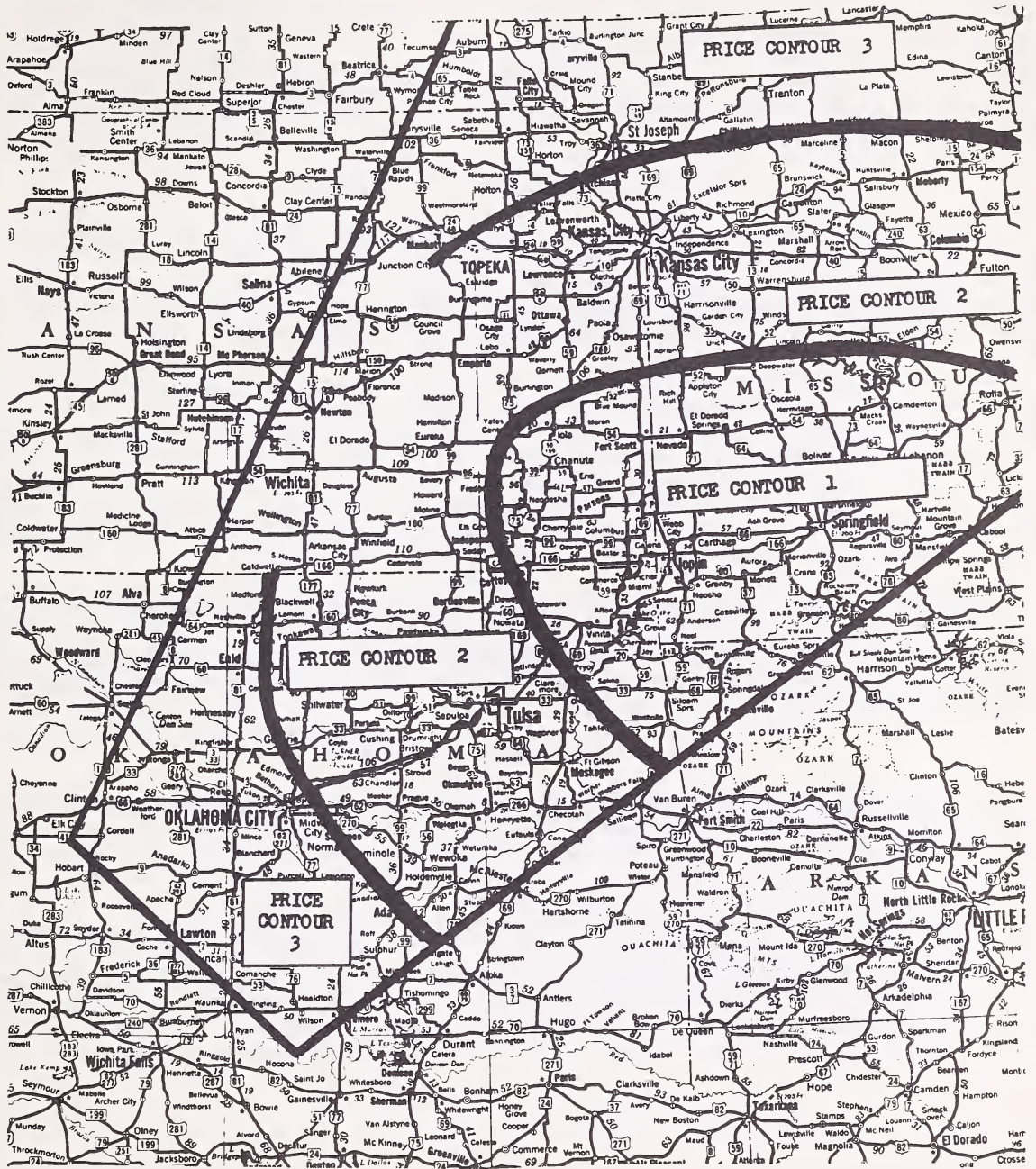
These percentages emphasize the fact that announced prices decrease from contour 1 to 3 and that supplemental payments increase from contour 1 to 3.

The net effect is to narrow the apparent range in average prices paid in different contours. As shown in table 7, plants in contours 2 and 3 paid nearly the same price for milk on an actual basis (within 1.7 cents a hundredweight) instead of the 11.1 cents difference indicated by announced prices. Likewise, an apparent difference of 40.3 cents a hundredweight between contours 1 and 3 actually became 23 cents when supplemental payments were considered.

TABLE 7.--Average prices and supplemental payments per hundredweight paid for 4.0 percent ungraded whole milk f.o.b. plant, by specified types of plants, in designated contours, south-central area, 1951-53

Contour and type of price	Condenseries	Cheese	Multiple use	All plants
Contour 1	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Announced-----	3.877	3.856	3.823	3.859
Supplemental-----	.041	.024	.084	.044
Actual-----	3.918	3.880	3.907	3.903
Contour 2	-----	3.568	3.567	3.567
Announced-----	-----	.020	.146	.123
Supplemental-----	-----	3.588	3.713	3.690
Actual-----	-----	3.463	3.453	3.456
Contour 3	-----	.069	.276	.217
Announced-----	-----	3.532	3.729	3.673
Supplemental-----	-----			
Actual-----	-----			

# LOCATION OF MILK PRICE CONTOURS



U. S. DEPARTMENT OF AGRICULTURE

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Figure 2



# THE PRICE STRUCTURE FOR 4.0 PERCENT UNGRADED WHOLE MILK IN NORTHEAST KANSAS AND NORTHWEST MISSOURI (AREA A)

## Characteristics of Sample Plants

Analysis in this section is based on complete information from 14 plants that buy ungraded whole milk from farmers for processing into manufactured dairy products. Their general location is outlined in figure 1 as area A. Four of these plants specialized in cheese, 1 is a condensery, 4 are butter-powder or butter-cheese operations, and the remaining 5 are best described as multiple-product manufacturers. The plants studied in this area included nearly every major processor of ungraded milk, who is not regulated by Federal milk orders.

## Announced Paying Prices to Farmers

During the 34-month test period the average announced basic price paid to farmers by the highest paying firm was 48.5 cents a hundred (14.3 percent) more than that by the lowest paying firm. The range in prices was from \$3.393 to \$3.878. This range in prices varied widely from year to year, equaling 48.5 cents in 1951, increasing to 73.7 cents a hundred in 1952, and decreasing sharply to 27.6 cents during 1953.

When the 14 plants are subdivided into 2 equal groups according to their average announced prices, location seems to be more closely related to status than type of operations. The upper group contains 3 cheese factories and 3 multiple-product operations along with the condensery; the lower group contains a cheese factory, 4 butter-powder or butter-cheese operations, and 2 multiple-product plants. However, on the basis of location only, no plants in the higher paying group are north of a line that cuts through Topeka, Kansas, when drawn parallel to the base line of area A, figure 1. Conversely, no plants in the lower group are south of such a geographical line.

Plants in the upper group paid 27.4 cents a hundredweight more for milk than those in the lower paying group (table 8). Here again the yearly variation is quite wide, ranging from a low of 16.9 cents in 1953 to a high of 42.6 cents in 1952. Thus, plants in the upper group announced paying prices that averaged about 8 percent more than those announced by plants in the lower group.

## Supplemental Payments for Milk

All of the 14 plants interviewed in this area made supplemental payments for ungraded whole milk sometime during the 34-month period. Twelve plants made supplemental payments during the entire period, one stopped them in 1952, and another stopped in 1953. However, data on size of payments do not include those made by 2 plants, one reporting occasional hauling subsidies, usually confined to a few routes, the other reporting sizable quality premiums to 3 or 4 producers. These plants declined to furnish the exact amounts, saying that total payments were not enough to justify the work involved. One of the two plants reported a policy of trying to meet localized competition for farmers' milk supplies (and build good will with all its producers) by putting the value of supplemental payments directly into the announced paying price. By this practice, the extra money was distributed to all producers rather than a selected few.

