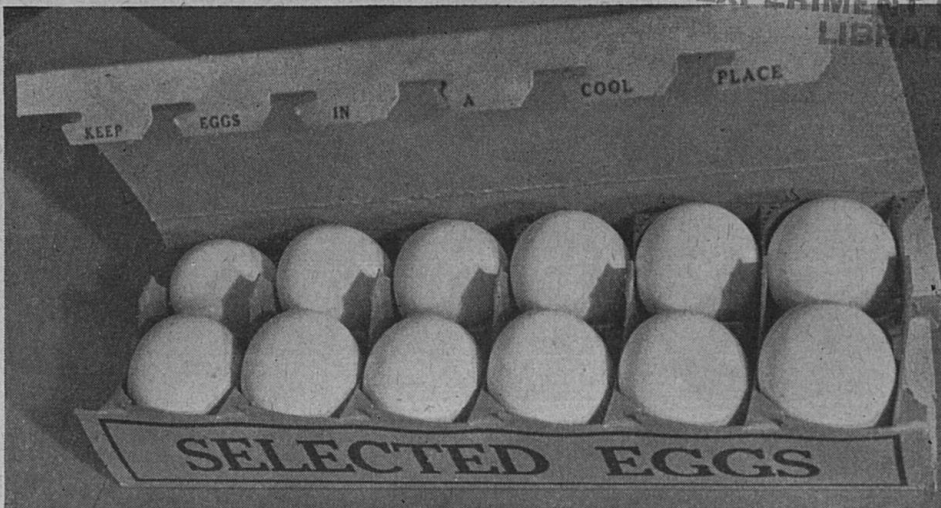


# GOOD EGGS

FOR MARKET

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Clean, fresh eggs of uniform size and color, are the kind consumers want.

Circular 424

UNIVERSITY OF KENTUCKY

College of Agriculture and Home Economics  
Agricultural Extension Division

Thomas P. Cooper, Dean and Director

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*This circular is a revision of  
Circular 349*

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# Good Eggs for Market

BY STANLEY CATON

FOR TOP QUALITY at marketing time, eggs must have the best of care before marketing. Though the inside of the egg cannot be improved in quality after the egg is laid, its "fresh quality" can be kept for several days with the right care. With poor care, on the other hand, the quality will be lowered very quickly. Both the quality of the inside of the egg and the condition of the outside must be considered in producing good eggs for market. Good outside condition means clean, strong shells, good size, and uniform shape and color.

## Clean Eggs Sell Best

No matter how fresh they may be, eggs do not bring the highest price if they are not clean. Dirty eggs are not pleasing to customers and are hard to sell. Clean eggs, on the other hand, are attractive and easier to sell.

Even with the best of care, under practical conditions, some eggs will be soiled when they are gathered. Clean the few that are dirty with emery cloth or fine steel wool. Don't wash dirty eggs because the washing removes the protective "bloom" and permits rapid evaporation from the inside of the egg.

The most common causes of dirty eggs are mud from the hens' feet in wet weather, dirty hen-house floors, broken eggs caused by hens crowding on the nests, not gathering the eggs often enough and gathering in dirty containers. For clean eggs, therefore, avoid these causes so far as possible.

Keep the hens in the laying house until one or two o'clock in the afternoon, if the ground is muddy. Most of the eggs will be laid by that time and the flock will still have plenty of time to range after that.

Wire netting stretched over the roost poles, above the droppings board or pit, will keep the hens from carrying filth to the nests. This arrangement also helps in the control of parasites and diseases. One and one-half inch mesh, 14 gage, poultry netting is a good size.

A deep litter on the floor of the laying house helps to keep the hens' feet clean. The nests should be kept bedded and clean. One broken egg in a nest may soil other good market eggs. Provide at least one nest for every four hens and gather the eggs frequently, especially in the forenoon when most of the eggs are laid.

### Strong Shells Mean Less Breakage

Eggs with strong shells stand shipping and handling much better than those with thin shells. Keep plenty of shell-forming material, such as limestone or oyster shell, before the hens all the time. Hens must have direct sunshine (or cod-liver oil) in order to form strong-shelled eggs.

### Size, Shape, and Color Depend on Breeding

The size, shape, and color of eggs are largely determined by breeding. In determining the grade of eggs, weight is an important factor, and is usually expressed in ounces per dozen. Eggs of the best grade, which bring the highest prices, weigh at least 24 ounces per dozen. Don't mix small eggs (those weighing 22 ounces per dozen or less) with the larger eggs, for the smaller eggs lower the grade.

