



Egg yolk mottling

Levels of mottling in egg yolks seem to be quite high at the moment.

Mottling is something that is often identified when there are reports of high levels of very early dead embryos, or particularly poor hatch after egg storage longer than 4-5 days.

Opening candled clear eggs shows that there is very little embryo development. But unlike infertile eggs, often the yolk membrane has broken and the yolk is mingled with the albumen. Examining fresh eggs usually shows that fertility is normal for the flock age, but that the yolk surface looks different – there are areas of the yolk that look translucent in mild cases (**Figure 1**) but a tan color in more severe ones (**Figure 2**). This is due to changes in the membrane around the yolk which allow water to collect between the layers. This makes the yolk more fragile, and less able to support normal embryo development.

It is normal to see some mottling, which will get worse as eggs age. It will not necessarily be easy to see in fresh eggs on the breeder farm. However, if the incidence of candled clear eggs is higher than expected and fertility is normal, it is worth checking eggs carefully for mottling.

Mottling can be caused by a variety of factors affecting the breeder hens. One of the best known is contamination of the feed with Nicarbazine (or an anticoccidial containing Nicarbazine). Wormers such as Piperazine can cause mottling, as can gossypol from cottonseed meal (above 0.005%) or tannins from sorghum (above 1%).

Yolk mottling also tends to be high in years where fungal diseases in wheat and maize cause a high or erratic mycotoxin burden in finished feed.

Management factors which put the birds under stress can also cause them to lay eggs with mottled yolks. Over mating is a surprisingly common cause – which tends to escalate if the candled clears are perceived to be due to poor fertility, triggering early or over generous spiking. The bird handling necessary for taking blood or swab samples can also cause a rise in mottling.

Sometimes the cause of mottling is not immediately obvious. In this case, a review of the feed formulation and raw materials in the feed mill will be helpful, along with a review of the birds' behavior. This should include periods of observation in the house, watching the birds feeding, selecting nests to lay in and during peak mating times.



Figure 1



Figure 2