UNIVERSITY OF
ILLINOIS LIBRARY
AT URBANA-CHAMPAIGN
AGRICULTURE

NON CIRCULATING

**CHECK FOR UNBOUND
CIRCULATING COPY**

22.7
E266

LIBRARY OF THE
DEC 23 1957

UNIVERSITY OF ILLINOIS

UNIVERSITY OF ILLINOIS
AGRICULTURE LIBRARY

THE EVOLUTION OF

GRADED EGG MARKETING IN ILLINOIS

By E. E. Broadbent

Bulletin 619

UNIVERSITY OF ILLINOIS
AGRICULTURAL EXPERIMENT STATION

CONTENTS

INTRODUCTION

Illinois Egg Marketing Prior to 1946.....	4
Early Attempts to Establish Graded Egg Marketing.....	7
Declining Importance of the Chicago Wholesale Market.....	8
Egg Breakers Decentralize the Egg Market.....	10
Changes in Seasonal Egg Supply.....	11

ANALYSIS OF GRADED AND CURRENT-RECEIPT MARKETING

Survey of Major Egg Markets (1947-1948).....	13
Detailed Analysis of a Representative Illinois Country Graded Egg Market (1947-1954).....	16
Areas of Influence of the Graded Market.....	33
Transition of Illinois Egg Marketing.....	36
Potential for Expanding Graded Egg Marketing.....	44
Distribution of Consumer's Egg Dollar.....	49

COSTS AND MARGINS FOR GRADED EGGS SOLD IN

FOUR MAJOR MIDWESTERN CITIES (1952-1954).....	52
---	----

SUMMARY AND CONCLUSIONS.....	56
------------------------------	----

APPENDIX	58
----------------	----

ACKNOWLEDGMENT

The author is indebted to major Illinois country egg-marketing firms and chain stores and dairies on the Chicago and St. Louis markets for much of the data presented in this report; and to his colleagues, especially the late Professor L. J. Norton, for their helpful suggestions in preparing the manuscript.

THE EVOLUTION OF GRADED EGG MARKETING IN ILLINOIS

By E. E. Broadbent, Associate Professor of Agricultural Economics

SINCE 1945 Illinois egg marketing has undergone a transition from the traditional farm-run or "current receipts" system to integrated graded-egg marketing. But this transition is not yet complete.

Although Illinois farmers received an annual income of more than 75 million dollars from egg sales during 1950 to 1955, their income would have been even larger if they had sold more eggs on a graded basis. During this same period — and in fact, since 1930 — the Illinois price per dozen eggs has been less than the average United States price. If Illinois farmers had received the average United States price for the eggs they sold in 1954 alone, their income would have been increased by at least 10 million dollars.

This bulletin describes the development of Illinois graded-egg marketing, analyzes the country graded and current-receipt systems, and compares the retail costs, margins, and quality aspects of Illinois egg marketing with those of competing alternative sources. It should prove especially helpful to tradespeople, research personnel, extension workers, and others interested in developing and maintaining a quality egg-marketing program.

To evaluate the current-receipt and graded-egg marketing systems, research workers interviewed every known major egg dealer in the state. Records of early attempts to improve the Illinois egg market were studied, and tradespeople who had taken part in these early attempts were interviewed. Secondary data regarding the surplus-deficit supply areas and seasonal supply and pricing data were also analyzed.

To study procurement and pricing methods and costs of egg marketing, data involving procurement costs, selling prices, quality yield, and volume were summarized from 1946 to 1949 for every major country egg assembler in the state who would cooperate. These "cooperating" assemblers handled over 25 percent of the eggs sold from Illinois farms. Egg-marketing records of the major chain stores and dairies in Chicago and St. Louis were summarized for the same period.

An analysis of differences in costs, quality yields, and margins by these different firms provided a basis for recommending changes in Illinois egg procurement and marketing.

Data were compared for northern and southern Illinois firms who were buying eggs on a graded and current receipts basis in 1947 and

1948. Since graded-egg marketing seemed to provide a basis for improvement, records of all graded-egg marketing by Illinois country grading stations from 1946 to 1949 were analyzed. All of these stations bought eggs from Illinois producers and sold them to essentially the same kind of terminal distributors, and their buying, selling, and grading methods were practically identical. Since the grading operations of these stations were so much alike, the records of one station were summarized and analyzed for the years 1947 through 1954. This comprehensive analysis was used to study the problems of developing and maintaining a system of country graded-egg marketing in Illinois.

Because consumers in large cities provide an outlet for most of the quality eggs bought by country grading stations, detailed records of egg marketing by outlets of this country grading station were obtained for the same period (1947-1954). And since one market cannot ignore its competitive relationship with other markets, comparative costs, grade yields, and seasonal egg supplies were summarized for retail outlets in four major midwestern cities for the years from 1950 to 1954.

Illinois Egg Marketing Prior to 1946

Prior to 1946 Illinois farmers were not encouraged to produce or market quality eggs. Most eggs were sold on a farm-run basis, commonly referred to as "current receipts." This marketing system was supposedly based on the Chicago wholesale market price quotation for current-receipt eggs less about 4 to 6 cents a dozen to cover marketing costs. Little attention was paid to quality or appearance, and prices varied seasonally with supply and the proportion of small and pullet eggs. Many assemblers bought farm-run eggs from local egg dealers and country stores.

Country assemblers sorted eggs into different lots according to size, color, and shell cleanliness. Usually dirty and cracked eggs were put in one lot, clean eggs were sorted into large and medium sizes, and all eggs were sold as wholesale grades on the terminal market. In the spring months, some surplus farm-run eggs may have been sold on the terminal market as current receipts. The Large and Medium eggs were usually sold in wholesale lots as either 40-, 60-, or 70-percent Grade A minimum quality. The "castoff" eggs were sold through terminal market channels as "current receipts."

A distinction should be made here between the term "current receipts" as used to describe these castoff eggs and "current receipts" as applied to country egg marketing. Although prices paid farmers

were based on castoff egg quotations, the farm-run current-receipt eggs were fresh, ungraded eggs. In other words, farm prices were based on eggs far inferior to the eggs actually sold by the farmers.

When the farm-run eggs were resold to other marketing agencies, the local first receiver or the farmer seldom received any price differential for supplying "quality" eggs. Under this system producers had no incentive to produce or market high-quality eggs.

Typical egg-marketing channels (Fig. 1)

Typical market channels (Fig. 1) through which shell eggs moved to consumers were: from producers to local stores; to local produce dealers and truckers who functioned as country assemblers; to terminal assemblers; to dealers and brokers; to wholesale jobbers; to retail stores; and finally, to consumers. Emphasis was placed on the quantity of eggs marketed, rather than on the quality of those eggs.

During the flush spring production months, many large "fresh" eggs were stored for shell-egg consumption in the fall months. Because eggs were comparatively cheap and of high quality, and yielded a high amount of liquid per dozen, a large part of the spring surplus supply was diverted to egg-breaking establishments. These establishments paid seasonally low prices for high-quality large eggs, and froze or dried the liquid portion of the eggs either as whites, yolks, or whole eggs, or as a patented, brand-named product. During the fall months these frozen and dried eggs were usually sold to bakers and noodle, candy, and mayonnaise manufacturers at prices lower than those received for fresh shell eggs. The inedible eggs were usually destroyed or sold to the tanning industry.

On the terminal markets, the major retail distributors and dairies tried to satisfy discriminating consumers by buying the best grades of eggs available at the wholesale market. Low yields of quality eggs, arising from frequent handling and deterioration of a perishable product, raised the costs per dozen of saleable eggs. Many high-priced, low-quality storage eggs were sold during the fall months to try to meet the consumer demand for "reasonably high-quality" eggs.

A cash-and-trade price system, which still persists in certain parts of the state, was common. The price in trade was usually 1 or 2 cents over the cash price; the quality of the eggs was relatively unimportant. Eggs were sometimes candled in the summer months to prevent the sale of inedible eggs.

Little attempt was made to differentiate for quality in Illinois eggs. The main purpose of the "grade" was to separate the small from the large and the bad from the good eggs. The head egg buyers of retail food distributors and dairies informed research workers that although a large volume of eggs was produced on Illinois farms, these eggs were produced at the wrong time of the year. It was impossible to get an adequate volume of quality eggs when they were needed. In processing Illinois eggs, these buyers discovered that with the same amount of labor, their egg candlers could pack almost three times the volume of high-quality eggs in the time required to sort the good- from the low-quality eggs.

Early Attempts to Establish Graded Egg Marketing

Farmers' cooperatives made the initial attempt to establish graded-egg marketing in Illinois. Grading stations were set up at Olney, Effingham, Yorkville, and Wayne City. These stations failed because of inadequate volume, lack of reliable grading standards, little or no enforcement of the egg candling law, poor egg quality, inability to meet the short-run competition of established current-receipt markets, inadequate market outlets, inefficient management, and limited understanding of graded marketing.

The financial loss sustained by these stations was comparatively small; but the antagonism to graded-egg marketing resulting from their failure was both bitter and widespread. This antagonism was perpetuated by old-line current-receipt egg buyers, who recognized in graded-egg marketing a threat to their existing procurement program.

In the early 1940's two feed companies realized that the poultry and egg industry offered the best means of expanding their feed sales. They reasoned as follows: since poultry feeds made up the most important volume of their total feed sales, and laying mash made up the greatest proportion of poultry feeds, any program which increased the profits for poultrymen would also increase demands for more feed and baby chickens. If hens were properly fed, they would lay more eggs. These eggs could be sold profitably — if a sound marketing program could be developed. Developmental costs would be absorbed by profits from current feed sales and the anticipated increase in future feed sales.

Eggs could be assembled, graded, and sold directly to retail food distributors. Although these feed companies believed that this integration would eventually prove profitable to the entire poultry industry, they expected to sustain financial losses for at least two years.

Their quality egg-marketing programs were launched just prior to World War II. Grading stations and pick-up routes were established, and feed dealers functioned as egg-receiving stations. Farmers were paid on a differentiated pricing system that encouraged them to produce high-quality eggs, and arrangements were made with chain stores and dairies to absorb all eggs marketed.

A comparison of the weighted average price paid producers at one of these country pick-up stations and the USDA midmonth price report of prices paid in the same area shows that graded marketing was definitely advantageous for producers (Fig. 2).

The egg-marketing programs initiated by these feed companies were

Premiums paid for graded eggs were usually highest in the summer and fall and lowest in the spring. (Fig. 2)

completely successful. Preliminary studies¹ of their activities indicated that (1) some Illinois farmers were producing better-quality eggs than reflected by the local price of current-receipt eggs; (2) buying eggs on a graded basis provides an incentive for improvement in the quality of eggs marketed; and (3) producers will respond to a market that differentiates for quality production.

Declining Importance of the Chicago Wholesale Market

The demand for eggs of assured quality, coupled with the pressure of increased costs of handling and processing eggs at the terminal wholesale egg market, has caused a transition in the importance of the Chicago market both in total supply and as a source of "quality" eggs.

¹ Illinois Agriculture Experiment Station Circular 631, "Grading Will Improve the Market for Illinois Eggs," 1948.

Since 1925, the total Illinois and United States production of eggs has increased over 70 percent (Appendix Table 22), and the production pattern of each has followed the same seasonal flow (Fig. 3).

Although Illinois egg production increased over 70 percent and United States production increased over 85 percent from 1925 to 1954, Chicago Wholesale Receipts decreased about 25 percent during this period. (Fig. 3)

During this time, there has been a great shift in the relative importance of receipts at the Chicago wholesale market. In the earlier period, Chicago market receipts represented 12.2 percent of the total United States production. By 1950-1954 Chicago receipts had decreased to only 6 percent of the total. In the latter period Chicago receipts represented only 17 percent more than the total Illinois production.

The decline in the importance of the Chicago wholesale market has been most pronounced since 1940-1945, when an average of 5.1 million cases of eggs was received. Receipts decreased 32 percent to 3.5 million cases by 1949. From 1949 to 1954, average receipts were lower than any year since 1935. The decline of the Chicago wholesale market receipts has largely been offset by the development of country egg buying stations which supply most of the eggs for the city trade.

Egg Breakers Decentralize the Egg Market

The major egg-breaking establishments made one of the first moves toward decentralization in egg marketing. These establishments, which supply liquid eggs to institutional users, conducted detailed research to determine alternative sources of supply and to predict market potential for country procurement of eggs for breaking purposes.

During the Second World War, egg-breaking establishments were set up at decentralized Illinois country points to intercept the flow of surplus eggs that normally moved to terminal markets. Modern highways and mainlines of railroads passed through these points, and

Illinois egg production in 1950-1954 varied seasonally about one-third as much as in 1925-1929. (Fig. 4)

labor costs were comparatively cheap. Since the plants located in these surplus-producing areas were closer to some Eastern consumer centers than the major terminal markets, frozen eggs could be transported south or east from these points easier than from Chicago.

The egg breakers offered country assemblers 1/2 cent a dozen less for eggs than the Chicago wholesale market price of current receipts. (For a comparison of the Chicago wholesale egg prices and prices paid by two Illinois egg breakers, see Appendix Table 23.) By selling their eggs directly to the egg breakers, country assemblers could save at least one day's travel time and the expense of driving a truck 300 miles to the wholesale market. Although the egg breaking took place at these country points, the actual sales of frozen eggs were coordinated at terminal markets.

Changes in Seasonal Egg Supply

During the past 30 years, seasonal egg production and prices in Illinois (Table 1) have gradually leveled out (Figs. 4 and 5).

Although 1950-1954 production during the lowest month increased 227 percent as compared with 1925-1929, it increased only 5 percent in the highest production months (Appendix Table 34). The low production month shifted from December to September.

Illinois egg prices in 1950-1954 varied seasonally about one-fourth as much as in 1925-1929. (Fig. 5)

Table 1. — Changes in Illinois Egg Production and Average Prices, 1925-1929 to 1950-1954

Year	Production					Price				
	Lowest month and index	Highest month and index	Percent ^a			Lowest month and index	Highest month and index	Percent ^a		
1925-29.....	Dec. 36	April 185	516			April 76	Dec. 151	198		
1935-39.....	Nov. 51	April 178	348			March 83	Nov. 137	166		
1945-49.....	Sept. 71	April 144	203			Feb. 90	Oct. 117	130		
1950-54.....	Sept. 76	March 136	165			June 90	Dec. 113	126		

^a Percent high month is of low month.

Table 2. — Seasonal Distribution of Illinois Egg Production, 1945-1954^a

Year	January to March	April to June	July to September	October to December
	(percent)			
1945.....	27.6	34.6	20.6	17.2
1946.....	29.0	33.3	19.2	18.5
1947.....	28.4	32.9	19.2	19.5
1948.....	27.6	30.9	20.4	21.1
1949.....	28.0	29.2	19.8	23.0
1950.....	29.2	29.8	19.9	21.1
1951.....	27.6	29.5	20.3	22.6
1952.....	28.8	28.5	19.9	22.8
1953.....	28.2	27.9	19.7	24.2
1954.....	28.1	27.5	19.8	24.6

^a Adapted from data compiled by the Illinois Cooperative Crop Reporting Service, Agricultural Marketing Service, U. S. Department of Agriculture.

The pricing pattern largely reflects this production change. By 1953 the low-priced month had moved ahead from April to February; and by 1954,¹ a new pricing pattern seemed to have developed. One low-priced month (December) preceded the time when egg-breakers become active buyers; the other (June) followed the end of their operations (after the flush high-quality-production spring months were over).

This change in seasonal supply is even more marked from 1945 to 1954 (Table 2). A comparison of egg production by quarters since 1945 shows a 21-percent decrease in the proportion of eggs produced from April to June and a 43-percent increase in the proportion of eggs produced from October through December. The relative supply produced during the other two quarters has not changed appreciably in the past ten years.

¹ In 1954 the high-priced month would have shifted from December to October if abnormal prices had not been paid for eggs during that year.

ANALYSIS OF GRADED AND CURRENT-RECEIPT MARKETING

Survey of Major Egg Markets (1947-1948)

During 1947 and 1948, a survey was made of every major Illinois country assembler. Detailed records of purchase and sales prices, as well as operational costs and grade workout, were obtained from every firm that would cooperate.¹ Procurement and sales data were summarized on a monthly, 13 four-week period,² and annual basis.

Volume and pricing data were obtained from thirteen country egg assemblers who were buying current-receipt eggs.³ (Nine were located in southern Illinois and four in northern Illinois.) Comparable data were also obtained from three small northern Illinois graded-egg buyers and one large and one small southern Illinois graded-egg buyer. Retail sales data were assembled from major retail outlets that bought and sold current-receipt eggs to city consumers.

Data were summarized to show the seasonal flow, weighted average price paid by each source, and the grade yield at each grading station. Price differentials were compared between graded and current-receipt egg marketing. Records were summarized according to the geographical location of the firms in the state and their method of buying eggs (whether on a graded or current-receipt basis).

Every country assembler reported that he based his current-receipt egg price to farmers on the Chicago terminal market quotations for current receipts less about 4 cents a dozen. The difference between the weighted average prices paid by these egg dealers and the reported Chicago current-receipt price base was summarized for 1947 and 1948 (Table 3).

Regardless of the method of buying or location in the state, little relationship existed between the reported base and prices actually paid producers for eggs. Prices paid by any class of egg buyers did not exceed the reported price base except during December 1947, and February 1948.

The price advantage of a graded egg market. In 1947 northern Illinois producers received 8.6 cents a dozen more for graded eggs than for current-receipt eggs. The northern Illinois grade price ex-

¹ The volume of sales by these firms represents about 25 percent of the total egg sales from Illinois farms.

² Since weekly summary data were available for some of the important cost data, summaries were made on 13 four-week periods for each year.

³ See footnote, Table 3.

