

# Preparing for a good start: objectives for the brooding period

The development of the long-life layer starts before they hatch, but that is a process which can not be influenced by the pullet rearer or egg producer. As soon as the newborn chicks arrive at the rearing house is where they play a crucial role in the development of the birds. The productivity of a flock depends to a large extent on the successful attainment of bodyweight targets from an early age.

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The objectives during the brooding period are:

- Rapid growth to reach body weight target at five weeks of age.
- Good uniformity from the beginning.
- Excellent livability.

From day-old to transfer to the production house, the bird will grow slowly, and organ development occurs at various ages. A lack of growth during each of the stages could have a detrimental impact on pullet quality.

Any delay in growth at 4-5 weeks will be reflected in a reduction in body weight at 16 weeks and in performance, particularly in mean egg weight in temperate climates.

Please keep in mind: two birds with the same body weight have not necessarily developed the same body composition. A rule of thumb:

good growth curves result in good pullet development.

Growth can be divided into the following stages:

- The first three weeks are devoted to the development of the organs and the immune system.
- From week three to week six, skeleton and muscles are growing. Bodyweight at 5/6 weeks is the most important determinant of pullet quality. Any delay in growth at this stage is harmful to the birds, as it will have a detrimental impact on pullet quality and body composition, which will impact negatively on the birds' performance.
- From weeks 6-15 growth is starting to slow down.
- The final stage is characterised by ovary development and rapid growth of these organs. Sexual hormonal regulation takes place around 18 weeks and leads to sexual maturity around this age.

## Preparing for chick arrival

The success of brooding depends a lot on a good start for the chicks. Most of the chicks have travelled for quite some time and they are looking for a safe place that provides them with water, feed, a comfortable environment and a good place to rest. We have listed here the key points:

- The houses should have been cleaned, disinfected and empty for at least 14 days. The house and its content should be dry before the new chicks come in.



- Start the heating system 24-36 hours before the chicks arrive (depending on climatic conditions). The brooder area and litter area should be warm enough with a constant temperature in the range of 33-35°C when the chicks arrive.

- Flush water lines prior to arrival of the chicks, make sure no disinfectant is left in the water lines when the chicks arrive.

- Make sure that the nipples and round drinkers are at the correct height: nipples should be at eye level of the chicks and round drinkers on the floor.

- Whatever drinking system is in use check whether the water supply is sufficient. When nipples are used, adjust the water pressure so that the chicks can see the water drop on the nipple and the water flows easily, at the lightest touch.

- If the chicks have been infrared beak treated in the hatchery, it is very important to use sideways activated nipples (360°) or nipple drinkers with cups and to use supplementary starting mini drinkers.

- Put paper under the nipples to attract the chicks and put extra feed on the paper or in cardboard trays.

- Check that all the birds, even the smaller ones, have access to feed and water. After a long transport duration, it is useful to wait for 3-4 hours before distributing feed, to make sure chicks first drink enough water to restore their body fluid.

- During the first two days use tepid water at 25-30°C.

- In hot conditions, be careful not to let water temperature increase too much, as this may reduce the feed intake of the chicks. Regularly flush the water lines to maintain the temperature.

- Monitor the water consumption.
- Avoid water spillage by the chicks as this will maintain litter quality.
- Always keep the drinkers clean. For the first two weeks, they should be cleaned at least daily.

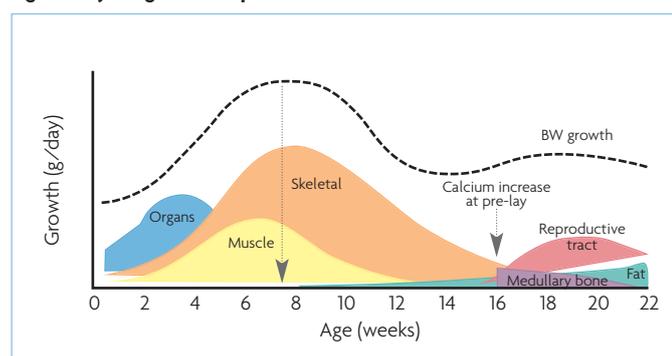
## Keep your chicks warm

Keep in mind that during the first few days, the chicks must rely on the temperature that we maintain before their own thermoregulation starts to work properly.

In order to ensure that the equipment and the litter are warm for chick arrival, it is advisable to start raising the house temperature at least 36 hours before chick arrival so that the air temperature reaches 33-35°C when the chicks arrive.

*Continued on page 8*

Fig. 1. Body weight development.



Age (days)	Brooding temperature (°C)		Room temperature (°C)	Relative humidity
	At the edge of the brooders	At 2m from the brooders		Optimum – maximum in %
0-3	35	29-28	35-33	55-60
4-7	34	28-27	32-31	55-60
8-14	32	27-26	30-28	55-60
15-21	29	26-25	28-26	55-60
22-24	–	25-23	25-23	55-65
25-28	–	23-21	23-21	55-65
29-35	–	21-19	21-19	60-70
After 35	–	19-17	19-17	60-70

**Table 1. Standards for temperature and humidity.**

*Continued from page 7*

The concrete floor must be at 28°C and the litter at 30°C. The best way to check if the house temperature is correct during the first days after arrival is to measure the cloacal temperature of the chicks (40°C).

It is recommended that the temperature of at least 20 chicks from throughout the house is taken in order to get a good indication of the situation. Day-old chicks cannot regulate their own body temperature so they depend on ambient conditions. Be aware that chick body temperature reacts quickly after ambient conditions have been

changed. Find the correct set point for house air temperature by managing the body temperature of the chicks. Start checking the body temperature of the chicks every hour after placement.

Keep checking body temperatures until the correct temperatures have been achieved and the situation is stabilised. At day five the chicks will normally be able to keep up their own body temperature (within limits) and a rise in body temperature will automatically follow to about 41°C.

From there on, the set point for house air temperature can be



**Checking body temperature.**

gradually reduced to reach around 20°C at five weeks of age (for example 0.5°C per day).

Temperature standards are given in Table 1, but again the observation of the behaviour of the flock is the best indicator of the real needs of the chicks.

- If the chicks crowd together under the brooder, the temperature is too low.

- If the chicks are close to the surround, inactive, lethargic and spreading away from the source of the heat, then the temperature is too high. ■

At all stages flock uniformity needs to be reviewed. The objective is to have a very high uniformity in order to facilitate flock management and stimulation. Low uniformity leads to poor laying performance. The number of feeders and drinkers, feed distribution, the presentation of the feed and farm management are strong contributors to ensure uniformity. Heterogeneity at an early age has a negative impact on uniformity during transfer.