TABLE 8.--Average prices and supplemental payments per hundredweight paid for 4.0 percent ungraded whole milk, by specified groups of plants, area A, 1951-53

Year and group <sup>1</sup>	Average price		
	Announced	Supplemental	Actual
1951	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Upper 7 plants-----	3.732	0.046	3.778
Lower 7 plants-----	3.522	.208	3.730
Difference-----	.210	-.162	.048
1952			
Upper 7 plants-----	4.114	.038	4.152
Lower 7 plants-----	3.688	.238	3.926
Difference-----	.426	-.200	.226
1953 <sup>2</sup>			
Upper 7 plants-----	3.419	.034	3.453
Lower 7 plants-----	3.250	.234	3.484
Difference-----	.169	-.200	-.031
34 months <sup>3</sup>			
Upper 7 plants-----	3.775	.040	3.815
Lower 7 plants-----	3.501	.226	3.727
Difference-----	.274	-.186	.088

<sup>1</sup> The 14 plants were ranked from high to low according to the average announced price paid during the 34 months period.

<sup>2</sup> January-October only.

<sup>3</sup> January 1951 through October 1953.

Spread over the 14 plants the total value of reported supplemental payments averaged 13.3 cents for each hundred pounds of ungraded milk. The continuing nature of these payments is illustrated by the fact that they equalled 12.7 cents in 1951, 13.8 cents in 1952, and 13.4 cents in 1953.

Monthly and seasonal variation. --An important aspect of supplemental payments is the degree to which the amounts change with seasonal changes in milk production and the monthly variations about the seasonal pattern. For this purpose, the average monthly values of supplemental payments were grouped together with the following results:

Month	Average rate per hundredweight of supplemental payments
	<i>Cents</i>
January-----	14.1
February-----	13.9
March-----	13.7
April-----	14.6
Average-----	14.1
May-----	12.8
June-----	12.0
July-----	11.8
August-----	12.1
September-----	12.7
Average-----	12.3
October-----	13.5
November-----	14.4
December-----	14.9
Average-----	14.3

Nearly all of this variation arises from changes in the amount of money spent for hauling subsidies of one kind or another.

### Importance of Different Types of Supplemental Payments

Of the 12 plants reporting costs of supplemental payments, 11 (10 in 1953) listed data on hauling subsidies. Five paid patronage refunds each year, and one plant (two in 1953) also reported regular payments for premiums or services.

Hauling subsidies made up 77 percent of all supplemental payments during the 34-month period under study. Patronage refunds accounted for 22 percent and premiums and services made up the remaining 1 percent. In terms of money, the average payment of 13.3 cents was comprised of 10.2 cents for hauling subsidies, 3 cents for patronage refunds, and 0.1 cent for premiums and services.

The most apparent changing relationship was the tendency for hauling subsidies to diminish in importance (from 81 percent in 1951 to 72 percent in 1953) in contrast to increased patronage refunds, premiums and services (appendix, table 20). Apparently the generally abundant supplies of milk since the summer of 1952 lessened the need for hauling subsidies, particularly in the fall and winter months. On the other hand, the added volumes of milk processed made it possible for cooperative associations to pass greater savings on to producer members in the form of patronage refunds.

### Supplemental Payments and Type of Plant

There was considerable variation in this area between the sizes of supplemental payments by types of milk processing plants. One comparison that does not reveal individual operations is presented in table 9. During the test period, the 4 cheese plants made supplemental payments averaging 2 cents a hundredweight compared with 17.8

TABLE 9.--Average rate per hundredweight of supplemental payments made for different purposes by designated types of plants, area A, 1951-53

Type of plant and purpose of supplemental payment	1951	1952	1953	Average 1951-53
<b>CHEESE PLANTS (4)</b>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>
Hauling subsidies-----	2.8	2.1	0.8	2.0
Patronage refunds-----	---	---	---	---
Premium and services-----	---	---	---	---
Total payments-----	2.8	2.1	.8	2.0
<b>OTHER PLANTS (10)</b>				
Hauling subsidies-----	13.3	14.1	13.1	13.5
Patronage refunds-----	3.3	4.3	5.1	4.1
Premium and services-----	.1	.1	.3	.2
Total payments-----	16.7	18.5	18.5	17.8
<b>ALL PLANTS (14)</b>				
Hauling subsidies-----	10.3	10.7	9.6	10.2
Patronage refunds-----	2.3	3.0	3.6	3.0
Premium and services-----	.1	.1	.2	.1
Total payments-----	12.7	13.8	13.4	13.3

cents paid out by the other 10 plants. The cheese plants also paid less each succeeding year, dropping from 2.8 cents in 1951 to 0.8 cent in 1953. Other types of plants increased their payments from 16.7 cents in 1951 to 18.5 cents in 1952 and 1953.

All payments made by the cheese plants were for hauling subsidies. Hauling subsidies accounted for 76 percent of the payments made by other plants, followed by 23 percent as patronage refunds and 1 percent as premiums and services. In terms of actual payments, all other types of plants paid 13.5 cents for hauling subsidies, 4.1 cents for patronage refunds and 0.2 cent for premiums and services. Payments for these different purposes showed mixed tendencies from year to year.

### Effect of Supplemental Payments on Prices Paid for Milk

Among the 14 plants in this area, the practice of making supplemental payments for ungraded whole milk brought important changes in the competitive positions of firms when measured by total prices paid for milk f. o. b. plant. When the 14 plants in this area were arrayed according to the average announced price during the test period, those in the highest paying group made supplemental payments averaging 4 cents a hundredweight, and those in the lowest paying group averaged 22.6 cents a hundredweight. These differing rates of payments reduced the range in prices paid by the high and low groups by 18.6 cents a hundredweight (from 27.4 cents difference in announced paying prices to only 8.8 cents difference when actual paying prices are compared).

The data in table 8 covering each of the years studied clearly illustrates the complicating effects of making comparisons between the relative attractiveness of prices of various plants. What appears to be a 21 cents a hundredweight difference in prices paid farmers in 1951 by the two groups of plants actually averages only 4.8 cents. Likewise, an apparent difference of 42.6 cents in 1952 becomes an actual difference of 22.6 cents. The extreme result is reached during 1953 when the 7 plants in the lowest paying group on the basis of announced prices (16.9 cents a hundred less) actually outpaid the 7 plants in the high group by 3.1 cents a hundredweight.

# THE PRICE STRUCTURE FOR 4.0 PERCENT UNGRADED WHOLE MILK IN SOUTHEAST KANSAS AND SOUTHWEST MISSOURI (AREA B)

## Characteristics of Sample Plants

Ten plants buying ungraded whole milk for manufacturing purposes supplied the data on which the analysis in this section is based. Located in area B outlined in figure 1, 6 of the plants are condenseries, 2 are specialized cheese plants, and 2 are multiple-product plants. None were regulated by Federal milk orders.

## Announced Paying Prices to Farmers

All plants in this area announced prices that differed within the narrow range of only 5.6 cents a hundredweight (\$3.878-3.822). This compares with 48.5 cents in area A and 18.5 cents in area C. Although tending to narrow, the range between the price of the highest and lowest paying firms held fairly steady during each of the three years, varying from 8.5 cents in 1951 to 7.5 cents in 1952 to 5.6 cents in January to October 1953.

Because of the narrow range in announced prices and the way they were distributed, the plants were divided into two groups, with 6 in the group of highest paying plants and 4 in the lowest. During the test period, upper group plants quoted prices that averaged

TABLE 10.--Average prices and supplemental payments per hundredweight paid for 4.0 percent ungraded whole milk, by specified groups of plants, area B, 1951-53

Year and group <sup>1</sup>	Average price		
	Announced	Supplemental	Actual
1951	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Upper 6 plants-----	3.825	0.040	3.865
Lower 4 plants-----	3.825	.070	3.895
Difference-----	None	-.030	-.030
1952			
Upper 6 plants-----	4.259	.042	4.301
Lower 4 plants-----	4.228	.060	4.288
Difference-----	.031	-.018	.013
1953 <sup>2</sup>			
Upper 6 plants-----	3.480	.028	3.508
Lower 4 plants-----	3.453	.065	3.518
Difference-----	.027	-.037	-.010
34 months <sup>3</sup>			
Upper 6 plants-----	3.877	.037	3.914
Lower 4 plants-----	3.858	.065	3.923
Difference-----	.019	-.028	-.009

<sup>1</sup> The 10 plants were ranked from high to low according to the average announced price paid during the 34-month period.

