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## Optimizing the Hatch Window

It has become increasingly apparent that one of the most critical management opportunities we can exploit in growing commercial turkeys, is ensuring that we place strong, viable poults. The hatching of fresh poults is not an accident. It takes careful monitoring by the hatchery to ensure that each hatch of birds is pulled when they are ready. A tool often overlooked to achieve this goal is the proper management of the "hatch window".

### What is the Hatch Window?

The hatch window is a time frame. Simply put, it is the measurement of time from the onset of hatching until its conclusion. In turkeys, the hatch window should be less than 36 hours. At Hybrid Turkeys, our standard is to have less than 1 % hatched 36 hours prior to pull time. The peak of the hatch will optimally occur approximately 11 to 14 hours before pull time. A narrow hatch window, less than 30 hours, indicates a strong, uniform hatch. A wide hatch window, greater than 40 hours, indicates that the poults are hatching unevenly and will be susceptible to problems such as dehydration.

### Measurement of the Hatch Window

The procedure to determine the hatch window is quite simple and should become a regular part of hatchery management routine.

- At transfer (day 24 or 25), select a hatcher for monitoring and record how many eggs have been transferred to that particular machine.
- Identify when the projected pull time for that hatcher is.
- Then, calculate 36 hours prior to the identified pull time. This should now be regarded as your **ideal** hatch window.
- At the 36th hour before pull, open the hatcher and physically count how many birds are out of their shells. The goal should be less than 1 % hatched 36 hours prior to the identified pull time.

If you are consistently observing greater than 1-2% of the poults out of their shells at this time, the hatching strategy should be reviewed. If more than 1 % are hatched, it may indicate that the eggs are set too soon for your pull time and a simple set time adjustment is all that is required. However, if you are also experiencing green poults at the pull, it probably indicates that the eggs were not uniform in their hatch time.

## Factors Affecting the Hatch Window

The hidden advantages of measuring and managing your hatch window is that it will necessitate awareness of all the variables that can affect it. The strict adherence to these time markers will require close monitoring of hen flock health, egg storage temperatures, pre-warming process, egg set time, incubator performance and hatcher performance. All of these factors can, and will, affect the hatch window.

If a narrow hatch window (less than 30 hours) is experienced, then clearly the many factors that can affect the hatch time are being successfully managed.

If however, your hatch window is wide (greater than 40 hours), it indicates that something in the management sequence of the egg is incorrect.

The following factors all lengthen the hatch window:

- Fevered hens will produce eggs with a more advanced germ cell. Instruct your flock service person to alert hatchery management of any health problems with flocks.
- Flock age affects hatch time.
- Uneven temperatures on the farm – in egg rooms or between egg houses in the case of egg sets from various breeder flocks.
- Uneven egg temperatures in the hatchery. If you are pre-warming eggs, ensure that all eggs are pre-warming at a uniform temperature. Often, middle-of-the-rack eggs, pre-warmed in a hatchery hallway, are slow to warm up.
- Incubators with uneven cabin temperatures or varied humidity will affect the uniform progression of the hatch.

- Hatcher airflow extremes (hi or low) can affect gas tensions within the machine, thereby creating a slow hatch.

By monitoring your hatch window on a regular basis, you can determine when your hatch window has been positively or negatively affected. This in turn will help you more quickly identify which variables in the whole chain may have been altered to affect your hatch window.

The greatest advantage we can give the brooder farm manager is to deliver a strong, uniform group of poults. The management of the hatch window is one more tool to help the hatchery manager achieve this goal.

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