Table 3.—Differences Between Chicago Current-Receipt Egg Price Quotations and Some Weighted Average Prices Paid for Illinois Eggs, 1947-1948

Market area	January	February	March	April	May	June	July	August	September	October	November	December	Average
	(cents per dozen)												
	1947												
Chicago current receipts.....	37.3	37.5	39.7	41.4	39.4	40.4	39.8	38.0	41.8	44.4	43.4	50.8	40.5
To producers for graded eggs:													
Northern Illinois.....	1.9	.7	2.7	2.4	3.1	2.2	5.7	8.7	10.6	8.6	8.6	2.7	6.7
Southern Illinois.....	2.6	.6	-.2	.7	.9	.1	4.3	6.3	8.2	6.4	10.1	2.3	3.3
Grocery stores in northern Illinois for farm-run eggs...	-2.8	-2.0	-3.3	-2.3	-1.5	-3.2	-.5	2.4	2.9	3.9	3.0	-4.5	-1.9
Southern Illinois country assemblers.....	-.7	-1.7	-2.2	-1.7	-2.0	-2.7	-.8	-2.0	2.7	3.7	4.3	-1.1	-1.2
Southern Illinois producer price ^a	-2.7	-3.7	-4.2	-3.7	-4.0	-4.7	-2.8	-4.0	.7	1.7	2.3	-3.1	-3.2
Western Illinois country assembler for farm-run eggs	-2.6	-1.1	-2.4	-2.2	-3.1	-2.1	-.9	-1.2	-.8	-.6	-.6	-.8	-2.2
Western Illinois producer price ^a	-4.6	-3.1	-4.4	-4.2	-5.1	-4.1	-2.9	-3.2	-2.8	-2.6	-2.7	-2.8	-4.2
	1948												
Chicago current receipts.....	41.9	43.0	41.5	41.3	40.2	39.9	38.1	40.9	37.1	41.3	47.5	46.0	43.1
To producers for graded eggs:													
Northern Illinois.....	3.0	-.3	2.2	2.7	2.3	4.5	7.9	7.0	11.0	11.3	8.2	2.4	4.8
Southern Illinois.....	1.7	.2	-.2	.5	.9	2.4	5.2	4.1	8.6	10.8	7.8	2.5	2.5
Grocery stores in northern Illinois for farm-run eggs...	-.8	-6.0	-3.1	-2.3	-2.7	-1.9	.1	-2.3	1.9	-2.6	-1.5	-1.5	-1.9
Southern Illinois country assemblers.....	-1.5	-1.8	-2.5	-2.4	-2.9	-1.9	-1.5	-.2	4.2	6.5	5.6	.5	-2.2
Southern Illinois producer price ^a	-3.5	-3.8	-4.5	-4.4	-4.9	-3.9	-3.5	-2.2	2.2	4.5	3.6	-1.5	-4.2
Western Illinois country assembler for farm-run eggs	-2.3	-3.7	-3.3	-2.6	-2.9	-1.2	.3	.6	3.2	6.1	3.3	-.1	-1.6
Western Illinois producer price ^a	-4.3	-5.7	-3.3	-4.6	-4.6	-3.2	-1.7	-1.4	1.2	4.1	1.3	-1.9	-3.6

^a Country assemblers' prices were weighted average prices paid local dealers. Producers' current-receipt prices were about 2 cents a dozen less than country assembler prices.

ceeded the reported price base by 10.7 cents a dozen. Southern Illinois farmers were paid 3.4 cents a dozen less for graded eggs than farmers in northern Illinois; but the southern producers received 6.5 cents a dozen more for graded eggs than for current-receipt eggs. Current-receipt egg prices paid by western Illinois country assemblers were the lowest in the state.

The same relative price relationships continued throughout 1948. Competition from graded-egg buyers (who started operating in a predominantly current-receipt territory) is largely responsible for the changes in the prices paid by the western Illinois country assemblers. Most country assemblers bought eggs from local dealers and small country stores rather than directly from producers.

This analysis shows rather conclusively the price advantage of a graded egg market to producers in 1947 and 1948. Next to the graded market, the highest-paying outlets were grocery stores; the lowest-paying outlets were firms associated with the large country assemblers who handled current-receipt eggs.

Since most of these eggs were obtained from different producing areas, a more detailed analysis was made of certain grading stations as they developed. The prices paid (Appendix Table 24) and the grade yield (Appendix Table 25) of these new stations were compared through 1949. Further price comparisons were made with competing current-receipt dealers who were buying eggs in the same producing areas.

Although the new grading stations bought eggs in different parts of the state, similar grade and quality yields were obtained from each station. The average grade price, as well as the local current-receipt prices paid producers, varied in different parts of the state; yet there was a definite price advantage of about 6 cents a dozen favoring graded over current-receipt marketing in each area.

High-quality yield obtained from country grading stations. Eggs bought at country grading stations yielded an annual average of about 80 percent Grade A quality (approximately 60 percent A Large; 16 percent A Medium; 4 percent A Small); 13 percent B Large and about 7 percent Undergrades (Table 4).

The yield of A quality usually exceeded 80 percent in the spring months, but declined to about 70 percent during the hot summer months. The yield of premium-priced A Large eggs varied from a high of about 75 percent of the volume in the spring months to a low of about 50 percent in the fall months.

Table 4.—Grade Workout of Eggs Bought Directly From Illinois Farmers Compared With the Grade Workout of Eggs From the Chicago Terminal Market, 1946-1949

Grading stations	Grade yield								Total Under-grade
	A Large	A Medium	A Small	Total Grade A	B Large	Checks and Under-grade	B Medium	Loss	
	(percent)								
Firm A									
1947.....	65.5	16.1	3.0	84.6	8.9	5.9	.....	.6	6.5
1948.....	61.1	19.5	3.5	84.1	9.4	6.0	.....	.5	6.5
1949.....	56.3	16.6	5.7	78.6	13.6	7.0	.....	.8	7.8
Weighted average.....	59.3	17.7	4.5	81.5	11.4	6.4	.....	.7	7.1
Firm B									
1947.....	69.0	13.7	1.3	84.0	9.5	6.3	.....	.2	6.5
1948.....	62.6	13.1	1.1	76.8	18.3	4.5	.....	.4	4.9
1949.....	57.3	16.3	2.2	75.8	19.2	4.6	.....	.4	5.0
Weighted average.....	61.1	14.9	1.6	77.6	17.2	4.8	.....	.4	5.2
Firm C									
1946.....	62.6	18.9	6.0	87.5	5.6	6.2	.....	.7	6.9
1947.....	64.9	16.5	4.5	85.9	7.3	6.1	.....	.7	6.8
1948.....	62.2	15.2	4.1	81.5	11.1	6.5	.....	.9	7.4
1949.....	61.5	15.6	3.7	80.8	11.8	6.7	.....	.7	7.4
Weighted average.....	62.7	16.3	4.4	83.4	9.3	6.5	.....	.8	7.3
Firm E									
1949.....	54.3	17.5	6.4	78.2	13.0	7.9	.....	.9	8.8
Chicago wholesale market eggs*									
1946.....	36.5	3.6	...	40.1	30.3	17.6	10.4	1.6	29.6
1947.....	38.2	7.4	.8	46.4	33.0	14.4	4.9	1.3	20.6
1948.....	38.5	6.8	.6	45.9	34.5	18.4	.....	1.2	19.6

* Bought mostly as wholesale Grade A Large eggs.

The flow of large-sized eggs varied from a high of about 90 percent in the spring months to a low of about 60 percent in October and November. (For more detail, see Appendix Table 25.) The problem of size and quality variation will be discussed in detail later in this report.

Detailed Analysis of a Representative Illinois Country Graded Egg Market (1947-1954)

The grading operations of one typical grading station were summarized and analyzed for the years 1947 to 1954. It was assumed that this station's problems in pricing, procurement, and quality relationships would typify problems in developing other graded-egg markets.

There were no specialized egg-producing areas in Illinois in 1947 and 1948, and most locally produced eggs had to be obtained from relatively small flocks. Although the grading station was located in a

surplus-producing area, the variable local supply created a difficult "feast and famine" situation.

The grading station's outlets demanded a comparatively uniform flow of eggs throughout the year. The egg supply from the local farmers followed the pattern of the total Illinois production as well as the pattern of receipts at the Chicago terminal market. Farmers sold from two to three times as many eggs during the spring months as in the fall months. Country assemblers were not promising alternative sources. Their supply of eggs was more variable than that of either local producers or receipts at the Chicago terminal market (Appendix Table 26).

Several factors limit the ability of producers to respond to graded marketing. Summary data from 1950 through 1954 (Fig. 6) indicate that: (1) there was a 50-percent variation in the number of laying hens on Illinois farms during the year, with the largest number of hens during the winter months and the smallest number during the summer months; (2) the average rate of production per hen was about 50 percent higher from April through June than from September through November; and (3) only half as many Grade A and Large eggs were available from July through October as in the spring months. Assuming a uniform egg-consumption pattern during the year, there was an egg shortage in Illinois for every month of the year except March, April, and May. The greatest shortages occurred from July through October (a deficit of about eight eggs per person). These variations resulted in low prices during the spring months and high prices in the fall months.

The grading station needed more eggs and a much more uniform flow of eggs than the local producers were able to supply. In order to initiate the grading program, the station bought from every available source and paid higher prices than the quality of the eggs justified. As the station learned to cope with the local supply situation, it developed firm grading, pricing, and supply policies.

Producers' response to graded marketing. Producers responded slowly to the "new egg market." They didn't like waiting for their eggs to be graded before receiving their pay. Most established egg buyers tried to defeat the program; but after producers decided that the graded market gave them more total income from egg sales, changes occurred in the marketing system.

In 1947 average receipts from producers totaled only 130 cases a week, ranging from 70 cases in November to 222 cases in May. By

Egg prices are a function of the seasonal variation in the number of hens, the number and size of eggs laid, and the surplus-deficit egg supply. When prices are lowest, Illinois always has a surplus supply of eggs. (Fig. 6)

1954 the seasonal distribution of local receipts had changed considerably, but the low seasonal supply still existed. Receipts during both the high and low months of the year increased over 400 percent. The lowest volume changed from November to July; the peak volume shifted from May to December, and average receipts increased to nearly 800 cases a week (Table 5). Producers altered their production practices in an effort to maximize total returns from the graded market outlet.

Table 5.—Producer Eggs Received at an Illinois Egg-Grading Station, 1947-1954

Year	When weekly receipts were		Receipts, cases per week			Percent high week was of low	Percent weekly average was of 1947
	Lowest	Highest	Low	High	Average		
1947.....	Nov. 25	May 13	70	222	130	318	100
1948.....	Oct. 15	April 8	136	409	257	300	197
1949.....	Aug. 26	Dec. 30	238	537	388	226	296
1950.....	Sept. 9	April 29	318	660	496	207	379
1951.....	Aug. 12	Dec. 23	353	741	542	210	414
1952.....	July 8	Feb. 25	344	854	640	248	490
1953.....	Aug. 13	Dec. 17	359	837	577	233	441
1954.....	July 31	Dec. 11	402	1,168	797	291	609

When the station first started buying eggs, over 90 percent of the total supply originated with dealers. A differentiated pricing system was planned to stimulate the flow of more high-quality, locally produced eggs; and by 1947, direct producer receipts represented 26 percent of the volume. Direct producer receipts increased to 75 percent of the total by 1951, but decreased to 52 percent by 1954. Local producers could not meet the increased demand for graded eggs, and the station was forced to draw supplemental supplies from other territories. Although the proportion of producer eggs decreased one-third from 1951 to 1954, the actual volume of producer eggs increased almost one-half (47 percent). Nevertheless (with the exception of the fall of 1951), at least half of the station's total volume of eggs had to be obtained from dealers (Fig. 7).

The grading station's primary objective was to obtain eggs directly from producers. The supply of producers' eggs was then supplemented by rehandled local dealer eggs, and the shortages were filled in with rehandled wholesale grades of eggs from terminal and large dealer sources.

Before 1951 it was impossible to obtain a breakdown of receipts from individual dealer sources; but an analysis of receipts from 1952

to 1954 revealed that the proportion of eggs from local dealers more than doubled and that from large dealers increased only one-third.

Eggs from all sources were candled and graded before they were offered for sale through the retail outlets. All producer eggs were bought on a graded basis and yielded about 80 percent Grade A quality. Although dealer eggs were mostly bought as "A Large," only from one-third to one-half of them met the grading station's A Large standard (Tables 4 and 6). The dealers were able to insist that the grading station accept their grades and prices; and until the volume from producers could be developed, the grading station was forced to handle dealer eggs on the dealers' terms.

Until 1951 the yield of A Large eggs from dealers was always less

INDEX (AVERAGE TOTAL RECEIPTS BY 4-WEEK PERIODS=100)

Producers were unable to expand production sufficiently to meet the increased demand for quality eggs. Although the volume of producers' eggs increased over 500 percent from 1947 to 1954, the grading station bought half its eggs from large dealers during this period.

(Fig. 7)

than from producers. In the fall months producers' eggs usually graded from 40 to 50 percent A Large as compared to about 30 percent from dealers, and dealers' eggs included over twice as many B Large eggs and many more Undergrades than producers' eggs.

Dealer grade buying improves quality. By 1952 many local dealers were forced to sell on a graded basis. During the fall months other local dealers sold some "better-quality" eggs on a straight price basis. But the large dealers continued to supply eggs on a straight price and dealer grade basis. Summaries of the volume, grade workout, and cost per dozen from each of these sources were compared.

Large dealers supplied from one-fourth to one-half the total volume of eggs from July through December 1953, but the yield of A Large eggs was only two-thirds as high as the yield from producers' eggs. Local dealer eggs bought on a graded basis yielded more A Large eggs but fewer total Grade A eggs than those bought on a straight price basis. The results of dealer grade buying in 1952 indicated that large dealers either had to lower prices or provide higher quality eggs at the straight price.

From 1952 to 1954 a noticeable change occurred in the quality of eggs supplied by both large and local dealers. Only 39 percent of the dealer eggs were A Large in 1951; but by 1954, the yield of A Large had increased to 59 percent, and the yield of B Large had decreased

Table 6. — Grade Workout of Eggs Bought Directly From Illinois Farmers Compared With Grade Workout From Large Dealers and Local Dealers at an Illinois Grading Station, 1952 Through 1954

Origin	Percent of supply	A Large	A Medium	A Small	Total Grade A	B Large	Checks and Undergrades	Loss	Total Undergrades
(percent)									
1951									
Direct receipts.....	75	58.6	17.5	2.4	78.5	16.6	4.2	.7	4.9
Dealer eggs.....	25 ^a	38.9	11.4	2.0	52.3	41.5	5.5	.7	6.2
1952									
Direct receipts.....	64	53.6	20.1	4.0	77.7	15.2	6.2	.9	7.1
Large dealers ^b	24	34.0	12.6	5.4	52.0	38.3	8.8	.9	9.7
Local dealers									
One price.....	12	38.0	18.1	2.6	58.7	32.0	8.8	.5	9.3
On grade.....	..	43.2	11.6	.4	55.2	34.3	9.2	1.3	10.5
1953									
Direct receipts.....	49	53.8	18.5	4.9	77.2	14.6	7.0	1.2	8.2
Large dealers ^b	26	48.4	11.5	.3	60.2	32.7	6.4	.7	7.1
Local dealers.....	25	45.6	13.5	.7	59.8	32.1	7.5	.6	8.1
1954									
Direct receipts.....	52	51.0	21.3	6.8	79.1	12.7	7.0	1.2	8.2
Large dealers ^b	19	59.1	11.7	.1	70.9	22.9	5.6	.6	6.2
Local dealers.....	29	43.4	17.6	3.5	64.5	27.1	7.8	.6	8.4

^a 14 percent from large dealers and 11 percent from local dealers.

^b These eggs were bought as wholesale Grade A Large.

from 42 percent to 23 percent. Although the yield of A Large during the critical fall months was still only about 40 percent of all eggs sold in 1954, the large dealers usually supplied more A Large eggs throughout the year than any other source.

Until 1954 the yield of A Large quality from dealers was always lower than from producers' eggs. But each year, as competition for the graded market outlet became greater, egg quality improved. In 1951 only 52 percent of the dealers' eggs graded A; but by 1954, 71 percent of the large dealers' eggs graded A, and 65 percent of the local dealers' eggs graded A (Table 6). The yield of B Large and Undergrades¹ remained extremely high for large dealer eggs bought as A Large.

From 1952 to 1954 direct receipts from producers represented 50 percent of the total egg supply. Producers' eggs yielded nearly 80 percent Grade A quality (over 50 percent A Large, 20 percent A Medium, 5 percent A Small) and 15 percent B Large; the remaining 5 percent were Undergrades. Only one-third of the producers' eggs were A Large during the fall months as compared to over two-thirds in the spring. Although the total A quality remained comparatively high in the fall, the heavy proportion of A Medium and A Small eggs created a definite marketing problem.

Since egg quality is economically important, it might be expected that highest-quality producer eggs would be bought at the highest prices. But dealers have alternative outlets for their eggs, and are in a better position than the producers to shift their volume of eggs to higher-priced competing markets. Usually the producer has only two outlets for his eggs — the local current-receipt market or the grading station. For these reasons, the grading station was able to buy higher-quality producer eggs at lower prices than it paid for dealers' eggs.

Despite the six-cents-a-dozen premium paid for graded eggs over local current-receipt prices, producers' eggs were the station's least costly source of supply. (Until 1951 only aggregate dealers' cost and volume data were available. The weighted average prices paid local dealers, large dealers, and producers since 1951 are shown in Table 7.)

In 1951 eggs from large dealers cost 9.9 cents a dozen more than producer eggs; in 1952, 14.1 cents more; in 1953, 8.0 cents more; and in 1954, 10.0 cents more. In the fall months large dealers received as much as 20 cents a dozen more for eggs than local producers. In October 1954, when the average price paid farmers for eggs was only 26 cents a dozen, the station paid a premium of 19.9 cents a dozen for large dealer eggs.

Until 1952 eggs bought from local dealers were about as costly as

¹ Undergrades include dirty, cracked, broken, and inedible eggs.

Table 7.—Weighted Average Price Paid for Eggs at an Illinois Grading Station by Source, 1951 Through 1954

Period ending	1951			1952			
	Door receipts	Large dealers	Local dealers	Door receipts	Large dealers	Local dealers	
						Grade	Straight
	(cents per dozen)			(cents per dozen)			
January 26.....	38.2	46.9	49.3	35.7	44.0	36.8	....
February 22.....	39.5	46.2	45.2	32.6	40.0	34.8	....
March 22.....	42.8	50.8	49.1	31.5	....	32.2	....
April 19.....	41.3	....	45.1	32.3	40.7	33.4	....
May 17.....	42.0	....	....	31.3	....	32.4	....
June 14.....	42.0	51.1	50.0	32.8	39.8	33.5	40.3
July 12.....	43.0	50.4	50.5	35.8	44.1	35.1	40.9
August 9.....	43.8	53.8	51.8	45.1	56.9	41.8	51.5
September 6.....	50.2	59.8	59.0	45.6	55.4	45.5	53.1
October 4.....	52.0	58.6	59.0	42.9	51.4	42.2	51.8
November 1.....	52.8	57.9	60.2	45.3	53.8	48.8	58.1
November 29.....	56.7	64.9	64.6	45.8	55.1	48.6	54.8
December 27.....	44.3	51.0	54.0	42.0	48.2	43.7	46.1
Average.....	44.6	55.5	52.5	37.4	51.5	40.5	47.5

Period ending	1953			1954		
	Door receipts	Large dealers	Local dealers	Door receipts	Large dealers	Local dealers
	(cents per dozen)			(cents per dozen)		
January 26.....	40.4	48.5	42.8	43.1	48.1	44.4
February 22.....	39.1	46.2	42.3	41.6	47.3	43.2
March 22.....	42.2	49.5	43.8	38.2	39.8	38.7
April 19.....	43.5	49.3	44.4	32.9	37.9	34.0
May 17.....	45.2	51.5	46.6	31.6	38.0	32.5
June 14.....	44.2	51.8	45.6	31.4	37.1	32.2
July 12.....	46.5	53.4	48.0	29.9	39.2	30.6
August 9.....	47.0	57.2	48.1	34.5	44.1	37.6
September 6.....	47.2	61.7	50.0	30.4	42.5	33.2
October 4.....	48.0	62.2	55.2	26.0	45.9	31.2
November 1.....	45.1	64.0	49.3	24.5	40.0	26.7
November 29.....	45.7	59.2	47.5	28.9	38.7	32.6
December 27.....	43.2	48.3	45.6	27.1	32.5	29.1
Average.....	44.2	52.2	46.4	31.7	41.7	33.5

large-dealer eggs. Some local dealer eggs bought on a graded basis in 1952 were only 3.1 cents a dozen more costly than producer eggs; but local dealer eggs bought on the dealer's price and grade cost 10.1 cents more than producers' eggs. Since 1953, all local dealers' eggs have been bought on a graded basis at a cost of about two cents a dozen more than the cost of door-delivered eggs.