<sup>2</sup> January-October only.

<sup>3</sup> January 1951-October 1953.

only 1.9 cents a hundredweight more than those of the lower group (table 10). Because these plants shifted their relative standing from year to year, there was no difference in prices paid by the two groups in 1951. In 1952 the difference equalled 3.1 cents and in 1953 it equalled 2.7 cents a hundredweight.

Type of plant does not explain completely the slight difference in price levels of the upper and lower groups. However, location plays a part, since lower group plants could be enclosed in a circle which would exclude all upper group plants. However, this circle would be straddled by plants in the upper group. Two other reasons for the narrow range in announced prices are suggested: one, two companies own more than one plant in the area, and two, the area is compact and may be more homogeneous and specialized as a heavy milk-producing area.

### Supplemental Payments for Milk

Every plant interviewed in this area reported supplemental payments of one type or another each year (except for 1951 when one plant reported no payments). Of these 10 plants (9 in 1951), 4 made supplemental payments during each of the 34 months under survey, while the others skipped payments for from 1 to 6 months.

The 10 plants in this area made supplemental payments averaging 4.8 cents a hundredweight on all the ungraded whole milk purchased during the test period.

Individual plants made payments that averaged from less than 1 cent to more than 11 cents a hundredweight. The number of plants making payments of varying amounts during the period were as follows:

Average rate per hundredweight of supplemental payments	Plants
<i>Cents</i>	<i>Numbers</i>
Under 3.0	3
3.0-5.9	3
6.0-8.9	2
9.0 and over	2

The extra payments varied from year to year within a range of only 1 cent a hundred (4.3 cents to 5.2 cents).

Seasonal variation. -- The effect of seasonal variations in hauling subsidies on total payments is shown below:

Month	Average rate per hundredweight supplemental payments
	<i>Cents</i>
January-April	6.1
May-August	3.2
September-December	5.3

Thus, January-April payments were 3 cents a hundredweight higher, and September-December payments 2 cents a hundredweight higher, than those made during the May-August period.

## Importance of Different Types of Supplemental Payments

Every plant in area B (except for one in 1951) subsidized the hauling of milk from farm to plant between January 1951 and October 1953. Some plants also paid patronage refunds or premiums. Percentagewise, hauling subsidies comprised about 79 percent of all supplemental payments, while patronage refunds and premiums each accounted for about 10 percent. In terms of actual payments, the hauling subsidies, patronage refunds, and premiums amounted to 3.8 cents, 0.5 cent, and 0.5 cent, respectively.

The month-to-month changes in the size and type of supplemental payments shown in appendix, table 21, emphasize the small but steady role of premiums and the changing importance of patronage refunds and hauling subsidies. For example, the amount of hauling subsidies varied from an average rate of 6.8 cents a hundred during January, November, and December to 2.8 cents paid during June. Other rates, averaged for each month in the 34-month period, are shown below:

Month	Average rate per hundredweight supplemental payments
	<i>Cents</i>
January-----	6.8
February-----	6.6
March-----	6.0
April-----	5.1
May-----	3.2
June-----	2.8
July-----	3.1
August-----	3.7
September-----	3.6
October-----	4.9
November-----	6.8
December-----	6.8

### Supplemental Payments and Type of Plant

The general nature of the variation in size and type of supplemental payment associated with different types of milk plants in this area is shown in the comparison of the 6 condenseries with the 4 other plants for each year and for the 34-month period (table 11). Averaged over 34 months, other-type plants paid out 7.4 cents a hundred as supplemental payments compared with 3.1 cents by condenseries. However, this average difference of 4.3 cents a hundredweight obscures the changing year-to-year relationships. For example, all other plants paid 4.4 cents a hundred more in supplemental payments than condenseries in 1951, 3.4 cents more in 1952, but 5.5 cents more during 1953.

All payments made by condenseries were for hauling subsidies. Other plants made extra payments for all three purposes, spending 5 cents a hundredweight for hauling subsidies and 1.2 cent a hundred each for patronage refunds and premiums and services. Between 1951 and 1952, both groups of plants paid slightly larger amounts for hauling subsidies (0.2 cent). Likewise, both groups paid about 1.5 cent a hundred less for hauling subsidies in 1953 and 1952. However, the decrease in payments for hauling in 1953 was more than offset in the other-than-condensery group by higher patronage refunds.

### Effect of Supplemental Payments on Prices Paid for Milk

Through the test period, and in each individual year, plants in the lower paying group made larger supplemental payments than plants in the higher paying group. The difference averaged 2.8 cents a hundredweight (6.5 cents as compared with 3.7 cents).

TABLE 11.--Average rate per hundredweight of supplemental payments made for different purposes by designated types of plants, area B, 1951-53

Type of plant and purpose of supplemental payments	1951	1952	1953	Average 1951-53
<b>CONDENSERIES (6)</b>				
	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>
Hauling subsidies-----	3.4	3.6	2.1	3.1
Patronage refund-----	--	--	--	--
Premium and services-----	--	--	--	--
Total payments-----	3.4	3.6	2.1	3.1
<b>OTHER PLANTS (4)</b>				
Hauling subsidies-----	5.4	5.6	3.9	5.0
Patronage refund-----	1.2	.2	2.5	1.2
Premium and services-----	1.2	1.2	1.2	1.2
Total payments-----	7.8	7.0	7.6	7.4
<b>ALL PLANTS (10)</b>				
Hauling subsidies-----	4.2	4.3	2.8	3.8
Patronage refund-----	.5	.1	1.0	.5
Premium and services-----	.5	.5	.5	.5
Total payments-----	5.2	4.9	4.3	4.8

These different rates of payment meant that farmers shipping to plants in the lower group actually received about 1 cent a hundredweight more for milk than farmers shipping to plants in the higher group (rather than about 2 cents less as indicated by announced paying prices). However, this did not hold true each year. Plants in the lower group on the basis of announced prices actually paid 3 cents a hundred more than the other plants in 1951, 1.3 cent less in 1952, and 1 cent more in the first ten months of 1953. These varying price movements made it impossible to accurately predict which plants provided the most remunerative outlets in any particular year.



# THE PRICE STRUCTURE FOR 4.0 PERCENT UNGRADED WHOLE MILK IN OKLAHOMA AND SOUTH-CENTRAL KANSAS (AREA C)

## Characteristics of Sample Plants

Of the 9 processing plants used in this section, 3 are cheese plants and 6 are multiple-product plants. Two of the latter manufacture butter in conjunction with powder and condensing operations, and 4 in conjunction with ice cream and ice cream mix operations (with some powder and cheese). None of these plants' paying prices was regulated by Federal milk orders, and all are located within area C as outlined in figure 1.

## Announced Paying Prices to Farmers

On the basis of announced paying prices during the test period, farmers shipping ungraded milk to the highest paying plant received 18.5 cents a hundred more than those shipping to the lowest paying plant. The prices ranged between \$3.609 and \$3.424, and averaged \$3.522. The 18.5 cent range equals 5.25 percent of the average paying price.

Concealed in the 34-month average is a very much wider range from year to year because a different plant paid the highest price each year and two plants alternated in paying the lowest. Thus, yearly differences between highest and lowest paying price averaged 26.6 cents a hundredweight (compared with the 18.5 cents for 34 months).

After being arrayed according to announced paying prices, 5 plants were placed in the upper group and 4 in the lower group. The upper group contains one cheese factory and four multiple-product plants. On the basis of geographical location, it is of interest that the four plants in the lower group are all located on the southern and western periphery of the area studied.

During the study period the group of higher paying plants announced prices averaging 7.5 cents a hundred more for milk than plants in the lower paying group. The difference was 5.7 cents in 1951, 7.6 cents in 1952, and continued to widen in 1953 to 9.4 cents (table 12).

## Supplemental Payments for Milk

Seven of the nine plants made supplemental payments for ungraded whole milk during the test period. An eighth plant reported occasional payments of hauling subsidies on a few routes, while the ninth indicated supplemental payments had been made from time to time, but none during the test period.

