Chick weight loss post pull – what is normal?

Hatching egg quality has a significant impact on hatchability and chick quality.

Chicks have a natural powerful robust provision when they hatch, the yolk reserve, which keeps them well supplied with food and water for a number of days until they start consuming feed and drinking water for themselves.

After chicks hatch it is normal for them to lose some weight. Some of that loss will be due to the residual yolk being used up, some will be meconium passed through the vent and some will be moisture loss as they breathe.

If the interval and the environment between take-off and placement on farm are good, then the weight loss is likely to be very small.

However, it is useful to have some idea of what is normal weight loss when assessing situations where things have not gone as planned.

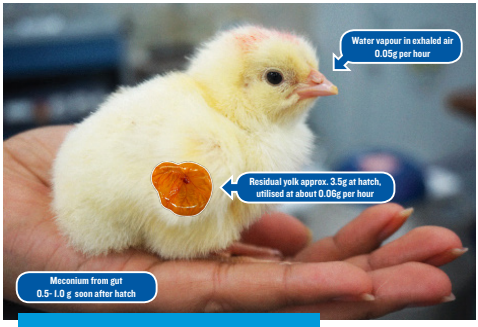

Figure 1 *Sources of weight loss in the hatchling chick.*

Recently, we compared weight losses of hatchling chicks across two trials. In the first, the chicks were removed from the hatcher within 6 hours of emergence, and kept for 24 hours in a climate respiration chamber held at 91.4°F (33.3°C) and 40-60%RH.

In the second, the chicks were pulled at the end of the hatcher period after approx. 504 hours incubation and held in chick boxes in the hatchery, also for 24 hours. Hourly weight loss over the 24 hours post hatch was 0.11g in both trials.

In summary, **Figure 1** shows the normal losses under optimal environmental conditions which keep the chicks comfortable: around 0.05 g/hour water vaporization in exhaled air. Furthermore, the meconium will leave the gut soon after hatch, which means a loss of about 1 g.

Then, in addition, chicks have in their yolk sac residual yolk of about 3.5 g at hatch, which will be used at a rate of about 0.06 g per hour. After 24 hours, the chicks had lost between 9 and 10% of their weight at take-off.

In the field, under less optimal holding conditions, higher weight losses in 24 hours are often observed. This is especially common if the chick holding area is too hot. Chicks will start panting, a common mechanism to get rid of surplus heat, if their vent temperature reaches 105°F (40.5 °C).

Panting chicks will lose more weight and this is probably one of the factors causing dehydrated chicks when they are observed in the field.