SPIDES

Optimizing chick quality & hatchability in periods of long egg storage

There are times in the year when chick production operations may struggle to keep egg age down.

However, a good egg storage strategy can greatly improve both hatchability and chick quality from older eggs. It is not only the hatchery that needs to adjust; close co-operation with the team planning the egg sets will simplify the decision-making process, and small shifts in placement dates can sometimes make a big difference (if the customer agrees).

When egg ages start to drift up, preparing for the consequences and putting in measures to help the embryos survive longer storage will pay dividends in better chick numbers and quality. The key is to have a good egg stock management strategy. Make sure the eggs are properly cared for while being stored by:

- **Adjusting the egg storage temperature from farm to hatchery to reduce embryo loss over a prolonged duration of egg storage (Table 1).**

Storage period (days)	Egg store temperature °C (°F)	Humidity (%)
1-3	15-18 (59-64)	65
3-14	15 (59)	65
14+	12-15 (54-59)	65

- **Avoiding excessive humidity while storing eggs. This can be enough to allow condensation to form on the eggshell, which makes it easier for micro-organisms to pass through the shell pores into the egg. Humidity over 80% RH is often associated with mold formation on walls and ceilings of the egg store.**

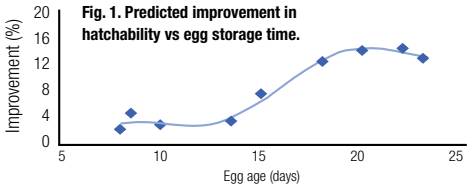

Fig. 1. Predicted improvement in hatchability vs egg storage time.

- **Using 'SPIDES' (short periods of incubation during egg storage) treatments. Well-implemented SPIDES treatments can recover 60% or more of hatch loss compared to untreated stored eggs (Fig. 1). For the best result from SPIDES treatments, the eggshell temperature must stay above 32°C (90°F) for between 5 and 12 hours (accumulated over several SPIDES treatments if appropriate).**
- **Turning eggs four times each day while they are being stored (to stop albumen deterioration and embryo adherence to the shell membrane) will improve the hatch of stored eggs, in addition to the benefit seen from SPIDES treatments.**
- **Preventing temperature fluctuations in the egg storing room; the room should be well insulated, the cooler able to cope with the local climate at its hottest and the egg store door should be kept closed unless someone is passing through it.**
- **Employing an egg stock management system that always uses the oldest eggs from the oldest flocks first. This is because eggs laid by older hens tend to deteriorate faster.**

With appropriate egg storage management, using eggs efficiently will increase hatchability and chick quality. Every egg in the hatchery is valuable!