Market eggs should be oval and uniform in shape. Very large eggs, which usually have two yolks, and very long eggs should not be marketed—at least not with the eggs of standard shape and size. Long eggs are easily broken when packed in an egg case, and when broken are likely to soil other eggs.

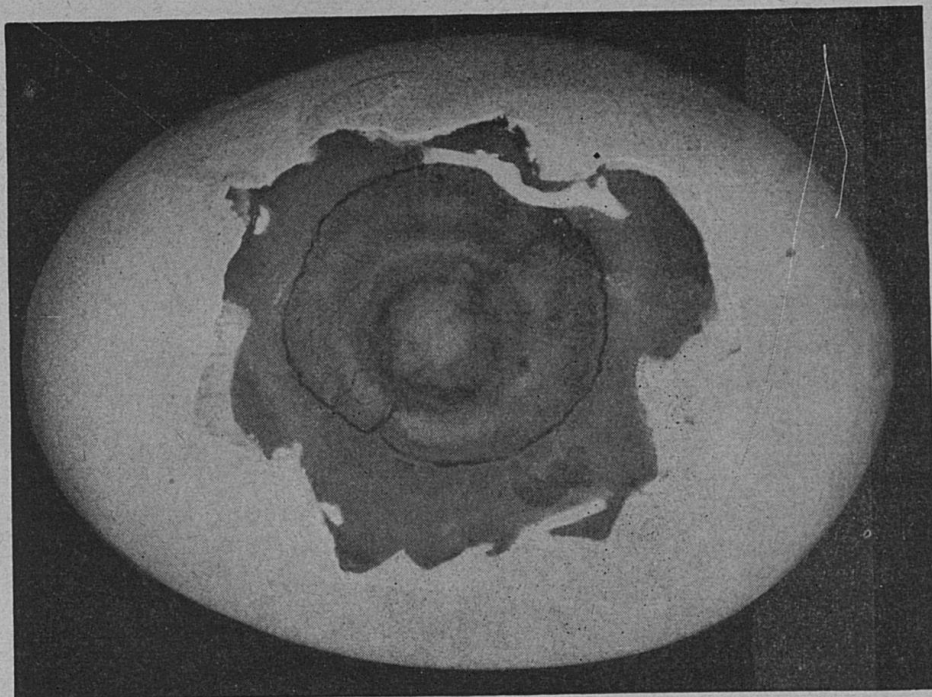
Don't mix brown-shell and white-shell eggs in the same carton or egg case, for such mixing breaks the uniformity of the package and makes it less attractive in appearance. The color of the shell is no indication of the quality or the food value of an egg. Some buyers, however, prefer brown-shell eggs, and others prefer white.

### Produce Infertile Eggs for Market

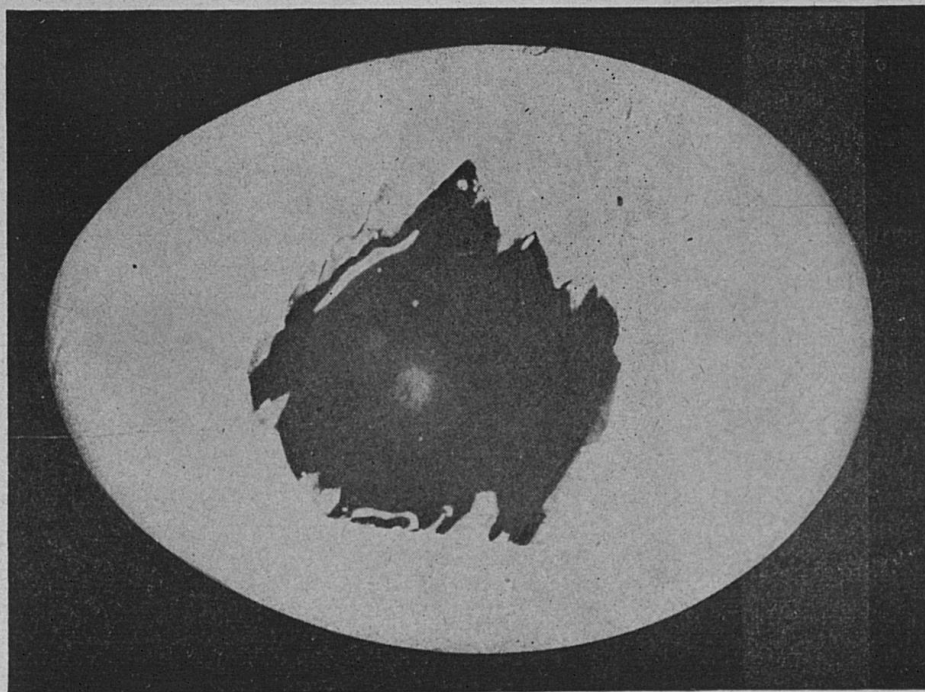
Fertile eggs begin to incubate, even at a temperature no higher than 68 degrees Fahrenheit. After a short period of incubation, blood appears, and this makes the egg unfit for eating. Such an egg is shown in Fig. 1. Much of the loss of Kentucky eggs is due to the fact that they are fertile. Infertile eggs lose quality much more slowly than fertile eggs when the temperature is over 68 degrees Fahrenheit—as it usually is in summer. The infertile egg shown in Fig. 2 is still good, though it was kept under the same conditions as the egg shown in Fig. 1. Occasional meat or blood spots in eggs also influence quality, but the producer cannot control these. They are the result of some disorder in the organs of the hen.

