

A PROBABLE CAUSE OF BLACK ROT "EXPLODERS" IN INCUBATED EGGS

Eggs infected with species of *Proteus* will after a period of time become completely black rotten. In the course of bacterial breakdown of the egg contents, gas is formed which can build up sufficient pressure to burst the egg. Such infected eggs can be the cause of much annoyance and loss if included with eggs for incubation. Conditions in the incubator are such that the egg is soon putrified and many will "explode." The explosion of the egg causes a number of surrounding eggs to become infected or coated with the putrid material and these eggs fail to hatch.

For many years extension workers have advised hatcherymen not to wash eggs that are to be incubated because of the danger of producing black rots. Dry cleaning methods such as cleaning with steel-wool have been recommended.

Some recent research work has cast doubts on this policy and some workers are advising that hatching eggs should be washed in a disinfectant solution soon after collection to remove the heavy bacterial load that must be present in dirt on the shell.

A recent survey to determine the causes of black rot in eggs delivered to the South Queensland Egg Marketing Board tends to show that the washing of eggs is not a major cause of black rots. In fact, this survey showed that the eggs that went rotten were the ones that were allowed to remain in contact with dirt for some time. It would, therefore, be logical to wash eggs for hatching in a disinfectant soon after collection. Observations made in a large hatchery in the Brisbane area tend to confirm this view.

On the hatchery, a group of Australorps were housed intensively on litter of pine shavings in pens of 200 birds. The nests were raised off the ground but landing boards were provided. The Australorps, being heavy birds, were not inclined to use these nests and consequently a large proportion of the eggs were laid on the floor. As a result, many of these eggs were dirty.

The eggs were collected frequently during the day and were delivered to the hatchery the following morning. The dirty eggs were dry-cleaned and stored at room temperature until set in the incubator.

As explosions in the incubator became very common, an endeavour was made to find the cause. Floor eggs were kept separate for a particular hatch and records of exploders were kept for this hatch.

In all, 7,692 eggs were set, of which 4,478 (58 per cent.) were eggs collected from the floor. Thirty-five eggs (0.45 per cent.) exploded during the incubation period and all of these were floor eggs. It was also estimated that approximately 100 other eggs were lost as a result of the explosions. The explosions occur after about seven days of incubation.

Washing of eggs was then implemented as a control measure. All eggs were washed in a detergent sanitizer solution at 110°F for 5 min on the day of delivery to the hatchery. They were then stored as previously at room temperature until incubated.

The washing procedure brought immediate results in that the number of exploders dropped from 0.45 to 0.03 per cent. Washing has been carried on since and no further trouble has been experienced even though floor eggs continued to be set.

As all the exploders in these observations were floor eggs, the view that eggs must remain in contact with manure for some time for bacteria to penetrate receives some confirmation. The washing procedure removes most of the bacteria before they can penetrate into the egg.

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