

Hatcher Management

Aviagen Turkeys Ltd ®



Definition

Eggs need to be transferred into a hatcher for the last 3 – 4 days of incubation. The hatching phase is normally separated from the incubation phase for several reasons:

1. The eggs need to be moved into baskets that will contain the poults once they hatch.
2. The high quantity of poult down and merconium produced during the hatching process, with associated higher levels of bacterial contamination, are better contained within one area of the hatchery away from the cleaner areas such as incubation and egg storage.
3. The hatcher can provide the specific environment required for successful hatching.

Objectives

To manage the hatcher so that the turkey embryo can hatch from the egg successfully and be properly prepared for the brooding farm.

Procedure

General Principles

- Eggs are normally transferred into the hatcher at 24 – 25 days of incubation see [Management Advice Sheet Egg Transfer](#).
- The eggs are placed in hatcher baskets designed to keep the poults together with the eggs once they have hatched (fig. 1). The floor of the hatcher basket should not be too smooth otherwise it can cause leg problems. This problem can be resolved with the use of a single use hatcher tray liner.



Figure 1. Example of a hatcher basket.

- The poults will normally be removed from the hatcher (take-off) on day 27½ - 28 of incubation. Poults should not be held in the hatcher for long periods after the hatch has completed, as this will rapidly dehydrate the poults. Similarly, the take-off should not be so early that poults are still hatching.
- The environment within the hatcher will go through three stages: Incubation, hatching and drying phases.

The Incubation Phase

- At this stage the eggs have not started to hatch and the hatcher environment needs to be managed as if it was a continuation of the incubator environment.
- The hatcher is effectively a single-stage machine and so the principles outlined in [Management Advice Sheet: Incubating Single-Stage](#) will apply.
- If the eggs were incubated in single-stage incubators then it is likely that the temperature, humidity and ventilation settings will be continued in the hatcher. This does assume that the hatcher and incubator are of similar design.
- If the eggs were incubated in a multi-stage incubator then it is likely that the operating temperature of the hatcher will be lower than the operating temperature of the incubator.

The Hatching Phase

- The hatching phase is when the poults start to pip all the way around the eggshell and hatch from the egg. In a hatcher that contains eggs that are from one breeder flock and have not been stored for a long period, this phase will typically take 36 hours between the first and last poult hatching.
- As poults start to hatch they are wet and release a lot of water vapour into the hatcher, resulting in a rise in humidity. Once the natural rise in humidity starts most hatcheries increase the hatcher humidity setting for the rest of the hatching phase to match the natural rise in humidity. However, there is little scientific evidence that this is necessary and it is likely the main benefit is preventing a high humidity alarm.
- It has been suggested that reducing the hatcher ventilation for a period of up to 12 hours to allow the CO₂ levels to rise (up to a maximum of 2%) stimulates all the eggs to hatch together and improves poult quality. In machines where it is possible to carefully control ventilation and CO₂ levels it has been found to be beneficial but it should be noted that good results are also obtained without restricting ventilation. Ventilation should never be restricted in hatchers where the principle method of cooling the machine is by using air.

The Drying Phase

- Once the last poult has hatched the humidity in the hatcher is decreased and the ventilation increased so that the poults dry ready for take-off.
- Typically 6 hours should be sufficient for drying the poults, do not over extend the drying period as it will result in dehydrated poults. Once the hatch has finished and the poults are dry then it best to remove the poults from the hatcher and hold them in poult boxes.

Monitoring the Hatch

- It is important to monitor the progress of the hatch to assess when the best time is to take-off or to allow an alteration of setting times. This can be done in several ways:
 - A visual inspection of the poults hatching inside the hatcher can give an indication of the timing of the hatch. This is a quick and simple check that can be easily undertaken. Opening the hatcher for a short period of time should not adversely affect the hatch.
 - Measuring the hatch window – the number of poults hatched on identified hatcher baskets are counted at 12-hour intervals during the hatch. This method is more time consuming than a simple inspection but does provide more reliable information.
 - Computer logging of hatcher humidity levels. This is a facility that is available on many modern hatchers that records the humidity levels throughout the hatch. The timing of the hatch can be monitored by looking at when the natural increase in humidity occurs and also when the humidity declines after the completion of the hatch.

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