FARM BUSINESS NOTES

Prepared by the Divisions of Agricultural Economics and Agricultural Extension
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Minnesota Egg Quality

F. R. TAYLOR and W. C. WAITE

Eggs and poultry account for 10 per cent of Minnesota farmers' cash income. Nine out of ten farmers raise chickens. All this means that it is important to keep the demand for Minnesota eggs high.

One way to keep demand strong is to produce good quality eggs on the farm and to keep this quality all through the marketing channels to the consumer. Quality is especially important to Minnesota producers because two-thirds of our eggs are sold in distant markets where they must compete with quality eggs from other areas.

University Farm Radio Programs

HI-LIGHTS IN HOMEMAKING
10:45 a.m.

UNIVERSITY FARM HOUR—12:30 p.m.

Station KUOM—770 on the dial

During 1948 the University of Minnesota Division of Agricultural Economics and various agencies of the United States Department of Agriculture made a cooperative study of egg quality. The Federal-State grading service inspected 100 eggs of each of 1,337 producers as they were delivered to the first buyer during April, July, and November.

The principal thing shown by this study was the great range in the quality of eggs delivered by individual farmers to the first buyer. Table 1 shows the proportion of farmers having a specified number of Grade A eggs per 100 eggs in their deliveries at the different periods of inspection.

The table shows that over one-third (34 per cent in April, 33 per cent in July, and 53 per cent in November) of the farmers delivered 80 per cent or more Grade A eggs. If over one-third of Minnesota producers can deliver eggs of such high quality it should be possible for the rest of the producers to improve the quality of their eggs. The higher quality of the eggs in November suggests the need for greater attention to more frequent gathering, prompter cooling, better storage, and better flock management during the warmer period of the year.

When the eggs for the state as a whole are classified according to their individual grade in these three periods, we obtain the results shown in table 2. The differences in quality in the three periods arise largely from the differences in the proportion of Grades B and C eggs. The eggs grading B and C are the result of interior deterioration and this arises largely from exposure to unfavorable temperatures. Prompt gathering and cooling would decrease this deterioration.

The stained and dirty eggs which result largely from management practices were fairly uniform in the different periods. Proper management practices, such as plenty of clean litter on the floor and in the nests, keeping the hens confined in wet weather, frequent gathering of the eggs, and proper cleaning would reduce these losses materially.

Table 3 shows the quality of the eggs delivered by farmers in different types of farming areas, which shows the attention which producers in different areas of the state give to these factors of good management.

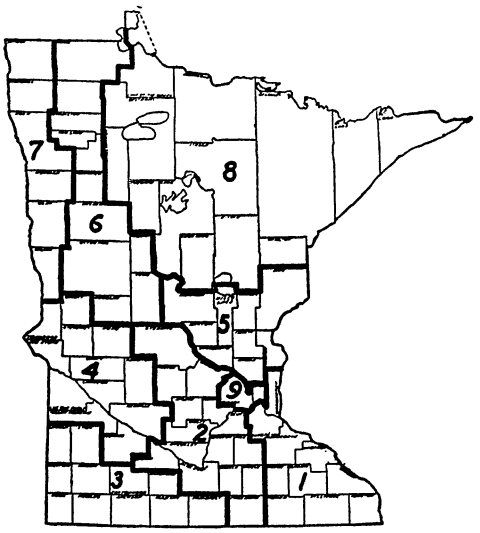
The map on page 2 shows the type-of-farming areas for Minnesota. There is a wide range in egg quality in different areas of the state, with Area 2 having 74 per cent Grade A eggs delivered by producers, while Area 4 had only 55 per cent. The difference in quality is due in large part to more Grade B and C eggs and a larger per cent

Table 1. Proportion of Farmers Delivering a Specified Number of Grade A Eggs per 100 Eggs Delivered

Time of Year	Number of Grade A eggs per 100 eggs delivered					
	90-100	80-89	70-79	60-69	0-59	All Farmers
	Proportion of farmers					
April	12	22	17	14	35	100
July	10	23	21	14	32	100
November	22	31	19	11	17	100
Average of all periods	15	26	19	13	27	100

Table 2. Quality of Eggs Delivered in Specified Months, Classified by Grade, 1948

Classification	April	July	November	Average 3 periods
	Per cent			
Grade A	66	64	73	67
Grade B and C	19	20	13	17
A Stains and Dirties	7	6	7	7
B and C Stains and Dirties	3	4	2	3
Checks, Leakers, and Loss	5	6	5	6
	100	100	100	100



Type-of-farming areas in Minnesota.

of stained and dirty eggs in the areas having deliveries of lower average quality.

