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THE INSIDE CHIRP

POULTRY NEWS VOL 30

MANAGING CHICK HOLDING ROOM TEMPERATURE

AVIAGEN MANAGEMENT ESSENTIALS

Aviagen®

NEWLY HATCHED CHICKS CANNOT REGULATE THEIR BODY TEMPERATURE VERY WELL. BODY TEMPERATURE IN YOUNG CHICKS THEREFORE DEPENDS ON THE SURROUNDING ENVIRONMENT.

Yet it is crucial to help chicks stay in their thermal comfort zone after they hatch. If chicks are too hot or cold, they will use more energy during holding. If they are too hot, they will also pant and get dehydrated. These chicks will not perform well on the farm.

It is extremely busy on a hatching day in a hatchery and it can be hard to monitor and respond to chick comfort.

Sometimes problems with chicks being too hot or cold are only seen when DOA numbers increase. On the other hand, it is not simple to keep chicks within their comfort zone in a chick holding room. There is not one ideal chick holding room temperature, which is suitable in all hatcheries, because it depends on chick size, physical condition, room humidity, chick box type and air speed around the boxes. You need to find the ideal holding room temperatures for different seasons in your own hatchery.

One Aviagen internal study has shown that vent temperature is a good indicator of chick comfort. A chick will be comfortable when its vent temperature is in the range of 39.4-40.6°C. Identify sample chicks and measure chick vent temperature hourly in the chick holding room. If chick vent temperature is too high, lower room temperature settings. If chick vent temperature is low, then increase room temperature settings.

If chicks are sampled and chick vent temperature measured at different locations in the chick holding room, you can then use this information to determine where any hot/cold spots are.

This information can be used to improve chick trolley design, chick trolley placement in the room, air circulation in the room and room ventilation, so that all chicks will be comfortable throughout the entire chick holding room. Using Excel to map the temperature distribution will help to identify problem areas.

In **Figure 2** the chicks were all slightly cold, except in the back right corner, furthest from the door. Raising the room temperature slightly, with some additional cooling fans in the back corner allowed the chicks to maintain a vent temperature above 39.4°C.

Figure 1:
Chicks are too hot

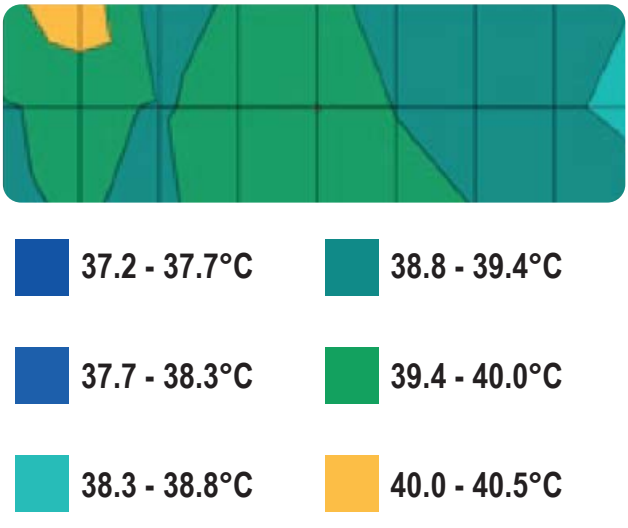

Figure 2:
Chick vent temperature by location

DO YOU MAKE REGULAR CHECKS FOR TRANSFER DAMAGE?

WITH THE INCREASING USE OF AUTOMATION AT TRANSFER, IT IS TEMPTING TO BELIEVE THAT TRANSFER DAMAGE IS RARE.

Yet, when we visit hatcheries, we often see significant amounts of transfer damage when doing a breakout. To make an accurate check for transfer damage, you need to look a bit further than the standard simplified QA check. Ideally, count the number of unhatched eggs per tray in a full stack of hatcher baskets, then look more closely at the eggs in the 3-4 worst trays. Ideally, this should be done so that every transfer crew is monitored at least twice a month; more often if they have new team members.

Transfer damage is caused by rough handling when the eggs are moved from the setter tray to the hatcher basket (cracks from earlier in incubation are easy to see, because in these the egg contents will have completely dried out). Transfer cracks will have some drying out, especially of the shell membranes, but the contents will still be soft (if the egg was infertile, or the embryo died early in incubation the egg contents will generally still be liquid).

The damage shown in the top photograph is usually caused when the tray or buggy has to be pushed hard to get it into position. It tends to be seen on the top trays (after transfer) or on whole buggies if the hatchery floor is damaged.

Excessive pressure in the vacuum lifter can damage the blunt end of the egg; in this case the shell does not flake away from the egg. The other common form of external damage is when the handling system has bars or ridges which can cause a linear hole in the side of the egg.

Although it is fairly easy to identify the characteristic external damage caused at transfer, it is possible for the impact to kill the embryo without damaging the shell. When this happens, there are usually blood clots visible, caused by rupture of the external blood vessels.

Figure 1:

Impact damage to egg shells during transfer. Impact was to the side of the egg, and the embryos were close to full term and slightly dried out. The shell membranes are white and papery.

Figure 2:

Impact damage

Figure 3:

Damage caused by a ridge or bar on the handling equipment.

Figure 4:

Transfer damage does not always damage the shell.

This shows a late dead embryo where rough handling has caused bleeding, and the blood then clotted.

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