

Chicks for the catwalk

By Ron Meijerhof

Alert and active

Designers expect super models to behave tall and proud and active on the catwalk, to show their creations at its best. In a way, we also want this from our chicks (except for the haute couture...). When we observe the chicks being processed at take off, especially when they are transported on a moving belt, we want to see them standing, trying to balance. If chicks are strong and full of energy, they will be curious, activated by the light and the noise and the movement, and they will be much more standing up than lying down. If chicks do not have enough energy but feel tired and exhausted, they will sit down, and when turned over and placed on their back, they will not express a lot of strength and urge to come up again. They will perhaps try for a few seconds, but very quickly give up and stay in that position.

Why do we want them standing

If chicks are not full of energy but tired and exhausted after hatch, they will also be lacking energy when they arrive at the farm. When the chicks are unloaded, we want them to quickly move around and find food and water. If they do find food and water, they can grow up to 10-12 gram in the first 24 hours. If they behave tired and don't want to get up, they will be delayed in their access to feed and water, and instead of growing 10-12 gram they will only grow 6 or even less. Although the difference in total grams is limited, percentage wise it is quite a lot. As the birds have very limited possibilities to compensate later in life, a lack of body weight of 10% after 24 hours will often result in a similar reduction at later ages. In a way, the bird is not only lacking 10% of growth, but it is actually 24 hours delayed. As it will be difficult to catch up, that often means that the bird is 24 hours behind at 7 and at 42 days, which will result in a substantial growth reduction.

Why would a chick lack energy

During incubation, the embryo utilizes energy by converting the yolk fat. This is a slow process that required oxygen. However, if temperatures are high, the embryo uses energy at a high rate, especially in the last part of incubation. If the conversion of yolk fat and with that the availability of energy is limited and the bird uses it at high rates, it will result in a shortage of energy and tired birds. We can compare it with practicing sports. As our energy supplies are limited, we can cover a long distance walking, but if we run at high speed we can only do this over a short distance. After that, we feel tired and need to relax our muscles for several hours, and restore our energy. To avoid that, we can train more, which will increase our ability to mobilize energy, or we can slow down our speed of running. If we keep on running at high speed, the next morning we feel muscle pain, as our body burned protein from the muscles to supply energy. As a result we want to sit down and not move, and we show the same pattern as the birds on the belt and in the house that also don't want to move for several hours.

How to control

Motivate our chicks for training to increase their capacities during incubation is not so easy. As the conversion of yolk fat requires oxygen, we have to make sure that we ventilate our incubators sufficiently, although the biggest barrier for oxygen exchange is the eggs shell. But as we have to balance the energy demand with the energy supply, we can avoid that they use their energy at a too high rate, by avoiding overheating. This must be done by keeping the temperature of the egg shell at 100-100.5°F until internal pipping. If we allow that temperature to go up, the use of energy will be higher and the birds might experience an energy shortage, making it more difficult for them to open the egg shell but also to be active after hatch. This means that the problem of non-active chicks will be often caused if the hatchers are too warm, but also overheating (especially in combination with too limited oxygen supply) at the end of the setter period can cause this problem.

Super model chicks can only be created if we control the temperature of the eggs during incubation. If we are able to this, they will reward us by standing tall at the catwalk.