Influence of graded market. With the shift to local dealer graded-egg buying, the influence of graded-egg marketing has extended over a considerably greater area. Each case of eggs from all sources is graded at the station. The grading station pays local dealers one lump sum and gives them individual grading reports for all lots of eggs delivered. In paying their producer patrons, local dealers frequently deduct two cents a dozen from the grading station's farmer door-delivered price. In addition, the grading station often pays local dealers two cents a dozen for their service.

The grading station's influence is shown by a comparison of prices paid to alternative sources and the U. S. Department of Agriculture Crop Reporting Service report of prices paid for Illinois eggs in 1954 (Table 8). Producer prices were always higher than government-reported prices paid for all eggs in the area. Large dealer prices exceeded all other prices. Local dealer prices were always higher than farmer prices but lower than large dealer prices. The greatest price differences always occurred during the fall months.

If the grading station had paid the farmers' door price for each grade of eggs brought from different sources in 1954, it could have decreased costs considerably. Local dealer eggs would have cost 0.3 cent a dozen less than producer eggs; large-dealer eggs would have cost only 4.3 cents a dozen more than producer eggs instead of 10.0 cents more; and A Medium eggs would have cost only 31.8 cents a dozen instead of 34.1 cents.

Seasonal distribution of egg size.¹ Assuming that producers' eggs sold to the grading stations represent Illinois supply, 65 percent Large, 24 percent Medium, 5 percent Small, 4 percent Undergrade, and 2 percent Loss eggs are produced annually (Appendix Table 27).

The peak flow of Large eggs occurs from January through July (over 70 percent). During October and November only about 40 percent are Large. To offset the seasonal decline of Large eggs, the peak flow of Medium eggs (45 percent) is in November, and the peak flow of Small eggs (20 percent) occurs in the latter part of October. Medium and Small eggs are in greatest supply from the middle of September through the first of December (at least 50 percent of the total). From January through July from 15 to 20 percent are medium-sized.

Changes in grade yield. During the eight-year period, the yield of different grades of eggs received at the station changed radically. The percentage of Large eggs decreased from 78.5 percent to 63.6 percent of the total, and the decrease in the volume of A Large eggs was even greater. To offset this decrease, the yield of A Mediums increased 7.6 percent; A Smalls increased 5.7 percent; B Large increased 3.2 percent; and Undergrades and Loss eggs increased 1.6 percent.

More A Mediums were bought during every period of the year in 1954 than in 1947; but the greatest differences occurred in October and November, when the greatest price range existed between Large and

¹ Extra Large and Jumbo eggs are included in the Large category. Loss includes "shells" and "shorts."

Table 8. — Comparative Cost of Eggs by Source for an Illinois Egg-Grading Station, 1954

Period ending	Door receipts	Local dealers	Large dealers		USDA price ^a	Large dealers less door price	Cost at door prices ^a		
			A	Medium ^b			Large dealers		Local dealers
							A	Medium	
(cents per dozen)									
January 30.....	43.1	44.4	48.1	45.3	40	5.0	43.9	38.3	43.1
February 27.....	41.6	43.2	47.3	45.2	40	5.7	42.7	40.9	41.6
March 27.....	38.2	38.7	39.8	36.0	33	1.6	38.4	35.4	37.9
April 24.....	32.9	34.0	37.9	.....	27	5.0	33.6	.....	32.6
May 22.....	31.6	32.5	38.0	.....	27	6.4	32.9	.....	30.5
June 19.....	31.4	32.2	37.1	.....	27	5.7	32.4	.....	30.7
July 17.....	29.9	30.6	39.2	41.0	24	9.3	31.6	30.5	29.4
August 14.....	34.5	37.6	44.1	34.8	30	9.0	39.8	32.9	35.8
September 11.....	30.4	33.2	42.5	34.7	26	12.1	36.1	31.9	30.6
October 9.....	26.0	32.2	45.9	28.3	23	19.9	39.3	24.0	26.8
November 6.....	24.5	26.7	40.0	.....	23	15.5	27.7	.....	24.7
December 4.....	28.9	32.6	38.7	32.0	25	9.8	30.1	25.5	28.8
December 31.....	27.1	29.1	32.5	.....	26	5.4	27.8	.....	26.9
Average.....	31.7	33.5	41.7	34.1	..	10.0	36.0	31.8	31.4

^a If all dealer eggs had been bought at the door price paid local farmers according to the actual grade workout, they would have cost these prices.

^b Most eggs were bought as wholesale "Grade A Large," but a few were bought as "A Medium" eggs and regraded before being sold.

^c Midmonth price report, Illinois Crop Reporting Service. Adjusted to 13 periods.

Table 9. — Summary of Changes in the Seasonal Distribution of Grades of Eggs Bought by an Illinois Grading Station From 1947 to 1954^a

Kind of eggs	January 27	February 24	March 24	April 21	May 19	June 16	July 14	August 11	September 8	October 6	November 3	December 1	December 29	Average
(percent of total eggs)														
Large.....	-5.1	-5.5	-7.9	-7.3	-2.7	-1.7	-12.4	-24.3	-24.2	-33.4	-23.5	-9.0	-4.9	-14.9
A Large.....	-7.6	-10.1	-12.3	-14.0	-11.4	-6.6	-17.7	-26.9	-24.7	-34.0	-26.3	-11.4	-5.9	-18.1
B Large.....	2.5	5.6	4.4	6.7	8.7	4.9	5.3	2.6	5.5	6.6	2.8	2.4	1.0	3.2
A Medium.....	1.4	2.1	4.4	3.8	8.1	1.9	6.7	7.0	2.8	10.3	14.1	7.5	1.2	7.9
A Small.....	.4	.5	.3	.3	.5	1.5	6.7	16.6	20.2	17.7	4.8	-1.6	.1	5.7
Undergrades.....	2.1	.5	1.8	1.9	1.0	-2.8	-2.1	-4	.7	4.6	3.8	2.6	2.4	.6
Loss.....	1.2	1.4	1.4	1.3	.4	1.1	1.1	1.1	.5	.8	.8	1.1	1.2	1.0

^a The (-) figures indicate a decrease in grade for the period indicated.

Table 10.—Percent Yield of Eggs Bought by Grade at an Illinois Egg Grading Station

Year	A Large	A Medium	B Large	Pullet and A Small	Under-grades	Loss
	(percent)					
1947.....	69.0	13.7	9.5	1.3	6.3	.2
1948.....	62.6	13.1	18.3	1.1	4.5	.4
1949.....	57.3	16.3	19.2	2.2	4.6	.4
1950.....	61.2	16.0	15.7	2.4	4.2	.5
1951.....	58.6	17.5	16.6	2.4	4.2	.7
1952.....	53.6	20.1	15.2	4.0	6.2	.9
1953.....	53.8	18.5	14.6	4.9	7.0	1.2
1954.....	50.9	21.3	12.7	7.0	6.9	1.2

Medium eggs. Although more A Smalls were bought during every period of 1954, the biggest increases occurred from July through November. (Tables 9 and 10 summarize changes in grade yield since 1947.)

Changes in grade yield may have been apparent rather than real.

Several factors other than actual changes in egg quality and size may account for the decrease in Large eggs over the eight-year period.

Quality market development costs were heavy for the first three years. The shift from current-receipt marketing could not occur without some misunderstanding from producers as well as opposition from local competition. Graded marketing had always been associated with failure in the past, and rigid grading at the beginning of the program might have impeded its ultimate objective.

The station graded both producer and wholesaler eggs under the same supervision and to the same grade tolerance. The quality of wholesale eggs was low, and it was necessary to grade these eggs loosely in order to obtain a marketable supply. Under the same grading system, producers' eggs yielded almost twice as many high-quality eggs as the wholesale supply.

As producer eggs became the most important source of supply, the wholesalers could be induced to market eggs of comparable quality. The grade tolerance of producer eggs could also be tightened. Since most competitive markets were supplied with the wholesale eggs, the higher quality of the station's eggs gave the grading station a definite advantage. Market outlets and consumers of graded eggs were accustomed to merely edible eggs, and loose grading of producer eggs was adequate for the consumer demand.¹

¹ In 1951 one hundred and ninety-nine Chicago retail store managers told research workers that they sold only the highest-quality eggs in their stores. Yet these managers identified more Grade C eggs as the highest-quality eggs than Grade AA.

Table 11.—Premiums Paid Producers for Graded Eggs Over Current-Receipt Eggs^a

Year	January 27	February 24	March 24	April 21	May 19	June 16	July 14
(cents per dozen)							
1947.....	8.4	4.9	6.4	5.9	5.9	6.4	4.8
1948.....	7.8	5.8	5.3	7.5	6.7	6.4	6.8
1949.....	4.2	4.7	6.1	6.2	6.9	7.0	7.8
1950.....	6.3	5.8	5.3	6.3	7.7	5.2	5.9
1951.....	2.7	4.9	5.0	6.5	5.0	6.6	5.3
1952.....	1.6	4.0	6.1	6.7	4.7	6.1	7.3
1953.....	5.7	3.5	5.7	6.0	5.3	6.4	7.9
1954.....	4.7	3.4	5.6	5.4	5.6	5.7	4.3

Year	August 11	Septem- ber 8	October 6	Novem- ber 3	Decem- ber 1	Decem- ber 29	Average
1947.....	6.9	7.2	4.3	3.7	4.9	3.6	5.0
1948.....	7.5	5.9	5.4	6.8	4.5	4.1	6.2
1949.....	7.7	7.6	4.3	4.3	7.2	1.3	5.3
1950.....	4.7	4.3	8.2	8.8	10.4	5.0	6.9
1951.....	5.8	9.8	7.5	8.7	9.4	.5	5.5
1952.....	9.0	6.6	4.4	7.0	1.9	1.9	4.7
1953.....	7.2	5.8	6.8	4.5	6.2	4.6	5.8
1954.....	3.6	2.6	3.1	3.0	4.2	2.7	3.4

^a Difference between the weighted average price retail stores paid farmers for current-receipt eggs and the average price paid producers for graded eggs at the grading station.

As producers became accustomed to graded marketing, many of them shifted to lighter breeds of chickens, which may lay smaller eggs than heavier breeds. Larger flocks produced more total Undergrades than the producer's family could eat; and as the size of the supply flock increased, a greater number of Small and Undergrades were sold to the station.

When the retail outlets expanded their egg sales after 1951, the grading station had to obtain more eggs from many new smaller flock owners. These owners were accustomed to selling current-receipt eggs and did not follow production practices that would yield high-quality eggs.

To the producer, the highest average price he receives for all of his eggs is the important price. Grade differentials are important to him only as they affect his total income. However, to the grading station, which must supply graded eggs to its retail outlets, grade and quality yields are of primary importance.

The new grading system evolved from experience, and those developing the system attempted to build confidence with local producers. Farmers were paid a price differential over current receipts to encourage the flow of eggs to the grading station. This favorable grade-price relationship (Table 11) answered the producer's most important egg marketing question: Can more money be made by selling graded eggs? Grade and quality adjustments developed as producers became accustomed to market requirements.

Comparisons with Ohio and Utah egg-grading stations and Illinois stations operating under the supervision of the Federal-State Egg Grading Service revealed that the grading station studied (Firm B) gradually tightened up its grade requirements over the eight years.

The pattern of grade and quality yield at these Federal-State Grading stations was practically identical. Firm B classified more producer eggs as Large and A Large than any of the other stations. The greatest differences occurred during the fall months when eggs were difficult to obtain (Table 12). The tightening up of grades over the eight-year period was probably a gradual adjustment of grade standards to more nearly approximate those of grading stations operating under the supervision of the Federal-State Grading Service. By 1954 the grade yield of Firm B approximated the grade yield of these other stations.

Prices were established to encourage the flow of "quality" large eggs and discourage the flow of poor-quality eggs and small eggs. Highest premiums were paid for A Large, and the price of A Medium and B Large was approximately 4 cents higher than current receipts (Fig. 8). As the grading stations supplied better eggs, the total flow of graded eggs more than doubled by 1951 and tripled by 1954.

Prices of all grades of Illinois eggs reach a peak by late fall, then decline as the supply increases during the winter months (based on 1947-1954 data). (Fig. 8)

Table 12. — Kinds of Eggs Bought by Some Illinois, Ohio, and Utah Egg-Grading Stations, 1946-1950 and 1954

Kinds of eggs	Annual					February					October				
	III. A*	III. B	III. C	Ohio*	Utah*	III. A	III. B	III. C	Ohio	Utah	III. A	III. B	III. C	Ohio	Utah
	(percent)														
1946															
Large.....	68	..	..	..	66	81	..	..	..	77	38	..	..	..	42
A Large.....	63	..	..	..	59	76	..	..	..	69	33	..	..	..	37
Medium and small.....	25	..	..	..	29	12	..	..	..	19	55	..	..	..	54
Undergrades.....	7	..	..	..	5	7	..	..	..	4	7	..	..	..	4
1947															
Total large.....	72	79	74	..	67	82	81	..	..	75	45	67	66	43	40
A Large.....	65	69	66	..	59	73	74	73	..	59	40	60	57	38	36
Medium and small.....	21	15	19	..	28	11	13	12	..	19	49	30	28	52	56
Undergrades.....	7	6	7	..	5	7	5	7	..	6	6	3	6	5	4
1948															
Total large.....	73	81	71	69	66	86	81	81	81	75	42	68	45	44	37
A Large.....	62	63	61	63	59	78	68	70	75	68	35	66	39	39	33
Medium and small.....	19	14	23	25	28	8	17	14	14	19	50	27	47	50	55
Undergrades.....	8	5	6	6	6	6	2	5	5	6	8	5	8	6	8
1949															
Total large.....	73	77	70	67	64	85	86	81	83	76	41	61	46	49	36
A Large.....	62	57	56	54	58	69	68	70	75	71	35	46	35	35	33
Medium and small.....	19	18	22	24	30	8	10	12	11	18	52	34	46	40	60
Undergrades.....	8	5	8	9	6	7	4	7	6	6	7	5	8	11	4
1950															
Total large.....	..	77	..	66	66	..	82	..	77	74	..	61	..	39	38
A Large.....	..	61	..	54	62	..	68	..	71	71	..	50	..	31	35
Medium and small.....	..	18	..	27	29	..	14	..	19	21	..	35	..	52	58
Undergrades.....	..	5	..	7	5	..	4	..	4	5	..	4	..	9	4
1954															
Total large.....	64	..	..	57	62	..	76	..	78	77	..	39	..	30	36
A Large.....	..	51	..	42	57	..	63	..	55	73	..	30	..	19	35
Medium and small.....	28	..	..	36	32	..	17	..	16	17	..	53	..	63	59
Undergrades.....	..	8	..	7	6	..	7	..	6	6	..	8	..	7	5

* These three firms were operating under supervision of the Federal-State Grading Service.

Some producers discovered that they could sort out Undergrades and sell them to local current-receipt buyers at a higher price than that paid by the grading station. This sorting practice continued until current-receipt prices were adjusted to compensate for the lower current-receipt quality.

If grade yield is the primary consideration, then the changes in grade yield during the eight-year period can be criticized. These changes were not exactly what one would expect from a stable, well-established market. But this market was not well-established. The graded marketing program was developed in an area in which neither the grading station nor the producers had had any firsthand experience in buying or selling producer graded eggs. Nevertheless, the decrease in quality yield at this station — whether real or apparent — indicates the need for objective, unchanging egg marketing standards.¹

Cooperative egg marketing in Ohio and Utah compared with Illinois station. Many producer groups consider cooperative marketing the answer to egg-marketing problems. Records of cooperative egg marketing in Ohio and Utah were compared with records of the Illinois station. Both of these out-of-state cooperatives had been in business for over 20 years. (Comparative grade yields are shown in Table 12.)

Until 1951 the out-of-state cooperatives paid producers a price roughly equivalent to the Chicago 60-percent A Large wholesale market quotation. The Illinois grading station's prices were about equal to the Chicago current-receipt market quotation during the spring months, but exceeded the current-receipt quotation by about 10 cents a dozen during the fall months. The prices paid Illinois farmers during the development of graded-egg marketing were much lower than the prices paid farmers by the Utah and Ohio cooperatives.

Since 1951, patrons of the Illinois grading station and the Ohio cooperative have received about the same average price for eggs during the fall months. During the spring months, Illinois patrons usually receive less than the prices paid by the Ohio cooperatives. Patrons of the Utah grading station have consistently received about six cents a dozen more for eggs than patrons of the Illinois and Ohio stations.

By 1954 both the grade and price comparisons for the Ohio and Illinois stations were approximately the same. Illinois farmers received 0.7 cent a dozen less than the average price paid Ohio cooperators in 1954. In the summer months Illinois farmers were paid as much or more than the Ohio cooperative paid its patrons. The average annual

¹ As a result of this study, an egg law defining consumer grade standards was passed by the Illinois Legislature in 1951.

difference in price would not justify paying transportation costs to move eggs from a surplus Illinois producing area to an Ohio deficit egg supply area. The seasonal distribution of grades of eggs bought by the Utah station in 1954 was about the same as that of the Illinois and Ohio stations.

Comparison of Chicago terminal market price quotations and prices paid at the Illinois grading station. The greatest comparative price changes occurred between the Chicago 60-percent A Large quotations and the weighted average prices paid for graded eggs. As more country grading stations developed, the supply of large eggs on the terminal markets diminished. Each year terminal market wholesalers bid higher prices for "A Large" eggs. This analysis indicates that the Illinois, Ohio, and Utah country grading stations need not — and did not — pay much attention to "quality price quotations" on the Chicago terminal market. (See Appendix Tables 28-31.)