The differences in the quality of eggs at different periods of the year, were also evident in the averages by periods for the different areas.

While stained and dirty eggs are unattractive to consumers, they may still be of good internal quality. Quality differences among areas may, therefore, be better compared on the basis of internal quality, disregarding the presence of stained and dirty eggs. This has been done in table 4. When eggs are compared on this basis, the principal change among areas is the higher ranking in Area 3, as compared to its rank in table 3.

The practices followed by the first buyer in purchasing the eggs from the farmers also appears to have an influence on the quality of eggs delivered to him.

It appears that Minnesota producers sell their better eggs on grade and the poorer-quality eggs (stained and dirty, checked, odd shaped, etc.) as current receipts. The larger producers, and in many cases the better producers, who take pride in quality eggs apparently sell on a graded basis, while those who take less care of their flocks and of their eggs tend to sell on a current receipts basis. All of these factors combine to lower the quality of eggs bought as current receipts. This is shown in table 5.

There was considerable variation in quality between the different areas, but in all cases the proportion of Grade A eggs was considerably lower in eggs bought on a current receipt basis than in those bought on a graded basis.

This same difference in quality held true at various times of the year. Sixty-nine per cent of the eggs bought on a graded basis were of Grade A quality in April, 67 per cent in July, and 74 per cent in November. Those sold on a current receipts basis graded 50 per cent Grade A in April, 50 per cent in July, and 53 per cent in November.

The study also showed that the proportion of Grade A eggs is influenced by the method of delivery and methods of purchase. Of those bought on a graded basis, eggs picked up on the farm by trucks graded 70 per cent Grade A, while those delivered to the first buyer by the producer graded 69 per cent Grade A. Of those purchased as current receipts, 54 per cent were Grade A when picked up by trucks and only 47 per cent when delivered by producers. In other words, eggs picked up by trucks are of higher quality than those delivered by producers.

Table 3. Quality of Eggs Delivered in Specified Months, Classified by Grade

Area	Grade A	Grades B and C	Stains and Dirties	Checks, Leaks and Loss	Total
			Per cent		
1. (Southeast)	71	17	7	5	100
2. (South central)	74	14	6	6	100
3. (Southwest)	69	11	14	6	100
4. (West central)	55	23	15	7	100
6. (Northwest)	67	22	6	5	100
7. (Red River Valley)	57	31	8	4	100
State average	67	17	10	6	100

Table 4. Proportion of Eggs of A Quality Delivered During Specified Months in Various Type-of-Farming Areas

Time	Farming Areas 1	2	3	4	6	7	Average of all areas
				Per cent			
April	78	78	77	57	67	61	73
July	71	78	80	61	68	38	70
November	86	83	84	68	83	82	80
	76	79	80	63	71	60	74

Table 5. Proportion of Grade A Eggs According to Methods of Purchase, Grade or Current Receipts, by Type-of-Farming Areas

Method of Purchase	Areas 1	2	3	4	6	7	All areas
Grade	73	76	73	61	67	57	69
Current receipts	60	47	56	38	*	*	50

* In these areas, no eggs in sample were sold as current receipts.

Small Poultry Flocks Can Be Efficient

FRANK T. HADY* and TRUMAN R. NODLAND

Do the owners of large poultry flocks do a better job of poultry production than owners of smaller flocks? Does the breed of chickens kept make a difference in the results obtained from the poultry flock?

The typical farm flock of chickens in Minnesota is rather small and on most farms poultry does not represent a major farm enterprise. Only about 6 per cent of the flocks contain as many as 400 chickens and the remainder are almost equally divided between flocks of under 100, from 100 to 200, and from 200 to 300 chickens.

It is sometimes assumed that one way to get greater efficiency in poultry production is to increase the proportion of large flocks. This would make the enterprise large enough to warrent "commercial management" or management as a part of the farm business. Smaller flocks are

* Bureau of Agricultural Economics, U.S.D.A.

presumed to be managed by the family or to lack careful management by anyone.

A study of the records kept by members of the Southeastern and Southwestern Minnesota Farm Management Services shows us something about the management of flocks of all sizes. In 1947, 13 per cent of the 292 member farmers had poultry flocks of under 100 chickens; 30 per cent, 100-199; 32 per cent, 200-299; 13 per cent, 300-399; and 12 per cent, 400-over.

This distribution does not differ greatly from that of all flocks in the state. It should be noted, however, that all of these flocks are farm flocks and that the larger flocks do not always get better management than the smaller ones.

