

Dark brooders – alternative heating to improve welfare and potential economy in pullet production

Problem

After hatching, chicks need to be housed at an appropriate temperature. Whole-house heating for brooding can be energetically demanding and costly.

Solution

Spot heating using dark brooders which more closely emulate maternal care, providing shelter and warmth.

Benefits

Use of dark brooders is less energetically demanding and may prevent the development of feather pecking leading to improved welfare during rearing and later in life.

Practical recommendations

Dark brooders are hot plates placed at the bird level, which can be used as an alternative to heating the whole barn. Dark brooders contain flaps, creating an enclosed, dark area for chicks to retreat to for rest, as light is often provided for the full 24-hour period. Spot heating creates a temperature gradient, allowing chicks to choose a temperature zone in which they feel comfortable. Behaviour should be monitored during the first couple of days following placement to ensure the chicks have found and are using the dark brooders. Huddling and stress calls are indicators of the chicks being too cold. Appropriate measures should be taken to avoid chicks from wandering too far from the heat source during the first week of life.

On-farm application

System approach

- When using dark brooders as a heat source for day-old chicks, the room temperature should be 20-24 °C, and the temperature under the brooders should be 30-34 °C.
- The floor of the rearing house should be at the appropriate temperature before adding litter to avoid condensation, resulting in moist litter, and before placement of the chicks to avoid cold stress.

APPLICABILITY BOX

Theme

Animal husbandry, environmental enrichment

Keywords

Brooding, thermal environment, feather pecking

Context

Prevention of feather pecking

Application time

During the brooding period

Required time

Roughly 4 weeks, may stay for longer as non-heated shelters

Period of impact

Improved welfare during brooding period and reduced risk of feather pecking throughout rearing and lay

Equipment

Dark brooders

Best in

Pullet rearing facilities

Target audience

Farmers, farm advisors

Evaluation

- Qualitative evaluation – bird behaviour should be monitored to ensure birds are able to find a temperature they find comfortable.



Figure 1 (left): A rearing barn with dark brooders (Photo: ©Tina Bøje Clausen, ØkologiRådgivning Danmark).

Figure 2 (right): Inside view of a dark brooder where the lid is lifted (Photo: ©Tina Bøje Clausen, ØkologiRådgivning Danmark).

Further information

Videos

Check the following videos for further instructions (Danish).

<https://www.youtube.com/watch?v=30yhFowKb2o>

<https://www.youtube.com/watch?v=vvMazKU2XoA>

<https://www.youtube.com/watch?v=cBcfkCs30sM>

Further readings

The second part of this review article on the benefits of dark brooders contains a discussion on possible reasons why dark brooders are not widely used commercially.

Sirovnik, J. Riber, A.B. 2022. Why-oh-why? Dark brooders show long-term positive effects on chicken welfare, but why are they still not widely used? *Animals*. 12, 1276. <https://doi.org/10.3390/ani12101276>

Weblinks

The following webpage contains additional materials, including a guide (in Danish):

<https://okologi.dk/viden-om-oekologi/landbrugsproduktion/hoens-og-kyllinger/velfaerd-for-hoens-og-kyllinger/giv-kyllingerne-en-tryk-start-med-kunstige-kyllingemoedre/>

About this practice abstract and Best Practice Hens

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Best Practice Hens: To support egg production in non-cage systems and improve animal welfare, a consortium consisting of 7 partners will develop Best Practices for Non-cage Egg Production Systems as a European Commission, DG SANTE pilot project. These Best Practices will provide practical support to egg producers to encourage them to convert from cage to non-cage systems, including organic production.

Project website: www.bestpracticehens.eu/

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