

# Successful brooding – how to achieve the best start for your poults

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Achieving the genetic potential of your flock begins before it is placed. The care and environment that poults receive at placement and during brooding will essentially set the path the flock will take.

It is important to practise good basic animal husbandry skills during this time in order to achieve the best results. The thermoregulatory system of a newly hatched poult is not fully developed, therefore the poult is highly dependent upon external heat sources to maintain its normal body temperature.

## Different brooding systems

There are many different ways to brood a day old turkey flock; there are systems based on 'spot' heating and others based on 'whole house' heating.

There are advantages and disadvantages in both systems. In spot brooding there is variation in temperature around the source of heat and the poult can find its most comfortable position.

Spot brooders generally deliver a better, more uniform heating of the litter.

With whole house systems there is less variation in temperature so more precise management of temperature is required.

Good control of temperature and supply of the poult with the right temperature

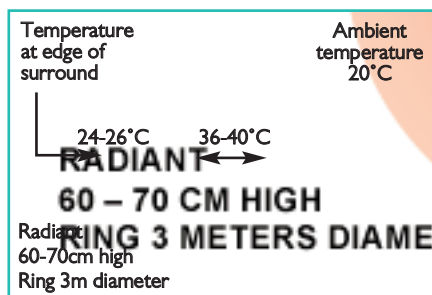


Fig. 1. Correct set up for spot heating.

range and profile during brooding is more likely to achieve the primary breeder company's standards for weight, uniformity and mortality.

Better temperature management will also result in good litter condition and a reduction in the level of foot pad lesions.

Good growth rates are only possible if optimal environmental conditions are maintained within the brooding barn.

It is for this reason special attention is paid to the birds in this period as they are very sensitive to any kind of mismanagement.

The brooder set up will depend on the kind of houses, brooder equipment, past experience and time of the year.

However, before the placement of any new flock of poults the following must be checked:

- Houses and equipment have been thoroughly cleaned, washed and disinfected.
- Time between successive crops is maximised.

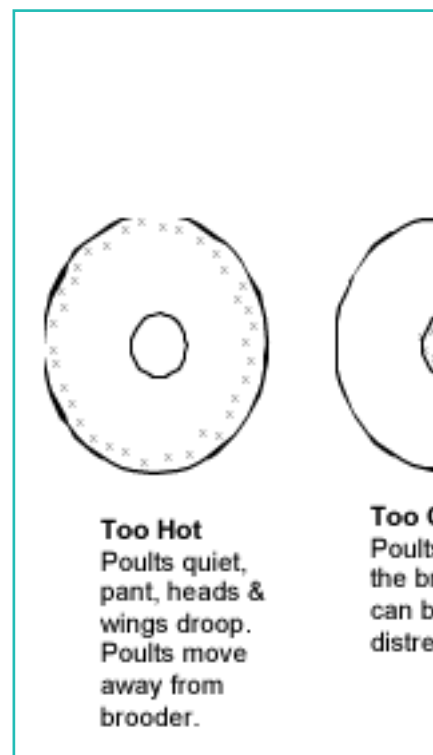


Fig. 2. Behaviour of poults under spot brooding.

- All equipment is checked at least two days before poults placement.

The litter during this period is normally straw or wood shavings. Wood shavings, which should be white, free from dust,

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### Example of spot heating.



### Example of whole house heating.



Surround diameter (m)	Brooder size (kW)	Suggested poult numbers
3.0	2.6/3.8	200-220
3.5	3.8/4.7	270-290
4.0	5.6	370-390
4.5	5.6	460-480

**Table 1. Ring size and poult number with different brooder output. Generally less birds = less competition.**

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moulds and chemicals, tend to remain in better condition than straw.

The litter's depth should be at least 7-8cm in summer placements and 10cm in winter placements. It is best is to compact and

level the litter surface in the rings before poult placement to reduce the incidence of flip-over.

Straw tends to get wet faster than shavings and it is not as absorbent, therefore it is preferred as the brooding period ends,

Brooder size (kW)	Height (m)
2.6-3.8	0.6-0.7 at day old
4.7-5.6	0.9-1.1
11.8 +	1.5-1.8

**Table 2. Brooder height for different brooder output. All measured from litter surface to brooder canopy. Depends on brooder size, house quality and house temperature.**

and especially for the birds grown during the summer.

The rings can be made of different materials, such as cardboard, wire netting or hard-board and should be at least 50cm high to prevent poults jumping out from the brooding area too early. The number of poults placed in the rings will vary depending the size of the rings, brooder heat output and the season.

Consider local welfare legislation, climate, type of housing and equipment when making decisions regarding stocking density.

Table 1 shows the number of poults per ring and the size of the rings suggested for different brooder outputs. Where feasible place as few poults as possible, to reduce competition and ensure all the birds are receiving the right level of care and attention.

As mentioned previously, there are different types of brooders available and they come in a variety of sizes and power, therefore they should be placed at different heights (see Table 2).

