The role of the incubationist in the hatchery

We can describe the 'rules of incubation' very clearly now, putting them into terms that define the needs of the embryo for temperature control, time, weight loss (humidity control) and turning.

However, the day-to-day management of the incubators needed to allow them to deliver the correct environment to what can often be quite variable eggs and machine load levels can be a challenge. It is not made any easier with both hatcheries and the incubators inside them getting steadily bigger and bigger.

The development of accurate gas sensors and data loggers has made it easier to record and analyze actual conditions inside an individual machine, but keeping on top of the information can be very time consuming. In the past, the hatchery manager was usually expected to deal with setting up and managing the incubators. In modern hatcheries, a dedicated incubationist reporting to the hatchery manager is the best way to make sure that the machines are set up to suit the needs of the eggs they are presented with.

A dedicated incubationist can make a considerable difference to hatchery performance because, over time, they can monitor and correct the performance of every incubator. Thus, measuring weight loss to 18 days can not only show that water loss is satisfactory on average, but will also enable the incubationist to drill down to the performance of individual machines and banks of machines – often finding irregularities in how well machines are sealed and how effectively they are ventilated. Monitoring chick yield will help to keep pull times right for short or long journey times.

Temperature checks may be as basic as checking machine calibration or as complex as setting up data loggers to measure eggshell temperature at critical areas within each machine. Again, making small corrections will even up performance within the machine. Modern loggers, with Bluetooth or ethernet connectivity, make it much easier to make real-time checks and monitor the impact of changes. Monitoring chick vent temperatures in the hatcher at intervals through processing makes it possible to refine holding conditions to keep chicks comfortable and resilient.

Turning frequency and angle can make a big difference to both hatch and chick quality. It is amazing how many hatcheries rely solely on the machine counter rather than observing and measuring turning angles regularly (Pic. 1). Regular breakouts of unhatched eggs are informative, giving early warning of transfer damage and of turning problems as well as storage issues (pic. 2)

Most importantly, the incubationist will keep good records of all the information they collect so that they can monitor trends, ensure that no machine is struggling and that the Hatchery Manager can be confident that the hatchery is performing well.

Figure 1 *Measuring turning angle with a mobile phone app.*

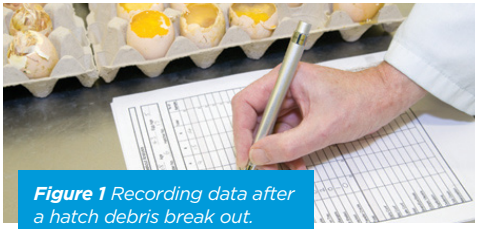

Figure 1 *Recording data after a hatch debris break out.*