Total payments made by the 7 plants, averaged over the total operations of all 9 plants, equalled 13.3 cents a hundredweight. These payments equal 3.8 percent of the average price paid farmers for 4.0 percent milk during the same period by the same plants. On a yearly basis, supplemental payments equalled 11.1 cents on all milk purchased in 1951, 12.9 cents in 1952, and 16.2 cents a hundred during the first 10 months of 1953 (appendix, table 22).

Seasonal variations. --The amount of supplemental payments also varied seasonally in this area. Payments that averaged 11.6 cents a hundredweight from May through August increased 1.4 cents between January and April (to 13 cents). They averaged 3.8 cents a hundredweight higher from September to December as shown in the tabulation below:

<u>Months</u>	<u>Average size of supplemental payments</u> <u>Cents per hundredweight</u>
January-April	13.0
May-August	11.6
September-December	15.4

A breakdown of the seasonal data into months did not reveal any significant contra-seasonal movements or payments. Most of the seasonal variation is caused by changes in the amount spent for milk hauling subsidies.

TABLE 12.--Average prices and supplemental payments per hundredweight paid for 4.0 per cent ungraded whole milk, by specified groups of plants, area C, 1951-53

Year and group	Average price		
	Announced	Supplemental	Actual
1951	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Upper 5 plants-----	3.584	0.071	3.655
Lower 4 plants-----	3.527	.160	3.687
Difference-----	.057	-.089	-.032
1952			
Upper 5 plants-----	3.825	.097	3.922
Lower 4 plants-----	3.749	.168	3.917
Difference-----	.076	-.071	.005
1953			
Upper 5 plants-----	3.199	.153	3.352
Lower 4 plants-----	3.105	.175	3.280
Difference-----	.094	-.022	.072
34 months			
Upper 5 plants-----	3.556	.104	3.660
Lower 4 plants-----	3.481	.167	3.648
Difference-----	.075	-.063	.012

### Importance of Different Types of Supplemental Payments

Five of the nine plants interviewed reported paying hauling subsidies. Of these, four made payments each month in the test period; the fifth plant skipped some payments in the first part of 1952 and 1953; a sixth plant made occasional payments for this purpose. Three of the nine plants paid premiums in 1951. After 1951, two plants continued to pay regular premiums through 1953. Also, three of the plants were cooperative associations and, except for one plant in 1951, all paid patronage refunds to producers of ungraded milk.

Although more plants paid them, hauling subsidies accounted for only 28 percent of supplemental payments during the period. About 61 percent of all payments were patronage refunds, with premiums the other 11 percent. Payments for hauling subsidies equalled 3.7 cents a hundredweight, those for patronage refunds 8.1 cents, and those for premiums 1.5 cent a hundredweight.

Relative importance of the different types of supplemental payments changed from year to year (appendix, table 22). Since 1951, hauling subsidies have become less important when compared with refunds and payments for premiums and services. This held true in 1953 when the increase of the hauling subsidy was offset by an even greater gain in patronage refunds and total payments.

## Supplemental Payments and Type of Plant

Multiple-product plants paid an extra 17.5 cents a hundredweight for ungraded milk during the test period, while cheese plants were paying about 4.5 cents a hundredweight extra (table 13). Cheese plants paid about the same amount each year, varying only from 4.9 cents a hundred in 1951 to 4.4 cents in 1952 and 1953. Multiple-product plants, on the other hand, made sizable increases in the amount of supplemental payments each year (from 14.1 cents in 1951 to 17.1 cents in 1952, and again to 22.2 cents in 1953).

TABLE 13.--Average rate per hundredweight of supplemental payments made for different purposes by designated types of plants, area C, 1951-53

Type of plant and purpose of supplemental payments	1951	1952	1953	Average 1951-53
<b>CHEESE PLANTS (3)</b>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>
Hauling subsidies-----	4.3	4.0	4.0	4.1
Patronage refund-----	-	-	-	-
Premium and services---	.6	.4	.4	.5
<b>Total payments-----</b>	<b>4.9</b>	<b>4.4</b>	<b>4.4</b>	<b>4.6</b>
<b>MULTIPLE-USE (6)</b>				
Hauling subsidies-----	3.5	3.5	3.1	3.4
Patronage refund-----	10.2	10.7	16.1	12.1
Premium and services---	.4	2.9	3.0	2.0
<b>Total payments-----</b>	<b>14.1</b>	<b>17.1</b>	<b>22.2</b>	<b>17.5</b>
<b>ALL PLANTS (9)</b>				
Hauling subsidies-----	3.8	3.7	3.4	3.7
Patronage refund-----	6.8	7.1	10.7	8.1
Premium and services---	.5	2.1	2.1	1.5
<b>Total payments-----</b>	<b>11.1</b>	<b>12.9</b>	<b>16.2</b>	<b>13.3</b>

None of the cheese plants was a cooperative association, hence supplemental payments were for hauling subsidies and premiums. Multiple-product plants made payments for all three purposes. For hauling subsidies and premiums combined, cheese plants paid 4.6 cents a hundredweight during the 34-month period compared with the 5.4 cents paid by multiple-product plants. Thus, patronage refunds make up the important difference in amount of supplemental payments made by the two groups of plants. For this purpose, multiple-product plants paid 12.1 cents a hundredweight, with such payments averaging 10.2 cents in 1951, 10.7 cents in 1952, and jumping to 16.1 cents a hundredweight in 1953. Apparently the increased quantities of milk shipped to all milk plants in 1953 lowered unit costs of processing enough to permit larger payments in the form of patronage refunds as an alternative to setting higher announced paying prices.

### Effect of Supplemental Payments on Prices Paid for Milk

The changing competitive positions of firms in this area, as affected by the practice of making supplemental payments for ungraded milk, may be shown by comparing the pricing practices of the 5 plants in the higher paying group (as measured by announced paying prices) with those of the 4 plants in the lower group (table 12).

In each year (and thus during the test period), plants in the lower paying group made larger supplemental payments than plants in the higher paying group. The difference between rates of payment equalled 6.3 cents a hundredweight--16.7 cents compared with 10.4 cents. The difference narrowed each year--from 8.9 cents in 1951 to 7.1 cents in 1952 and 2.2 cents in 1953. This narrowing was caused by the fact that the higher paying group increased the size of supplemental payments faster than plants in the lower paying group.

Because these supplemental payments differed in size, plants in the lower group paid within 1.2 cents a hundredweight of the price paid by plants in the higher paying group (instead of the 7.5 cents a hundredweight difference indicated by announced paying prices).

The complicating effects of supplemental payments are seen more clearly by analyzing year-to-year changes in the "actual" prices paid for ungraded milk by these two groups of plants. In 1951, for example, it appears that plants in the upper group paid 5.7 cents a hundredweight more for milk than plants in the lower group. However, plants in the lower group paid 16 cents a hundredweight as supplemental payments (compared with 7.1 cents by plants in the upper group). Thus, in 1951, farmers shipping to plants in the lower group actually received 3.2 cents a hundredweight more for milk than farmers shipping to plants that appeared (from their announced paying prices) to be paying the most for milk.

During 1952, the higher supplemental payments made by plants in the lower group almost entirely offset the higher prices announced by plants in the upper group. In the first 10 months of 1953, on the other hand, plants in the upper group increased their supplemental payments sharply--to within 2.2 cents of the amount paid by plants in the lower group. These larger supplemental payments, combined with announced prices that averaged 9.4 cents higher, meant that plants in the upper group actually paid 7.2 cents a hundredweight more for milk.

The net effect of the practice of making supplemental payments at widely different rates between plants and between years for the same plant was to make it nearly impossible to predict which plant or plants would have paid the most for ungraded milk f.o.b. plant basis in any year. This statement was equally true even if the announced paying prices were already known.

# THE PRICE STRUCTURE FOR 3.8 PERCENT UNGRADED WHOLE MILK IN GREATER KANSAS CITY AREA

## Introduction

Handlers in the Greater Kansas City area have, from time to time, proposed that the price for Class II milk in their market be set at the average price quoted for ungraded milk by 14 local processing plants. These plants are located in northwest Missouri and northeast Kansas, and are within 100 miles of Kansas City. Included here are several plants not covered in the section beginning on page 16.