Comparative food-weight value of eggs bought from producers. Although different sizes of eggs are offered for sale during the year, the average weight of all eggs is about 24 ounces a dozen (the size of Large eggs). To compare the food-weight value, the average price of all eggs was used as a basing point; deviations from the average price were computed for the different sizes of producers' eggs. These deviations show the relative difference in prices paid for each grade of eggs. A comparison of these deviations illustrates the market potential for buying or selling different sizes of eggs on the basis of the food value of the edible portion (Fig. 9).

Over the eight-year period, the average price paid for graded eggs was 40.7 cents a dozen. For eggs of the same grade, a definite correlation exists between the food value and the price of different sizes (based on a uniform cost per pound of edible eggs).¹

On this basis, A Extra Large eggs were worth 45.6 cents a dozen; Large eggs, 40.7 cents; Medium, 35.6 cents; and Small eggs, 30.5 cents a dozen. Prices actually paid producers were 44.5 cents for the trade's "Grade A Large"² eggs; 40.1 cents a dozen for A Medium; 38.6 cents for B Large; 27.4 cents for Pullet and A Small; and 12.8 cents a dozen for Undergrades.

¹ Sizes and minimum net weight specifications per dozen are as follows: Jumbo, 30 ounces; Extra Large, 27 ounces; Large, 24 ounces; Medium, 21 ounces; Small, 18 ounces; and Pee Wee, 15 ounces. Using the Large egg as a standard, Extra Large eggs, which weigh one-eighth more than Large, are worth one-eighth more. Mediums are worth one-eighth less, and Small one-fourth less than Large eggs.

² No price differential was paid for A Extra Large eggs. Both A Large and Extra Large were bought and sold as A Large eggs.

From the standpoint of food value, producers always received a substantial premium for A Large and A Medium eggs. They accepted small discounts for A Small and substantial discounts for Undergrade eggs. (Fig. 9)

Throughout the year producers received considerably more than the weight value of A Large and A Medium eggs. Prices paid for A Large eggs were almost equal to the weight value of Extra Large eggs. Producers accepted an average discount of 2.1 cents a dozen for B Large eggs; 3.1 cents a dozen for A Small eggs; and a discount of 18.9 cents a dozen for Undergrades.

Most of the differences among Grade A, Grade B, and Undergrade eggs are due to environmental factors which cause internal deterioration. If producers had preserved the initial high quality of all their eggs, many of the Grade B and Undergrade eggs could have been sold as Grade A eggs. Price differentials offer a definite incentive for improvement in Illinois egg marketing.

Illinois quality egg marketing stimulated by price differentials.

The quality of the eggs received at the Illinois station was determined by source of supply, extent of grading or sorting by dealers, and the comparative prices paid for quality.

It is not known how many consumers stop buying large eggs when the price increases so rapidly in the fall. If more people would buy small-sized eggs when they are abundant, and if retailers continued to

sell these eggs at bargain prices, one of the major egg-marketing problems would be solved.

At present the trade supplements the local supply by paying high premiums to dealers located beyond the immediate supply area. These dealers provide "A Large" eggs which do not grade out as high quality as locally produced eggs. It would be a sounder marketing practice to stimulate consumer demand for Small and Medium eggs when these eggs are plentiful.

Assuming that receipts of different sizes and grades of eggs by this station in 1954 represent the demand for quality in Illinois eggs, either major adjustments must be made in the local supply pattern to meet the quality needs of the market, or changes must be made in retailing eggs to promote the sale of more Medium and Small eggs during the fall months.

Areas of Influence of the Graded Market

After grading stations were well established, producers made direct delivery from a distance of about 20 miles. To obtain buffer supplies during the slack season, these stations purchased eggs from local dealers who were buying current receipts from producers located beyond the 20-mile direct delivery area (Figs. 10 and 11).

When the supplemental supply from local dealers was inadequate, the stations made arrangements with larger terminal or country egg dealers located beyond the local producer and local assembler areas. Most large-dealer eggs were originally bought from the producer as current receipts, and may have been sorted and rehandled many times before being delivered to the grading station. Although dealer eggs were bought as "Grade A quality," they were all recandled and regraded before being sold to consumers. This system of buying extended the grading station's area of influence to over 100 miles.

Some local dealers were forced to buy and sell eggs on a graded basis because (1) more farmers were producing more eggs near the grading station; (2) the producers who supplied the local dealers recognized the advantage of selling graded eggs and demanded that they be paid for the quality of eggs they supplied; and (3) the grading station had alternative egg sources and did not have to depend wholly on the local dealers' supply. This system provided added incentives for producers to market quality eggs.

Summary results indicate that a grading station can expect a direct flow of from 600 to 900 cases of eggs a week from Illinois producers. To supplement this volume, the station must make special arrange-

Typical areas of influence of a grading station. Egg supplies often originate from sources several hundred miles from the station. (Fig. 10)

As shown below, the grading station must buy dealer eggs throughout the year to insure an adequate supply of eggs during the fall months. (Fig. 11)

ments with dealers located beyond the immediate supply area. The large dealers, who function as "buffers," command the highest prices because they dominate the surplus supply of large eggs during the fall months.

Direct receipts from producers provide the grading station with the most uniform flow of high-quality eggs, the fewest Undergrades, and the lowest-priced eggs. The most costly and lowest-quality eggs are purchased from large terminal dealers. When these dealers had to compete for the graded market outlet, however, the quality of their eggs improved.

Volume of supply is usually induced by a differentiated pricing system that provided incentives for quality production of large eggs and discriminates against low-quality and small eggs. It was difficult for the producer to understand why the grading station paid large dealers a substantial premium for eggs that only yielded 50 percent Grade A, and discriminated against locally produced eggs that yielded over 80 percent Grade A and approximately the same volume of A Large eggs as the dealer's eggs. The grading station needed high-quality, low-cost eggs, but it was forced to pay large dealers premium prices for so-called "A Large" eggs to supplement the local supply.

This study demonstrates that producers can and will respond to graded-egg marketing when sufficient price differentials are paid to initiate the desired volume and quality changes. The greatest opportunity for expanding graded-egg marketing lies either in establishing smaller grading stations in surplus supply areas, or in expanding the influence of the larger stations through local dealers.

In response to price incentives, producers shifted the low egg supply month from November in 1947 to July in 1954, and the peak flow of eggs from May to December. These changes were advantageous to the grading station, the producer, and the consumer.

The most economical way for the grading station to expand the influence of graded marketing is to increase prices paid producers for assured high-quality eggs during the fall months. An increase of 4 cents above present graded prices, accompanied by more stringent grade tolerances, would be less costly than buying dealer eggs under the present system. An added producer premium would redirect the flow of high-quality eggs to the grading station and leave the lower-quality eggs for current-receipt buyers. These buyers would undoubtedly object, but they could raise the price for quality current receipts and the entire industry would benefit.

As other Illinois grading stations developed, they were confronted with problems similar to those of this firm. Before 1946, about 1,000 cases of eggs a week were bought from farmers on a graded basis.

Location of major egg dealers in Illinois, 1955.
 (Fig. 12)

By 1947 the weekly volume from three grading stations had increased to only 1,600 cases — enough eggs to supply the needs of approximately 80,000 people. By 1955 about 30 country grading stations and over 60 feeder stations (local dealers) had been established (Fig. 12). About 35,000 cases a week (enough eggs to supply the needs of 1,800,000 people, or about 25 percent of the market requirements for Illinois consumers) were bought from Illinois farmers on some kind of a graded-egg market. Illinois egg marketing developed largely around the expansion of three firms that started buying quality eggs in the 1940's.

Transition of Illinois Egg Marketing

The period from 1945 to 1955 was a transition period in Illinois egg marketing. During that time, egg marketing changed from the traditional farm-run or current receipts system to one which encouraged integrated graded-egg marketing. This transition marked the change from "barnyard" to "quality" eggs.

The seasonal supply pattern also changed. More commercial producers began to produce more eggs when prices were highest during the fall months. Although production during the flush months, January to March, continued to be as great as before this transition period, the increased flow of eggs during the slack months, July to September, had a noticeable effect on the egg market.

These changes were brought about by improved transportation, communications, and refrigeration; the united efforts of research workers, educators, feed and equipment manufacturers, poultry breeders, hatcherymen, trade organizations, and legislators; and the increased demand for better-quality eggs by discriminating consumers.

The trends of this transition were perpetuated and expanded because quality egg marketing provides more dollars for the producers, more profits and lower processing costs for the trade, and better quality eggs at lower prices to consumers.

Quality marketing was achieved by a simple application of principles of conservation to a perishable farm product. A differentiated pricing system, with premiums and discounts for quality variations, provided the incentive for producers to conserve the initial egg quality and produce eggs when they were most needed. An integrated marketing system enabled the tradespeople to preserve the high initial quality of producers' eggs for immediate sale to consumers.

Transition motivated by analysis of terminal and decentralized marketing. Major retailing firms analyzed alternative marketing costs of eggs bought from the Chicago wholesale market and from country points. The results of this analysis motivated the transition to decentralized graded-egg marketing.

Since the marketing activities of country graded-egg buying stations represent only one phase of trade procedures needed to encourage improved marketing in Illinois, a complete analysis was also made of all the grading stations' marketing activities from the producer to the consumer, including the purchase and sale of all eggs from all sources by the grading stations' retail outlets.

The results of this complete analysis from 1947 through 1954 illustrate rather conclusively why major changes occurred in the organization of the Illinois egg market.

Until 1947 major egg retailers in Chicago and St. Louis relied on wholesale terminal egg markets as a principal source of graded eggs. In order to supplement their supply of graded eggs, these retailers bought current-receipt eggs directly from producers and sold them at retail. Neither the wholesale eggs nor the current-receipt farm eggs

were satisfactory, but the pattern of egg procurement and sales was fixed by tradition and rigid company policy.

A study of decentralized egg procurement and processing, started in 1947, was carried through 1954 to parallel the analysis of country egg marketing discussed earlier in this report. By 1954 every major chain and dairy that bought and sold "quality" eggs on the Chicago and St. Louis market had shifted to some form of decentralized egg marketing.

Cost and grade analysis preceded decentralized egg buying. Before any large-scale shift from terminal to country graded-egg marketing developed, the grade yield, supply, and comparative costs of wholesale and country egg sources were analyzed.

Comparisons were made of the egg-marketing activities of three Illinois grading stations. Two stations (A and B) were located at country points, and the third was located in Chicago. The Chicago station, the largest of the three, had been operating for many years. Stations A and B were new country grading stations.

Although these three stations operated under the same management and supplied eggs for retail sale to the same outlets, they received their eggs from different sources. Results of this analysis, combined with the analysis of country graded-egg marketing, were used to develop improved marketing programs.

The Chicago station bought most of its eggs from the wholesale market, and usually paid a premium over the "60-percent A Large" wholesale market quotations in an effort to obtain "the best eggs available on the Chicago market." Supposedly, these were all large, top-quality eggs.

Stations A and B bought eggs from large dealers, country assemblers, and terminal wholesalers, and began to develop supplemental sources with local stores, local dealers, and producers.

Lower costs favor country grading stations. The same functions and services were performed at each of the three grading stations. Although the wholesale market eggs were bought as "A Large" eggs, they were candled, graded, and cartoned in exactly the same way as eggs bought from local producers.

Records of comparative costs and grade yield were analyzed. On the basis of this comparison, eggs graded at the Chicago station were more costly every year than eggs graded at either of the two country stations. In 1946 the cost of uncandled eggs¹ at Station A was 2.6

¹ Uncandled cost equals the weighted average cost of all eggs delivered to the grading station.

cents a dozen less than that at the Chicago station; 4.1 cents less in 1947; and 4.2 cents less in 1948. When these eggs were sold to retailers,¹ the cost of eggs from the Chicago station was 3.2 cents more in 1946; 6 cents more in 1947; and 6.6 cents more in 1948.

Loss from breakage and Undergrades was greater, and labor costs were one-third higher at the Chicago station than at either of the two country stations. The cost of overhead and supplies at all of these stations was approximately the same. The capital cost of new equipment at the two country stations made supply costs greater than those of the Chicago station in 1947 and 1948.

Although the Chicago station paid higher prices for its eggs every year, these eggs sold at retail for only $\frac{1}{2}$ cent a dozen more than the eggs bought at the country stations. Gross margin over uncandled costs was about 10 cents a dozen for the Chicago station, and from 12 to 15 cents a dozen for Station A. In 1946 the retail margin for eggs bought at the country grading station was 2.7 cents a dozen more than for eggs graded at the Chicago station. By 1947 this margin had increased to 5.9 cents, and by 1948 to 6.2 cents.

Assuming that each station sold 2,000 cases of eggs a week, the value of the difference between selling graded eggs originating from the wholesale market and those originating from country points was \$1,620 a week in 1946; \$3,540 in 1947; and \$3,720 in 1948. Based on the 1948 analysis, this difference represents an annual savings of nearly \$200,000. (Summaries of comparative costs for wholesale eggs and eggs graded at a country grading station are shown in Table 13.) If other grading stations could shift from the wholesale market to country graded-egg marketing, and buy and sell 10,000 cases a week on the same comparative price relationship as the Chicago station and Station A, this change could mean a savings of about 1 million dollars a year without additional costs in buying, assembling, candling, and grading eggs at the country grading station.

The big question confronting terminal egg-marketing firms was no longer, Should we develop integrated country egg-grading stations, but rather, How soon can they be developed?

By paying the same price for eggs in the country as wholesale market eggs cost in Chicago, the country grading stations could pay producers at least 4 cents a dozen more for eggs. This price increase would initiate a quality marketing program that would give poultrymen an incentive to produce the kind of eggs needed by the market. The grading station not only could sell consumers higher-quality eggs at reasonable prices, but also earn more total profits.

¹ Retail cost equals the weighted average cost of all eggs delivered to the retail store, including all processing, cartoning, and delivery costs.

Table 14. — Yield of "Quality" Eggs by Illinois Terminal^a and Country^b Grading Stations, 1946, 1947, 1948

Period ending	Total Grade A			A Large			Undergrades ^c		
	Chicago	Station A	Station B	Chicago	Station A	Station B	Chicago	Station A	Station B
(percent)									
1946									
Jan. 26.	40.4	42.7	....	33.4	39.7	....	25.8	37.5	....
Feb. 23.	40.9	44.9	....	35.9	42.2	....	30.7	32.4	....
Mar. 23.	45.9	44.5	....	43.4	42.5	....	30.5	30.4	....
Apr. 20.	45.0	50.6	....	42.1	49.4	....	30.0	27.3	....
May 18.	41.0	49.1	....	36.5	48.4	....	33.7	28.7	....
June 15.	38.4	50.7	....	35.7	50.2	....	35.6	28.2	....
July 13.	38.0	51.5	....	36.0	51.1	....	34.4	27.2	....
Aug. 10.	37.0	52.8	....	33.3	52.0	....	32.8	25.7	....
Sept. 7.	43.8	45.6	....	40.5	44.5	....	27.4	29.0	....
Oct. 5.	39.4	48.8	....	35.9	47.5	....	26.6	27.6	....
Nov. 2.	34.1	41.3	....	29.9	40.4	....	26.2	35.2	....
Nov. 30.	38.1	44.9	....	31.7	38.5	....	22.8	37.5	....
Dec. 28.	42.2	45.4	....	40.6	41.8	....	25.7	32.3	....
Average.	40.1	47.1	....	36.5	45.2	....	29.6	30.7	....
1947									
Jan. 25.	45.9	51.5	46.5	42.0	45.2	37.9	25.2	21.2	28.2
Feb. 22.	47.2	55.1	39.0	43.7	42.4	34.6	24.0	18.8	36.3
Mar. 22.	46.4	52.4	42.5	42.5	49.8	39.6	26.3	20.8	29.8
Apr. 19.	49.3	51.6	41.6	44.1	48.3	39.2	25.7	24.9	31.3
May 17.	47.2	47.9	40.2	39.0	44.5	38.9	27.7	26.0	33.8
June 14.	45.6	48.0	43.3	38.6	44.4	31.4	28.9	24.2	31.6
July 12.	45.4	50.4	43.2	36.9	45.2	38.0	19.2	16.6	34.8
Aug. 9.	40.5	48.7	41.4	31.8	44.4	36.4	17.9	17.1	19.6
Sept. 6.	43.1	42.9	31.7	36.6	39.0	25.4	16.2	17.3	20.5
Oct. 4.	45.6	45.8	42.3	36.7	42.5	32.6	14.8	14.4	7.6
Nov. 1.	48.7	45.5	47.0	35.8	43.3	34.4	13.6	12.3	7.3
Nov. 29.	50.8	44.3	52.1	36.4	41.6	37.2	13.4	10.9	7.6
Dec. 27.	47.8	61.7	50.8	33.0	49.1	38.7	15.3	9.6	8.6
Average.	46.4	49.7	43.2	38.2	45.4	35.7	20.6	18.0	22.8
1948									
Jan. 24.	47.9	60.7	57.0	38.0	47.4	46.0	18.1	12.1	7.7
Feb. 21.	51.7	57.1	62.6	40.4	48.2	54.0	13.0	14.0	5.1
Mar. 20.	43.8	50.3	62.2	34.2	43.5	54.2	16.5	13.2	5.2
Apr. 17.	46.8	60.3	73.2	42.1	57.0	63.2	21.6	11.2	5.3
May 15.	35.6	60.2	62.8	31.6	57.7	52.9	27.9	10.4	7.1
June 12.	42.9	63.9	58.1	32.3	53.1	53.2	27.2	11.7	6.8
July 10.	41.2	59.3	58.4	36.4	55.2	52.3	24.8	12.4	8.8
Aug. 7.	39.7	52.6	57.8	39.7	52.6	46.9	25.5	13.4	12.0
Sept. 4.	43.0	43.8	49.8	42.0	43.1	42.4	18.2	21.0	7.9
Oct. 2.	45.1	48.7	49.4	43.6	38.9	41.5	18.3	18.1	6.5
Oct. 30.	46.8	56.4	48.7	41.3	34.2	44.4	16.0	14.7	4.1
Nov. 27.	56.3	63.6	54.3	37.9	34.2	37.2	15.8	9.9	7.4
Dec. 25.	55.5	67.4	55.1	40.7	48.2	40.0	12.7	5.4	5.0
Average.	45.9	57.3	57.6	38.5	47.2	48.3	19.6	12.9	6.8

^a Eggs originated mostly on the wholesale market.^b Eggs originated from large egg dealers and some direct receipts from producers.^c Eggs that would not meet Grade A or Grade B standards.

Comparative costs and margins were used as guides in determining whether to buy graded eggs at the terminal market or at country points; but an equally important factor was the quality yield of country eggs from alternative supply sources.

Grade yield from Chicago wholesale market eggs. From 1946 through 1948 less than half the eggs obtained from the Chicago wholesale market met the minimum Grade A quality standards of the grading stations' market outlets (Table 14).

