

Helping the chick with early challenges

It is not until we stop and reflect on the adversities and challenges that the young chick has to face that we appreciate why good first week management of the chick is so important.

If we are talking about the broiler chick we know that a good start is essential if we are to produce a good broiler for processing. We know that we need to achieve a seven day weight of 175-180g and that we need to achieve that as uniformly as possible in our flock. A flock where all the seven day olds achieve 165-175g is much better than one in which the achieved weight range has a wider spread of, for example, 150-205g.

Competitive environment

Whether we like it or not, the environment the chick is in is a competitive one and this tends to mean the big grow faster and the small grow slower and weight differences are increased or exaggerated. As the pig sector so aptly puts it about runt piglets, 'once a runt, always a runt in a competitive society!'

The first issue we need to appreciate is that day old weight is directly correlated to egg weight and egg weight is a function of

the stage of lay of the breeder flock – young flocks produce smaller eggs, while flocks later in lay produce larger eggs.

There are other differences, for example, immunity declines through lay so, as a rule, chicks from a flock early in lay have proportionally more maternal antibody than those from a flock late in lay.

This being the case, there is a lot of merit in the practice of placing chicks from one breeder flock into one broiler house as this will give us chicks that are more uniform in terms of weight and maternal antibody levels.

This latter point can be quite important

It does not matter about the breed, feed and water should always be easily accessible.



when it comes to vaccinating the broilers against Gumboro disease.

The second issue we need to understand is that not all chicks hatch off in the hatcher at the same time.

The period of time in which the chicks hatch off (the hatch window) varies and can be as long as three days.

Hatching consequences

Let us consider the consequences of this for the chick that hatches off first. Firstly that chick has not hatched off early – it has developed quicker in the egg and is ready to hatch earlier. Therefore, its physiological status and, for example, yolk sac reserves are similar to the chick that hatches off later. The big difference is that the earlier hatching chick has to endure the hatcher's environment for longer.

The consequences of this are:

- The chick uses up more of its yolk reserves while in the hatcher so that by the time it is placed on the farm it has significantly less yolk left to draw upon as a food source.
- The chick is exposed to the hatcher's atmosphere for longer and, therefore, at the

time of take off is significantly more dehydrated.

● The chick has been exposed to more stresses such as formalin gas and dust.

Alternatively, we can say the chick hatching later has better yolk reserves, is better hydrated and is less stressed!

Managing the hatch window

Modern incubators, especially single stage machines, enable us to better manage the hatch window and, for example, ensure that all the chicks hatch off on the last day the eggs are in the machines. The benefits of this are obvious.

Next the chicks are subjected to challenges of processing in the hatchery. These need to be done as quickly as possible and with a minimum of stress to the chicks.

Then the chicks are placed on the farm and the quicker they start to consume feed and water the better.

There are all sorts of theories about the benefits, or otherwise, about the withholding of feed and/or water. These might have some merits if all the chicks were the same but in view of what we have said earlier, they are not!

So, feed deprivation might benefit some while it would certainly have negative effects on others. This being the case, there is a lot of merit in letting the chicks decide when they are ready to eat and drink by placing the chicks into an environment containing feed and water.

If chicks have been stressed and are tired there is a real possibility that they will sit and sleep so we should consider gently disturbing them – not panicking them – because when they get to their feet they often go for a feed and a drink before settling down again.

This problem can be compounded if the



Good chick quality is essential.

brooder environment is a little on the hot side. Finally, we tend to overlook the major physiological changes that are happening in the chick's body.

Dietary changes

At the time of hatching the chick is on a rich diet of animal protein and fat (yolk) but within a few days it will be on a diet of vegetable protein, carbohydrates and fibre (the starter feed).

This will require different metabolic processes and pathways in the chick's body and it will necessitate major systems coming on stream such as the adequate production of digestive enzymes.

Remember the yolk went straight from the yolk sac via the bloodstream to the various parts of the body, whereas the feed enters by mouth and needs to go through the full gambit of the digestion process followed by the absorption process.

The digestion of yolk has minimal wastage, whereas the digestion of feed has a waste (faeces) disposal aspect to it.

The changeover from one nutrient source to another wants to be a seamless changeover and does not want to be complicated by any unnecessary stresses that we inadvertently subject the chicks to.

In essence, we need to be aware of what the chick is going through so we can plan our management to facilitate a good start and easy passage through these changes. ■