HATCHER ROOM

Preventing chick fluff build-up on hatcher cooling coils

Chick fluff adhering to the hatcher cooling coil is a frequent observation in hatchers, seen late in the incubation process as the chicks emerge and after they have hatched (Fig. 1).

When the hatcher's cooling system runs at a lower temperature than the surrounding air temperature, condensation can occur.

For example, if the air temperature in the hatcher is 36°C and the relative humidity is 50%, the dew point is 24°C; however, the cooling water temperature flowing through the coils is normally between 12°C and 15°C.

This is significantly lower than the dew point, causing moisture to condense out of the air on to the cooling pipe surface. The airborne hatchling chick fluff will then adhere to the 'sweaty' cold pipe.

Chick fluff build-up can be problematic because, when mixed with water, the fluff forms an insulating coat to the coil, creating barriers to heat exchange and lowering the water cooling system's efficiency.

The hatcher will then struggle to maintain the correct environment, which may result in a high air temperature or increased ventilation to achieve additional air cooling, resulting in an unbalanced air temperature within the machine. Also, excess water condenses to create droplets, which may puddle on the hatcher floor.

This will increase the likelihood of bacterial problems, since the water provides an ideal environment for them to grow. A flush of bacteria can infect freshly hatching chicks through their unhealed navels, resulting in decreased chick livability.

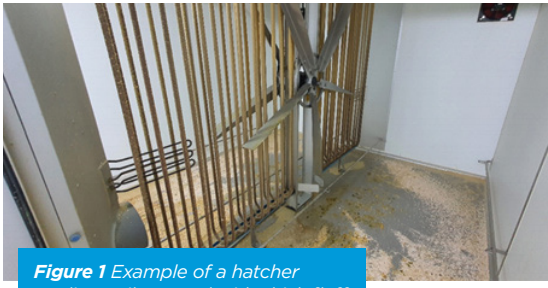

Figure 1 *Example of a hatcher cooling coil covered with chick fluff.*

Furthermore, puddles of water will cause a cold area at the bottom of the incubator, delaying the hatch in the area and causing an uneven machine temperature.

To help prevent chick fluff build-up on hatcher cooling coils, reduce condensation by increasing the cool water temperature to near the dew point. Because some hatcheries only have a single chilling unit for hatchery cooling equipment, a system which recycles chiller water for the hatchers may be a viable option. It is also good practice to increase ventilation to evaporate condensate water and lower the humidity level in the hatcher. However, over-ventilation can result in an uneven machine temperature, as well as cold and hot spots, so exercise caution.

If condensate cannot be avoided, the cooling pipe can be cleaned manually. This can be done safely after the majority of the chicks have hatched, as opening the hatcher doors will not have an impact on the hatching environment.

The less condensate on the cooling pipe, the better hatching environment, leading to reduced contamination and a lower probability of uneven hatcher temperature, all of which contribute to higher-quality chicks.

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