One way of measuring the relative efficiency of the large flocks (over 400 hens) and the smaller flocks is the annual rate of lay per hen. Do large flock owners, through better selection, better care, and better feeding, get a larger number of eggs per hen than smaller flock owners? The 1947 data on rate of lay for the farm management service members are shown in table 1.

These data for 1947 show no significant relationship between the size of the flock and the average rate of lay per hen. The differences that are shown in the table could readily happen due to chance alone. Hens in the large flocks do not lay materially more eggs than do hens in the smaller flocks. Differences in the highest rates of lay and lowest rates of lay likewise indicate no advantage for the larger flock compared with the smaller ones. On the other hand the big spread between the high and the low in all size groups indicates that the quality of chicks and quality of management is more important than the size of the flock.

Thus it would appear that it is not necessary to have a large poultry flock in order to secure high production per hen. Good chick selection, good care and feeding, and care in controlling disease are possible among owners of small flocks as well as owners of larger ones.

Another possible measure of the relative efficiency of large and small flocks is the return received from $100 worth of feed fed to chickens. Do owners of large flocks receive a higher return from their feed than smaller-flock owners? Return data are shown in table 2 for the farm management service farms.

The relationship is not entirely consistent but it appears that the owners of large flocks receive a little more on the average from each $100 worth of feed fed than do those of the smaller flocks. This may indicate better use of the feed fed or it may show better returns from the eggs due to marketing larger numbers. Because of the larger production, the eggs may be better cared for and marketed oftener. It is evident, however, that the small flock can show returns as high as the large flock. The highest returns from every flock size are well above the average for the large flocks. Avoiding waste in feed use, proper care of eggs, and marketing under favorable market conditions are equally possible for owners of small and large flocks.

Table 1. Average Rate of Lay per Hen in Flocks of Different Sizes, 1947

Flock Size	Number of farms	Average rate of lay	Highest rate of lay	Lowest rate of lay
Under 100	39	149	249	61
100-149	32	168	283	64
150-199	55	178	262	93
200-249	52	173	252	78
250-299	40	179	268	67
300-399	39	172	246	67
400-over	35	189	299	74

Table 2. Returns for $100 Worth of Feed Fed to Hens, by Size of Flock, 1947

Flock size	Number farms	Return for $100 feed fed		
		Average	Highest	Lowest
			(Dollars)	
Under 100	36	117	227	45
100-149	31	127	240	37
150-199	56	132	373	67
200-249	51	137	217	82
250-299	40	140	191	68
300-399	35	129	229	62
40-over	37	148	239	92

The relative profitability of the various breeds can be measured by egg production and return per hen. Figures on these items are shown in table 3. Since the number of farmers maintaining some breeds is small, the data for all breeds other than Leghorns have been combined. The difference between Leghorns and other breeds in rate of lay is not significant. The quality of poultry within a breed varies more than between different breeds. The important problem for a poultryman is to obtain good stock regardless of the breed desired.

The data in table 3 show some difference between Leghorns and the other breeds in the returns from meat. This is expressed as net increase in value per hen. The net increase in value is determined by adding the sales, value of poultry used in the home, and the end of the year inventory. The value of beginning inventory and purchases is than deducted from this total. Since the net increase in value is shown on a "per hen" basis, the breeds other than Leghorns have the largest total return per bird.

The results from this study indicate that neither size of flock nor breed show a significant relationship to profits. It is more important for a farmer to consider the various management practices affecting returns and quality of chickens purchased. One should bear in mind that the flocks kept by the cooperators in the farm management services are essentially farm flocks; the receipts from the sale of poultry and eggs are a relatively small proportion of the total receipts from these farms. A study of specialized poultry farms might show different results.

Table 3. Size of Flock, Rate of Lay, Feed Cost, and Returns from Leghorns and All Other Breeds, 1946-47

	Leghorns	All other breeds
Average number of records	161	68
Average number of hens	272	207
Eggs laid per hen	175	173
Returns and feed cost per hen:		
Eggs	$ 5.50	$ 5.29
Net increase in value	.64	1.87
Total returns	$ 6.14	$ 7.16
Feed cost	4.45	5.04
Return over feed cost	1.69	2.12
Return per $100 feed fed	$138.00	$142.00

Minnesota Farm Prices For April, 1949

Prepared by W. C. WAITE and K. E. OGREN

The index number of Minnesota farm prices for April, 1949, is 231. This index expresses the average of the increses and decreases in farm product prices in April, 1949, over the average of April, 1935-39, weighted according to their relative importance.

