Poultry Patter

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ON-THE-FARM SHELL TREATING EGGS FOR HIGHER QUALITY

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Momentarily immersing shell eggs in a bath of light oil to reduce quality loss is not new. For many years eggs have been so treated before being placed in cold storage or shipped long distances under adverse conditions. By oil-sealing the pores of the shell, moisture evaporation is reduced, thereby minimizing growth in air cell size and weight loss.

A more recent development is the use of the spray method to oil process eggs on the farm. Researchers learned that there was an additional advantage to be gained beyond mere reduction of weight loss if eggs were sealed within a few hours of laying.

Not only does moisture leave the egg through the several thousand tiny openings in the shell, but gases are also free to escape. One of these gases is carbon dioxide, and it leaves the egg so rapidly that most of it is gone within 48 hours.

Because carbon dioxide has acidifying properties, loss of the gas causes the white of the egg to become more alkaline. This, in turn, stimulates the breakdown of the thick white into thin and a weakening of the yolk membrane.

These undesirable changes can be slowed down by holding eggs under refrigeration, but combining oil treatment of the shell with refrigeration is more effective. By sealing the pores shortly after laying, carbon dioxide loss is retarded so that the thick white-upstanding yolk characteristics associated with freshness are retained.

To gain the full advantages of shell treatment, the eggs must be oiled on the day of lay or in no case later than the following morning. This means that the processing must be done at the farm unless there is daily delivery to an egg assembly plant for in-plant treatment.

Oils used in shell treating eggs are especially refined and sold for this purpose. They are lightweight mineral oils that are essentially colorless, odorless, and tasteless. For information on sources of oil, contact your egg dealer or write to the Department of Poultry Science, University of Minnesota, St. Paul, Minnesota 55101.

Immersing eggs in an oil bath is hazardous unless precautions are taken to regularly sterilize the oil. Therefore, the spray process, which always applies fresh, clean oil, is recommended for farm use.

The author uses a small hand sprayer to spray oil a flat of eggs. Note that large end of eggs is up for maximum exposure to spray.

A variety of equipment can be used to spray-oil eggs. The simple hand pump or small pressure sprayer is inexpensive and does a satisfactory job. Some have found the electric vibrator sprayer convenient for this purpose. For large production units motor driven sprayers may be more efficient. Egg oil is also available in aerosol containers with their own built-in pressure system.

In applying the oil the eggs are laid out on one-piece filler flats with large end up so as to give the eggs maximum exposure to the spray. The nozzle of the sprayer is moved across the flats 6 to 8 inches above the eggs. The quantity of oil applied is quite important. Too little oil will not give maximum protection, and the effort will be wasted; too much oil is also undesirable. A properly treated egg will have a thin layer of oil over the top and down the sides so that at least three-fourths of the shell surface is covered. Within a few hours the oil will have dried down so that it is practically undetectable, yet the majority of pores will be sealed.

If eggs are to be cleaned on the farm and cleaning immediately follows gathering, then oil treatment can be delayed until after soil removal. But if cleaning is postponed, spray oiling the eggs on gathering will make it somewhat easier to remove the soil later.

Producers using in-plant cleaning services may find fewer eggs downgraded for stains by oiling at the farm. For maximum quality protection, eggs should be reoiled following cleaning.

Cost of oil treating eggs is low. One gallon of oil will adequately spray process about 4,000 dozen eggs. This means a cost of less than 1 cent a case for material. Labor requirements are also minimal, especially if eggs are gathered and handled on filler flats.

Producers not now on an oiling program should consult their egg buyer before adopting the practice. Some markets may not yet accept the oil-processed egg. However, more and more quality egg programs are requiring on-the-farm shell treatment because of the added protection it gives as an adjunct to refrigeration in minimizing quality loss.

Egg Cooking Contest

Minnesota has again been very active in the Poultry and Egg National Board Egg Cooking Contest. We will have five area contests and a state contest. Entries must be in by March 15. It looks as though we have more entry blanks out this year than we did a year ago.

Milo Swanson Joins U of California Staff

Milo H. Swanson left Minnesota late in February to join the staff of the University of California to work in extension and research. Professor Swanson has contributed a great deal to the improvement of egg quality in our nation. He pioneered the work on shell treatment on the farm and did many other basic studies.

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ROLAND ABRAHAM, acting director
Cooperative agricultural extension work, acts of May 8 and June 30, 1914.

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