TRANSFER

Optimizing the environment during egg transfer

Can you improve the environment for the eggs when you transfer them to the hatcher? Room temperature is often discussed, but air flow is important too.

Questions about the need for air flow during transfer may arise because, in theory, eggs cool down once removed from the setter and the goal is to achieve an environment that keeps them warm. It may seem counter-intuitive to want to manage good air flow. However, during embryo development, the embryos switch from an endothermic phase to an exothermic phase after approximately 12 days. By 18 days, when they are due to be transferred, the embryos themselves will produce a lot of heat, which means that the setters must deliver much more cooling and air ventilation to prevent the embryos from overheating.

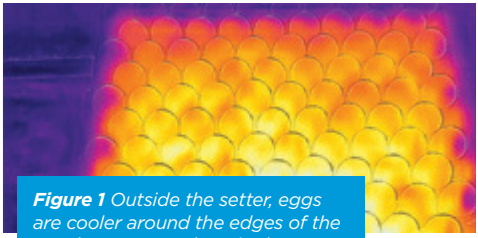

Figure 1 *Outside the setter, eggs are cooler around the edges of the tray, but may overheat in the center*

When transferring eggs, some hatcheries have a dedicated transfer room to prevent cross contamination. However, often these rooms do not have proper ventilation or have a very high room temperature set-point.

When the egg trolleys are pulled out of the incubator and waiting to be transferred, only the eggs close to the outside edge of the egg trays will cool down.

On the other hand, the eggs in the middle of the egg trays can be easily overheated (above) because there is insufficient air flow to help remove the heat they are generating. Embryos subjected to heat stress are likely to express poor chick quality, embryo malpositions or even embryo death.

To prevent embryos from becoming overheated during transfer, only pull one trolley at a time and keep the remaining trolleys inside the machine for better temperature control until you are ready to transfer them. Make sure there is a smooth air movement in the room or use a low-speed fan to help the embryos dissipate heat (but avoid blowing air directly onto the eggs, because this could cause some embryos to become chilled). Try to transfer each individual trolley within 15 minutes.

To determine if embryos are overheating, a Braun Thermoscan IRT6520 thermometer can be kept in the transfer room to measure eggshell temperature (EST) during transfer; if the EST is greater than 102°F (right), the solutions suggested above should be considered.

Figure 2 *Keep a Braun Thermoscan in the transfer room and check egg shell temperature in the center of the egg pack regularly, aiming to keep all eggs below 102˚F.*