

Why Do Broodies Hatch Better Than Incubators?

Many people falsely blame the incubator here but this may well not be the case.

If your incubator performs as per the manufacturer's instructions, holding a constant temperature without more than 1 degree Fahrenheit of temperature difference between off and on, and with somewhere near the correct humidity, then the most likely cause of the problem is the breeder nutrition. This may also be the cause of low hatchability, especially if there is a high incidence of fully formed chicks which died just before hatching, or piped and then couldn't get out.

But why should this difference occur, surely the incubator must be at fault if it doesn't perform as well as the broody?

This is a question (and a problem) we handle almost daily in the lead up to spring. We must sometimes like a salesman who either wants to sell a lot of vitamins or don't want to take the blame for faulty machinery. Sad to say there are some and have been many who do just that.

Back to our problem Why is it so? The fact of the matter is that there is no such thing as an incubator which will perform as well as a broody hen of the species being incubated. I will qualify that by saying a broody hen which is healthy, in good condition, louse free and in a good nesting site.

All incubators fall short of the ideal set by our broody, though no-one fully understands why. Our incubators generally do not have as accurate a temperature control as the broody hen (some electronics now comes close) who regulates the temperature by shuffling the eggs in and out from under her, often as much as 100 times a day.

This movement also contributes to the broody's success. The movement ensures that the embryo is moved around in the egg leaving the waste products behind and moving the embryo to fresh nutrients in the egg.

The movement of the broody is also quite gentle in contrast to some types of turning mechanisms or clumsy turners in manual machines.

In forced draught machines we also make the egg sit in a gale, albeit a hot gale, making it difficult for the embryo to do its job of regulating the egg moisture levels.

Well, this sounds good but why is all that important?

All this is important because it adds up to that bogie of modern man STRESS. On us when the results are not so good and on the embryo in the egg. If any of the required conditions for hatching are less than optimum, and I am saying that all of

the physical conditions in our incubators are less than perfect, then these cause added stress on the embryo. This causes the embryo to use the stress fighting vitamins up more quickly than normal. This means that the reserves of these vitamins are used before the embryo needs them.

When does the embryo need them?

When the chick changes from breathing via the vein system in the egg to breathing via the lungs, the chick encounters the highest stress of the incubation period. Following this it must perform the strenuous task of removing the end of the shell. Both of these events cause the chick to use up large amounts of B group stress fighting vitamins. But if the reserves are already depleted then the chick will die. This usually happens at the time the embryo pushes its beak through the membrane into the air cell but can occur at the time of the first pip.

With the broody the extra rotation ensures that the vitamins are used most effectively, allowing eggs which are marginal to be hatched where those same eggs would be dead in shell in the incubator.

The Solution

The solution is simple and straightforward. Increase the levels of the B group stress fighting vitamins and the hatch rate will increase. Water soluble vitamin mixes fed in the water or feed for 2 weeks before collecting eggs for incubation will improve the results. This will also ensure stronger chicks and better liveability.

But, you may say the birds have good pellets and green feed isn't that enough. The short answer is no. Pelleted rations are least cost formulated for high production, not for hatching. The amount of b group vitamins necessary for good hatch is a great deal higher than that necessary for high production.

Add to this the fact that the strains of modern fowl lay many more eggs than the wild bird, so the amount of green feed required to obtain the necessary vitamins is more than the digestive tract can process. The only way is to add concentrated vitamins to the food of the bird.

With species other than chicken, the commonly available rations leave a great deal to be desired. We know comparatively little of the nutritional requirements of species such as peafowl, some pheasants, quail and goose. For these species a broader vitamin mix than the standard stress mix can produce exceptional results. Often the amino acid blend supplements are best.

In summary, the incubation problem you may be experiencing may not be the incubator. About 70% of all incubator problems we encounter (apart from outright component failure) are nutritional problems.

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