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Issue 145 / January 2016 £3.80

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## Hatching egg choices?

If your incubator allows it, always lay the hatching eggs on their side, mimicking the way a broody hen tackles the job.



Thank you for the highly informative article in your November issue, 'Good hatching?' (p24-27). This provided a good account of the practical measures required to have a good hatching rate.

However, I have a query on a specific point related to the incubation process and it's something that, in the past, I've seen conflicting information about. It all seems to depend on who you ask!

Last year I lost a large number of highly-developed chicks when placing the eggs with the tip facing upwards. Obviously they suffocated, just before hatching.

Some experienced hatching people tell me to place the eggs with the rounded end facing upwards, while others recommend always keeping the eggs on their sides as the incubator process progresses.

I'd be very interested to hear your views on this subject, and hope that you can provide

me with a definitive answer which will help me avoid hatching problems in the future.

**Markus Radscheit, Woking, Surrey**

*Malpresentations of the chick and embryo can be caused by a whole range of factors, which is why being specific about the precise cause of hatching problems can be so tricky.*

*However, before I get on to the matter of egg orientation, I thought it might be useful to run through a few of the incubation basics; aspects that you need to get right to maximise the prospects of a decent hatch rate.*

*The fact that egg incubation is such a delicate process means that it doesn't take much to upset the all-important balance and, in turn, detrimentally affect the development process inside the egg.*

*Once laid, the contents of a fertile egg are held in suspension. The bundle of cells that form the 'germ' that's identifiable on the yolk are incredibly*

*tough, considering what they often have to withstand once the egg has been produced.*

*However, the chances of these cells developing correctly and producing a fit, healthy chick after hatching three weeks down the line, fall dramatically in eggs that are more than 10 days old before incubation begins. So it's important not to store hatching eggs for too long beforehand.*

*Some domestic keepers prefer to store the fertile eggs on their sides before hatching begins while others, like me, stand them point-down, in ordinary egg trays.*

*As a rule of thumb, I never keep any hatching eggs for more than a week before starting their incubation. But if, for some reason, you absolutely have to, then storing them on their side and turning them daily, will help prevent the membranes sticking and creating problems once the development process starts.*

*Wildfowl breeders do this routinely, and*

prefer to keep their eggs on specially dried sand. One other point worth noting, if you're using cardboard egg trays, is that it's always best to use these just once, then dispose of them, to help prevent the spread of potentially harmful bacteria.

Malpresented chicks/embryos during incubation can result for a number of reasons. For a start, both turning and storage problems can be a common cause of trouble.

Regular, daily turning once incubation begins, washes nutrients over cell walls and, just as important, allows for the transfer of gases. Oxygen is brought to the cells and carbon dioxide is removed (it leaves the egg through the shell, which is porous).