Chicago wholesale market eggs graded over 50 percent Grade A quality during only four 4-week periods in the three years. The quality yield (percentage of Grade A eggs) was only about half that of eggs bought directly from Illinois producers at the country grading stations (compare Tables 4 and 14). Although Grade A Large eggs sell at a premium, only slightly more than one-third of the Chicago wholesale market eggs graded A Large. (Supposedly, these were the best eggs that could be bought from the Chicago terminal wholesale market, and most of them were bought as wholesale market Grade A Large eggs.)

Grade yield from Stations A and B. In 1946 most of Station A's egg supply still originated with the wholesale dealers who supplied the terminal market. Although the flow of producer eggs improved the quality yield, the yield of Grade A eggs only exceeded 50 percent of the total volume from June 16 through August 10 in 1946. Nevertheless, the yield of A Large eggs was 25 percent greater than that from the Chicago wholesale market. The same general quality and grade advantage held true through 1948.

When Station B started to buy eggs in 1947, it obtained most of its supply from dealers who supplied the terminal market, and its yield of A Quality and A Large grades was only slightly less than that of the Chicago station. But by 1948, when the flow of producer eggs became an important source of supply, the average A Quality and A Large yield not only exceeded that of the Chicago station, but of Station A as well.

In 1948 the yield of A Quality eggs at both Station A and B was 25 percent greater than that of the Chicago station; and the yield of A Large eggs was 23 percent greater at Station A and 26 percent greater at Station B than at the Chicago station.

Percentage of Undergrades at the three stations. In 1946 both the Chicago station and Station A had 30 percent Undergrade eggs. Most of these Undergrades were bought at premium prices from wholesale dealers at the terminal market; and despite their high cost, they either had to be thrown out or sold at a discount. The resulting loss had to be absorbed in higher retail prices for eggs that met higher minimum grade standards.

In 1947 the Undergrade yield had decreased to about 20 percent of the total volume of eggs graded. Station B, which had just started buying eggs, had the highest percentage of Undergrades.

The 1948 data show essentially the same pattern of quality yield for eggs bought from the terminal market. Because of the higher

quality yield of producer eggs at Station A, the proportion of Grade A eggs increased from 47.1 percent of the total in 1946, to 57.3 percent by 1948; the quality yield from both country stations was 12 percent greater than that of the Chicago station. By 1948 the proportion of Undergrade eggs at country stations had decreased to less than half of what it was in 1946.

Grade yield from producers' eggs. Summaries of the other Illinois country graded-egg markets referred to on page 16 were compared with summaries of these grading stations. Regardless of location, the quality yield of producers' eggs was far higher than that obtained from either terminal assemblers or country dealers (Table 4). Although Firm E was just beginning to buy eggs on a graded basis in 1949, its yield of A Large eggs was about 50 percent higher than that obtained at the Chicago wholesale market. The yield of A Large eggs from all other firms was at least 50 percent higher, and the yield of Grade A eggs from producers was almost 100 percent greater than the yield obtained from the terminal market.

All of these summaries reveal that producers respond to price incentives offered by the country grading stations. Analysis of costs and quality yield by source of eggs indicates that country graded-egg marketing offers higher prices to the producer, lower costs to the grading station, and better-quality eggs to the consumer.

Effect of country grading stations on Illinois marketing system. Graded-egg marketing at country points was accompanied by an integration of marketing functions and channels. With the most completely integrated system, egg ownership changed only twice between producers and consumers: first, when the grading station bought eggs from producers; and second, when eggs were sold to consumers through company-owned retail stores. Between these two transactions, eggs were candled, graded, cartoned, and packed for consumer sale.

Farmers were paid for the same size and grade of eggs as those cartoned and sold at retail. The changeover to graded-egg marketing appreciably reduced the time and labor required to market eggs. Under an integrated grading system, not only can consumer demand indicate prices the grading station should pay its patrons for different grades of eggs, but the buying, assembling, sorting, grading, packing, financing, risk-bearing, distributing, advertising, and selling are all undertaken by one organization.

Since eggs are perishable, they must either be sold immediately or held under refrigerated conditions to maintain their high initial quality.

An integrated marketing system enables retailers to sell graded eggs within 36 hours after they are laid.

Integrated producer-retailer marketing is an ideal. In actual practice, the grading stations have developed a combination of graded and current-receipt marketing with producers and dealers. The graded market intercepts the flow of producers' eggs before they enter the current-receipt channels and supplements this supply with dealers' rehandled eggs. In response to price incentives, the flow of Undergrades is minimized, and the resulting higher-quality product competes favorably for the consumer's dollar.

The country graded marketing system minimizes procurement, processing, and distributing costs. Although graded eggs cost more than current receipts, they sell for higher prices on the market, and the price incentive to conserve quality has benefited the entire industry.

Competition of the graded-egg market encourages producers to take care of their eggs so that more of them can be sold on a quality basis rather than as current receipts or Undergrades. This competition has materially strengthened the current-receipt price structure in those areas where eggs are bought on a graded basis.

Potential for Expanding Graded Egg Marketing

Records of all egg sales by the grading station's retail outlets were summarized from 1947 to 1954.¹ These outlets were buying and selling both graded and current-receipt eggs for retail sale. Eggs originated from dealers, the grading station, and directly from producers.

Comparisons of costs and margins in handling graded and current-receipt eggs revealed definite changes. From 1947 through 1951, current-receipt eggs bought directly from farmers represented two-thirds of the total volume sold by these retail outlets. The proportion of total sales of producers' eggs bought on a graded basis increased from 8 percent in 1947 to 26 percent by 1951. Eggs bought from dealers and graded at the grading station decreased from 24 percent of the total in 1947 to 9 percent by 1951. The sale of all eggs by the retail outlets increased 40 percent during this five-year period.

After 1951 total sales of all eggs increased even more sharply. The sale of more graded eggs accounted for most of this increase (Fig. 13 and Table 15). By 1954, current receipts had declined to 49.6 of total

¹ This grading station provided all graded eggs to the same retail outlets during the eight-year period. Although these outlets did not buy graded eggs from any other source, they bought and sold current receipts locally. All outlets were controlled by the same management.

Although total egg production increased 18 percent from 1947 to 1954, the sales of the grading station's retail outlets more than doubled. Total graded egg sales increased 215 percent and farmers' graded eggs increased 509 percent. (Fig. 13)

Table 15. — Index of Volume of Eggs Sold by Retail Outlets of an Illinois Grading Station, 1947-1954

Year	Current receipts	Graded eggs		Total eggs	Eggs produced	
		Farmers	Total		Nationally	Illinois
index (1947 = 100)						
1947.....	100	100	100	100	100	100
1948.....	108	197	113	110	99	101
1949.....	118	296	115	117	101	104
1950.....	136	379	149	140	106	111
1951.....	133	414	150	139	107	111
1952.....	146	490	207	170	110	117
1953.....	145	441	303	180	113	117
1954.....	148	609	315	202	118	122

Table 16. — Source and Kind of Eggs Sold by Retail Outlets of an Illinois Grading Station, 1947-1954

Year	Current receipts ^a	Graded eggs ^b (Source to grading station)			Total
		Large dealers ^c	Local dealers	Farmers	
		(percent of total eggs)			
1947.....	67.6	23.9	....	8.5	100
1948.....	66.6	17.7	....	15.7	100
1949.....	68.2	9.2	....	22.6	100
1950.....	65.6	11.3	....	23.1	100
1951.....	64.9	8.8	....	26.3	100
1952.....	59.6	9.7	4.8	25.9	100
1953.....	54.7	11.8	11.3	22.2	100
1954.....	49.6	9.6	14.6	26.2	100

^a Current receipts were delivered by farmers directly to retail stores.

^b All graded eggs came from the grading station.

^c All dealer eggs are shown as Large Dealer eggs until 1952.

sales and graded eggs had increased to 50.4 percent. Producers and dealers supplied about the same volume of graded eggs in 1954 (Table 16).

Total egg sales more than doubled during the eight-year period, and the volume of graded eggs sales more than trebled. Whenever the grading station could develop alternative sources, it cut down its supply of current receipts and dealers' "graded eggs." Although current-receipt sales through the retail outlets increased 48 percent from 1947 to 1954, more graded eggs were sold in 1954 than the total volume of all eggs sold in 1947. Part of this increase in total sales can be accounted for by the 18 percent increase in total volume of eggs in the United States; but the greater part of it may be safely attributed to the effects of marketing "quality" graded eggs (Fig. 13 and Table 15).

Handling current receipts at retail. When eggs moved through typical current-receipt channels, the price advantage to farmers was greater than that shown in this study. Retailers were selective in buying current-receipt eggs from producers. They usually paid two to three cents a dozen premium over local current-receipt prices for clean, fresh, farm-run eggs. The eggs were checked for cleanliness, placed in "three by four" cartons, and offered for sale with a minimum of handling costs. Consumers were guaranteed 12 eggs in a dozen — nothing more.

Handling graded eggs at retail. Eggs delivered to the country grading station were candled, cartoned, and graded into different sizes,¹ refrigerated to maintain their high initial quality, and delivered to the

¹ Eggs were sold as consumer Grade A Large, B Large, A Medium, or A Small Quality. The size exceeded minimum U. S. Department of Agriculture consumer grade standards.

retail outlets twice each week. The high-quality eggs were separated from the low-quality, and the grading station guaranteed the quality of every dozen eggs sold.

Comparative costs for graded and current-receipt eggs. From 1947 to 1954, farmers received an average of 4.5 cents a dozen more for graded eggs delivered at the grading station than the retail stores paid for current receipts. Because the grading station had to pay premiums to large dealers for a supplemental supply of "graded" eggs, the average uncandled cost of all graded eggs was 7.4 cents a dozen more than that of current receipts. The grading station had to pay large dealers an average premium of 2.9 cents a dozen in order to obtain a uniform flow of large eggs during the fall months. This supplementary supply cost was an added marketing cost equal to 78 percent of the value of the average retail margin made from selling graded eggs.¹

The retail stores paid 12.6 cents a dozen more and received 12.4 cents a dozen more for graded eggs than for current receipts. The average gross margin over uncandled costs was 5.0 cents a dozen more for graded eggs than for current receipts, but the average retail margin for graded eggs was 0.2 cent a dozen less (Table 17).

Except for 1954, the price farmers received for graded eggs and the retail price paid for eggs varied seasonally, with highest prices paid from July through December. Processing costs were usually lowest from December through April because egg quality was usually higher and eggs were comparatively clean and uniform in size. The higher processing costs from July through October largely resulted from the high supplementary procurement costs. As total sales increased, overhead and other fixed processing costs decreased. Although processing costs declined from 8.9 cents a dozen in 1947 to 7.7 cents a dozen in 1954—a 13 percent drop—they tended to be comparatively stable from year to year.

On a percentage basis, retail margins tended to be highest when farm prices were lowest. The cost of obtaining supplemental egg supplies from large dealers cut into the retail margin during the fall months. It exceeded the retail margin from June 15 through October 4, 1952; in March, 1953; from May 17 through October 4, 1953; and from June 20 through October 3, 1954. (See Appendix Table 33.)

Retail margins by grade of eggs sold. The greatest gross retail margin was usually received for A Medium and the least margin for

¹The supplemental cost is the difference between the weighted average price paid farmers for door-delivered eggs and the weighted average uncandled costs of all eggs, including both dealer and locally produced eggs.

Table 17.—Comparative Costs and Margins for Selling Graded and Current-Receipt Eggs^a
Through Retail Outlets Served by an Illinois Egg-Grading Station, 1947-1954

Kind of eggs sold	1947	1948	1949	1950	1951	1952	1953	1954	Weighted average
(cents per dozen)									
Average farm price ^b									
USDA reported farm price	41.0	41.5	40.0	31.0	42.0	35.5	42.0	30.0	35.3
Graded eggs	43.1	45.1	42.7	35.8	44.6	37.4	44.2	31.7	39.3
Current receipts	38.1	38.9	37.4	28.9	39.1	32.7	38.4	28.3	34.8
Difference ^c	5.0	6.2	5.3	6.9	5.5	4.7	5.8	3.4	4.5
Average uncandled cost ^d									
Graded eggs	45.1	47.1	45.0	38.1	47.2	41.4	47.7	34.5	42.2
Current receipts	38.1	38.9	37.4	28.9	39.1	32.7	38.4	28.3	34.8
Difference ^e	7.0	8.2	7.6	9.2	8.1	8.7	9.3	6.2	7.4
Average store cost ^e									
Graded	54.0	55.2	53.0	45.9	55.8	50.2	56.0	42.2	50.4
Current receipts	41.1	41.9	40.4	31.9	42.1	35.7	41.4	31.3	37.8
Difference ^f	12.9	13.3	12.6	14.0	13.7	14.5	14.6	10.9	12.6
Average retail price ^f									
Graded	56.5	59.0	56.9	49.8	61.0	53.9	59.4	45.5	54.1
Current receipts	44.6	45.6	44.4	35.2	46.2	39.2	45.7	35.3	41.7
Difference ^g	11.9	13.4	12.5	14.6	14.8	14.7	13.7	10.2	12.4
Average gross margin ^h									
Graded	11.4	11.9	11.9	11.7	13.8	12.5	11.7	11.0	11.9
Current receipts	6.5	6.7	7.0	6.3	7.1	6.5	7.3	7.0	6.9
Difference ⁱ	4.9	5.2	4.9	5.4	6.7	6.0	4.4	4.0	5.0
Average retail margin ^h									
Graded	2.5	3.8	3.9	3.9	5.2	3.7	3.4	3.3	3.7
Current receipts	3.5	3.7	4.0	3.3	4.1	3.5	4.3	4.0	3.9
Difference ^j	-1.0	.1	-1	.6	1.1	.2	-0.9	-.7	-.2

^a Weighted average prices or costs.

^b Average price received by farmers for eggs sold.

^c Graded less current-receipt prices or costs.

^d Average cost of all eggs bought before they were candled or cartoned. Graded eggs were more costly because of supplementary egg supply costs.

^e Average cost to retail store after candling, grading, and cartoning.

^f Average retail price of all eggs sold.

^g Gross over uncandled cost.

^h Retail price less retail cost.

A Small eggs. From a year-round food value standpoint, A Large eggs were usually the best consumer buy.

No fixed price relationship existed between different grades of eggs sold, except that A Large eggs always cost most and sold for the highest prices, and A Small cost least and sold for the lowest prices. The cost and sale price of A Medium and B Large eggs were about the same during the winter and spring months; but during the summer and fall months, margins from the sale of A Mediums were usually 2 to 4 cents more than the margins from B Large eggs. Consumers paid a high premium for smaller eggs of assured quality during the summer and fall months.

Retailers price eggs to reflect the consumer demand. If one particular grade moves slowly, the price is reduced to clear the stocks. Under the integrated marketing system described in this study, producers usually received 15 cents a dozen less than consumers paid for the different grades of eggs. Consumers set the price and retailers reflected the consumer demand to producers.

In 1954, when the price of all eggs was low, the retail outlets sold small eggs as loss leaders during the spring and summer months. (Gross margins for farmers' eggs sold on a graded basis from 1952 through 1954 are shown in Appendix Table 32.)

Distribution of Consumer's Egg Dollar

For graded eggs. During the eight-year period, producers received 72.6 cents of every dollar spent for graded eggs; marketing costs absorbed the balance. To process the eggs, that is, to candle, carton, refrigerate, grade, and prepare them for retail sale, cost 15.2 cents. The supplementary supply cost was 5.4 cents, and retail stores received 6.8 cents for their services (Table 18).

The proportion of the dollar spent for processing varied inversely with prices paid for eggs. These processing costs tended to be fixed in absolute amount, and were relatively highest in the spring months because of the seasonal decline in producer and retail prices. Retail margins were highest in the late fall and early winter months. Supplementary procurement costs were highest from June through November. The relative gross margin between graded and current-receipt prices was usually greatest during the spring months.

For current receipts. Current-receipt eggs retailed for 77 percent as much as graded eggs. Producers received 83.4 cents of every dollar spent for current receipts, retailers received 9.4 cents, and cartoning and handling totaled 7.2 cents.

Table 18. — Distribution of Consumers' Dollar for Graded and Current-Receipt Eggs Sold
by Retail Outlets of an Illinois Egg-Grading Station, 1947-1954

	1947	1948	1949	1950	1951	1952	1953	1954	Weighted average
(percent)									
Graded eggs									
Farmers' door price.....	76.3	76.4	75.0	71.9	73.1	69.4	74.4	69.7	72.6
Supplementary supply cost ^a	3.5	3.4	4.1	4.6	4.3	7.4	5.9	6.1	5.4
Uncandled cost.....	79.8	79.8	79.1	76.5	77.4	76.8	80.3	75.8	78.0
Processing costs.....	15.8	13.8	14.0	15.7	14.1	16.3	14.0	16.9	15.2
Store cost.....	95.6	93.6	93.1	92.2	91.5	93.1	94.3	92.7	93.2
Retail margin.....	4.4	6.4	6.9	7.8	8.5	6.9	5.7	7.3	6.8
Retail price.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Gross margin.....	20.2	20.2	20.9	23.5	22.6	23.2	19.7	24.2	22.0
Gross over farmers' grade price.....	23.7	23.6	25.0	28.1	26.9	30.6	25.6	30.3	27.4
Gross over current-receipts.....	32.6	34.1	34.3	42.0	35.9	39.3	35.4	37.8	35.7
Current-receipt eggs									
Farmers' price.....	85.4	85.3	84.2	82.1	84.6	83.4	84.0	80.2	83.4
Processing costs.....	6.7	6.6	6.8	8.5	6.5	7.4	6.6	8.5	7.2
Store cost.....	92.1	91.9	91.0	90.6	91.1	91.1	90.6	88.7	90.6
Retail margin.....	7.9	8.1	9.0	9.4	8.9	8.9	9.4	11.3	9.4
Retail price.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Gross margin.....	14.6	14.7	15.8	17.9	15.4	16.6	16.0	19.8	16.6

^a Difference between the average price paid farmers for graded eggs and the uncandled cost of all eggs graded at the grading station.

Although producers received relatively more (10.8 percent more) of the current-receipt dollar than of the graded-egg dollar, they actually received 4.5 cents a dozen less for current-receipt eggs than for graded eggs. Grading, candling, and other processing costs were relatively and absolutely more costly for graded eggs (Table 17).

Some retailers prefer to sell current-receipt eggs because they can earn more per dollar invested from current receipts than from graded eggs. These retailers also believe that they attract more farmer trade to their stores by buying farm eggs.

The difference in margins between graded and current-receipt egg marketing has caused a great deal of misunderstanding. On a dozen-egg basis, the individual retailer realizes no immediate advantage in selling graded eggs, and he may make more margin per dozen from the sale of current-receipt eggs. But often the consumer who buys current receipts does not get good eggs, and repeat sales cannot be built on uncertain egg quality.

