

5. Implementation of a good lighting programme

BY THE TECHNICAL TEAM, HY-LINE INTERNATIONAL. WWW.HYLINE.COM

Lighting programme

● Distribution of light:

Place lights to eliminate any shadows in the activity, feeding and drinking areas in the bird's environment. One or two rows of lights positioned in an alternating pattern usually creates the most uniform light distribution.

Use a light source that produces diffused light and does not create shadows. Some LED light sources produce directional light that produces sharp areas of shadow under feeders, water lines, and in corners (Fig. 17).

The brightest area in the house should be in the activity area where birds eat, drink and rest. The entrance to nests should be well-lit, but not brighter than the activity area. The inside of the nests should be dark, preferably less than 0.5 lux (Fig. 18).

● Simulation of dawn and dusk:

In aviary systems, the house lights are typically stepped/sequenced to draw the birds up onto the system at night. Any birds that remain on the floor should be lifted and manually placed in the system. Not permitting hens to spend the night on the floor can reduce floor eggs.

● Nest lights:

String LED lights placed inside automatic colony nests can be used to attract hens to the nests in the morning. Nest lights are typically turned on one hour before and turned off one hour after the house lights come on. Nest lighting can be especially effective during the nest training period. Nest lights can be discontinued after the hens are consistently using the nests.

● Timing of lights-on:

If floor eggs are encountered, it is important to determine what time of day they are being laid. In houses that are not fully light-proof, the outside light, particularly in summer months, may cause birds to lay before house lights are switched on. In this instance, house lights should be programmed to come on earlier.

Feeding considerations

Schedule the automatic feeder runs not to interfere with the pre-laying behaviour and egg laying of the flock. Typically, the first feeder run is timed when the house lights come on in the morning, or alternatively, just before the house lights turn on.

The second feeding is after the majority of eggs have been laid. Poorly timed feeder runs can interrupt pre-laying behaviour and motivate hens to

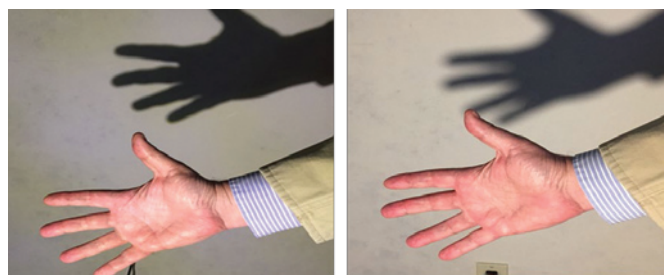


Fig. 17. Some LED light sources produce light that is directional, creating sharp shadows which may attach unwanted nesting. Select light sources that produces diffuse light to reduce these shadows.

leave the nests, resulting in more floor eggs. Preferably, place all feeders on the slats when using a combination of litter (scratch) and slats.

Adjust feeder and water lines to the proper height to avoid creating obstacles for hen movement to the nests. Prevent swinging water lines that could distract nesting hens. Provide sufficient feeder space and use fast feeder run times (18m/min feeder) to ensure that all hens can eat simultaneously.

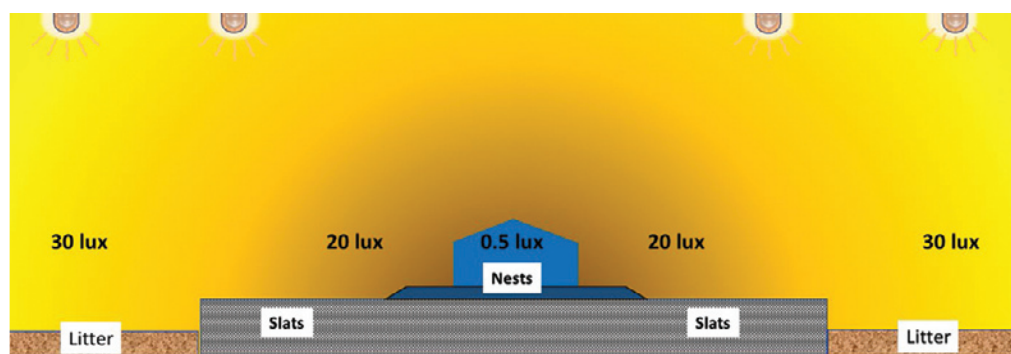
Considerations for breeding flocks

In breeder flocks, eggs laid outside the nests are not suitable for hatching and cause significant economic loss. These eggs are often soiled with faeces and dirt, leading to bacterial contamination of the egg and hatchery. Hatchability and chick quality are decreased if out-of-nest eggs are used for hatching.

The proper ratio of roosters to hens should be set by 16 weeks of age. Too many roosters result in excessive fighting as they establish territories and compete for females. This can lead to males acting aggressively toward females and disrupting their normal nesting behaviour. Roosters may attempt to 'corral' hens, blocking their movement to the nests.

Low-ranking males often hide inside the nests to avoid persecution by dominant males. The presence of males inside the nests may result in females refusing to use these nests. Low-ranking males without tail feathers, small combs, or appearing pecked and underweight should be continuously culled from the flock.

Fig. 18. Light intensity should be highest over litter and slats, and lower near the nests.



Summary

Nesting behaviours are habituated in the hen soon after egg production begins and, once established, become difficult to change. Manage the flock to provide positive early nesting experiences, leading to good nesting behaviours. Eliminate obstacles, interruptions, and negative experiences that might cause hens to lay out-of-nest eggs.

References for the complete series are available on request