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Ag Engineering

Penn State  
**Poultry Pointers**



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**EGGS AND SALMONELLA**  
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Eggs are one of the most nutritious, economical, and versatile foods provided by nature. When properly handled, eggs and egg-rich foods are also safe foods. However, if improperly hand-

led, eggs may lead to illness (Salmonellosis) caused by a group of bacteria called Salmonella when ingested in large numbers.

Symptoms of Salmonellosis include abdominal cramps, fever, headaches, nausea, vomiting, and diarrhea. The severity of an attack differs among individuals, depending on the number of bacteria ingested, the health of the individual, and the particular species of Salmonella involved.

Although the attacks are usually relatively short in duration, they may be more prolonged in infants, convalescents, and the elderly. But Salmonellosis is rarely fatal. Additionally, an individual who is

recovering from a recent infection may remain a potential carrier for varying lengths of time.

Food poisoning caused by Salmonella is not uncommon, largely because the organisms are widely distributed in nature and easily spread. Salmonella is found in the intestinal tracts of humans, domestic and wild animals, birds, poultry, seafoods, reptiles, and insects.

Salmonella organisms can be passed from the intestinal tract to the hands and onto food. So, before preparing food, it is very important to wash hands and food contact areas well. Food and preparation areas exposed to pets or insects

may also become contaminated if proper sanitation practices are not used.

A newly laid egg does not ordinarily contain bacteria. However, the shell may become contaminated because of contact with cages, feces, and other parts of the bird or during washing, handling, and storage.

Several natural mechanisms exist in eggs to protect the eggs against microbial organisms. These are the shell and cuticle, the shell membrane, the egg white, and the chalaziferous layer. Because freshly laid eggs may have Salmonella on the shells, industry standards require that eggs be washed in special detergent and sanitizing solutions before packing. This process should kill the pathogenic bacteria on the outside of the egg.

If the process is not properly done or if the shell is reinfected from other sources, bacteria may remain on the shell. Like other bacteria, Salmonella need food, moisture, a favorable temperature, and time for growth. All animal protein foods — meat, milk, eggs, poultry, and fish — if they become contaminated by bacteria, provide a ready environment for bacterial growth.

Contamination of the interior of the egg rarely occurs. However, it may be introduced during the preparation and service. Salmonella organisms reproduce rapidly at temperatures between 40 degrees F and 140 degrees F. If foods are held between these temperatures for more than an hour, the microbial population can multiply to hazardous levels.

Clean hands, counter tops and utensils, sanitary food handling practices, proper cooking temperatures, and adequate refrigeration are essential in safely preparing any food or egg product.

Tips for handling shell eggs:

- Buy eggs at retail from refrigerated cases only. For food service, use eggs delivered under refrigeration.

- Refrigerate eggs at 40 degrees F or below (but not below freezing) as soon as possible after delivery or purchase.

- Use only clean unbroken eggs for dishes such as scrambled, poached, or soft-cooked eggs.

- Egg dishes for those who are pregnant, elderly, very young, or ill should be thoroughly cooked.

- Dirty or leaking eggs should not be used.

- Keep cold food and egg products below 40 degrees F and hot foods above 140 degrees F.

- Do not allow foods or egg-rich products to remain on the counter top for more than one hour, including preparation and service.

- Always wash hands with soap and water before preparing food.

- Thoroughly wash equipment and utensils, and counter tops that have been in contact with raw food, before preparing other foods.

- Do not mix shells with egg contents.

Source: "A Scientist Speaks Out About Salmonella and Eggs," American Egg Board.

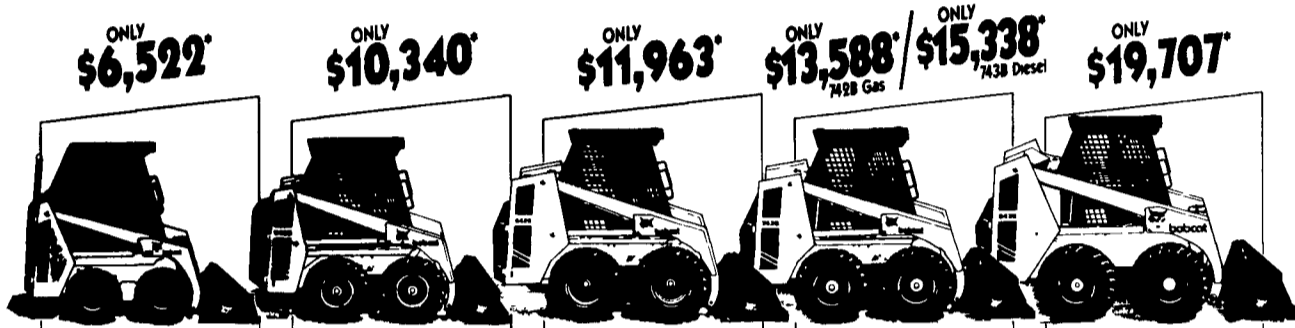
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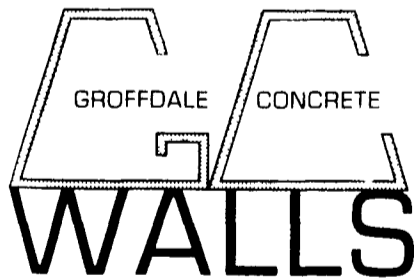
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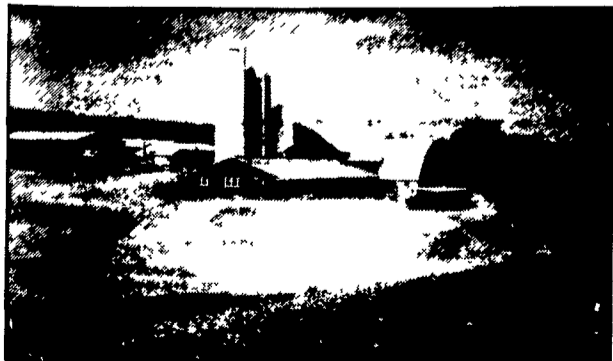
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