Although many other factors and considerations affect the determination of what constitutes an equitable price for Class II milk in each market, this section compares findings on the average price paid farmers by such plants with the Greater Kansas City Class II price. To accomplish this, the pricing data for each plant was adjusted, when necessary, to a 3.8 percent butterfat basis to fit the conditions of the Kansas City market. The analysis covers a period of 34 months from January 1951 through October 1953.

Of the 14 plants originally proposed by the handlers in Kansas City, 13 were still in business in the fall of 1953. Of these, 11 reported data or returned questionnaires which were complete and internally consistent.<sup>6</sup> All 13 plants were used to determine the average announced paying price. The size and type of supplemental payments were computed for the 11 plants furnishing complete data, and the average rate of these payments were added to the announced price level of all 13 plants to determine prices actually paid for ungraded milk.

## Proposed Price and Class II Prices

In each of the months surveyed, prices for Class II milk in the Greater Kansas City area exceeded the average basis price quoted by the 13 local manufacturing plants. The difference averaged 29.5 cents a hundredweight. By years, the difference averaged 34 cents a hundredweight in 1951, 25.5 cents in 1952, and 29 cents during January-October 1953. These relationships are shown in tables 14 and 15 and figure 3.

TABLE 14.--Amount prices per hundredweight for Class II milk in Kansas City exceeded the announced price of 13 local milk processing plants, 1951-53

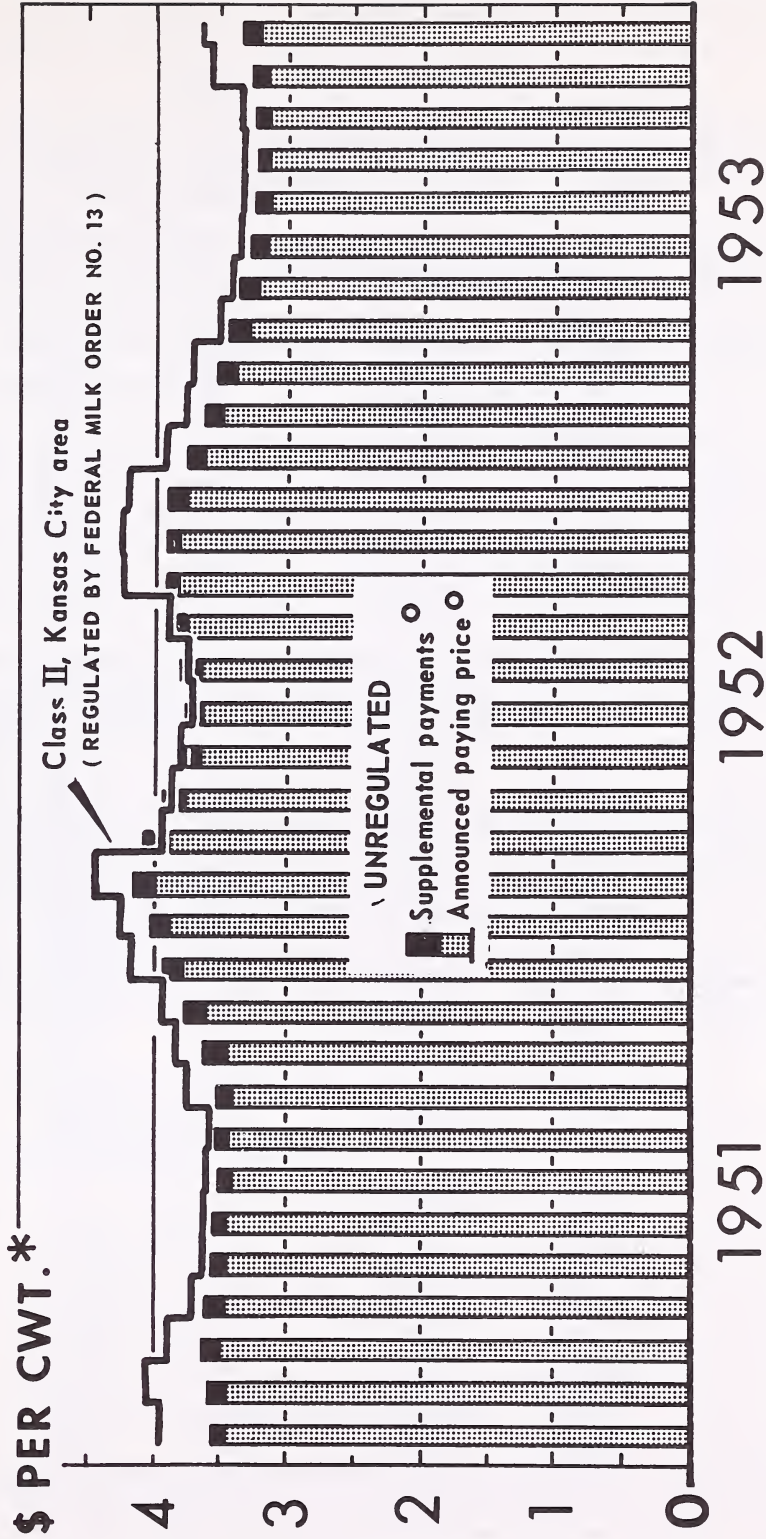
Date	Amount	Date	Amount
<u>1951</u>	<i>Cents</i>	<u>1953</u>	<i>Cents</i>
Jan.-Mar.-----	0.510	Jan.-Mar.-----	0.276
Apr.-Aug.-----	.203	Apr.-Aug.-----	.232
Sept.-Dec.-----	.380	Sept.-Oct.-----	.464
Year-----	.339	10 months	.292
		Average	
<u>1952</u>		<u>1951-53</u>	
Jan.-Mar.-----	.277	Jan.-Mar.-----	.354
Apr.-Aug.-----	.110	Apr.-Aug.-----	.182
Sept.-Dec.-----	.418	Sept.-Dec.-----	.412
Year-----	.254	34 months-----	.295

For the 34 months, the Class II price averaged 18 cents a hundredweight higher than the 13 plant price during April-August, 35 cents higher during January-March, and 41 cents higher from September-December.

<sup>6</sup> In one instance, a butterfat differential had to be determined.

In South Central U. S.

# PRICES PAID FOR MILK USED IN MANUFACTURED DAIRY PRODUCTS



\* CONTAINING 3.8 PERCENT BUTTERFAT

○ PAID BY 13 LOCAL UNREGULATED MANUFACTURING PLANTS

U. S. DEPARTMENT OF AGRICULTURE

NEG. 1283-54 (12)

AGRICULTURAL MARKETING SERVICE

Figure 3

TABLE 15.--Average prices and supplemental payments per hundredweight paid for 3.8 percent ungraded whole milk by local plants and comparison with the price of Class II milk, Greater Kansas City area, by months, January 1951-October 1953

Year and month	Price					
	Class II Kansas City	Announced, at 13 plants	Supplemental payments, at 11 plants	Actual	Amount Class II exceeds	
					Announced	Actual
1951	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
January-----	3.987	3.439	0.132	3.571	0.548	0.416
February-----	4.063	3.474	.130	3.604	.589	.459
March-----	3.900	3.506	.135	3.641	.394	.259
April-----	3.743	3.477	.146	3.623	.266	.120
May-----	3.674	3.463	.134	3.597	.211	.077
June-----	3.634	3.464	.117	3.581	.170	.053
July-----	3.618	3.419	.116	3.535	.199	.083
August-----	3.596	3.427	.117	3.544	.169	.052
September----	3.773	3.406	.135	3.541	.367	.232
October-----	3.855	3.479	.152	3.631	.376	.224
November-----	3.984	3.617	.163	3.780	.367	.204
December-----	4.189	3.780	.160	3.940	.409	.249
Year-----	3.835	3.496	.136	3.632	.339	.203
1952						
January-----	4.266	3.903	.173	4.076	.363	.190
February-----	4.465	4.016	.164	4.180	.449	.285
March-----	3.967	3.949	.153	4.102	.018	-.135
April-----	3.870	3.781	.168	3.949	.089	-.079
May-----	3.806	3.661	.138	3.799	.145	.007
June-----	3.742	3.656	.132	3.788	.086	-.046
July-----	3.753	3.671	.130	3.801	.082	-.048
August-----	3.902	3.753	.129	3.882	.149	.020
September----	4.268	3.813	.134	3.947	.455	.321
October-----	4.269	3.808	.140	3.948	.461	.321
November-----	4.204	3.770	.151	3.921	.434	.283
December-----	3.935	3.612	.165	3.777	.323	.158
Year-----	4.037	3.783	.148	3.931	.254	.106
1953						
January-----	3.770	3.491	.152	3.643	.279	.127
February-----	3.712	3.390	.155	3.545	.322	.167
March-----	3.522	3.295	.151	3.446	.227	.076
April-----	3.413	3.219	.158	3.377	.193	.036
May-----	3.372	3.150	.142	3.292	.222	.080
June-----	3.378	3.126	.131	3.257	.252	.121
July-----	3.360	3.117	.128	3.245	.243	.115
August-----	3.366	3.116	.141	3.257	.250	.109
September----	3.609	3.145	.141	3.286	.464	.323
October-----	3.666	3.203	.147	3.350	.463	.316
10 months--	3.517	3.225	.145	3.370	.292	.147