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**Fig. 1.**— A fertile egg which has been kept at 103 degrees F. for 48 hours. Blood has formed and made the egg unfit for food.



**Fig. 2.**— An infertile egg which has been kept at 103 degrees F. for 48 hours. It is still good for food. The white spot in the center is found in all eggs.

### Quality of Yolk and White

The quality of an unbroken egg is judged by the use of an egg candle. By taking the right precautions, however, farmers can be confident of marketing their eggs in good condition without use of an egg candle.

In candling eggs, the air cell in the large end of the egg is used as a guide to determine whether the egg has been properly cared for before marketing. In a well-kept egg, this air cell is small, not more than one-eighth of an inch in depth and about the size of a dime. As the egg ages, evaporation takes place and the air cell becomes larger. Keeping eggs in a dry, warm room results in such rapid evaporation that the egg soon loses its good quality. The air cell should not be movable but should remain in the large end of the egg. A freely moving or bubbly air cell lowers the grade of the egg. This defect is often the result of careless handling and packing.

The characteristics of a fresh egg are shown in Fig. 3. The yolk stands up well and there has been no breaking down of the albumen, or "white." The dense layer of albumen next to the yolk is firm and distinct from the thinner layer. As the egg ages, however, the characteristics of yolk and dense albumen change, unless the egg is kept under the very best conditions. The egg shown in Fig. 4 is four days old, but has been kept in a cooler at 34 degrees Fahrenheit and it still has the quality of a fresh egg. In Fig. 5, however, is shown an egg

