EGG STORE

Using a dehumidifier in the egg store

Egg storage is an important part of the incubation process. Storage conditions must be set to maintain the egg and embryo quality, and minimize hatchability losses.

During storage, moisture is lost through the eggshell into the air. If humidity levels in the air are relatively high, the air cannot take and hold much moisture from the eggs. This can prevent eggs from losing too much moisture before incubation starts. On the other hand, different types of bacteria and fungi need high levels of humidity to reproduce and grow. The majority require a relative humidity (RH) of 60% or more. Decreasing temperature and moisture (RH) in the egg store creates a less hospitable environment for micro-organisms to grow.

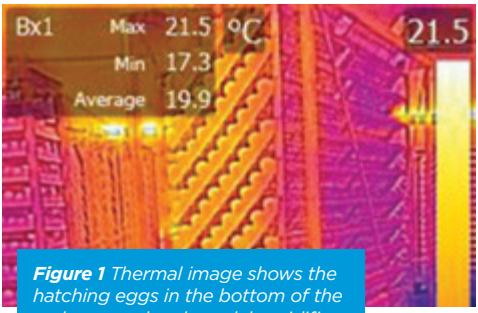

Figure 1 *Thermal image shows the hatching eggs in the bottom of the rack warmed up by a dehumidifier placed too close to the egg pack.*

An RH of 50-60% is required to balance the necessary moisture loss and acceptable hygiene in the egg store. If egg storage time is below 10 days, an RH of 50-60% could lead to 0.5% moisture loss during storage. Where eggs are held longer, there will be a little bit more moisture loss. This can be a benefit if the eggs are to be set in a single-stage setter, which is run sealed for the first few days.

In tropical areas, or during the summer in some temperate areas, a dehumidifier is needed to lower humidity levels and achieve the target humidity. Dehumidifiers work well, but there are some practical adjustments that will optimize their impact. The temperature of the air emerging from the dehumidifier could be 3°C-6°C higher than the room set-point, so the dehumidifier should be placed far enough away from the egg racks to avoid warming them. Placing the dehumidifier next to the air conditioner and higher than the egg racks is a good choice.

When the air temperature is reduced, the air can hold less water vapor. In most breeder hatcheries, a low temperature set point (12-15°C) for long egg storage is quite common.

Therefore, heat from the dehumidifier should be considered when setting up the air conditioning system to maintain a stable temperature in the target range in the egg store. There are two ways to collect the condensation water from the dehumidifier; either by using a sealed container with the pipe connected to the dehumidifier or by piping the water to the egg store drain. Do not let the water wet the floor of the egg store. Dehumidifiers need routine checks and maintenance in the same way as any other equipment in the hatchery.

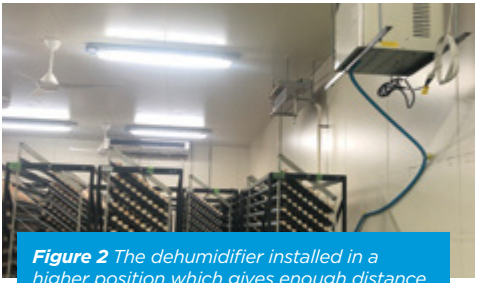

Figure 2 *The dehumidifier installed in a higher position which gives enough distance from the eggs in the egg store.*