On a monthly basis, the difference between the Class II price in Greater Kansas City and the 13-plant average price varied widely--ranging from 2 cents a hundredweight in March 1952 to 59 cents in February 1951. The seasonal nature of these changing price relationships is illustrated by the data in table 14.

### Supplemental Payments

Of the 11 plants reporting, 10 made supplemental payments that increased prices paid for milk f. o. b. processor's plant.<sup>7</sup> Of these 10 plants, 9 made supplemental payments of one type or another each month between January 1951 and October 1953. The 10th plant stopped such extra payments in 1952.

Supplemental payments to producers supplying the 11 plants averaged 14.3 cents a hundred during each of the 34 months. Extra payments averaged 13.6 cents in 1951, 14.8 cents in 1952, and 14.5 cents in January-October 1953. It is apparent such payments in this area are a regular practice and have been made at steady rates during this 34-month period of rapidly changing economic conditions in the dairy industry.

### Importance of Different Types of Supplemental Payments

The most important supplemental payments were subsidies for hauling milk from farms to plants. Eight of the 11 plants made such payments each month, and a 9th plant made such payments during 1951 and part of 1952. Hauling subsidies made up 78 percent of all supplemental payments, and averaged 11.2 cents a hundredweight during the 34 months. By years, the payments remained fairly steady in size, averaging 11.2 cents in 1951, 11.7 cents in 1952, and 10.6 cents in 1953. As might be expected, the largest hauling subsidies were paid during October through April when supplies of milk ordinarily are shorter than in other months of the year.

Four of the plants in this sample are cooperative associations and each paid a patronage refund each year. Such refunds constituted about 20 percent of the value of all supplemental payments made during the test period (appendix, table 23). In terms of cents per hundredweight, these payments amounted to 2.3 cents in 1951, 3 cents in 1952, and 3.6 cents in 1953.

Three plants reported payments of quality and volume premiums and the supplying of services or materials to farmers. However, such payments equaled only one-tenth of a cent per hundredweight in 1951-52 and three-tenths of a cent per hundredweight in 1953.

### Size of Supplemental Payments of Individual Plants

The average value of supplemental payments made by individual companies in different months varied from less than one to as high as 66 cents a hundredweight. The distribution in size of payment during the 34-month period by the 11 plants is shown in the following tabulation:

Average value per hundredweight of supplemental payments	Plants
<i>Cents</i>	<i>Number</i>
Less than 1.0 <sup>1</sup>	1
1.0-9.9	4
10.0-19.9	2
20.0-29.9	3
30.0 and over	1

<sup>1</sup> But actual amounts not reported.

<sup>7</sup> The 11th plant reported quality premiums to some producers, but said the payments increased the cost of milk by only fractional amounts.



The practice of making supplemental payments by these 11 plants narrowed the range in prices actually paid by plants for ungraded milk. An array of the 11 plants, based on the average price quoted for 3.8 percent ungraded milk, shows the same 5 plants heading the list each year. These 5 plants are known as the upper group, the remaining 6 as the lower. Supplemental payments made by each group were then broken down by type and size for the 34-month period (table 16).

The most striking aspect of these data is that plants in the upper group made supplemental payments that averaged 3.6 cents a hundredweight while lower group plants, on a quoted basis, actually made supplemental payments averaging 23.2 cents a hundredweight. The net effect of these differing rates of supplemental payments was to narrow the spread between prices paid by the two groups of plants from 36.4 cents a hundredweight to 16.8 cents a hundredweight.

TABLE 16.--Average prices and supplemental payments per hundredweight paid for 3.8 percent ungraded whole milk, by specified groups of plants, Greater Kansas City area, 1951-53

Year and group <sup>1</sup>	Average Price		
	Announced	Supplemental	Actual
1951	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Upper 5 plants-----	3.617	0.045	<sup>2</sup> 3.661
Lower 6 plants-----	3.337	.213	3.550
Difference-----	.280	-.168	.111
1952			
Upper 5 plants-----	4.029	.034	4.063
Lower 6 plants-----	3.478	.243	3.721
Difference-----	.551	-.209	.342
1953			
Upper 5 plants-----	3.330	.028	3.358
Lower 6 plants-----	3.088	.242	3.330
Difference-----	.242	-.214	.028
34 months <sup>3</sup> ---			
Upper 5 plants-----	3.678	.036	3.714
Lower 6 plants-----	3.314	.232	3.546
Difference-----	.364	-.196	.168

<sup>1</sup> The 11 plants were ranked from high to low according to the average announced price paid during the 34-month period. The plants classified as "upper 5" ranked in the high five each year as well as on a 34-month basis.

<sup>2</sup> Not additive, because of rounding.

<sup>3</sup> January 1951-October 1953.

APPENDIX

TABLE 17.--Average prices and supplemental payments per hundredweight paid for 4.0 percent ungraded whole milk, by plants located in specified areas, south-central area, 1951-53

Year and group	Average price		
	Announced	Supplemental	Actual
1951	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Area A-----	3.627	0.127	3.754
Area B-----	3.825	.052	3.877
Area C-----	3.559	.110	3.669
All Plants-----	3.669	.099	3.768
1952			
Area A-----	3.901	.138	4.039
Area B-----	4.247	.049	4.296
Area C-----	3.791	.128	3.919
All Plants-----	3.976	.108	4.084
1953			
Area A-----	3.335	.134	3.469
Area B-----	3.469	.043	3.512
Area C-----	3.157	.163	3.320
All Plants-----	3.327	.114	3.441
34 months			
Area A (14)-----	3.638	.133	3.771
Area B (10)-----	3.869	.048	3.917
Area C ( 9)-----	3.522	.133	3.655
All Plants-----	3.677	.107	3.784

TABLE 18.--Average value per hundredweight and percentage distribution of supplemental payments made by plants purchasing ungraded whole milk, by items, south-central area, by months, January 1951-October 1953

