



Poultry Patter

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EGG BREAKAGE CAN BE COSTLY

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It has been estimated that cracked and broken eggs cost U. S. egg producers and handlers more than \$25 million each year. Estimates of egg breakage on commercial poultry farms vary from less than 2 percent to nearly 10 percent. Breakage cannot be entirely avoided, but the wide variations found in the amount of breakage indicate that much can be done to reduce losses from this problem.

Breakage can occur in the nest or egg trough, the basket, the washer, or the case. Attention to proper handling of eggs and maintenance of equipment can cut losses from breakage. Reducing the losses can be one way to maintain your egg income as the industry moves from a period of relatively high prices to one of lower prices.

Strong Shells Needed

Many of your breakage problems are minimized if your hens lay eggs with strong shells. Some strains of hens produce eggs with better shell quality than others. However, proper management of the flock probably has the greatest influence on shell quality. A favorable environment, adequate ration, and a good, healthy bird are all necessary if shell quality problems are to be reduced.

Many breakage problems are related to poor shell quality associated with high environmental temperatures and aged hens. A high incidence of breakage at other times points out the importance of other factors as well.

Since some diseases can have an effect on shell quality, an adequate vaccination program and attention to sanitation procedures cannot be

over-emphasized. Some diseases permanently damage the shell-secreting portion of the oviduct and as a result shell quality may not return to normal. Infectious bronchitis and Newcastle disease are two of the most costly diseases to the egg producer from the shell quality standpoint.

An adequate ration is essential. The requirement for calcium is particularly high in birds that are in good production. The ration should be tailored to the needs of the bird. Producers should be certain that the feed they are using is properly formulated for their management program.

After the Eggs Are Produced

Many of the problems of egg breakage have been alleviated with modern cage-laying operations. Much of the egg breakage occurred in the nests. Where nests are still being used, their proper construction, location, and maintenance are of primary importance. All nests should be made attractive to the hens so that they will be used. One nest should be provided for each four to five birds. Sufficient clean nesting material must be kept in conventional nests to reduce breakage of eggs.

In roll-away nests and cages most breakage is due to the collision of the eggs. By keeping the slope properly adjusted and gathering eggs frequently, breakage can be minimized. Eggs should be gathered three times a day. If shells are weak more frequent gathering may be helpful in reducing the number of checks. If much more than one-third of the day's production is gathered at any one gathering, the time should be adjusted to make the collection earlier.

Carelessness in handling can be a big source of breakage. When workers are not properly trained or are in a hurry, they may not be too careful. Some time spent in demonstrating to workers proper handling procedures and stressing the need for careful handling may pay dividends in reduced breakage, especially with part-time help.

Picking up too many eggs in one hand will increase the number of checks. Untrained persons sometimes practically toss eggs into the basket or filler-flat. A common practice is to place the eggs on one side of the basket, thus many checks result when the eggs roll down to the lower level. An even distribution of eggs in the basket will help to reduce cracking. Another common practice is to fill the egg basket too full. Breakage occurs when the basket is picked up by the handle, causing the sides to be pulled in slightly. The capacity most baskets are designed to carry is reached before the basket is full, yet it is common to see baskets in the egg room that are heaped full of eggs. The jar of the basket against the doorjamb or in setting the basket on the floor may also be costly.

Studies have shown that gathering eggs directly into filler-flats cuts breakage to a minimum. The filler-flats provide each egg with a protective cell. One handling operation can also be eliminated by collecting in filler-flats. Handling systems have also been devised to use plastic filler-flats which can be run through the egg washer without rehandling the eggs.

Mechanical Handling

More operations in the egg production and marketing business are being mechanized. There is a tendency to treat this equipment as being automatic, that is, capable of operating without adjustment and maintenance. There are still some problems in perfecting this type of equipment. Many users of mechanical equipment have experienced considerable breakage due to improper alignment and poor maintenance procedures. As eggs are moved at greater speeds, frequently with change in direction and elevation, greater care in adjustment and maintenance will be necessary.

Some eggs are broken in the washing operation. Many of these may have been weak-shelled or have suffered previous stresses and had cracks or false checks. The change in tem-

perature during washing provides an additional stress that may make the egg more susceptible to breakage during the washing operation. The action of the brushes or agitation also contributes to egg breakage.

Another source of checked eggs is the table on which the eggs roll out from the grader. If this table is sloped too much the eggs roll down at too great a speed. As egg shell quality declines, many checks are made in this operation, especially if the operator is not careful in picking up eggs to be cartoned.

Use Only Good Packing Materials

Egg handlers should use only clean, strong cases and filler-flats. A weak, beat-up case cannot protect its contents properly. Producers should put their eggs only in cases that they feel are substantial enough to carry their eggs to market safely. Refuse to use damaged cases and return them for ones that are satisfactory. Research has shown that poor cases cause both product loss and increased labor requirements in subsequent handling.

Rough handling of cases in loading and unloading must also be avoided. Even a strong case cannot protect its contents in collisions with doorjamb and severe jolts. Some additional training of workers in egg handling procedures may reduce the number of smashed eggs and the amount of case damage that results from careless handling in transit.

Every producer should visit his egg marketing agency and see some of his eggs being graded. The statement that accompanies the egg check does not provide enough information to show why down-grading takes place. If the producer knows the reasons for his lower grades, he can take steps to improve his operation. Only then can he reduce his losses from breakage and other causes which may be only a small amount each week but over the production cycle of the flock can be a considerable amount of income.



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