

A quick breeder farm visit

by Eline Holtslag, Incubation Specialist, Royal Pas Reform

Egg quality is a very important part of incubation. And, as we often say, bad input equals bad output. We simply cannot create good quality chicks from poor quality eggs, as one of my recent hatchery visits proved.

While looking at the transfer, I noticed that one flock in particular had a lot of clears, even though this was a prime flock! The hatchery manager said this flock was known for having lots of clears, but when I asked whether they knew why, there was no answer.

So, I placed myself at the end of the conveyor belt that takes away the clears, and played a game of catch the egg during the drop towards the hopper. Many of the eggs I caught had hairline and/or star cracks. This required further investigation of the fresh eggs coming from the breeder farm.

The farm from which these eggs came was relatively new; this flock was the first round in this barn and neither the owners nor the personnel had any previous experience with poultry. So, while it is easy to look at the eggs and draw your conclusions, we all know that being completely new at something is always hard. As we discussed this, the opportunity was presented to go and visit the farm. While incubation specialists often go to hatcheries, they do not always get the chance to visit breeder farms, so of course I jumped at the chance.

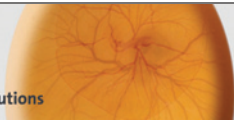
As we made our rounds through the different barns, we applied the same rules that I often tell our customers: keep your eyes, nose and ears open, and your brains switched on! And of course, if you spot something, do not be afraid to get your hands dirty. Only one of the basic five senses is left, but when it comes to breeder eggs and day-old chicks, I prefer to skip the tasting part!

This easy trick saved us a lot of time as it immediately pointed us in the right direction. While standing in the barn, our ears picked up the familiar sound of eggs colliding. We walked towards the source of this sound: the laying nests. As the eggs rolled down towards the conveyor, they picked up so much speed that they collided into the edge of the conveyor. This was probably where the hairline cracks were being formed.

Later on, when we took a look at the point where the eggs left the barn conveyor and were passed onto the central egg conveyor, we heard even more noise. Here, we saw that the eggs were forced to make a small jump before landing on the central conveyor, leaving a star crack. By slightly raising the central conveyor, the eggs rolled gently without any problems. So, by making a couple of simple adjustments, the incidence of hairline cracks decreased from 3.1 to 0.7% and both the breeder farm owner and the hatchery experienced a change for the better.

Hatching eggs with hairline and star cracks.





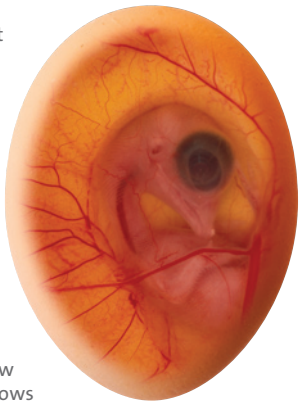
Building a foundation for a robust chick

by Martin 'Tiny' Barten,
Senior hatchery specialist, Royal Pas Reform

Customers and participants on our training courses often ask me: "What is the most important aspect of incubation?" Usually, I turn the question around and ask them what they think it is. Temperature is often mentioned, as well as relative humidity and turning. Indeed, a turning failure in early incubation can seriously impede hatching.

In my mind, however, the question should be answered differently, or even asked differently, and should be: "What is the most important period of incubation?" For me, this is clearly the first 10 days. On day 10 of incubation, the embryo is more or less complete and the body parts are clearly recognisable as a mini chick. All the embryo has to do from this point on is grow.

Of course, the embryos must not overheat and they must receive sufficient oxygen and lose sufficient weight to achieve an air cell that can easily be pipped, but the real challenge is to get every embryo as uniformly as possible to day 10 and in such a way that it is well developed and strong.



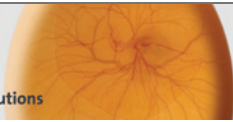
After all, whatever you do wrong in this period cannot be corrected later! Getting the first 10 days right is therefore the foundation for a good and uniform hatch and a narrow hatch window. Mother Nature knows this too: a broody hen is much more attentive to her nest at the start of incubation than in the last few days, when she leaves the nest more regularly for food and water.

So, how to get the first 10 days right? This starts with loading the setter with eggs that are as similar as possible in terms of breeder age, preferably with no more than 5-10 weeks difference. If this is not possible due to breeder flock size in relation to the setter capacity, at least use the different sections in the setter and load the setter 'in balance'. Also, try to minimise differences in egg storage duration, as storage clearly has a delaying effect on the rate of embryo development.

Next, make sure that all eggs reach incubation temperature as uniformly as possible, through proper preheating. The effect of incoming air on temperature uniformity should also be minimised by keeping the damper closed for a few days, or at least reducing the ventilation rate and ensuring that incoming air is warm and humid enough.

A mistake often made in practice is to start with an incubation temperature that is too low and/or to reduce it too quickly. When aiming for an eggshell temperature of 100°F (measured with Braun Thermoscan), the reality will be that the internal egg temperature is too low. My method, which has proven successful more than once, is to achieve an internal egg temperature of 100-100.2°F.