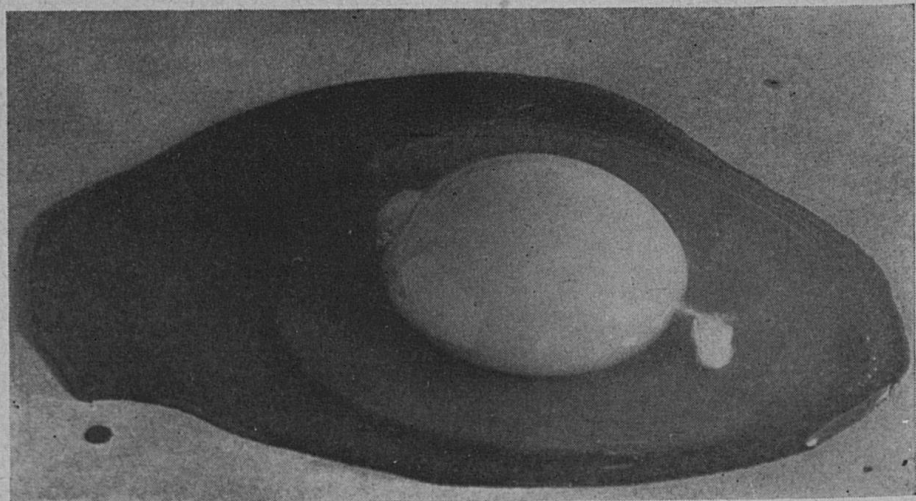


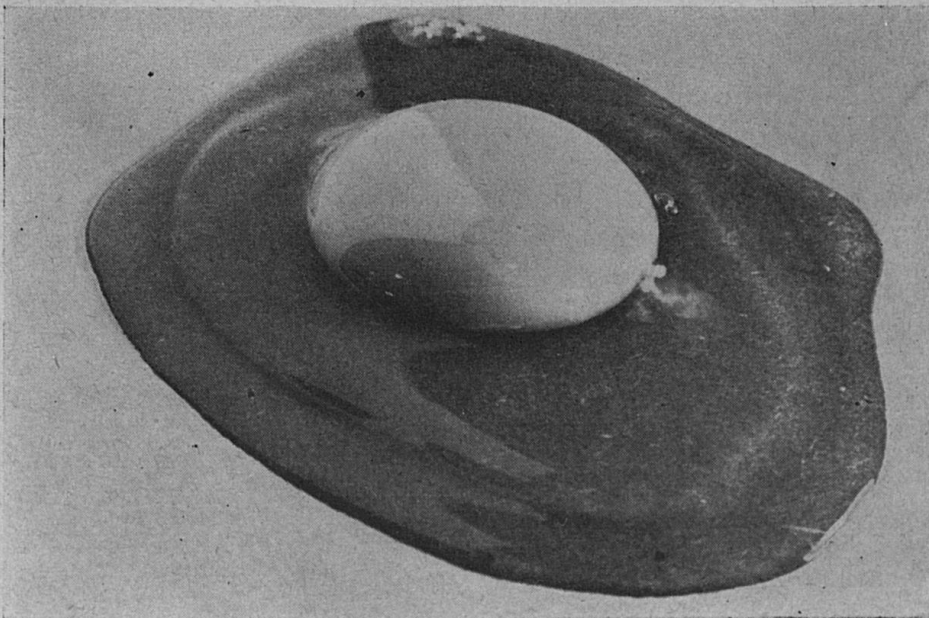
Fig. 3.—A strictly fresh egg. Note the condition of the thick albumen and the yolk.

Fig. 4  
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Fig. 5  
at too



**Fig. 4.**— This egg was kept where temperature and humidity were right, for four days. It still has the quality of a fresh egg.



**Fig. 5.**— Flattened yolk and liquid albumen indicate that the egg has been kept at too high a temperature.

which also was four days old when broken, but it had been kept at room temperature (75 to 85 degrees Fahrenheit) during the four days and its quality had been lowered. Note that the yolk has flattened out and a larger area is covered by the thick albumen, which has begun to break down. The yolk is held in the center of the egg by the thick white. As the egg ages in a warm, dry room the white becomes more liquid, allowing the yolk to move freely when the egg is twirled before the candle. Some eggs which are strictly fresh may have these characteristics, but not as a rule.

The color of the yolk is influenced by the feed. Hens which do not receive plenty of green feed or yellow corn, produce eggs with pale yolks. Alfalfa, clover, or lespedeza hay have the same effect on yolk color as green feed. Some consumers prefer eggs with pale yolks. In most instances the only reason for this preference is that the high-quality eggs which they have been using happened to have pale yolks. The food value of eggs with deep yellow yolks is equal or superior to that of eggs with pale yolks.

#### Farm Practices that Influence Quality

There are certain practices which the flock owner must follow if he is to produce eggs of high quality.

**Breeding.**— Size, color, and shape of the egg are inherited characters. Select for breeding stock hens that lay large eggs, and use roosters known to be from parents which were selected for large eggs.

**Feeding.**— Hens must have the right kind of feed if they are to produce eggs of best quality. Unless the feed contains the needed nutrients, such as protein, minerals, and vitamins, the eggs will be lower in food value than they otherwise would be, and the hens will not lay as many eggs as they otherwise would. Therefore, keep a complete ration of grain, mash, and water or milk before the hens at all times. Also keep oystershell or ground limestone before the hens at all times, for strong egg shells. The egg shell is particularly affected by feed. Cod-liver oil in the laying mash in winter aids in producing strong shells. In summer, if the hens are on range part of each day, they will get enough direct sunshine and will not need cod-liver oil.

