Keep an eye on the color

Egg shell quality is an important issue for optimal hatchability and chick quality. If the egg shells are not of first quality, both in structure and in hygiene, the incubation process will not result in optimal results.

However, not only shell structure and hygiene can vary, but also shell color. Although specific broiler breeder strains produce egg shells that are more dark than other strains, there can be a substantial variation in colors between flocks of the same breed, mainly depending on the feed.

Not only between flocks there can be a difference, also eggs within a flock can be more uniform or less uniform in color. Usually we see that with increasing age, not only uniformity in size of eggs goes down, but uniformity in color as well. But if we see that the uniformity in color is unexpectedly going down, or that the eggs in general are becoming more pale, we have to pay attention as it can be an indication for problems occurring. Infectious diseases like IB do influence the color of the shell, so a difference in color uniformity can indicate that an infection is moving through the flock. Especially if also the structure of the shell is getting more rough (so called “sand heads”, egg surfaces that feel like sand paper if we run our fingers over the shell), we can expect that IB is playing a role. In a multi age farm or in an area with high pressure of surrounding poultry a certain infection level can often not be totally avoided, but we should keep a close eye on the occurrence and evaluate the IB vaccination program and bio security if the situation is changing.

A special category of shell discoloring is formed by egg shells that are typically white, almost as white as paper. If its only a few eggs a day it can be caused by IB as well, but if we see all of a sudden the incidence increasing, we have to be aware of the possibility that we are dealing with contamination with Nicarbazin in the feed. Both male and female breeders are very sensitive for coccidiostats like Nicarbazin and Salinomycin, but especially traces of Nicarbazin in the female feed will change the color of some eggs on the tray to white. At higher levels of inclusion the production will drop and the mortality will increase, but already at very low levels the fertility and hatchability will go down.

The problems can occur even when the contamination of the feed is at a very low level. It is not necessary caused by wrong mixing of feed or premixes, or by mixing broiler feed into the breeder feed bins or trucks. If the breeder feed is produced in the same feed factory as broiler feed, even traces of dust in the lines or in the truck are sometimes enough to reduce the hatchability. We then typically see a sudden drop in fertility and hatchability, which recovers after a couple of days or weeks, although often not to the same level as before the drop. When we perform a break out of the hatch residue, we sometimes can see that it is actually not infertility but very early mortality, occurring already in the first day or days of incubation.

Usually the first indication of this problem is that the number of very typical white eggs in the normal production is increasing. If this happens, we have to monitor the fertility of the flock to see if it all of a sudden starts to decrease, and check if the feed is coming from a feed mill where also broiler feed is produced. If this is the case, we have to consider the possibility that we are dealing with a coccidiostat contamination in the feed.

In rare situations it is not the female feed that is contaminated, but the male feed. This can for instance happen if the male feed is produced in another feed mill, because of its low quantity. In this case we obviously will not find the discoloring of the egg shells and the early deads, but an increase

in the infertility, as the male reproductive organs are very sensitive for coccidiostat contamination as well.

Contamination with coccidiostats due to mixing of broiler and breeder feed will seldom happen, as most feed mills will have strict procedures in place to avoid this. However, even traces that once in a while occur in the feed by not having complete separated production systems can cause incidental problems. Ideally, breeder feed should therefore not be produced in a feed mill where also broiler feed is produced, but preferably be combined with the production of feed for other species.

Keeping an eye on the color of the egg shells can help us to notify changes in the health status of the flock, but also in possible problems that are caused by contamination of feed with coccidiostats.