

Ensuring quality chicks with good biosecurity in the hatchery

In poultry production, no matter whether we are talking about broilers, laying hens or breeding hens, one of the keys in order to achieve success and reach the best productive parameters, is to start with good quality chicks, and biosecurity is one of the main tools that we have to do it.

by **Luis Granado, Veterinarian,**
International Division, OX-CTA.
www.grupoox.com

This means that we are going to start production with young chicks which have a good health status and, therefore, their efforts are going to be focused on developing themselves properly so production will be optimised. This is a must to be successful in our goal of achieving the best possible productive parameters. In addition, this will result in flocks with improved mortality rates.

But, apart from considering all these factors, it is very important to remember that due to the typical nature and physiology of these animals, their immune system is not going to be properly developed until they are around a week old and, because of this, it is even more important than ever not to compromise the biosecurity of the farm.

Ensuring good quality chicks

To achieve this goal of ensuring good quality chicks there are many variables that are going to be involved, from the incubator handling, to the breeding hens' health status itself.

We will have to see it as a global process that goes, as previously said, from the breeding hens, up to the egg, the transport, and the final handling of the egg at hatching.

Every single one of these stages is going to be crucial to grant the good quality of the chicks, but we have to know, that on most occasions, a failure in one of these stages may not give us a chance to amend it at a later stage, therefore compromising the whole process.

Grupo Ox, as a pioneer company working on developing and implementing smart and



sustainable biosecurity solutions, with more than 25 years of international experience, know all of these stages well, and their experience is wide in dealing with them and optimising to the maximum the productive process and ensuring chick quality.

Breeding hen farms

Breeding hen farms are the first stage of the chain. They can be the first potential point of infection of the egg and it can happen both by vertical transmission, where the breeding hen is the source of transmission for the egg, or horizontal transmission, as a result of a breach in the biosecurity of the farm.

Some micro-organisms, such as mycoplasma and salmonella, will infect the egg laid by an infected hen. Once inside, they will affect the embryo development, resulting in smaller and weaker chicks at hatching, which of course, will be showing poorer productive parameters, even flocks with higher mortality rates. In the end, the result is poor quality chicks.

But horizontal transmission due to poor biosecurity practices is as important as vertical transmission because it can infect both the hens and the eggs, compromising

the quality of the future chicks in the same way.

We understand biosecurity as a whole set of measures put in place within the farm, with the aim of protecting the farm and the process from the entrance and spreading of potential pathogenic agents.

These measures to be put in place at the breeding farm include correct protocols for general cleaning and disinfection of the premises, up to more specific protocols for some riskier points, such as nests, and even some other control actions, such as disinfection arches, bootwashers, wheel ditches, etc.

In short, some very different measures need to be put in place and, together with all these, we must never forget about the management of water quality.

The target at this point, and to ensure quality chicks, is to decrease the microbiological challenge through correct biosecurity management.

● Hens:

Although the current tendency is to work with specific pathogen-free birds, this is not the global way of working and some countries are still not in line with this.

For this reason, it is key to reduce exposure
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to some micro-organisms to decrease the challenge. In addition, with good water quality management, we will optimise the whole digestive process of the hen, resulting in a better health status of the bird and an improvement in the quality of the eggs.

● Eggs:

Some actions, such as general cleaning and disinfection, or nest management in terms of biosecurity, are going to be essential to control infection.

Transport

Another key point is transportation of the eggs from the farm to the hatchery. Cleaning and disinfection of the vehicle itself, but also trays, trolleys or any other material or equipment involved in the process is essential to control any possible contamination of the eggs.

Remember that during the whole process, there is a real risk of broken eggs, that create an ideal environment for micro-organisms to grow. This can be difficult to clean, even if it looks clean by visual inspection.

Beforehand, this stage may not seem as important and some places seem to omit it. That is a big mistake. We may be doing a good job on the farm and in the hatchery but a breach here can bring big issues. Bear in mind that egg transport vehicles normally move between different farms so they can act as a vector for those pathogens.

Hatcheries

The incubator/hatchery, which is the last stage, is a point of potential infection for the egg, and for the chicks, that will compromise their quality for any later

different activity; broilers or future hens for breeding or laying. These infections may occur by introducing previously infected eggs, in any of the previous stages, or they may occur inside the premises.

Normally, this stage is considered the most important point to ensure quality chicks but, as we have just seen, we can not forget about all the previous stages.

As we have mentioned before, some micro-organisms, such as mycoplasma and salmonella, can contaminate the rooms and spread themselves contaminating the equipment and the environment. This will multiply the economical loss due to an infected flock of breeding hens and will also result in poor quality chicks.

Hatchery design

In the hatchery we understand biosecurity as a whole set of hygienic and handling measures that are put in place to avoid egg and chick contamination, protecting them from infection during the whole process.

When a hatchery is designed, the multiple factors that could affect the process need to be considered as well. A bad design of the premises can compromise production and affect chick quality.

So, starting from this point, it is clear that biosecurity measures are needed even when the eggs are produced on a farm with good biosecurity management. Again, here a lot of water will be involved in the premises and, even if it is just cleaning water, do not forget about its quality.

We need to apply a whole biosecurity programme in the hatchery that lets us keep any possible pathogen under control that could affect the process if we want to ensure quality chicks.

Even if the eggs are clean and free of pathogens inside and on the shell, the

environmental conditions of temperature and humidity create a favourable place for the development of micro-organisms.

The specific characteristics of this kind of premises presents a challenge for a good biosecurity programme due to the abundance of critical points. It is therefore key to count on Grupo Ox, with plenty of experience and expertise in designing solutions for a smart biosecurity programme, in order to ensure quality chicks and obtain the maximum productive parameters.

Within these solutions provided by Grupo Ox, one of the most successful experiences developed in a hatchery is the surface and environmental disinfection by air with the equipment Ox-Disair. This goes beyond providing an essential extra security due to the nature of the process related to humidity and temperature.

As mentioned before, these conditions are great for micro-organisms and thanks to this kind of disinfection we will eliminate micro-organisms in an easier way, but also reaching areas that are really difficult to reach with standard disinfection.

Remember, these kind of premises have a wide range of different elements and ventilation systems that, in a different way, would be nearly impossible to disinfect on a daily basis.

Finally, another basic point for the process is introducing and using products such as the ones designed and manufactured by Grupo Ox (Ox-Virin and Ox-Agua 2G). They have a proven efficiency against a wide spectrum of micro-organisms (bacteria, virus, fungal, protozoa), a great performance, even in the presence of organic material, but also and extremely important, they differ from other products by being biodegradable, environmentally friendly and perfectly safe for embryos and chicks. This is key for ensuring quality chicks. ■