**Housing.**— The right kind of laying house and the right kind of equipment for it, aid greatly in producing clean eggs, as well as in

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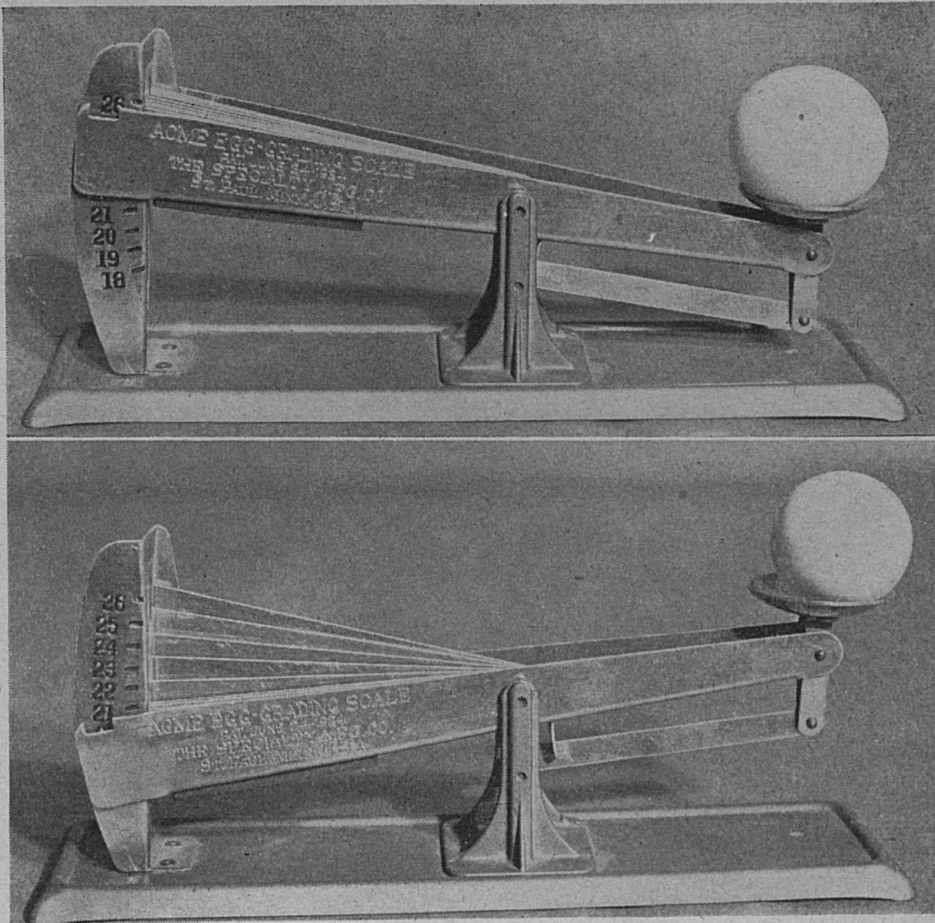


Fig. 6.—Large eggs, 24 to 26 ounces per dozen, are desirable for market. Small eggs, less than 22 ounces per dozen, are discounted on many markets.

producing the maximum number of eggs. The house should be large enough for the hens to be kept in during wet weather. That means that there should be  $3\frac{1}{2}$  to 4 square feet of floor space per hen. The floor should be made of concrete or of boards, and should be covered with a deep litter all the time. Dirt floors lead to unhealthy hens and dirty eggs. There should be enough nests so that the hens need not crowd into them—1 nest for every 4 hens is about right. Keep the nests clean and well supplied with straw. Provide plenty of feed and water containers, so that the hens need not crowd around them. That means at least 1 foot of feeder space for each 4 hens—or 3 feed hoppers 4 feet long for 100 hens. A droppings pit and a water container with a slatted platform around it help to keep the hens healthy and the eggs clean. (The laying house and its equipment are described in more detail in Circular 403, "Shed-Roof Poultry

House for the Laying Flock," and Leaflet 93, "Laying Flock Management.")

**Roosters.**—Egg quality can be greatly improved by producing only infertile eggs after the hatching season or during warm weather. A fertile egg starts germ development at 68 degrees Fahrenheit. As soon as blood forms the egg is unfit for food and is a total loss to the producer. Infertile eggs have no germ development. Sell the roosters immediately after the hatching season, or keep them separate from the hens.