Average Farm Prices Used in Computing the Minnesota Farm Price Index, April, 1949, with Comparisons*

	April 15, 1949	Mar. 15, 1949	April 15, 1948		April 15, 1949	Mar. 15, 1949	April 15, 1948
Wheat	$ 2.08	$ 2.03	$ 2.39	Hogs	$18.50	$19.60	$20.00
Corn	1.10	1.03	2.09	Cattle	19.50	19.00	21.60‡
Oats	.62	.61	1.16	Calves	26.50	25.60	22.60‡
Barley	1.02	1.11	2.19	Lambs-Sheep	23.53	22.59	19.69‡
Rye	1.13	1.12	2.26	Chickens	.270	.260	.185
Flax	5.74	5.74	5.85	Eggs	.385	.370	.396
Potatoes	1.50	1.50	1.60	Butterfat	.66	.68	.91
Hay	15.70	15.90	15.50	Milk	2.80	2.95‡	4.00‡
				Wool†	.44	.44	.45‡

* These are the average prices for Minnesota as reported by the United States Department of Agriculture.

† Not included in the price index number.

‡ Revised.

Prices received by Minnesota farmers in April were down about one-half per cent from March. Significant price advances were made in cattle, eggs, and corn. Hog, barley, butterfat, and milk prices were down from last month. The index of prices paid by farmers was unchanged.

Hog prices dropped 6 per cent in April. The average United States price of hogs in April ($18.60) was 104 per cent of the parity price. The United States Department of Agriculture has announced a hog support-price schedule for April-September based on an annual average of $16.75, Chicago basis, for good and choice barrow and gilt butcher hogs. Weekly support prices, adjusted for seasonal variation, range from $16.25 to $18.50.

Indexes and Ratios for Minnesota Agriculture*

	April 15, 1949	April 15, 1948	April 15, 1947	Average April 1935-39
U. S. farm price index	237.7	266.0	252.3	100
Minnesota farm price index	231.0	273.8	253.5	100
Minn. crop price index	203.3	304.3	251.1	100
Minn. livestock price index	262.3	272.0	282.7	100
Minn. livestock product price index	211.2	265.1	227.0	100
U. S. purchasing power of farm products	121.3	134.2	137.8	100
Minn. purchasing power of farm products	117.9	138.1	138.4	100
Minn. farmers' share of consumers' food dollar	56.6†	58.9	63.9	47.9
U. S. hog-corn ratio	15.2	9.4	14.9	12.5
Minnesota hog-corn ratio	16.8	9.6	16.8	15.4
Minnesota beef-corn ratio	17.7	9.8	12.5	12.6
Minnesota egg-grain ratio	15.6	10.4	12.0	13.7
Minnesota butterfat-farm-grain ratio	33.2	23.4	26.6	31.8

* Explanation of the computation of these data may be had upon request.

‡ Figure for February, 1949.

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Increasing Egg Production Per Hen

K. E. OGREN

Egg production per hen in Minnesota has been steadily increasing during the last ten years. In 1948 there was a record high of 176 eggs per average number of hens on hand during the year. The average United States rate of lay was 163 eggs per hen. The Minnesota rate of lay in 1948 was 55 per cent higher than during the ten-year period, 1926-35. The United States average increased only 35 per cent between the same two periods of comparison.

The data in table 1 indicate that most of the increased rate of lay is the result of a much higher output during the low production fall and winter months. In the years for which records are available, the highest rate of lay has been in May of each year, and November has been the low month in all except two years. The difference in rate of lay between the two months, however, has narrowed considerably in recent years. During 1926-35, the rate of lay in May averaged 17 eggs per hen, and in November, 3. In 1948 the average rate of lay in May was 19 and in November, 10.

Total Minnesota egg production in 1948 was 3,885 million eggs, compared to an average production of 1,435 million in 1926-35. Because of a reduction in number of layers kept on farms during the last several years, last year's egg production was about 5 per cent below the peak production reached in 1946.

Table 1. Eggs per Layer in Minnesota, 1926-48

	Jan.-March	April-June	July-Sept.	Oct.-Dec.	Total*
1926-30	22	47	32	12	113
1931-35	23	47	32	12	114
1936-40	27	49	36	17	129
1941-45	38	52	40	25	155
1946	44	54	42	30	170
1947	45	54	42	30	171
1948	44	54	44	34	176

* The total number of eggs produced during the year, divided by the average number of hens and pullets of laying age on hand during the year.

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