TRANSFER

Backfilling hatcher baskets for low fertility flocks

Many manufacturers have developed automatic egg candling and transfer systems that help the hatchery transfer process to be completed in an efficient and timely fashion.

Unfortunately, few of them make it easy to backfill the hatcher baskets when a flock has poor fertility.

The term 'backfilling' refers to the action needed when flock fertility, defined as candled clears, falls below 75%. After the clear (infertile and early dead embryos) and contaminated eggs have been removed during the transfer process, any baskets that have fewer than 90% of eggs containing live embryos need to have added to them enough reserved candled eggs from the same flock to make up for the eggs that were removed. Thus, if the setter trays hold 150 eggs, and 25% of them are removed at candling, then each hatcher basket will need to have 22 fertile eggs added.

Correct and effective backfilling will maintain and enhance the metabolic heat output from each hatcher basket, reduce cold spots and tighten the hatch window in the embryos' last few days of development.

Picture 1 *Showing 50% filled and 90% filled hatcher trays (photograph taken at 507 hours of incubation).*

Chart 1 shows predicted hatch spread when hatcher baskets contain 55%, 75% or 90% eggs with live embryos; it is tightest with a 90% fill, as opposed to a wider hatch spread when the baskets are only 55% filled. Backfilling can be done by trained hatchery staff with a gentle hand packing technique or by using a portable egg lifter. It is important to place the replacement eggs into the hatcher baskets with great care.

If care is not taken, there may be internal or external damage to the egg, similar to that seen with other forms of transfer damage. These can cause late stage mortality and reduce chick quality.

It is very important not to overfill the baskets. Hatchers are not designed to cope with the heat output when 100% full of live embryos, especially from older flocks with a larger egg size. Overfilled baskets also restrict airflow, which exacerbates the excessive embryonic heat output, damaging chick quality and performance.

The time and labor required will probably make backfilling in broiler hatcheries uneconomic. However, hatcheries handling high generation stock will find it a useful technique to improve the hatch window and final chick quality at hatch.

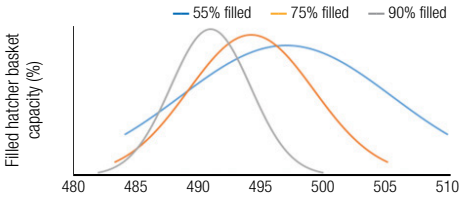

Chart 1 *Hatch window as per filled hatcher basket capacity (%)incubation).*