

TECH TUESDAY - WEBINAR SERIES

‘Residue Breakout Analysis’



Why does the mid dead increase as the flock age gets above 50 weeks of age?

Older flock sourced eggs generally have much thinner shells, which will allow a higher rate of bacteria ingress causing heavier rates of contamination, leading to a higher incidence of mid dead mortality.

Is it advisable to do in-ovo vaccination with eggs having a long storage period? We commonly observe poor uniform in hatch.

Long periods of egg storage in general can contribute to poor uniformity in hatch due to the total number of active cell growth around the blastodisc, which varies greatly from one egg to the next. This has been observed in hatcheries with and without in-ovo.

What are the common causes of early embryonic deaths between day 1-3 and how will you determine if it's farm or hatchery related?

Common causes include the following:

- Eggs not being gathered often enough on the farm

- Unsanitary and rough egg handling on the farm
- Poor environmental conditions of the farm storage
- Inadequate temperature control and rough handling during transport to the hatchery
- Inconsistent temperature control during storage at the hatchery
- Extended storage time - anything past 7 days will cause increases
- Extended warm-up times following egg set

What are the possible effects of fumigation over exposure to the egg?

Depending on the type of fumigant it can cause embryo mortality. It is important to follow all manufacturers recommendations when mixing and applying any type of fumigant at any point to the egg.

During egg transfer, if all the clear eggs are removed versus leaving them in the hatcher basket, should we use a different temperature profile for the hatcher?

The clear eggs will not produce any heat, they simply take up space in the basket so there shouldn't be any need to adjust the temperature profile.

What are the different types of anomalies and what does it indicate?

Rough egg handling can cause an increase in exposed brain. Also, overheating the embryos during the first 6 days of incubation will cause exposed brain, ectopic viscera, missing eyes, twisted beaks, malformation of the legs and toes along with multiple limbs.

Do you consider red hocks as cull chicks? I commonly observe this on eggs coming from old breeder flock.

It is common to see red hocks with older flock sourced eggs, especially during higher humidity climate conditions. Moisture loss is the key and managing incubation temperatures will help with the size of the embryo. Depending on the severity of the red hocks, chicks can show signs of soreness and be hesitant to move to feed and water at the farm. Most hatcheries do not cull if chicks have red hocks, but they are aware that higher early mortality can occur at the farm.

If a chick is malpositioned with the head above wing, will this affect hatchability when using In-ovo?

Whether In-ovo is used or not, the hatchability is going to be affected simply from the fact the chick is mal-positioned and will have great difficulty pipping completely out of the shell.

If percentages of early-dead, mid-dead or late-dead are high, what is the troubleshooting method?

The first step in troubleshooting comes in the form of identifying and documenting any available secondary information during the residue breakout, as discussed during the presentation. This information will provide direction for where to look to make improvements in performance.

Does the use of formaldehyde in the hatcher for 3 days have an impact on DIS (Dead In Shell)? If so, are there restrictions on the use of formaldehyde?

If the PPM of formaldehyde reaches high levels it can cause an increase in DIS. Not sure on the exact PPM that was achieved, but we have seen many cases where as little as 30 ounces caused as much as 50% loss in hatch. It is important to understand that the amount of the dose along with the rate of ventilation through the hatcher must work together to avoid overexposure. Meters are available to monitor the PPM and this can be very useful in developing your program. Smaller doses more often are more effective than bigger doses less often.

What are the most common causes of late dead, 17 to 18 days of age, and what should I do to minimize this problem?

The most common causes are turning, inconsistent temperature control, high humidity and the lack of proper ventilation. Verifying that all of these conditions are being managed correctly is the first step to making improvements.

What could be causing leg weakness of DOC?

The most common causes are inconsistent turning and the lack of proper temperature control during the early stages of incubation.

If we find lots of mal-positions like head over right wing in multistage classic machine, what can we do?

First, monitor the eggshell surface temperature in the incubator prior to transfer to make sure they are not getting too hot. Next, monitor the transfer process and look for things that can cause overheating or over cooling along with rough handling. Finally, make sure your hatcher temperature is not causing overheating or overcooling immediately after transfer.

Is there any comparison between Leg weakness in DOC and storage of H.E?

The relationship is the early proper tissue development and the fact that it is delayed with the reduction in cells due to the extended storage time.

What kind of hatching egg disinfection protocol would you recommend for the farm and at the hatchery?

We don't deal directly with individual companies that produce different types of products so we can only provide information about different procedures that seem to work without effecting the quality of the incubation. Most recently, farms that have started using chlorine wipes to remove excessive dirt have shown the best results and the use of dry hydrogen in the hatchery egg rooms are showing good results.

Will fumigating eggs with antibacterial right after setting them on incubator trolleys affect fertility?

No amount of fumigation will ever affect fertility, this is determined before the egg is laid. However, the type of fumigant and exposure can cause the embryo to die and therefore affect hatchability.

How many days can an egg be stored before hatchability is greatly affected?

Drastic reductions in hatchability will be noticed when eggs are stored around 10 days.

What is the optimum hatch window to reduce dehydration for early hatches and to reduce poor hatchability for late hatches?

Monitoring the wet bulb in a hatcher is the best way to determine when pipping is at its peak. This should occur between 15 to 20 hours prior to pull for optimal conditions.

Will fumigating a multi-stage setter cause an increase in DIS?

Not normally, but if high doses are used and the fumigant leaves a surface residue this can restrict the eggs ability to allow gases to pass and this causes reduced oxygen and high CO₂ build up in the egg, resulting in mortality.

Is it common when eggs are stored long, the first week of mortality becomes high?

Yes, it is common for the first week mortality to be slightly higher with extended egg storage time.

How can we determine if rotten eggs at 18th day breakout is a hatchery or farm related issue?

The first thing to review is if it is specific to certain flocks or if it is widespread throughout the hatchery as this generally indicates the source.

Is infertility only caused by males not mating?

There are many factors that affect fertility such as hen health, nutrition and house conditions. It's best to work directly with your primary breeder supplier to make those determinations.

What is the optimum fumigation technique in a Hatcher? Like we keep formalin solution below trays.

There are several techniques that are being used successfully and most of them follow the guidelines of dosing less formaldehyde more often and generally using some form of media to allow the evaporation to occur slowly, so a constant PPM is maintained. Paper egg flats in the floor is widely used as is a braided wicking material hanging down stream of the fans.

How long after transfer should formaldehyde be applied in the hatcher?

It's best to begin immediately following transfer.

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