Are retail margins excessive? One of the most controversial marketing topics is the supposed "excessive margin" between the price farmers receive for eggs and the price consumers pay for them.

Producers as well as consumers may rationalize an excessive margin. But comparisons between farmers' current-receipt prices and consumers' "A Large" quality egg prices can be both misleading and unrealistic.

From the marketing standpoint, current receipts and graded eggs may be two very different products. Usually the production and marketing processes for these two kinds of eggs are entirely different. Many current-receipt eggs are the by-product from small flocks of meat-type hens. These hens usually scavenge for their existence. Most graded eggs, on the other hand, are produced by specialized poultry flocks where careful management and marketing practices have been followed.

Graded and current-receipt eggs reach consumers through two entirely different marketing systems. In the comparison of costs and margins presented in this study, the producer sold current-receipt eggs directly to the store; the store then sold them to the consumers. As a rule, current-receipt eggs pass through many hands before ultimately being sold to the consumer, but graded eggs often only change ownership twice. The quality of current receipts is usually unknown; but graded eggs should be a well-defined quality product, labeled to show the consumer what he is buying.

In 1954 the weighted average farm price of current-receipt eggs

bought by these retail stores was 28.3 cents a dozen — 21.9 cents less than the retail price for Grade A Large eggs. An apparent gross margin of 77 percent existed between the current-receipt farm price and the retail price of A Large eggs.

In 1954 farmers received 28.3 cents a dozen for current receipts. When processing costs of cartonning, breakage, labor, and loss were added, the retail store cost was 31.3 cents. Retailers sold current receipts for 35.3 cents a dozen. In 1954 the retail margin was only 4 cents a dozen (11.3 percent of the retail price), and varied from 2.8 cents in the last of November to 5 cents a dozen during January and February.

Farmers received 38.2 cents a dozen for A Large eggs (9.9 cents more than for current receipts). Candling, grading, cartonning, delivering, etc., cost 7.7 cents a dozen. Net store cost was 45.9 cents. These A Large eggs sold for 50.2 cents a dozen, and the retail margin was only 4.3 cents a dozen (8.6 percent of the retail price). During 1954, the margin on A Large eggs varied from a low of 1.7 cents a dozen in June to a high of 6.4 cents during November.

An extreme case of misunderstanding can be illustrated by using price comparisons of current-receipt and A Large eggs for the four-week period ending October 9, 1954. The average current-receipt farm price was only 22.9 cents; the A Large retail price was 55 cents.

This comparison shows an apparent margin of 32.1 cents a dozen — *140 percent* over the farm price of current receipts! Actually the grading station paid farmers 43.7 cents a dozen for A Large eggs, processing costs were 7.9 cents, and the retail margin was only 3.4 cents a dozen. Stores paid farmers 22.9 cents a dozen for current receipts, processing costs were 3 cents, and the retail margin totaled 3.5 cents a dozen. The retail margin was 6.1 percent for graded eggs and 11.9 percent for current receipts — somewhat different from the apparent margin of 140 percent (Table 19).

COSTS AND MARGINS FOR GRADED EGGS SOLD IN FOUR MAJOR MIDWESTERN CITIES (1952-1954)

Any study of Illinois egg marketing must consider the competitive aspects of alternative sources of supply. Detailed records of egg procurement and pricing of four competing grading stations were obtained for the years 1952 through 1954. Summaries of costs, margins, and quality yield were then compared with those from an Illinois grading station. Each grading station sold eggs in a different midwestern city

and competed for quality eggs from the same basic surplus supply areas. (The Illinois grading station is designated as City B, Table 20.)

Each station followed essentially the same procurement and marketing program, and each had to supplement its supply of locally produced eggs with dealer eggs. All of these stations attempted to avoid the wholesale terminal egg markets as a source of supplemental supplies, and all of them cartoned eggs at country points for retail sale. The retail outlets of each grading station were chain stores that handled some farm-run eggs in addition to graded eggs.

In 1954, the Illinois station had the lowest uncandled cost, store cost, and retail prices of the four stations. It also had the highest processing costs, gross margin, and retail margin. The same price advantage carried through many of the periods in 1952 and 1953. Prices paid for uncandled eggs tended to be lowest for Illinois eggs during the spring months. These lower-cost graded eggs were usually sold to consumers at lower prices than consumers paid for graded eggs at the other major cities.

The weighted average retail margin during 1954 was only about 3 cents a dozen. Processing costs were just over 7 cents, and the gross margin was just under 11 cents a dozen for most eggs sold at these four cities.

A study of the kinds of eggs bought by these grading stations compared with Illinois producer eggs confirmed the fact that eggs bought directly from producers yield more total Grade A and fewer Grade B eggs than those bought from dealers (Table 21).

The grading station that supplied City C obtained about one-fourth more premium-priced A Large eggs than the Illinois station. The Illinois station had the highest percentage of eggs bought as A Medium, as well as a fairly heavy proportion of Undergrades. Eggs bought by City C's grading station were more costly than those bought by the other three stations, but the yield of premium-priced A Large eggs was always greater. During the critical high-priced months (July through October), eggs at Station C yielded as much as 50 percent more A Large eggs than any of the other stations.

An analysis was made of the requirements of major market outlets, alternative supplies, relative costs and quality yields, and the facilities and services available in states competing with Illinois for quality markets. This analysis revealed that if Illinois producers are to make any major additional inroads on the high-priced markets, they must improve the quality of eggs marketed.

Once Illinois grading stations are well established, they cannot continue to subsidize Illinois producers by paying high prices for lower-

quality products. Any market advantage to Illinois farmers for comparable egg quality will be determined by differences in transportation costs from alternative supply areas.

Missouri, Wisconsin, Minnesota, Iowa, Kansas, and other North Central states are interested in developing better market outlets for surplus eggs. Each of these states appears to have either lower-priced or higher-quality eggs than the eggs being bought, candled, and car-

Table 20. — Costs and Margins for Graded Eggs Sold in Four Major Midwestern Cities, 1952-1954

City	Un-candled cost	Store cost	Average retail	Retail margin	Processing cost	Gross margin over cost	Retail margin	Processing cost
			(cents per dozen)			(percent of average retail price)		
1952								
A.....	42.8	52.5	57.0	4.5	9.7	14.2	7.9	17.0
B.....	41.4	50.2	53.9	3.7	8.8	12.5	6.9	16.3
C.....	46.2	51.8	56.0	4.2	5.6	9.8	7.5	10.0
D.....	40.9	47.7	51.8	4.1	6.8	10.9	7.9	13.1
1953								
A.....	49.0	57.1	61.2	4.1	8.1	12.2	6.7	13.2
B.....	47.7	56.0	59.4	3.4	8.3	11.7	5.7	14.0
C.....	50.7	57.4	61.3	3.9	6.7	10.6	6.4	10.9
D.....	45.8	55.4	58.8	3.4	9.6	13.0	5.8	16.3
1954								
A.....	35.3	42.9	46.0	3.1	7.6	10.7	6.7	16.5
B.....	34.5	42.2	45.5	3.3	7.7	11.0	7.3	16.9
C.....	37.2	43.6	46.3	2.7	6.4	9.1	5.8	13.8
D.....	36.3	43.4	46.7	3.3	7.1	10.4	7.1	15.2

Table 21. — Kinds of Eggs Bought by Four Midwestern Egg-Grading Stations Compared With Producer's Eggs Bought at an Illinois Grading Station, 1952-1954

City	A Large	A Medium	A Small	Total Grade A	Grade B	Under-grades
(percent)						
1952						
A.....	43.0	6.7	4.1	53.8	35.3	10.9
B.....	48.2	17.8	3.6	69.6	22.3	8.1
C.....	61.6	13.1	1.9	76.6	19.9	3.5
D.....	49.2	8.3	2.2	59.7	33.5	6.8
Illinois producers.....	53.6	20.1	4.0	77.7	15.2	7.1
1953						
A.....	49.2	2.6	3.7	55.5	36.6	7.9
B.....	50.1	15.3	2.7	68.1	24.0	7.9
C.....	59.4	13.9	2.2	75.5	20.8	3.7
D.....	44.6	9.4	4.2	58.2	34.3	7.5
Illinois producers.....	53.8	18.5	4.9	77.2	14.6	8.2
1954						
A.....	52.7	1.0	4.2	57.9	33.8	8.3
B.....	49.9	18.7	3.8	72.4	19.2	8.4
C.....	62.6	8.1	4.5	75.2	19.5	5.3
D.....	43.4	6.6	3.5	53.5	35.9	10.6
Illinois producers.....	50.9	21.3	7.0	79.2	12.7	8.1

toned for retail sale in the St. Louis and Chicago markets. Future developments in Illinois graded-egg marketing must be on a competitive quality and price basis.

SUMMARY AND CONCLUSIONS

An eight-year study of Illinois egg marketing, including procurement costs, pricing, and quality yield from alternative marketing systems, revealed that:

Current-receipt egg marketing provided little incentive for farmers to market high-quality eggs. Although country egg buyers reportedly based their prices to farmers on the Chicago wholesale market quotation for current receipts, an analysis of their buying practices and prices revealed little or no relationship between the Chicago quotations and prices actually paid local farmers. Decentralized egg marketing, initiated by egg-breaking establishments and expanded by country grading stations, has diminished the importance of the Chicago wholesale market as a price-making force.

Early attempts at country graded-egg marketing failed because of inadequate volume, unreliable grade standards, inability to meet short-run competition, poor market outlets, inefficient management, a limited understanding of graded marketing, and lack of producers' cooperation. The first successful graded-egg markets in Illinois were established by feed companies. Developmental costs were absorbed by profits from the increased sale of feed and baby chickens.

Country grading stations were developed after a comparative analysis indicated that eggs from the Chicago wholesale market were more costly and lower quality than eggs bought directly from producers and graded for retail sale at country points. A typical grading station, processing 2,000 cases of eggs a week, could obtain twice the volume of Grade A eggs, pay producers 6 cents a dozen more than the local current-receipt price, and save nearly \$200,000 a year by buying eggs directly from farmers rather than from the wholesale market.

The demand for a uniform volume of large eggs forced country grading stations to buy dealer eggs during the fall months. These eggs were higher priced and lower quality than eggs bought directly from farmers, yielding only from one-third to one-half as many Grade A and over twice as many B Large eggs as producers' eggs.

The grading station paid farmers 6 cents a dozen over the current-receipt price, but the egg dealers demanded and received from 8 to 14 cents a dozen more than the grading station paid for farmers' graded eggs. As country graded-egg marketing developed, competition of

farmers' high-quality eggs forced dealers to supply better eggs at lower comparative prices.

Within eight years, total egg sales by the grading stations' outlets more than doubled, and the volume of graded egg sales more than trebled. Although current-receipt sales through the retail outlets increased 48 percent from 1947 to 1954, more graded eggs were sold in 1954 than the total volume of all eggs sold in 1947. Total graded eggs sold in Illinois increased from about 1,000 cases a week in 1947 to over 35,000 cases in 1954.

At the present time (1957), from 600 to 900 cases of Illinois producer eggs flow to the grading station from a radius of about 20 miles. By making arrangements with local dealers to supplement this producer supply, the grading station can expand its influence to a radius of 100 miles. For its supplementary egg supply, the grading station paid an average of 2.9 cents a dozen for all eggs sold by the stations' retail outlets.

Farmers received 73.5 cents of every consumer dollar spent for graded eggs and 83.6 cents of every dollar spent for current receipts; but the current-receipt eggs were only worth three-fourths as much at retail as graded eggs. Retail margins were highest when farm prices were lowest. The cost of obtaining a supplemental supply of eggs was equal to 78 percent of the value of the average retail margin made from selling graded eggs.

Cost, margin, and quality comparisons with grading stations in four major midwestern cities revealed that the Illinois station had the lowest average uncandled cost, store cost, and retail prices for eggs sold in 1954. It also had the highest processing costs, gross margin, and retail margin of any of these stations.

Eggs from Missouri, Wisconsin, Kansas, and Iowa were either higher quality or lower priced than some Illinois eggs graded for retail sale in Chicago and St. Louis.

Illinois producers must improve the quality of eggs marketed if they expect to make any additional inroads on the high-priced markets. Further developments in Illinois graded-egg marketing must be on a competitive quality and price basis; recognizable standards and adequate quality price differentials must be maintained to insure a supply of eggs for the better markets.

Buyers must have a dependable supply of eggs in sufficient volume to meet market requirements. Either the local supply pattern must be adjusted to meet the market grade and quality needs, or changes must be made at retail to promote the sale of more Medium and Small eggs during the fall months.

Further integration of country grading stations could include egg-

breaking establishments owned and operated by the grading stations. These integrated firms not only could supply their major outlets with both quality shell and liquid eggs, but could afford to pay producers 3 to 4 cents a dozen more for eggs during the fall months. Graded marketing can be expanded most economically by paying producers more for eggs from July through December rather than paying dealers premium prices for lower-quality eggs.

Producers with reliable outlets for quality eggs have demonstrated that when proper incentives are provided, GRADING WILL IMPROVE THE MARKET FOR ILLINOIS EGGS.

APPENDIX

Table 22.—United States and Illinois Egg Production and Receipts of Eggs at the Chicago Wholesale Market

Year	Production			Index (average 1925-54 = 100)		
	United States ^a	Illinois ^b	Receipts at Chicago market ^c	United States	Illinois	Chicago receipts
	(millions)		(thousands of cases)			
1925.....	34,969	1,927	4,479	76.9	82.6	102.6
1926.....	37,248	2,045	4,545	80.9	87.7	104.1
1927.....	38,627	2,036	4,898	83.9	87.3	112.2
1928.....	38,659	1,983	4,603	83.9	85.0	105.5
1929.....	37,921	1,997	4,381	82.3	85.6	100.4
Average.....	37,485	1,997	4,581	....	....	....
1930.....	39,067	2,032	4,508	84.8	87.1	103.3
1931.....	38,532	2,033	4,317	83.7	87.1	98.9
1932.....	36,298	1,881	3,466	78.8	80.7	79.4
1933.....	35,514	1,883	4,126	77.1	80.7	94.5
1934.....	34,429	1,800	3,625	74.7	77.2	83.1
Average.....	36,768	1,926	4,008	....	....	....
1935.....	33,609	1,727	3,789	73.0	74.1	86.8
1936.....	34,534	1,741	4,154	75.0	74.7	95.2
1937.....	37,564	1,942	4,372	81.6	83.3	100.2
1938.....	37,356	1,900	4,201	81.1	81.5	96.3
1939.....	38,843	2,008	5,082	84.3	86.1	116.5
Average.....	36,381	1,864	4,320	....	....	....
1940.....	39,707	1,932	5,362	86.2	82.8	122.9
1941.....	41,894	2,042	5,028	91.0	87.6	115.2
1942.....	48,610	2,346	5,218	105.5	100.6	119.6
1943.....	54,547	2,642	4,937	118.4	113.3	113.1
1944.....	58,537	2,856	4,719	127.1	122.5	108.1
Average.....	48,659	2,634	5,053	....	....	....
1945.....	56,221	2,757	4,039	122.1	118.2	92.6
1946.....	55,962	2,689	5,586	121.5	115.3	128.0
1947.....	55,384	2,684	4,059	120.2	115.1	93.0
1948.....	54,899	2,712	5,693	119.2	116.3	130.4
1949.....	56,154	2,800	3,450	121.9	120.1	79.1
Average.....	55,724	2,728	4,565	....	....	....
1950.....	58,734	2,998	3,962	127.5	128.5	90.8
1951.....	59,265	2,989	3,823	128.7	128.2	87.6
1952.....	60,985	3,148	3,900	132.4	135.0	89.4
1953.....	62,323	3,148	2,980	135.3	135.0	68.3
1954.....	65,375	3,283	3,617	141.9	140.8	82.9
Average.....	61,054	3,113	3,656	....	....	....
1925-54 Average...	46,059	2,332	4,364	100.0	100.0	100.0

^a Poultry and Egg Situation, January 26, 1955.

^b Illinois Crop Reporting Service, USDA.

^c Dairy Produce yearbooks.

Table 23.—Some Comparative Costs and Yields per Case of Eggs Bought
by Two Illinois Egg-Breaking Plants, by Four-Week Periods in 1948

Item	January 24	February 21	March 20	April 17	May 15	June 12	July 10	Weighted average
Firm A								
Net weight per case, pounds.....	44.6	45.9	46.6	46.7	46.3	45.7	44.9	46.0
Liquid yield per case, pounds.....	37.1	38.5	39.3	39.3	39.0	38.3	37.5	38.6
Industrial liquid yield, pounds.....	.2	.2	.1	.2	.4	.4	.4	.4
Total loss per case, pounds.....	7.3	7.2	7.2	7.2	6.9	7.0	7.0	7.1
Shells.....	6.5	6.6	6.5	6.6	6.3	6.1	6.0	6.4
Rots (tanners).....	.7	.5	.5	.5	.5	.7	.8	.6
Dirt and other weight loss.....	.1	.1	.2	.1	.1	.2	.2	.1
Average price paid per dozen, cents.....	41.5	41.5	41.5	40.6	40.5	40.0	39.6	40.6
Average Chicago CR price, cents.....	41.1	42.2	42.3	41.4	40.3	40.6	39.9	41.1
Time required to break a case of eggs, hours.....	.93	.96	1.00	.83	.90	.85	.86	.88
Firm B								
Net weight per case, pounds.....	44.8	45.8	46.3	46.1	45.6	45.0	44.6	45.6
Liquid yield per case, pounds.....	38.1	38.6	39.1	39.1	38.5	37.8	37.6	38.5
Industrial liquid yield, pounds.....	.2	.3	.4	.3	.4	.4	.2	.3
Total loss per case, pounds.....	6.5	6.9	6.8	6.7	6.7	6.8	6.8	6.8
Shells.....	6.1	6.4	6.3	6.3	6.2	6.1	6.1	6.2
Rots.....	.4	.4	.4	.3	.4	.6	.6	.5
Other.....	(*)	.1	.1	.1	.1	.1	.1	.1
Average price paid per dozen, cents.....	40.7	41.6	41.1	40.3	39.6	39.6	39.8	40.1
Time required to break a case of eggs, hours.....	.83	.82	.80	.69	.72	.72	.69	.73

* Less than 0.1 pound.

