HATCHERY/BREEDER TIP... A SIMPLE, CHEAP, AND EFFECTIVE METHOD TO SANITIZE HATCHERS

The hatcher environment has the potential for bacterial and fungal population explosions. Hatcher temperature, humidity, and the presence of large quantities of organic material generated from the pipping and hatching process render the hatcher environment an excellent environment for microbial proliferation. In past years, the poultry industry was allowed to fumigate the hatcher environment once or twice using either potassium permanganate and formalin or paraformaldehyde and a heating element to produce formaldehyde gas. However, this practice was discontinued in the US in 1989 when OSHA restricted the use of formaldehyde. Fumigation releases a large burst of formaldehyde gas at once that exceeds maximum recommended exposure limits in hatcher rooms. Other methods of hatcher sanitation have been explored and developed due to these restrictions.

Central fogging has been one of the most effective methods to control hatcher microbial populations. The practice of central fogging involves the misting of disinfectants into the hatcher space at timed intervals. The central fogging units may be timed to fog once or twice per hour for a predetermined duration of seconds in a whole bank of hatcher machines. Although very effective, not all hatcheries use this method because of the expense of the central fogging units and installation costs. Other hatcheries pour formalin into small container so that formaldehyde can evaporate into the hatcher. This certainly helps but is not as effective as the frequent timed release provided by central fogging units. Other hatcheries fog a disinfectant into the hatchers with a portable fogger that is also somewhat effective. The drawback of portable fogging is that it is not possible to fog with the frequency of central fogging units. Other high tech methods to sanitize hatchers have also been developed. The ionization of hatcher environments with electrostatics has also been proven to be effective at controlling microbial populations within hatcher environments. Ionization removes almost all of the airborne particles from the air, including fluff. By removing dust and fluff, most of the microorganisms are eliminated from the hatcher. However, like central fogging, the installation of electrostatics is somewhat expensive.

In the last two years, a simple and cheap method to reduce hatcher contamination was developed by a hatchery manager. This method involves the evaporation of formalin into the hatcher using hospital type IV bags with tubing, flow regulators, and humidity wicking material. In this procedure, an IV bag is filled...
with 22 ounces of formalin. Two ounces of formalin is slowly released over a three hour period immediately after transfer of eggs to the hatcher. This is accomplished by regulating the flow of formalin out of the IV bag into the IV tubing and down to a section of wick material where the formalin evaporates. The wick is about 25 to 30 inches long, depending on the size of the hatcher. If formalin drips off the bottom of the wick onto the hatcher floor, then the flow is too fast. If the wick is not damp with formalin from top to bottom, then the flow is too slow. Knots may be tied in the wick in several places to increase wick surface area. The next morning after transfer of eggs to the hatcher, two ounces are released every three hours until a total of 22 ounces has been released. No formalin is released inside the hatcher the last eight hours before the chicks are pulled. Side by side hatcher comparisons of the IV drip bag system and the electrostatic system showed that the two systems were equally effective at controlling during microorganisms. The IV drip bag system has a significant advantage because of its very low cost of installation and operation. The figures depict how the IV system is installed and operated.

Figure 1. The IV drip bag is located above the hatcher door.

Figure 2. The IV bag, tubing, and wick placements are seen here.

Figure 3. Knots are tied in the wick to provide more evaporation surface without increasing the length.

Joseph M. Mauldin  
Extension Poultry Scientist  
County Extension Coordinator/Agent

**Consult with your poultry company representative before making management changes**