Year and month	Value				Percentage distribution		
	Hauling subsidies	Patronage refunds	Premium and services	Total	Hauling subsidies	Patronage refunds	Premium and services
1951	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
January---	7.2	3.1	0.2	10.5	68.6	29.5	1.9
February--	5.4	3.1	.2	8.7	62.1	35.6	2.3
March-----	6.5	3.1	.2	9.8	66.3	31.6	2.1
April-----	6.8	3.1	.2	10.1	67.3	30.7	2.0
May-----	5.6	3.1	.2	8.9	62.9	34.8	2.3
June-----	5.0	3.1	.3	8.4	59.5	36.9	3.6
July-----	4.9	3.1	.3	8.3	59.0	37.4	3.6
August----	5.1	3.1	.2	8.4	60.7	36.9	2.4
September-	6.6	3.1	.2	9.9	66.7	31.3	2.0
October---	7.7	2.6	.2	10.5	73.3	24.8	1.9
November--	8.7	2.7	.7	12.1	71.9	22.3	5.8
December--	8.8	2.6	.7	12.1	72.7	21.5	5.8
Average--	6.5	3.0	.3	9.8	66.3	30.6	3.1
1952							
January---	9.1	2.9	.7	12.7	71.7	22.8	5.5
February--	8.6	3.0	.7	12.3	69.9	24.4	5.7
March-----	7.2	2.9	.5	10.6	67.9	27.4	4.7
April-----	7.4	2.9	.6	10.9	67.9	26.6	5.5
May-----	5.6	2.9	.5	9.0	62.2	32.2	5.6
June-----	5.3	2.9	1.2	9.4	56.4	30.8	2.8
July-----	5.4	2.9	.6	8.9	60.7	32.6	6.7
August----	5.3	2.9	.6	8.8	60.2	33.0	6.8
September-	6.2	2.9	.7	9.8	63.3	29.6	7.1
October---	7.1	4.2	.6	11.9	59.7	35.3	5.0
November--	7.6	4.2	1.1	12.9	58.9	32.6	8.5
December--	7.8	4.5	1.0	13.3	58.7	33.8	7.5
Average--	6.9	3.3	.7	10.9	63.3	30.3	6.4
1953							
January---	7.1	4.9	.8	12.8	55.5	38.3	6.2
February--	7.2	4.8	.8	12.8	56.3	37.5	6.2
March-----	6.1	4.8	.8	11.7	52.2	41.0	6.8
April-----	6.0	4.8	.9	11.7	51.3	41.0	7.7
May-----	5.0	4.8	.8	10.6	47.2	45.3	7.5
June-----	4.6	4.7	.8	10.1	45.6	46.5	7.9
July-----	4.5	4.7	.8	10.0	45.0	47.0	8.0
August----	5.4	4.7	.8	10.9	49.6	43.1	7.3
September-	6.0	4.7	.8	11.5	52.2	40.9	6.9
October---	6.4	4.8	.9	12.1	52.9	39.7	7.4
Average--	5.8	4.8	.8	11.4	50.9	42.1	7.0

TABLE 19.--Average prices and supplemental payments per hundredweight paid for 4.0 percent ungraded whole milk, by price contours, south-central area, January 1951-October 1953

Year and group	Average price			
	Announced	Supplemental	Actual	Percentage supplemental is of announced price
1951	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Percent</i>
Contour 1-----	3.810	0.050	3.860	1.31
Contour 2-----	3.587	.102	3.689	2.84
Contour 3-----	3.493	.204	3.697	5.84
1952				
Contour 1-----	4.232	.044	4.276	1.04
Contour 2-----	3.822	.123	3.945	3.22
Contour 3-----	3.668	.223	3.891	6.08
1953				
Contour 1-----	3.470	.038	3.508	1.10
Contour 2-----	3.239	.148	3.387	4.57
Contour 3-----	3.158	.225	3.383	7.12
34 months				
Contour 1-----	3.859	.044	3.903	1.14
Contour 2-----	3.568	.123	3.691	3.45
Contour 3-----	3.456	.217	3.673	6.28

TABLE 20.--Average value per hundredweight and percentage distribution of supplemental payments made by plants purchasing ungraded whole milk, by items, area A, by months, January 1951-October 1953

Year and month	Value				Percentage distribution		
	Hauling subsidies	Patronage refunds	Premium and services	Total	Hauling subsidies	Patronage refunds	Premium and services
1951	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
January---	9.9	2.4	0.1	12.4	79.8	19.4	0.8
February--	9.7	2.4	.1	12.2	79.5	19.7	.8
March-----	10.1	2.4	.1	12.6	80.2	19.0	.8
April-----	11.1	2.3	.1	13.5	82.2	17.0	.8
May-----	10.1	2.4	.1	12.6	80.2	19.0	.8
June-----	8.8	2.3	.1	11.2	78.6	20.5	.9
July-----	8.6	2.3	.1	11.0	78.2	20.9	.9
August----	8.8	2.3	.1	11.2	78.6	20.5	.9
September-	10.2	2.3	.1	12.6	81.0	18.2	.8
October---	11.5	2.3	.1	13.9	82.7	16.6	.7
November--	12.3	2.4	.1	14.8	83.1	16.2	.7
December--	12.1	2.4	.1	14.6	82.9	16.4	.7
Average--	10.3	2.3	.1	12.7	81.1	18.1	.8
1952							
January---	12.6	3.1	.1	15.8	79.8	19.6	.6
February--	11.8	3.1	.1	15.0	78.7	20.7	.6
March-----	11.0	3.1	.1	14.2	77.5	21.8	.7
April-----	12.3	3.0	.1	15.4	79.9	19.5	.6
May-----	9.8	3.0	.1	12.9	76.0	23.2	.8
June-----	9.4	3.0	.1	12.5	75.2	24.0	.8
July-----	9.3	3.0	.1	12.4	75.0	24.2	.8
August----	9.1	3.1	.1	12.3	74.0	25.2	.8
September-	9.4	3.1	.1	12.6	74.6	24.6	.8
October---	10.0	3.1	.1	13.2	75.7	23.5	.8
November--	10.9	3.0	.1	14.0	77.9	21.4	.7
December--	12.1	3.0	.1	15.2	79.6	19.7	.7
Average--	10.7	3.0	.1	13.8	77.5	21.8	.7
1953							
January---	10.4	3.7	.1	14.2	73.2	26.1	.7
February--	10.7	3.7	.1	14.5	73.8	25.5	.7
March-----	10.4	3.7	.1	14.2	73.2	26.1	.7
April-----	10.8	3.7	.3	14.8	73.0	25.0	2.0
May-----	9.1	3.6	.3	13.0	70.0	27.7	2.3
June-----	8.3	3.6	.3	12.2	68.0	29.5	2.5
July-----	8.1	3.5	.3	11.9	68.1	29.4	2.5
August----	9.1	3.5	.3	12.9	70.6	27.1	2.3
September-	9.1	3.6	.3	13.0	70.0	27.7	2.3
October---	9.5	3.6	.3	13.4	70.9	26.9	2.2
Average--	9.6	3.6	.2	13.4	71.6	26.9	1.5

TABLE 21.--Average value per hundredweight and percentage distribution of supplemental payments made by plants purchasing ungraded whole milk, by items, area B, by months, January 1951-October 1953

Year and month	Value				Percentage distribution		
	Hauling subsidies	Patronage refunds	Premium and services	Total	Hauling subsidies	Patronage refunds	Premium and services
1951	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
January---	5.2	0.5	0.5	6.2	83.9	8.1	8.0
February--	5.2	.5	.5	6.2	83.9	8.1	8.0
March-----	5.1	.6	.5	6.2	82.3	9.7	8.0
April-----	4.4	.5	.5	5.4	81.5	9.3	9.2
May-----	2.4	.5	.5	3.4	70.6	14.7	14.7
June-----	1.9	.6	.5	3.0	63.3	20.0	16.7
July-----	2.1	.5	.5	3.1	67.8	16.1	16.1
August-----	2.4	.5	.5	3.4	70.6	14.7	14.7
September--	2.8	.5	.5	3.8	73.7	13.2	13.1
October---	4.4	.5	.5	5.4	81.5	9.3	9.2
November--	7.0	.5	.5	8.0	87.5	6.3	6.2
December--	7.7	---	.5	8.2	93.9	---	6.1
Average--	4.2	.5	.5	5.2	80.8	9.6	9.6
1952							
January---	8.1	---	.4	8.5	95.3	---	4.7
February--	7.3	---	.5	7.8	93.6	---	6.4
March-----	6.2	---	.5	6.7	92.5	---	7.5
April-----	5.2	---	.5	5.7	91.2	---	8.8
May-----	2.5	---	.5	3.0	83.3	---	16.7
June-----	1.9	---	.5	2.4	79.2	---	20.8
July-----	2.5	---	.5	3.0	83.3	---	16.7
August-----	2.7	---	.5	3.2	84.4	---	15.6
September--	2.6	---	.5	3.1	83.9	---	16.1
October---	4.4	---	.5	4.9	89.8	---	10.2
November--	5.0	---	.5	5.5	90.9	---	9.1
December--	4.1	1.0	.4	5.5	74.5	18.2	7.3
Average--	4.3	.1	.5	4.9	87.8	2.0	10.2
1953							
January---	4.4	1.0	.4	5.8	75.9	17.2	6.9
February--	4.3	1.0	.5	5.8	74.1	17.3	8.6
March-----	3.6	1.0	.5	5.1	70.6	19.6	9.8
April-----	2.6	1.0	.5	4.1	63.4	24.4	12.2
May-----	1.7	1.0	.5	3.2	53.1	31.3	15.6
June-----	1.6	1.0	.5	3.1	51.6	32.3	16.1
July-----	1.7	1.0	.5	3.2	53.1	31.3	15.6
August-----	2.9	1.0	.5	4.4	65.9	22.7	11.4
September--	2.5	1.0	.5	4.0	62.5	25.0	12.5
October---	2.8	1.0	.5	4.3	65.1	23.3	11.6
Average--	2.8	1.0	.5	4.3	65.1	23.3	11.6