Table 24.—Weighted Average Prices Paid Illinois Farmers by Three Grading Stations for Graded Eggs and Competitive Prices Paid for Current-Receipt Eggs, 1947-1949

	Firm A			Firm B			Firm C		
	Graded eggs	Current receipts	Difference	Graded eggs	Current receipts	Difference	Graded eggs	Current receipts	Difference
(cents per dozen)									
1947									
Jan.....	40.1	36.0	4.1	40.0	33.5	6.5	38.7	32.8	5.9
Feb.....	41.5	37.2	4.3	37.7	32.8	4.9	38.9	33.2	5.7
March.....	42.6	38.2	4.4	39.7	36.0	3.7	42.6	35.9	6.7
April.....	44.3	40.8	3.5	40.4	36.5	3.9	43.9	37.2	6.7
May.....	43.0	38.8	4.2	40.3	36.0	4.3	42.4	34.9	7.5
June.....	44.4	39.2	5.2	39.7	36.2	3.5	42.7	36.1	6.6
July.....	46.7	40.5	6.2	44.0	34.9	9.1	46.4	35.6	10.8
Aug.....	48.1	41.9	6.2	44.8	34.2	10.6	46.8	34.0	12.8
Sept.....	54.3	48.0	6.3	49.4	38.5	10.9	51.2	38.9	12.3
Oct.....	53.6	53.6	0.0	49.4	40.7	8.7	52.5	41.6	10.9
Nov.....	54.0	49.8	4.2	51.6	39.4	12.2	50.3	40.3	10.0
Dec.....	55.0	50.6	4.4	53.4	46.2	7.2	54.7	45.1	9.6
Average...	50.4	46.2	4.2	43.0	36.8	6.2	46.8	37.6	9.2
1948									
Jan.....	44.9	41.1	3.8	44.7	38.1	6.6	45.0	41.5	3.5
Feb.....	45.2	37.0	8.2	43.2	38.2	5.0	40.2	37.0	3.2
March.....	44.2	38.4	5.8	41.5	38.2	3.3	43.2	38.2	5.0
April.....	44.5	39.0	5.5	41.6	37.0	4.6	43.5	39.0	4.5
May.....	43.3	37.5	5.8	40.6	36.4	4.2	42.0	37.6	4.4
June.....	45.6	38.0	7.6	42.5	35.5	7.0	42.8	37.2	5.6
July.....	47.6	38.2	9.4	43.3	35.0	8.3	44.4	38.2	6.2
Aug.....	50.2	38.6	11.6	44.8	36.8	8.0	45.7	38.1	7.6
Sept.....	48.9	39.0	9.9	46.7	32.7	14.0	47.2	39.0	8.2
Oct.....	53.4	38.7	14.7	52.0	37.6	14.4	51.8	39.5	12.3
Nov.....	55.3	46.0	9.3	55.0	43.5	11.5	56.1	46.0	10.1
Dec.....	49.8	44.5	5.3	49.8	44.0	5.8	47.0	44.8	2.2
Average...	47.8	40.1	7.7	44.9	37.7	7.2	45.9	40.0	5.9
1949									
Jan.....	43.4	37.0	6.4	42.6	37.0	5.6	42.1	37.0	5.1
Feb.....	41.7	36.4	5.3	40.9	36.4	4.5	39.2	36.4	2.8
March.....	43.1	37.2	5.9	41.2	37.2	4.0	42.7	37.2	5.5
April.....	45.1	38.9	6.2	42.2	38.9	3.3	44.3	38.9	5.4
May.....	45.4	39.4	6.0	43.6	39.4	4.2	43.8	39.4	4.4
June.....	45.7	37.9	7.8	44.3	37.9	6.4	46.0	37.9	8.1
July.....	48.0	38.4	9.6	45.1	38.4	6.7	48.9	38.4	10.5
Aug.....	48.6	40.8	7.8	47.8	40.8	7.0	50.0	40.8	9.2
Sept.....	50.7	45.4	5.3	50.5	45.4	5.1	51.0	45.4	5.6
Oct.....	44.9	39.9	5.0	46.9	39.9	7.0	44.6	39.9	4.7
Nov.....	41.6	37.8	3.8	44.9	37.8	7.1	40.5	37.8	2.7
Dec.....	32.3	28.0	4.3	32.4	28.0	4.4	32.6	28.0	4.6
Average...	43.7	37.7	6.0	42.7	37.0	5.7	43.0	37.6	5.4

Table 25. — Grades of Eggs Bought from Illinois Producers at Three Illinois Grading Stations, 1947-1949

1957]

GRADED EGG MARKETING IN ILLINOIS

61

	A Large			A Medium			A Small			Total Grade A			B Large			Checks and Under-grades			Loss			Total Under-grades			Total Large																			
	A B C			A B C			A B C			A B C			A B C			A B C			A B C			A B C			A B C ^b																			
	(percent)									(percent)									(percent)									(percent)									(percent)							
1947																																												
January.....	69	71	68	18	18	18	*	*	1	87	80	87	7	7	7	5	4	5	1	*	1	6	4	6	76	78	75																	
February.....	74	75	73	12	13	11				86	88	84	8	7	9	5	5	6	1	*	1	6	5	7	82	82	82																	
March.....	74	80	77	9	7	7	1	*		84	87	84	9	8	8	6	5	6	1	*	1	7	5	8	83	90	85																	
April.....	75	81	79	10	4	6	1			86	85	85	8	9	8	5	5	6	1	1	1	6	6	7	83	88	87																	
May.....	70	69	77	12	13	7	1			83	82	84	10	11	9	6	7	6	1	*	1	7	7	7	80	80	86																	
June.....	74	63	75	10	8	7	*			84	71	82	9	13	10	6	16	7	1	*	1	7	16	8	83	76	85																	
July.....	69	69	75	11	14	8	*	*	*	80	83	83	12	11	10	7	6	6	1	*	1	8	6	7	81	80	85																	
August.....	66	64	62	14	15	11	*	9		80	79	82	11	9	8	8	12	9	1	*	1	9	12	10	77	73	70																	
September.....	64	62	48	12	19	17	5	6	21	81	87	86	11	10	7	7	3	7	1	*	*	8	3	6	75	72	55																	
October.....	57	60	40	18	22	34	10	8	15	85	90	89	9	7	5	6	3	5	*	*	1	6	3	6	66	67	45																	
November.....	57	55	47	22	28	35	8	7	8	87	90	90	8	7	5	5	3	5	*	*	1	5	3	5	65	62	52																	
December.....	66	62	65	21	25	24	3	1	2	87	88	91	7	10	4	6	2	4	*	*	1	6	2	5	73	72	69																	
Average.....	66	69	65	16	14	17	3	1	4	85	84	86	9	10	7	6	6	6	*	*	1	6	6	7	75	79	72																	
1948																																												
January.....	64	62	72	20	22	16	*			84	84	88	10	13	6	5	3	5	1	*	1	6	3	6	74	75	78																	
February.....	70	68	78	14	17	8	*			84	85	86	10	13	7	5	2	6	1	*	1	6	2	7	80	81	85																	
March.....	67	71	77	15	10	5	*			82	81	82	12	16	11	5	3	6	1	*	1	6	3	7	79	87	88																	
April.....	70	73	74	14	8	5	*			84	81	79	9	14	14	6	4	6	1	1	1	6	5	7	80	87	88																	
May.....	71	68	73	14	8	5	*			85	76	78	9	19	15	5	5	6	1	1	1	6	5	7	80	87	88																	
June.....	68	67	69	14	6	5	*			82	73	74	11	21	18	6	5	7	1	1	1	7	6	8	79	88	87																	
July.....	69	55	64	10	12	6	*			79	67	70	13	25	21	7	7	8	1	1	1	8	8	9	82	80	85																	
August.....	67	54	61	8	10	5	3	1	9	78	65	75	11	27	15	8	7	9	1	1	1	9	8	10	80	81	76																	
September.....	52	57	40	14	14	21	13	5	20	78	78	81	11	19	9	10	5	9	1	1	1	11	5	10	62	76	49																	
October.....	39	56	35	34	17	35	13	10	15	86	83	85	6	13	7	7	4	7	1	*	1	8	4	8	45	69	42																	
November.....	42	52	46	36	23	34	9	6	7	87	81	87	6	15	6	6	4	6	1	*	1	7	4	7	48	67	52																	
December.....	58	57	57	27	20	28	5	2	90	77	87	87	6	19	7	3	4	5	1	*	1	4	4	6	64	76	64																	
Average.....	61	63	62	20	13	15	3	1	4	84	77	81	9	18	11	6	5	7	1	*	1	7	5	8	70	81	73																	
1949																																												
January.....	64	67		18	14	15	3	*		85	78	82	10	18	11	4	4	6	1	*	1	5	4	7	74	82	78																	
February.....	70	68	69	11	10	8	1			82	78	77	11	18	16	6	4	6	1	*	1	5	4	7	81	86	85																	
March.....	69	61	75	11	11	4	1			81	72	79	11	23	13	7	5	7	1	*	1	8	5	8	80	84	88																	
April.....	67	65	76	11	8	4	1			79	73	80	14	22	12	6	4	6	1	1	1	7	5	8	81	87	88																	
May.....	64	63	73	10	12	4	1			75	75	77	17	20	16	7	4	6	1	1	1	8	5	7	80	83	89																	
June.....	60	58	71	10	13	3	1	*		71	71	74	20	24	18	8	4	6	1	1	1	9	5	8	80	82	89																	
July.....	53	52	66	11	16	4	3	1		67	68	71	23	26	21	9	5	8	1	1	*	10	6	8	76	78	87																	
August.....	44	58	61	11	16	7	8	3	9	63	77	77	24	18	14	12	4	9	1	1	*	13	5	9	68	76	75																	
September.....	38	52	40	19	19	24	17	7	16	74	78	80	15	17	9	10	4	11	1	1	*	11	5	11	53	69	49																	
October.....	35	46	35	26	24	39	21	10	13	82	80	87	10	15	6	7	5	7	1	*	*	8	5	7	45	61	41																	
November.....	44	46	47	31	29	34	11	6	6	86	81	87	8	14	6	5	4	5	1	*	*	6	4	5	52	60	53																	
December.....	55	54	64	25	24	22	5	3	2	85	81	88	9	15	7	7	5	4	5	1	*	6	4	5	64	69	71																	
Average.....	56	57	61	17	16	16	5	2	4	78	76	81	14	19	12	7	5	6	1	*	1	8	5	7	70	76	73																	

^a Designated as Firms A, B, and C. ^b Firm C graded mostly white eggs; Firms A and B graded both white and brown eggs. * Less than 1/2 of 1 percent.

* Designated as Firms A, B, and C. ^b Firm C graded mostly white eggs; Firms A and B graded both white and brown eggs. * Less than 1/2 of 1 percent.

Table 26.—Indexes of Illinois Egg Production: Eggs Received at the Chicago Market and by Illinois Country Assemblers; and Total and Door Receipts by an Illinois Country Grading Station, 1947-1948

Months	Chicago wholesale market	Eggs received by country assemblers	Illinois egg production	Eggs received directly from producers at grading station	Graded eggs received by grading station's retail outlets
index (yearly average = 100)					
1947					
January.....	91	53	97	109	111
February.....	72	91	102	97	115
March.....	90	170	138	123	95
April.....	141	208	145	139	117
May.....	180	174	139	150	105
June.....	145	135	117	134	89
July.....	108	122	98	96	91
August.....	81	76	72	68	107
September.....	69	33	63	71	88
October.....	60	62	75	74	84
November.....	70	40	72	56	108
December.....	93	37	82	86	90
1948					
January.....	98	60	93	79	82
February.....	99	74	102	77	107
March.....	101	150	133	107	104
April.....	159	193	137	152	99
May.....	194	178	131	120	113
June.....	170	146	109	105	84
July.....	96	108	94	112	87
August.....	63	79	80	105	98
September.....	50	47	75	66	105
October.....	36	47	79	49	103
November.....	52	41	76	74	109
December.....	82	70	89	153	109

Table 27.—Seasonal Distribution of Size of Eggs Bought From Illinois Farmers on a Graded Basis

Period ending	Large	Medium	Small	Under- grades	Broken rots short
(percent)					
January 26.....	68	26	1	3	2
February 23.....	75	19	1	3	2
March 23.....	77	16	1	4	2
April 20.....	77	16	1	4	2
May 18.....	76	17	1	4	2
June 15.....	76	18	1	3	2
July 13.....	72	20	1	5	2
August 10.....	67	22	4	5	2
September 7.....	59	21	17	4	2
October 5.....	47	27	21	3	2
November 2.....	38	40	14	3	2
November 30.....	43	45	8	3	2
December 28.....	56	36	3	2	1
Average.....	65	24	5	4	2

Table 28.—Weighted Average Prices Paid for Producers' Eggs Bought on a Graded Basis by an Ohio Egg-Grading Station

Period ending	1947	1948	1949	1950	1951	1952	1953	1954
	(cents per dozen)							
January 26.....		49.7	48.9	30.0	40.1	38.3	42.2	43.3
February 23.....		49.0	43.7	28.5	42.7	35.3	41.9	42.2
March 23.....		51.4	45.6	33.4	45.6	35.3	47.0	38.5
April 20.....		48.8	46.9	33.3	42.8	37.0	47.7	35.6
May 18.....		49.5	49.6	30.3	44.3	35.1	46.5	33.3
June 15.....		49.3	49.9	28.9	45.4	35.7	47.1	32.2
July 13.....		52.6	52.6	33.8	49.8	41.4	50.8	33.3
August 10.....	57.5	55.0	56.4	39.3	50.7	49.8	51.7	36.1
September 7.....	56.4	58.1	55.4	37.8	52.0	48.4	47.4	29.5
October 5.....	57.4	56.8	54.6	39.6	51.5	44.0	49.2	26.3
November 2.....	58.3	59.7	45.0	43.3	51.9	45.5	43.0	25.6
November 30.....	57.5	60.2	43.0	47.5	54.9	46.7	42.6	29.3
December 28.....	61.4	52.4	36.9	51.8	45.7	41.9	41.5	26.5
Year.....		53.3	47.7	37.2	47.6	41.3	46.0	32.4

Table 29.—Weighted Average Prices Paid for Producers' Eggs Bought on a Graded Basis by an Illinois Egg-Grading Station

Period ending	1947	1948	1949	1950	1951	1952	1953	1954
	(cents per dozen)							
January 26.....	40.5	45.0	42.8	29.4	38.2	35.7	40.4	43.1
February 23.....	37.4	43.4	40.8	29.9	39.5	32.6	39.1	41.6
March 23.....	39.7	41.7	41.2	30.7	42.8	31.5	42.2	38.2
April 20.....	40.1	42.0	41.8	30.4	41.3	32.3	43.5	32.9
May 18.....	40.3	40.4	43.7	29.5	42.0	31.3	45.2	31.6
June 15.....	39.9	41.7	44.0	27.6	42.0	32.8	44.2	31.4
July 13.....	40.7	43.2	44.4	30.7	43.0	35.8	46.5	29.9
August 10.....	44.4	43.6	46.4	33.9	43.8	45.1	47.0	34.5
September 7.....	46.0	44.8	48.6	35.0	50.2	45.6	47.2	30.4
October 5.....	49.9	47.0	50.6	41.6	52.0	42.9	48.0	26.0
November 2.....	49.4	52.1	45.6	43.7	52.8	45.3	45.1	24.5
November 30.....	51.6	54.9	44.2	48.3	56.7	45.8	45.7	28.9
December 28.....	54.8	50.6	31.7	52.7	44.3	42.0	43.2	27.1
Year.....	43.1	45.1	42.7	35.8	44.6	37.4	44.2	31.7

Table 30.—Weighted Average Prices Reported at the Chicago Wholesale Market for 60-Percent A Large and Current-Receipt Eggs, 1947-1954^a

Period ending	1947	1948	1949	1950	1951	1952	1953	1954
(cents per dozen)								
60-percent A Large								
January 26.....	39.7	48.0	45.4	32.6	42.3	39.9	45.1	46.9
February 23.....	38.5	45.2	42.5	31.6	43.2	36.1	43.8	44.7
March 23.....	42.4	45.5	43.7	33.7	46.4	35.7	48.0	40.7
April 20.....	43.1	44.3	45.5	33.2	45.6	37.7	48.0	38.5
May 18.....	43.5	43.5	47.1	31.8	47.8	35.4	48.6	35.7
June 15.....	42.5	43.3	46.8	31.9	45.7	37.3	49.6	34.7
July 13.....	43.7	43.2	43.7	34.7	51.0	45.4	51.5	37.4
August 10.....	44.3	43.9	53.1	39.2	53.2	53.2	55.1	43.4
September 7.....	45.7	47.8	54.9	40.1	60.5	55.4	58.4	41.0
October 5.....	48.3	49.4	59.3	47.9	61.9	54.6	61.6	45.7
November 2.....	48.9	55.1	53.5	54.2	66.0	60.5	55.4	41.3
November 30.....	47.9	57.6	47.1	56.3	65.8	54.6	52.6	37.0
December 28.....	53.9	53.1	37.3	55.8	49.4	48.6	47.0	31.1
Current-receipt								
January 26.....	36.8	42.2	40.7	28.5	39.5	34.6	40.9	42.7
February 23.....	36.7	42.2	40.1	27.4	40.9	30.5	41.4	41.6
March 23.....	39.4	42.3	40.7	30.7	42.7	30.5	43.8	37.2
April 20.....	40.5	41.4	41.9	29.0	42.1	31.7	44.0	31.8
May 18.....	40.1	40.3	43.7	27.8	44.2	31.6	45.9	32.2
June 15.....	39.4	40.6	41.7	26.4	40.7	31.4	41.3	30.0
July 13.....	41.0	39.5	40.6	28.1	40.8	32.9	40.9	25.9
August 10.....	38.6	38.6	41.8	31.6	38.6	37.1	41.5	27.3
September 7.....	37.6	40.8	44.1	30.0	42.9	36.7	41.0	24.7
October 5.....	40.1	36.7	46.6	32.2	46.0	35.2	44.2	22.8
November 2.....	43.7	40.2	42.1	32.3	45.5	39.1	43.3	23.6
November 30.....	43.2	46.2	41.0	43.0	49.2	39.4	41.2	25.5
December 28.....	49.4	45.7	34.4	49.4	42.4	37.8	43.3	25.4

^a Adapted from data in the Dairy Produce yearbooks.

