

## Pullet lighting options in non-cage housing systems

### Problem

In pullet rearing, lighting is important to prepare the birds for egg laying, and to reduce the risk of feather pecking both in the rearing and laying period. As non-cage housing systems are more divers in environmental elements and the chicks have more possibilities for behavioural reactions to the lighting, it needs special attention.

### Solution

Proper lighting and light management are the basis for a good start and good performance of a laying hen flock.

### Benefits

Proper light management will reduce the risk of the development of feather pecking and prepare pullets for a long and productive laying period.

### Practical recommendations

- One day-old chicks should be placed in a system with ample light to find their way around and find feed and water.
- After some days, the daylength and light intensity can be reduced, but the light intensity should not be reduced too much. Preferably an intensity of 20 lux or more is maintained. Light intensities lower than 5 lux may cause a later start of egg laying.
- A dimming phase of 15-30 minutes (depending on the complexity of the system) at the end of the day allow the birds to find their roosting places. A dimming phase of about 15 minutes at the start of the day prepare the birds for the day. Dimming phases will reduce arousal and stress in the flock.
- A combination of sufficient light intensity and the provision of litter and roughage can reduce the risk of the onset of feather pecking.
- For rearing pullets, a slightly cooler light is recommended compared to the laying period (pullets: max. 4000K; laying hens: max. 3000K). Warmer light comprises more of red spectrum, which is stimulating hormone production for egg production. Cool light comprises less red and possibly more green and blue wavelength, that are associated with growth.

### APPLICABILITY BOX

#### Theme

Animal husbandry, lighting, pullets

#### Keywords

Light, pullets, feather pecking

#### Context

Transition to and operating non-cage housing systems for laying hens

#### Period of impact

Lighting during rearing has an impact on the entire life of a laying hen

#### Equipment

Lighting, dimming equipment

#### Best in

All cage-free rearing housing systems for laying hens: barn, free range, and organic production

#### Target audience

Farmers, farm advisors



**Figure 1 (right):** A combination of enough light, good litter, roughage, and pecking stones can reduce the risk of feather pecking and prepare the hens well for their production period (Source: WUR)

**Figure 2 (Left):** Sufficient light intensity and an even light distribution will enable the birds to learn to move around in the system and negotiate heights. Also, it will make them less fearful (Source: WUR).

## On-farm application

### System approach

- Layer pullets tend to be fearful, with the risk of flightiness and smothering. Together with frequent flock walks (to get them used to humans), a proper light intensity can help as birds will be able to see from a distance what is approaching them.
- Although very dim light will prevent feather pecking, it will also cause fearfulness and is not preparing the pullets for their life as laying hens. The transition from rearing house to layer house should be as smooth as possible, with a maximum of similarities to prevent stress. Therefore, the lighting settings at the end of rearing and at the start of laying should be the same: starting time of the day, light duration, preferably type of light and intensity.

### Evaluation

- Light intensity can be checked with a lux meter at bird height, measuring between light sources directing the measuring cell towards the ceiling
- Light distribution can be checked by looking for very bright or dark spots.

## Further information

Practice Abstract on *Light management for laying hens*: <https://bestpracticehens.eu/wp-content/uploads/2022/10/11-Light-management-Hens-1.pdf>

Check management guides of the breed used, to find detailed information about light programs.

## 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/](http://www.bestpracticehens.eu/)

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