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Egg Shell Damage

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Damaged egg shells represent a sizable economic loss to individual producers and marketing firms. The severity varies among producers. It is not uncommon when candling eggs to pick out 5 to 10 percent of the eggs having damaged shells. Some may even be a total loss. These conditions represent not only a reduced return for eggs to producers but may also represent a loss of markets. Complaints from consumers often mention the difficulty of removing eggs from the carton. Right or wrong, the consumer believes sticking to the carton

means the egg shell is broken. Even though the shell is not broken when the eggs are purchased, breakage may occur when the eggs are removed from the carton.

If 5 percent of the eggs are removed due to damaged shells and have to be marketed as cracked eggs, the blend price to the producer could be reduced as much as one cent per dozen at a time when there is a 20 cent per dozen difference between the price of large and checked eggs. One-cent per dozen difference may mean the margin between profit and loss

There is no magic remedy for reducing egg shell damage. The problem requires attention to

many details. It involves continued surveillance of egg handling from the hen to the consumer. There is no single factor which can be blamed as the chief cause of egg shell damage. True, the incidence of egg shell damage may be greater among eggs with weak shells; however, not all damage is confined to eggs with weak shells. Another consideration is that shell damage increases with the age of the flock. This may be related to egg size which also increases as age of layers increases. In one study, it was pointed out that incidence of shell damage increased as the age of layers increased. At 38 weeks of age, 1.2 percent of the eggs had damaged shells, while at 78 weeks of

lay, 4.3 percent had damaged shells.

As the mechanical handling of eggs from hen to consumer increases, added precautions must be taken to keep shell damage at a minimum. With mechanical handling, eggs are usually subject to more stresses, including bumping, than with proper hand operations. This will vary among systems. The same is true with processing. As we mechanize, there is additional opportunity for malfunction of the equipment which can increase the quantity and proportion of damaged shells.

This means keeping equipment and repair, minimizing the stress applied to eggs as they move or are conveyed over the equipment. Unfortunately, it appears that adverse handling of eggs may not show up as damaged shells until later in the marketing channel. Also, shell damage may occur after candling and the cause go unnoticed.

Perhaps more frequent inspection of eggs after packing should be made, to determine the percent of eggs which are checked. This would help in determining and correcting causes of shell damage before the problem becomes too severe.

Correcting shell damage problems can be a difficult task and is a responsibility of all segments of the industry. It involves starting with adequate shell strength. Then handling techniques must be such as to minimize shell damage.

In today's never-ending search for ways to reduce egg processing and marketing costs, there is a tendency to speed up operations and increase productivity in order to reduce costs. Speeding up machinery can result in increased breakage. This raises the question whether increasing machine speed above optimum levels really reduces costs of processing eggs.

Unfortunately all eggs in consumer packs are not free of shell damage. This may be another factor which may retard egg consumption.

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