Table 31.—Weighted Average Prices Paid for All Producers' Eggs by a Utah Egg-Grading Station

Period ending	1947	1948	1949	1950	1954
(cents per dozen)					
January 26.....	47.0	51.9	54.2	36.2	48.4
February 23.....	42.7	49.3	47.0	35.3	46.2
March 23.....	44.4	49.8	45.5	36.1	40.2
April 20.....	47.4	49.0	47.1	36.1	37.8
May 18.....	50.3	48.2	48.4	35.8	37.1
June 15.....	50.2	49.0	49.2	35.7	37.0
July 13.....	53.1	51.8	51.4	38.5	41.9
August 10.....	57.5	55.7	54.7	44.3	42.1
September 7.....	59.8	57.7	56.3	42.7	36.2
October 5.....	59.5	56.2	55.5	43.7	31.9
November 2.....	56.9	57.7	50.2	45.5	28.9
November 30.....	55.2	60.4	43.6	54.1	30.7
December 28.....	60.3	57.3	38.2	56.3	32.3
Year.....	51.9	52.5	48.7	41.0	37.3

Period ending	A Large				A Medium				A Small				B Large			
	Farm price	Retail	Gross margin		Farm price	Retail	Gross margin	(cents per dozen)	Farm price	Retail	Gross margin		Farm price	Retail	Gross margin	
1952																
January 26.....	38.5	53.6	15.1		35.5	50.1	14.6		23.8	33.9	10.1		35.4	50.1	14.7	
February 23.....	35.0	47.6	12.6		31.7	43.6	11.9		20.0	30.0	10.0		31.6	43.6	12.0	
March 22.....	34.0	46.1	12.1		30.0	41.9	11.9		.....	.....	.....		30.0	40.0	10.0	
April 19.....	34.9	46.3	11.4		30.0	42.8	12.8		.....	.....	.....		30.0	40.3	10.3	
May 17.....	34.2	45.4	11.2		29.5	41.9	12.4		.....	.....	.....		29.6	40.4	10.8	
June 14.....	35.8	47.9	12.1		30.8	43.3	12.5		24.2	33.0	8.8		30.7	40.9	10.2	
July 12.....	40.9	55.1	14.2		34.9	49.0	14.1		25.0	33.0	8.0		34.6	48.7	12.1	
August 9.....	52.6	67.0	14.4		43.7	61.0	17.3		30.0	37.7	7.7		43.8	58.0	14.2	
September 6.....	54.9	69.0	14.1		43.5	62.5	19.0		30.0	39.0	9.0		42.6	58.7	15.1	
October 4.....	52.8	66.0	13.2		42.7	58.3	15.6		30.0	39.0	9.0		45.1	58.7	14.5	
November 1.....	56.5	71.9	15.4		45.3	58.6	13.3		30.0	40.0	10.0		46.4	62.0	15.6	
November 29.....	52.6	69.1	16.5		46.3	61.9	15.6		30.0	43.1	13.1		41.7	54.7	13.0	
December 27.....	47.2	61.8	14.6		41.9	55.0	13.1		30.0	43.2	13.2		35.4	50.0	14.6	
Year.....	41.3	56.4	15.1		38.4	53.2	14.8		29.5	39.5	10.0					
1953																
January 31.....	43.7	58.0	14.3		40.0	54.5	14.5		30.0	45.0	15.0		40.0	52.9	12.9	
February 28.....	41.8	53.7	11.9		39.4	51.1	11.7		30.0	45.0	15.0		39.4	49.1	9.7	
March 28.....	44.8	56.5	11.7		41.8	52.8	11.0		30.0	43.0	13.0		41.8	49.8	8.0	
April 25.....	46.4	57.5	11.1		42.8	53.5	10.7		.....	.....	.....		42.8	50.5	7.7	
May 23.....	48.0	59.0	11.0		45.0	56.7	11.7		.....	.....	.....		45.0	56.2	11.2	
June 20.....	48.0	59.2	11.2		43.3	56.2	12.9		30.0	43.0	13.0		43.3	52.1	8.8	
July 18.....	52.7	62.7	10.0		46.5	58.7	12.2		30.0	43.0	13.0		46.5	56.2	9.7	
August 15.....	56.5	66.2	9.7		46.1	61.9	15.8		30.0	43.0	13.0		46.1	60.1	14.0	
September 12.....	60.0	72.1	12.1		49.3	66.0	16.7		28.3	42.0	13.7		49.3	64.3	15.0	
October 10.....	61.2	73.6	12.4		50.9	66.0	15.1		25.0	39.0	14.0		50.9	64.5	13.6	
November 7.....	56.3	71.0	14.7		46.1	64.0	17.9		23.0	39.0	14.0		46.1	63.0	16.9	
December 5.....	51.7	66.8	15.1		43.8	58.1	14.3		25.0	39.0	14.0		43.8	59.6	15.8	
December 31.....	46.9	60.4	13.5		44.4	56.9	14.3		25.0	39.0	14.0		42.6	58.8	14.2	
Year.....	49.2	62.0	12.8		44.4	58.4	14.0		26.5	40.3	13.8		43.9	56.2	12.3	
1954																
January 30.....	46.6	57.5	10.9		41.6	54.2	12.6		25.0	39.0	14.0		41.7	54.5	12.8	
February 27.....	44.6	55.4	10.8		41.2	51.5	10.3		25.0	39.0	14.0		41.0	51.8	10.8	
March 27.....	41.1	51.5	10.4		36.7	48.5	11.8		25.0	35.7	10.7		36.5	48.2	11.7	
April 24.....	35.8	46.4	10.6		30.5	42.1	11.6		20.2	31.0	10.8		30.5	38.2	7.7	
May 22.....	34.7	47.0	12.3		29.5	42.5	13.0		20.0	29.8	9.8		29.6	39.2	9.6	
June 19.....	34.9	44.9	10.0		29.2	40.8	11.6		20.0	27.0	7.0		29.1	38.7	9.6	
July 17.....	36.7	49.9	13.2		28.6	43.2	14.6		20.0	27.0	7.0		28.6	40.5	11.9	
August 14.....	46.1	58.7	12.6		34.6	52.8	18.2		20.0	27.0	7.0		34.6	49.7	15.1	
September 11.....	41.3	52.0	10.7		30.8	45.3	14.5		18.7	27.0	8.3		30.9	45.4	14.5	
October 9.....	43.7	55.0	11.3		24.5	38.2	13.7		12.0	20.0	8.0		24.8	38.4	13.6	
November 6.....	36.3	48.3	12.0		22.2	32.1	9.9		12.7	21.3	8.6		22.2	32.2	10.0	
December 4.....	34.5	48.8	14.3		27.4	41.8	14.4		19.9	26.9	7.0		27.4	41.9	14.5	
December 31.....	30.2	41.3	11.1		26.1	37.7	11.6		16.3	26.6	10.3		26.1	38.1	12.0	
Year.....	38.2	50.2	12.0		28.7	41.7	13.0		15.7	23.3	7.6		30.4	42.4	12.0	

* Computed as the difference between actual weighted farm price and retail price

**Table 33. — Costs and Margins for Graded Eggs Sold
by Retail Outlets of an Illinois Grading Station**

Period ending	Current- receipts price ^a	Farmers' grade price ^b	Un- candled cost ^c	Retail cost	Retail price	Gross Margin	
						Over un- candled cost	Over farmers' grade price
(cents per dozen)							
1947							
January 25.....	32.1	40.5	39.0	47.0	51.4	12.4	10.9
February 22.....	32.5	37.4	37.8	46.8	48.7	10.9	11.3
March 22.....	33.3	39.7	39.2	47.2	48.0	8.8	8.3
April 19.....	34.2	40.1	39.6	47.5	49.6	10.0	9.5
May 17.....	34.4	40.3	41.2	48.0	50.3	9.1	10.0
June 14.....	33.5	39.9	39.4	48.0	49.6	10.2	9.7
July 12.....	35.9	40.7	40.3	49.3	51.6	11.3	10.9
August 9.....	37.5	44.4	42.6	53.0	55.3	12.7	10.9
September 6.....	38.8	46.0	46.8	57.2	59.2	12.4	13.2
October 4.....	45.6	49.9	55.0	63.2	66.8	11.8	16.9
November 1.....	45.7	49.4	54.7	64.1	67.2	12.5	17.8
November 29.....	46.7	51.6	54.1	62.9	64.8	10.7	13.2
December 27.....	51.2	54.8	58.3	67.5	71.5	13.2	16.7
Year.....	38.1	43.1	45.1	54.0	56.5	11.4	13.4
1948							
January 24.....	37.2	45.0	45.8	53.3	58.7	12.9	13.7
February 21.....	37.6	43.4	44.0	51.1	55.6	11.6	12.2
March 20.....	36.4	41.7	43.4	51.3	54.7	11.3	13.0
April 17.....	34.5	42.0	41.9	48.1	50.3	8.4	8.3
May 15.....	33.7	40.4	40.6	48.5	52.5	11.9	12.1
June 12.....	35.3	41.7	41.6	50.4	52.9	11.3	11.2
July 10.....	36.0	43.2	43.2	52.1	56.0	12.8	12.8
August 7.....	36.1	43.6	44.0	53.2	55.6	11.6	12.0
September 4.....	38.9	44.8	46.3	56.0	59.2	12.9	14.4
October 2.....	41.6	47.0	51.3	60.1	63.0	11.7	16.0
October 30.....	45.3	52.1	53.9	62.1	66.4	12.5	14.3
November 27.....	50.4	54.9	58.4	67.0	70.6	12.2	15.7
December 25.....	46.5	50.6	51.8	59.4	66.0	14.2	15.4
Year.....	38.9	45.1	47.1	55.2	59.0	11.9	13.9
1949							
January 29.....	38.6	42.8	43.6	51.1	56.8	13.2	14.0
February 26.....	36.1	40.8	41.5	48.2	52.0	10.5	11.2
March 26.....	35.1	41.2	41.3	49.0	51.9	10.6	10.7
April 23.....	35.2	41.8	42.2	49.5	53.3	11.1	11.5
May 21.....	36.8	43.7	43.9	51.8	55.1	11.2	11.4
June 18.....	37.0	44.0	44.8	53.4	56.4	11.6	12.4
July 16.....	36.9	44.4	45.6	56.0	59.4	13.8	15.0
August 13.....	38.7	46.4	49.1	57.9	61.5	12.4	15.1
September 10.....	41.0	48.6	52.0	60.4	64.0	12.0	15.4
October 8.....	46.3	50.6	56.1	64.7	69.2	13.1	18.6
November 5.....	41.3	45.6	48.1	57.1	60.9	12.8	15.3
December 3.....	37.0	44.2	47.2	55.4	58.9	11.7	14.7
December 31.....	30.4	31.7	34.4	41.4	46.4	12.0	14.7
Year.....	37.4	42.7	45.0	53.0	56.9	11.9	14.2
1950							
January 28.....	23.1	29.4	30.0	37.0	40.6	10.6	11.2
February 25.....	24.1	29.9	30.6	38.1	40.5	9.9	10.6
March 25.....	25.4	30.7	31.0	38.6	42.3	11.3	11.6
April 22.....	24.1	30.4	30.9	40.0	41.6	10.7	11.2
May 10.....	21.8	29.5	29.8	37.5	40.4	10.6	10.9
June 17.....	22.4	27.6	28.7	36.2	38.5	9.8	10.9
July 15.....	24.8	30.7	33.6	40.6	45.8	12.2	15.1
August 12.....	29.2	33.9	36.7	44.8	48.0	11.3	14.1
September 9.....	30.7	35.0	37.9	46.5	50.1	12.2	15.1
October 7.....	33.4	41.6	44.5	52.2	56.2	11.7	14.6
November 4.....	34.9	43.7	45.4	53.1	57.6	12.2	13.9
December 2.....	37.9	48.3	51.1	58.2	63.4	12.3	15.1
December 30.....	47.7	52.7	55.3	62.7	69.6	14.3	16.9
Year.....	28.9	35.8	38.1	45.9	49.8	11.7	14.0

^a Weighted average prices paid farmers for current receipts by the grading station's retail outlets.

^b Weighted average prices paid farmers for graded eggs by the grading station.

^c Equals the weighted average cost of all graded eggs bought from all sources by the grading station.

(Table is concluded on next page)

Table 33. — Concluded

Period ending	Current- receipts price ^a	Farmers' grade price ^b	Un- candled cost ^c	Retail cost	Retail price	Gross Margin	
						Over un- candled cost	Over farmers' grade price
(cents per dozen)							
1951							
January 27.....	35.5	38.2	41.4	49.1	52.9	11.5	14.7
February 24.....	34.6	39.5	41.0	49.0	54.0	13.0	14.5
March 24.....	37.8	42.8	45.2	52.0	59.2	14.0	16.4
April 21.....	34.8	41.3	41.2	49.3	54.3	13.1	13.0
May 19.....	37.0	42.0	42.2	51.8	55.0	12.8	13.0
June 16.....	35.4	42.0	43.2	52.4	56.8	13.6	14.8
July 14.....	37.7	43.0	45.6	55.1	61.1	15.5	18.1
August 11.....	38.0	43.8	45.9	55.6	60.3	14.4	16.5
September 8.....	40.4	50.2	54.6	64.9	69.0	14.4	18.8
October 6.....	45.5	52.0	55.6	64.3	71.4	10.8	19.4
November 3.....	44.1	52.8	53.9	63.2	69.3	15.4	16.5
December 1.....	47.3	56.7	59.1	67.7	70.6	11.5	13.9
December 29.....	43.8	44.3	47.1	55.1	62.7	15.6	18.4
Year.....	39.1	44.6	47.2	55.8	61.0	13.8	16.4
1952							
January 26.....	34.1	35.7	37.3	45.6	51.9	14.6	16.2
February 23.....	28.6	32.6	33.8	42.1	46.0	12.2	13.4
March 22.....	25.4	31.5	31.7	39.2	44.2	12.5	12.7
April 19.....	25.6	32.3	33.2	41.2	44.7	11.5	12.4
May 17.....	26.6	31.3	32.0	40.5	43.8	11.8	12.5
June 14.....	26.2	32.8	33.8	42.6	45.4	11.6	12.6
July 12.....	28.5	35.8	38.8	48.0	50.5	11.7	14.7
August 9.....	36.1	45.1	51.2	61.4	62.1	10.9	17.0
September 6.....	39.0	45.6	50.2	59.8	62.9	12.7	17.3
October 4.....	38.5	42.9	46.0	55.5	58.4	12.4	15.5
November 1.....	38.3	45.3	48.3	57.8	61.4	13.1	16.1
November 29.....	44.1	45.8	48.8	57.7	63.7	14.9	17.9
December 27.....	40.1	42.0	45.8	53.6	58.0	12.2	16.0
Year.....	32.7	37.4	41.4	50.2	53.9	12.5	16.5
1953							
January 31.....	34.7	40.4	43.2	50.6	56.0	12.8	15.6
February 28.....	35.6	39.1	41.4	48.9	52.1	10.7	13.0
March 28.....	36.5	42.2	45.3	52.1	54.3	9.0	12.1
April 25.....	37.5	43.5	45.4	53.5	55.6	10.2	12.1
May 23.....	39.9	45.2	47.5	55.7	57.9	10.3	12.7
June 20.....	37.8	44.2	46.6	54.7	56.6	10.0	12.4
July 18.....	38.6	46.5	49.3	58.4	59.7	10.4	13.2
August 15.....	39.8	47.0	51.1	61.1	62.6	11.5	15.6
September 12.....	41.4	47.2	54.7	64.4	66.4	11.7	19.2
October 10.....	41.2	48.0	54.4	63.4	66.2	11.8	18.2
November 7.....	40.6	45.1	49.7	58.6	63.9	14.2	18.8
December 5.....	39.5	45.7	47.7	55.9	62.6	14.9	16.9
December 31.....	38.6	43.2	45.2	52.5	58.7	13.5	15.5
Year.....	38.4	44.2	47.7	56.0	59.4	11.7	15.2
1954							
January 30.....	38.4	43.1	44.7	51.8	56.3	11.6	13.2
February 27.....	38.2	41.6	44.2	50.6	54.1	9.9	12.5
March 27.....	32.6	38.2	39.2	46.4	50.4	11.2	12.2
April 24.....	27.5	32.9	34.3	42.1	44.1	9.8	11.2
May 22.....	26.0	31.6	32.4	39.8	44.3	11.9	12.7
June 19.....	25.7	31.4	32.7	41.0	42.5	9.8	11.1
July 17.....	25.6	29.9	33.2	42.5	45.2	12.0	15.3
August 14.....	30.9	34.5	40.5	49.6	55.0	14.5	20.5
September 11.....	27.8	30.4	36.4	44.6	46.7	10.3	16.3
October 9.....	22.9	26.0	29.1	37.0	39.7	10.6	13.7
November 6.....	21.5	24.5	26.5	34.2	36.3	9.8	11.8
December 4.....	24.7	28.9	33.1	41.0	44.2	11.1	15.3
December 31.....	24.4	27.1	28.4	35.4	39.6	11.2	12.5
Year.....	28.3	31.7	34.5	42.2	45.5	11.0	13.8

^a Weighted average prices paid farmers for current receipts by the grading station's retail outlets.

^b Weighted average prices paid farmers for graded eggs by the grading station.

^c Equals the weighted average cost of all graded eggs bought from all sources by the grading station.

Table 34.—Average Illinois Egg Production and Farm Prices^a in 5-Year Periods

Month	1925- 1929	1935- 1939	1945- 1949	1950- 1954	1925- 1929	1935- 1939	1945- 1949	1950- 1954
	(millions of eggs)				(index)			
January.....	80.6	100.8	178.8	278.2	48	65	79	107
February.....	133.8	135.2	240.8	277.8	79	87	106	107
March.....	261.6	236.0	319.4	327.0	155	152	140	126
April.....	311.6	276.4	326.4	320.0	185	178	144	123
May.....	288.4	256.4	309.2	310.2	171	165	136	120
June.....	225.2	196.0	254.0	260.6	134	126	112	100
July.....	190.4	158.8	213.2	222.6	113	102	94	86
August.....	161.6	131.2	175.6	199.6	96	84	77	77
September.....	155.6	110.2	160.8	197.8	92	71	71	76
October.....	90.5	96.2	171.8	224.6	54	62	76	87
November.....	61.0	79.4	174.6	236.2	36	51	77	91
December.....	60.4	87.0	204.4	258.6	36	56	90	100
Average.....	168.39	155.30	227.42	259.43	100	100	100	100
Percent that high is of low.....	516	348	203	165	...	...	...	...
	(cents per dozen)				(index)			
January.....	38.4	21.1	37.2	35.1	126	105	97	98
February.....	30.6	20.4	34.4	34.5	100	101	90	96
March.....	23.6	16.6	34.8	34.4	77	83	91	96
April.....	23.2	16.8	35.2	33.2	76	84	92	92
May.....	24.0	17.1	35.0	33.2	79	85	92	92
June.....	23.4	16.6	35.3	32.3	77	83	92	90
July.....	24.4	17.0	36.1	32.8	80	85	94	91
August.....	25.8	17.8	37.4	36.4	84	89	98	101
September.....	30.0	20.9	41.3	38.5	98	104	108	107
October.....	34.8	23.3	44.8	39.5	114	116	117	110
November.....	42.4	27.6	44.2	40.4	139	137	116	112
December.....	46.0	26.1	43.2	40.7	151	130	113	113
Average.....	30.55	20.11	38.24	35.92	100	100	100	100
Percent that high is of low.....	198.3	166.3	130.2	126.0	...	...	...	...

^a Illinois Cooperative Crop Reporting Service data.

UNIVERSITY OF ILLINOIS-URBANA

Q.630.7/L68
BULLETIN. URBANA
601-620 1956-57

C001

3 0112 019528774