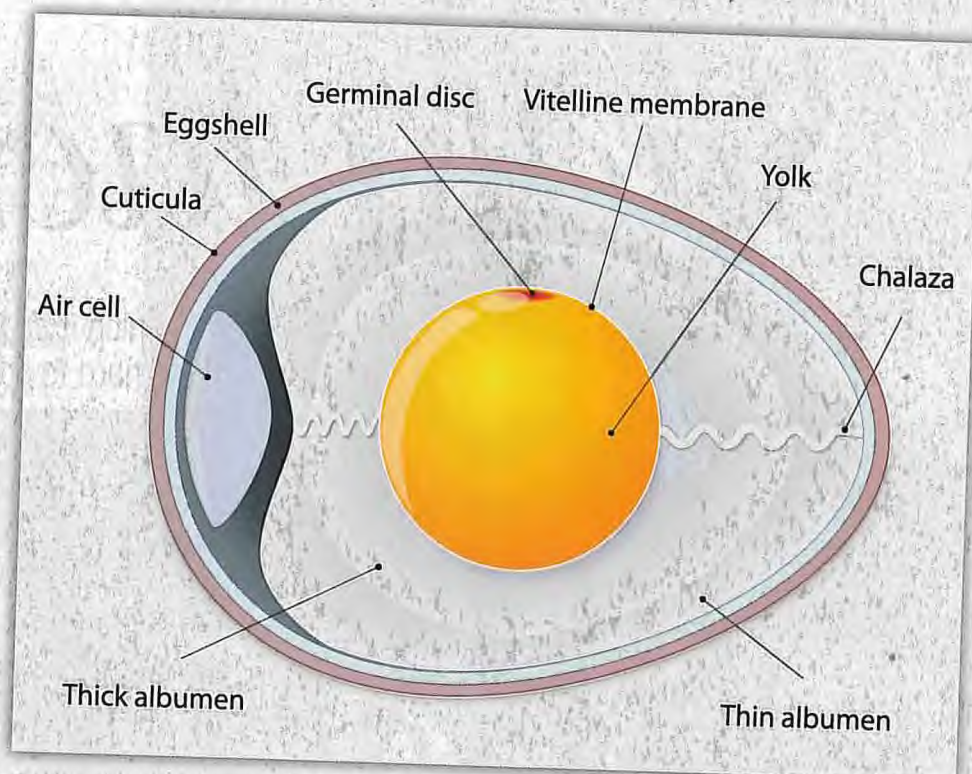
If the important air space, which should be located at the round end of the egg, finds its way somewhere else – typically caused by incorrect storage, or stress during the 24 hours prior to laying – this will almost always prevent a successful hatch. Even though the chick may well have developed perfectly, it won't be able to manoeuvre itself properly due to a lack of space.

Also, the inner and outer membranes might not separate correctly during incubation, which can result in chicks being found at the pointed end of the egg, rather than the other way round.

Incorrect temperature and humidity levels during incubation are another common cause of trouble, and can leave chicks facing the wrong way as hatching time approaches.

If there's a wide variation in the age of the eggs placed in an incubator, then the older ones will have dried out (through natural evaporation) more than the more recently-laid ones, which means they will grow at a slower rate and chick malpresentations will be more likely.

The temperature setting is crucial; even one that's set too high by just 0.1°C will result in differing speeds of development, producing chicks that will have become too big by day



▲ It's very important that the air gap is at the rounded end of the egg, and that the developed chick is able to turn itself to breathe this air just before hatching begins.

18/19. Although they'll still be alive at this stage, they won't be able to turn around to position themselves so that, by day 20, they can break into the air space. As a consequence the chick is likely to drown.

Other things to bear in mind are that the hatching eggs should be clean before being set in the incubator, and they should have been sourced from fit and healthy birds. Shell quality needs to be good, as does overall shape. Avoid incubating eggs that are too round or elongated, as well as those with rough or wrinkled shells.

Before you start the incubation process, make sure you're familiar with the manufacturer's

instructions, and that you understand all aspects of the unit's operation. Also, you'll need to have tested the incubator before starting with it in earnest, by having run it empty for a day or two, making sure that it maintains temperature consistently.

If you encounter operating problems, then speaking to the manufacturer and/or supplier is usually the best way to get things sorted. This is one of the reasons why I always recommend people buy an established, recognised brand. This way there should be a decent support network, should you need it.

Having said all this, a good broody hen remains by far the easiest and most reliable way of hatching eggs. Doing things nature's way is also very rewarding, and usually well worth the effort. Hens tend to know what they're doing and there are no fiddly settings to worry about!

Finally, with regard to egg orientation during incubation, I would definitely never recommend 'bottom down'. Whether or not you opt for 'point down' will depend on the incubator; I know that some of the large machines, such as those from Curfew that I'm familiar with, do incubate in this way, as the egg trays and turning mechanism work in a specific way.

Having the egg on its side is the natural way of doing things; this is how a broody hen arranges things, after all. So, if the incubator tray in the machine you're using allows it, eggs on their side would be my recommendation.

In my opinion, fully-developed chicks going full-term but then failing to hatch, will be succumbing to some other problem; whether or not they are point-down or on their side won't affect this. As I mentioned earlier, though, round-end-down is a definite no-no. Good luck!

**Andy Marshall**



▲ Avoid storing fertile hatching eggs for longer than a week before incubation begins. If you use cardboard trays like this, destroy them after each batch to avoid the risk of bacterial contamination.