

Broiler Breeder Management to Minimize Floor Egg Production

Written By: Mert Yalcinalp, Senior Technical Manager – Cobb Turkey



Introduction

Nesting systems have been designed to maximize the production of clean settable eggs that are free of contamination and exposure to moisture. Unfortunately, a producer will occasionally experience a flock that will reject the nests and consistently lay eggs on the floor and slats.

In extreme cases this can lead to reduced production, lower hatch performance and ultimately reduced chick quality leading to poor broiler performance. The collection of floor eggs requires extra labor and creates biosecurity challenges in the hatchery. Once the floor egg habit begins, it is very difficult to change this behavior. The occurrence of floor eggs should be addressed before it leads to bigger problems.

It is important to know that there is no such thing as “a clean floor egg”. A visually clean egg collected from the litter surface may be contaminated by up to 30 times more than a clean nest egg.

Rearing Period: Though floor eggs are a problem during the production period, there are management practices during rearing that may lead to floor egg production. For example, the use of electric deterrents on the drinkers and the feeder systems create an early fear of jumping for the birds. Instead of choosing electrical systems, use double wires or rolling parts so the bird is unable to grab and balance on the drinker and feeder system. Both of these alternatives are good preventative measures to prevent perching on the equipment without making the hens fearful of jumping.

Enrichments in rearing are a viable option to teach the bird how to climb and jump at an early age. Choosing the right type of perch is also very important. If the birds are going to be transferred to a mechanical nest box system, choose flat perches (not A-type perches), preferably manufactured with the same slats (perches) as those found in production. This will encourage the birds to jump up directly and quickly get accustomed to the new production layout.

Positioning slat-type perches under one nipple line will also encourage jumping and create a positive association between jumping up on the slats and drinking. The height of the slats must be no higher than 45 cm.

Pan feeders in rearing can influence the need to jump. The bird travels underneath the pan feeder instead of jumping or climbing over. Chain feeders in rearing create for more mobility. Chain feeders have to be set low enough to encourage hens to jump over the track. When pan feeders are used in rearing, it is encouraged to incorporate enrichments. Enrichments can be implemented at placement with access ramps. Females trained from an early age (5 weeks) in rearing require no ramps in production with a 45 cm high slat.

Light intensity may also lead to future floor egg problems. Very low light intensity (<1 lux) during rearing can reduce bird activity. Therefore, light intensity should be maintained at a level that allows farm workers to perform normal duties and are high enough to promote bird activity. Intensity over lux 5 can negatively affect female photo stimulation, so consider this when adjusting light levels.



Photo 2 (left): In production, 4 rows of LED lamps in 14 m wide house should be positioned over the scratch area and at the end of the slats and no lights directly above or shining into the nests.

Production Period: Although broiler breeder producers tend to have their own targets, typically a floor egg ratio above 2% suggests a problem or at the very least means improvements need to be made. The first step in tackling a floor egg problem is to collect them regularly so that the birds have minimal opportunity to see the eggs in the litter. A minimum of 4 floor egg collections per day (more is better) should be done until the flock is at least 27 weeks of age. Walking patterns are also useful to deter females from laying in corners or on the floor.

To minimize floor eggs and achieve good flock performance it is essential to follow the breed standards. However, if you do face a problem with floor eggs, determine if hens are having difficulty jumping onto the slats. The height of the slats must be no higher than 45 cm as heavy hens are more unwilling to jump. Ramps can also be installed as a quick solution. To decide how many ramps are needed, observe the flock to determine the extent of the problem. Placing less litter (i.e. 2 to 3 cm) can also help reduce floor egg, especially in warm and low humidity areas.

Photo 2 (right): Ramps make it easier for heavy hens to climb onto the slats in production which will enable them to access the nests and help prevent floor eggs.



Flocks should be transferred at least 2 weeks before the first egg. The hens need time to acclimate to the equipment in the production houses. Automatic nest boxes should stay closed prior to the first egg. Birds need to know that nests are a place to lay eggs not to sleep. Expel systems should be opened 15 minutes before lights on and should be closed 30 minutes before lights out. After the first few egg are laid, (or even if there is no eggs in the nest box), run collection belts for a few minutes at the same time each day to familiarize the hens with belt sounds and vibrations.

Hens need to feel safe when laying eggs and will search for relatively dark areas to lay eggs. They are more likely to lay eggs in dark spots instead of going into the nest boxes which may be further away. Therefore, prevent shadowed areas with uniform lighting and ensure there are no shadows next to the slat ends and no direct light shining on the nest boxes.

Approximately 80% of the birds will lay eggs between 2 and 6 hours after lights on. This means that any disruptive activity during this 4 hour period can cause floor eggs. For example, feed and water is a very strong distractor for birds. Therefore, if the majority of feed and water intake is during this 4 hour period, birds will choose feed and/or water instead laying eggs in the nests.

Feeders and drinkers should never become obstacles in front of the nest boxes. Feeder heights should allow the birds to freely pass under them if they are hanging or go over them if the trough is placed directly on the slats. If the hens crowd around drinkers, reconsider the drinker numbers, drinker heights or water pressure which can extend the water intake time. Producers should always follow the manufacturers' technical directions and not limit or exceed the suggested numbers of drinkers per bird.

In minimum ventilation, if the air draft is directed at the nest box opening instead of the roof, it can disturb the birds and can cause them to leave the nests. Similarly, if the entrance of the nest box at the corridor sides are not sealed well, tunnel fans can pull air from the corridor and cause a draft in the community nests which can increase slat or floor eggs.

Males need to be 1 week ahead of females in their sexual development, which means the males may push the females onto the slats. This practice is important to reduce floor eggs, but if the males are too advanced in development, aggressive male behavior can cause hen mortality, reduce fertility, and increase slat eggs. In this case, decrease the male ratio until there is a uniform mix of males and females along the scratch area particularly in the early afternoon (1400 to 1600 hr).

Interiors of the nest boxes should be clean and parasite free including red mites which can disturb the hens and can cause them to avoid nests. It is recommended to have 20% more pads than needed so soiled pads can be replaced and washed without leaving nests without pads.

It is important to take a proactive approach to managing floor egg production. The location and timing of floor egg production provide a clue about why the hen chose to lay on the floor rather than the nests. Good observation and taking action at the first sign of floor egg production are keys.