4. Checking turning angles can improve hatchability and chick quality

by Scott Jordan, Hatchery Specialist, World Technical Services, Cobb-Vantress
www.cobb-vantress.com

Turning is a very important part in the incubation process but often overlooked. Turning the eggs every hour prevents the embryo from sticking to the eggshell membrane.

Incorrect turning angles can decrease hatchability, chick quality, and airflow inside the incubator and increase the number of malpositioned chicks. Unfortunately, the negative impact of turning failures in the first week cannot be corrected later during incubation.

The optimum turning angle for most incubators is 39-45 degrees. Turning angles should be checked at least every 90 days in a multistage machine. This check can be done in coordination with calibrating a multistage machine.

While waiting for the temperature probe to equalise with the machine temperature, take this time to check the turning angle inside the machine. In single-stage machines, the turning angle can be checked before every set or at transfer.

Record the turning angle and any adjustments made in the incubator log books. If frequent correctional adjustments to the turning angle are required, check for bent bars, turning mechanism issues, worn parts, or other mechanical issues.

There are several tools that can be used to check the turning angle, including manual and digital angle finders. Some apps are available to download and use on your phone that can be used to check the angle and will even store historical data.

Tips for checking the turning angle:

- In a machine with portable trolleys, check the trolley when it is loaded with eggs. An empty trolley will often turn the correct angle, but when loaded with eggs, may fail to achieve the correct angle.
- In a fixed rack incubator, check the turning angles when loaded with eggs. Allow the machine to make a full turning cycle from the control. Do not manually turn the eggs using the control switch before checking the angle. Some machines will achieve the correct angle when turned manually but will not when turning automatically.
- Place the angle finder on the metal tray where the flat of eggs is sitting. If this is not possible, place the angle finder on the end of the flat or tray.
- It is important to check every trolley in the machine. In some cases, the trolley closest to the turning arm will turn correctly, while the trolley farthest away from the turning arm will turn less than 39 degrees.
- In a fixed rack incubator, it is important to check the front, middle, and back sections on both sides of the machine.

Turning angles less than 39 degrees reduce hatchability by 1-2% and the number of first-quality chicks by 0.5-2.0%. If the turning angle is less than 39 degrees, turning the eggs two or four times per hour can reduce the number of malpositioned embryos.

Some fixed rack incubators have a very simple design for adjusting the turning angle. Some incubators have individual trolleys that require maintenance of turn bushings or couplers to correct the turning angle. See the incubator operator's manual for specific details of correcting the turning angle.

Egg turning is required for proper embryo development, but the correct turning angle is equally important. Ensuring the turning angle is 39-45 degrees can increase hatchability and chick quality, which will maximise the number of saleable chicks produced. ■

More information on turning angles is available from Cobb's newly expanded and revised hatchery guide. Available for download at: *https://www.cobb-vantress.com/resource/management-guides*

Ensuring the correct turning angle in incubators can increase hatchability and chick quality, which will maximise the number of saleable chicks produced.

Phone apps are available that can be used to measure the turning angle in incubators, and some will store data to track turning angles over time.