For that, I start with a relatively high set point of 100.5°F or even a bit higher for the first 12 hours and maintain the set point for a couple of days well above 100 °F until the heat production of the embryo is higher than the cooling due to the evaporation of water through pores in the eggshell. This ensures a sound foundation on which the embryo can successfully build to become a strong and robust day-old chick.



Close your doors to trouble

by Eline Holtslag,
Incubation Specialist, Royal Pas Reform

One of the things I like to highlight when talking about incubation is optimal hygiene in the hatchery. By hygiene, I mean all the conditions and practices that help to prevent the introduction and spread of disease. The warm, humid environment of the hatchery is ideal for pathogens such as bacteria and fungi to flourish. Of course, not all bacteria are necessarily bad, but some can cause disease, and these small organisms will thrive and multiply quickly if left alone. We must therefore maintain our vigilance!

Contamination sources can be anything that enter the hatchery, such as eggs, people, air or pests. While your hatchery will never be 100% free of pathogens, proper hygiene through monitoring, cleaning and disinfection can help control them to a certain extent. However, any breach in hygiene can reduce hatchability or chick quality, not to mention the economic losses it can cause. Hygiene, therefore, is key to every training that I give and every visit that I make.

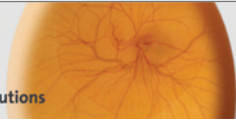
During a recent incubation visit to one of our clients, this topic came up again. Before entering the hatchery, I had to fill in a form providing information such as my last contact with poultry, have a mandatory shower and wear company clothing. When I went in, I saw that the hatchery had a good unidirectional routing system in place, to prevent clean areas and objects coming into contact with dirty areas. Also, the cleaning and disinfection procedures seemed to be in perfect order: so far, so good!

Later, after a morning of hard work, our stomachs began to rumble. At around noon, as we headed towards the canteen, I saw a lot more people with the same idea: lunch! But then, when I entered the canteen, I saw personnel from all the different zones sitting and chatting and eating together. Plus, the whole time, the person delivering the food was walking in and out to the vehicle through the open side entrance to the hatchery.

My good impression of this hatchery's hygiene status was somewhat diminished as a result. Of course, I understand that people want to eat their lunch together, and that you sometimes need to cross walking routes for the sake of convenience. However, as hatchery manager, you have to ensure that your personnel can easily follow the correct procedures (or they won't stick to them) and therefore maintain hygiene standards.

Corporate blindness happens to all of us. And this time, all it took was one meaningful look at the hatchery manager to register a point of improvement. Luckily, it was an easy problem to solve this time. You can apply the 'clean should never meet dirty' rule to eggs, people, air and objects. Delivery staff can deliver the food to the hatchery entrance, and rotating shoe brushes and hand wash stations can be installed between different zones so that the canteen does not become an area of cross-contamination.

Also, staff can take breaks in shifts, or separate canteens can be used for dirty and clean areas. Or, you can take a conscious decision to allow this type of hygiene breach during lunch, for the sake of a happy workforce! You can think of hygiene as a row of dominoes; you can have everything neatly in place, but if you are careless with just one piece, the outcome can be very different from that intended.



Loading the setter room

*by Martin 'Tiny' Barten,
Senior hatchery specialist, Royal Pas Reform*

Last year, I was in a hatchery that had been operational for just a month or two and that had a problem with the alarms on the setters for advanced embryos, which kept going off. As I investigated the alarm, it became clear that the temperature could not be kept at set point.

I quickly realised what was going on. As the hatchery had gradually started up, they had developed a routine that was now causing problems. The setters were loaded in chronological order, so first setter 1, then setter 2 on the same day; the next day the neighbouring setters were loaded, and so on.

At first sight, this would seem to be very logical, as it is easy to work out where you have to go in the setter room for the youngest and the oldest embryos. However, the downside to this routine came to light when the first setters had been running for 16-18 days. All of the setters containing advanced embryos were in the same area of the setter room and, as these embryos produce a lot of heat, the setters require a lot of cooling water.

With so many setters close to each other demanding sufficient cooling water, there was an issue of competition and some setters barely got enough and were therefore at risk of overheating. Of course, whether this happens or not depends a lot on the cooling water temperature and pressure as well as on the diameters of the supply and return pipes to and from the incubator.

However, it is possible to avoid the issue altogether. I explained to the hatchery manager that this can be easily achieved by skipping a few setters in the row when loading the next setter. In this way, it is possible to create an embryo age difference between neighbouring setters of 5-7 days, and therefore balance the embryonic heat production throughout the setter room.

As they had started incorrectly in this new hatchery, we had to sit down and come up with a plan to rectify the situation that involved the least amount of work and disturbance. Then, all we had to do was get some help from a few workers to exchange trolleys between multiple machines. The next day, there were no more high temperature alarms and the setters were able to easily maintain the set points without demanding too much cooling activity.

When I returned to the hatchery a few months later and entered the setter room, I could not help but smile. You would think it was someone's birthday, as each door handle was decorated with a coloured ribbon – blue, green or red – evenly spread out through the setter room. The hatchery manager explained that this helped him to communicate the colour system with his staff, who then knew which colour's turn it was for transfer.

