EGG STORE

Automated grading systems for hatching eggs

The quality of eggs coming into the hatchery can make a big difference not only to hatchability but also to the culling rate and livability levels in the seven days after delivery.

Some issues are covered in Hatchery Tips 6 (hairline cracks) and 55 (eggs set upside down). Soiled eggs will increase the percentage of rotten eggs (exploders) and embryo mortality. Chick livability will also suffer.

Most of these problems come from the farm, but it is not always easy to see them in newly laid eggs – neither hairline cracks nor the air cells are particularly easy to see at that stage. This is why automated screening after the eggs arrive at the hatchery can be beneficial in identifying most of these issues, with the eggs either removed and sent to breakers or re-orientated in the case of eggs placed upside down in the trays. As with most automated systems, however, they need to be adjusted, cleaned and maintained properly to deliver maximum impact.

Figure 1 *Eggs manipulated to correct setting orientation.*

When choosing a machine, it is essential that it is capable of delivering the level of accuracy required, in a reasonable time frame for the number of eggs sent to the hatchery daily.

However, given the choice between two suitable systems, it is advisable to choose the one with the best level of local technical support so that any issues can be dealt with quickly and effectively. On delivery to the hatchery, the machine first needs to be located somewhere clean and dry, with good access all around it for ease of maintenance. The people operating the machine need to be adequately trained to understand how to set it up and what results it should achieve.

It is well worth assessing samples of eggs before and after they go through the machine to check that they are removing cracks, eggs with abnormal shells and soiled eggs, and realign eggs set upside down. Record the data and analyze trends to ensure the machine delivers the expected improvements.

Machines that grade eggs based on egg weight need to be calibrated regularly. If the cut-off is not delivered as expected, settings may need to be adjusted by properly trained mechanics. Machine maintenance must be scheduled and regular to include functionality checks, lubrication, wear assessments and cleaning down.

Finally, ensure that eggs cannot accumulate on the belt at any stage – if they bang into each other, the incidence of hairline and star cracks will go up, not down, as a result of treatment.

Figure 2 *Eggs accumulating on the belt will have increased numbers of cracks.*