TABLE 22.--Average value per hundredweight and percentage distribution of supplemental payments made by plants purchasing ungraded whole milk, by items, area C, by months, January 1951-October 1953

Year and month	Value				Percentage distribution		
	Hauling subsidies	Patronage refunds	Premium and services	Total	Hauling Subsidies	Patronage refunds	Premium and services
1951	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
January--	5.2	7.2	0.1	12.5	41.6	57.6	0.8
February--	5.0	7.2	.1	12.3	40.7	58.5	.8
March----	2.4	7.2	.1	9.7	24.8	74.2	1.0
April----	2.7	7.2	.1	10.0	27.0	72.0	1.0
May-----	2.3	7.2	.2	9.7	23.7	74.2	2.1
June-----	2.4	7.2	.3	9.9	24.3	72.7	3.0
July-----	2.4	7.2	.3	9.9	24.3	72.7	3.0
August---	2.5	7.2	.2	9.9	25.3	72.7	2.0
September	5.1	7.2	.2	12.5	40.8	57.6	1.6
October--	5.5	5.4	.2	11.1	49.5	48.7	1.8
November-	4.9	5.4	1.9	12.2	40.2	44.2	15.6
December-	4.9	6.0	2.1	13.0	37.7	46.2	16.1
Average	3.8	6.8	.5	11.1	34.2	61.3	4.5
1952							
January--	4.9	6.0	1.9	12.8	38.3	46.9	14.8
February--	4.9	6.0	1.9	12.8	38.3	46.9	14.8
March----	2.2	6.0	1.4	9.6	22.9	62.5	14.6
April----	2.2	6.0	1.5	9.7	22.7	61.9	15.4
May-----	2.2	6.0	1.3	9.5	23.2	63.1	13.7
June-----	2.2	6.0	3.7	11.9	18.5	50.4	31.1
July-----	2.2	6.0	1.4	9.6	22.9	62.5	14.6
August---	2.2	6.0	1.5	9.7	22.7	61.9	15.4
September	4.9	6.0	1.8	12.7	38.6	47.2	14.2
October--	5.4	10.4	1.6	17.4	31.0	59.8	9.2
November-	5.5	10.4	3.4	19.3	28.5	53.9	17.6
December-	5.2	10.7	3.2	19.1	27.2	56.0	16.8
Average	3.7	7.1	2.1	12.9	28.7	55.0	16.3
1953							
January--	4.9	10.7	2.3	17.9	27.4	59.8	12.8
February--	4.9	10.7	2.4	18.0	27.2	59.5	13.3
March----	2.2	10.7	2.3	15.2	14.5	70.4	15.1
April----	2.2	10.7	2.2	15.1	14.6	70.8	14.6
May-----	2.2	10.7	2.0	14.9	14.8	71.8	13.4
June-----	2.2	10.7	1.9	14.8	14.9	72.3	12.8
July-----	2.2	10.7	1.9	14.8	14.9	72.3	12.8
August---	2.4	10.7	1.9	15.0	16.0	71.3	12.7
September	5.2	10.7	2.0	17.9	29.0	59.8	11.2
October--	5.6	10.7	2.4	18.7	30.0	57.2	12.8
Average	3.4	10.7	2.1	16.2	21.0	66.0	13.0

TABLE 23.--Average value per hundredweight and percentage distribution of supplemental payments made by 13 local plants purchasing ungraded whole milk, by items, Greater Kansas City area, by months, January 1951-October 1953

Year and month	Value				Percentage distribution		
	Hauling subsidies	Patronage refunds	Premium and services	Total	Hauling subsidies	Patronage refunds	Premium and services
1951	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
January---	10.8	2.3	0.1	13.2	81.8	17.4	0.8
February--	10.6	2.3	.1	13.0	81.5	17.7	.8
March-----	11.1	2.3	.1	13.5	82.2	17.0	.8
April-----	12.3	2.2	.1	14.6	84.2	15.1	.7
May-----	11.0	2.3	.1	13.4	82.1	17.2	.7
June-----	9.3	2.3	.1	11.7	79.5	19.7	.8
July-----	9.3	2.2	.1	11.6	80.2	19.0	.8
August----	9.4	2.2	.1	11.7	80.3	18.8	.9
September-	11.2	2.2	.1	13.5	83.0	16.3	.7
October---	12.8	2.3	.1	15.2	84.2	15.1	.7
November--	13.9	2.3	.1	16.3	85.3	14.1	.6
December--	13.6	2.3	.1	16.0	85.0	14.4	.6
Average-	11.2	2.3	.1	13.6	82.4	16.9	.7
1952							
January---	14.1	3.1	.1	17.3	81.5	17.9	.6
February--	13.2	3.1	.1	16.4	80.5	18.9	.6
March-----	12.1	3.1	.1	15.3	79.1	20.3	.6
April-----	13.7	3.0	.1	16.8	81.5	17.9	.6
May-----	10.7	3.0	.1	13.8	77.5	21.8	.7
June-----	10.2	2.9	.1	13.2	77.3	22.0	.7
July-----	10.0	2.9	.1	13.0	76.9	22.3	.8
August----	9.8	3.0	.1	12.9	76.0	23.2	.8
September-	10.2	3.1	.1	13.4	76.1	23.1	.8
October---	10.8	3.1	.1	14.0	77.2	22.1	.7
November--	11.9	3.1	.1	15.1	78.8	20.5	.7
December--	13.4	3.0	.1	16.5	81.2	18.2	.6
Average-	11.7	3.0	.1	14.8	79.0	20.3	.7
1953							
January---	11.3	3.8	.1	15.2	74.3	25.0	.7
February--	11.7	3.7	.1	15.5	75.5	23.9	.6
March-----	11.3	3.7	.1	15.1	74.8	24.5	.7
April-----	11.8	3.6	.4	15.8	74.7	22.8	2.5
May-----	10.2	3.6	.4	14.2	71.8	25.4	2.8
June-----	9.2	3.5	.4	13.1	70.2	26.7	3.1
July-----	8.9	3.5	.4	12.8	69.5	27.4	3.1
August----	10.2	3.5	.4	14.1	72.4	24.8	2.8
September-	10.2	3.5	.4	14.1	72.4	24.8	2.8
October---	10.7	3.6	.4	14.7	72.8	24.5	2.7
Average-	10.6	3.6	.3	14.5	73.1	24.8	2.1



TABLE 24.--Announced paying prices per hundredweight for ungraded milk and range between plants with the highest and lowest average prices, by areas, 1951-53

Year	Average price			
	Highest-paying plant	Lowest-paying plant	Range between highest and lowest paying plant	
			Actual	Percentage of lowest price
Area A	<i>Dollars</i>	<i>Dollars</i>	<i>Cents</i>	<i>Percent</i>
1951-----	3.825	3.340	48.5	14.5
1952-----	4.262	3.525	73.7	20.9
1953 <sup>1</sup> -----	3.480	3.204	27.6	8.6
Area B				
1951-----	3.873	3.788	8.5	2.2
1952-----	4.263	4.188	7.5	1.8
1953 <sup>1</sup> -----	3.480	3.424	5.6	1.6
Area C				
1951-----	3.817	3.442	37.5	10.9
1952-----	3.853	3.662	19.1	5.2
1953 <sup>1</sup> -----	3.316	3.090	22.6	7.3

<sup>1</sup> January-October only.











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