**Care of eggs.**—Gather the eggs frequently, especially in hot weather. Four times a day is not too often. Breakage and the number of dirty eggs will then be greatly reduced. A wire basket is ideal for gathering and holding eggs, as it allows air to circulate

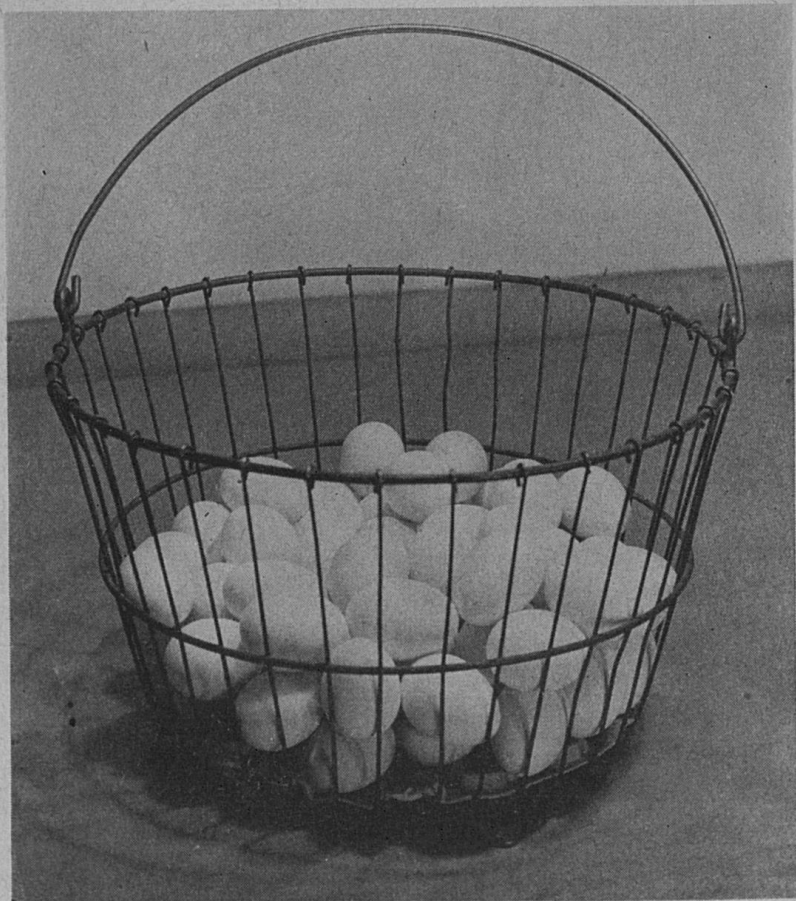


Fig. 7.— A wire basket is ideal for gathering and cooling eggs.

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around the eggs and cool them quickly. Use only clean containers for gathering eggs.

Market eggs should be kept in a cool, moist room. A cellar is good. Don't keep them in a place where the temperature goes above 68 degrees Fahrenheit, or below freezing. After the eggs have cooled for 8 to 10 hours, pack them in cases, placing the small end down. Don't keep market eggs where there are strong odors (such as of kerosene or onions), for the eggs quickly absorb the flavor of such odors.

**Marketing eggs.**—Eggs deteriorate with age. Market them as soon as possible, at least twice a week. In bringing eggs from farm to market careful packing and handling are necessary to prevent breakage and interior damage. If enough eggs are not available at one time to fill a 30-dozen case, a 15-dozen fiber case may be used.

Kentucky farmers who are making poultry an important source of income should be interested in producing and selling eggs of the best quality. In Kentucky the country storekeeper, huckster, and produce buyer usually pay for eggs according to count, regardless of quality; therefore, in self protection, they must pay a lower price than top quality eggs should bring. It is known that eggs from the middle west do not bring so good a price on the major markets as those from certain other sections of the United States. Poor quality is the principal cause of this discrimination. However, farmers who are producing high-quality eggs should be paid for them accordingly. If the local market does not pay more for eggs of high quality than for poorer grades, the producer should try to find a better market. Under existing conditions the lapse of time from producer to consumer is so great that the quality of the egg is lowered decidedly when it reaches the consumer. Many flocks are too small to justify the producer making frequent trips to a market other than the country store. The development of larger flocks in local areas would provide enough volume to make frequent trips to market economical.

KENTUCKY FARMERS can gain more profit from their laying flocks by marketing top-quality eggs on a market where such eggs bring a premium in price. Such top-quality eggs are . . .

Large, but not oversize

Normal in shape; not too long nor too round

Clean; uniform in color

Strong-shelled; from well-fed hens

Fresh; kept in a cool, moist room, and marketed frequently

For the production and marketing of such eggs, no high-priced special equipment is needed, and very little more work is required than for average or low-quality eggs. What is needed is mainly good, practical production practices and business-like care.

Lexington, Kentucky

September, 1946

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