## General guidelines

In general the rings should be 3m in diameter and the brooder kept at a height of 60-70cm above the litter surface and over the centre of the ring, allowing placement of 200-220 poults.

One feeder (trough type or linear feeders) should be provided for 50-55 poults and one egg or kiwi tray per 100 poults placed should be added for the first 24-36 hours.

These trays increase the possibility of the birds 'encountering' the feed, but are a source of contamination and should be removed from the rings as soon as poults are feeding from the main system.

One automatic bell drinker and one manual drinker should be available per 100 birds placed. It is now common to see some nipples or cups used in this period and depending on individual type each may serve between 10-25 poults.

Correct litter temperature is critical for a successful start.

With spot brooding houses should be preheated at least 24 hours before poults are placed.

Temperature should be set as follows:

- 36-40°C under brooder.
- 24-26°C at the edge of the surround.
- The ambient temperature of the barn is not a fundamental parameter since birds



**Poult arrival.**



**Ensure good bedding around drinkers.**

are living in within the rings; however ambient temperature should not be below 20°C see Fig. 1 (page 11).

Table 3 shows how temperature should change with the age of the birds.

Closely monitor poult behaviour as this will tell you if the temperature inside the ring is incorrect. Fig. 2 (page 11) shows the typical behaviour of poults under spot brooding.

## Correct ventilation

Providing good air quality for the poult is critical. Correct ventilation will ensure that pollutants such as dust, carbon dioxide, excess water vapour are removed, as well as providing adequate oxygen requirements without causing draughts and chilling the poults.

Ideally the relative humidity in the brooder during the first week should be 65-70%.

Key points on the day of arrival are:

- Put down poults with the minimum of noise.
- Let poults become familiar with the new environment leaving them alone for 40-60 minutes to settle and to imprint to the ring and then:
- Check temperature – poult behaviour.
- Check and reset drinkers, ensuring the litter beneath them is compact.
- Check the poults every hour (quickly without stopping in the barn if not necessary).
- Limit movement of people inside the barn to a minimum.
- Do not make any noise inside or outside

the barn or the poults will huddle together and smother. The first few hours of management after placing the birds are important. Birds should have free and easy access to water and feed and the light should be managed as follows:

- Lights should be on when birds arrive.
- Lights off for one hour in the first 24 hours.
- Then increase every day hours of dark to arrive at 4-5 days of age to 16 hours of light – eight hours of continuous dark every 24 hours.
- In the first two days light intensity should be between 80-100 lux and then (if needed) reduced progressively until 30-40 lux at one week of age.

## Lighting programmes

Sometimes intermittent light programmes are used to encourage feeding and general poult activity. These programmes should be started after placement, but only after the poults have settled down and found both feed and water. Usually this can be started after a minimum of two hours light but can be delayed for a further two hours if the poults are particularly active.

- An example of an intermittent light programme is alternate cycles of two hours of light followed by two hours of dark.
- This programme is normally used for a minimum of two days after placement but can be continued for up to four days if necessary.

While the poults remain inside the ring, the following tasks must be completed at least twice a day:

- Clean and disinfect the manual and automatic drinkers and put fresh and clean water in the manual drinkers.
- Clean away faeces and litter from the feeders, throw away the feed you recover and add new fresh food.
- Keep feed on the trays for no longer than 24-36 hours.

The litter should not be allowed to become caked or wet, and every time food and water are changed, dirty litter should be removed from the rings and new fresh litter added and mixed with the litter under feeders and drinkers and around the ring.

At 3-4 days of age, two rings can be combined to build a double ring.

The most common mistakes in the first week of brooding are:

- Food not available on floor trays.
- Drinkers not suitable for young poults.
- Feeders not suitable for day-old poults.
- Feed depth too low.
- Equipment removed and/or introduced too soon.
- Lights too dim.
- Room temperature too hot.
- Too many poults per brooder.
- Poults kept on continuous light.

Good management in the brooding period requires attention to detail. Individual birds within the flock may require detailed attention and birds that are slow to start should be placed in suitable rings with low stocking density and access to water.

Alternatively, these birds may be returned to the transport boxes for 4-5 hours before replacing in the brooder ring. Normally, around the 6-7th day, the rings are taken out from the house and the birds are free to roam inside the barn.

**Table 3. Temperature profile with age using spot brooding.**

Age (days)	Spot	Temperature (°C) Edge of surround	Ambient
0-3	36-40	24-26	20!!
3-7	34-38	23-24	20!!
7-14	33-34	-	22-24
14-21	-	-	21-23
21-28	-	-	20-22
28-35	-	-	19-21
35+	-	-	18-20

## Brooder house targets

The targets of the brooder house are:

- From day one provide an environment that helps the activity, feeding and water consumption and poult growth.
- Manage the poults in such a way to minimise any stress that can have a negative impact on their potential growth.
- Give the poult an environment that lets their genetic potential be fully expressed. ■