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Nutrition, feeding issues impact broiler breeder feathering

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Maintaining the feather covering of broiler breeder females can be a challenging management task in the broiler breeder operation but is essential to achieving mating in the flocks and the fertility of the hatching eggs produced.

An inadequate amount of feather coverage can cause a decline in fertility, a loss of body

weight and poor feed conversion. Although in some instances it can be difficult to determine the cause of [broiler feather loss](#), there are management practices that can be used to avoid the unfortunate situation, explained Jeanna Wilson, professor of poultry science at the University of Georgia.

Genetic selection

Both genetic selection and feeding programs have contributed to the problems associated with feather loss. They have also caused producers to experience lower egg production and an increase in hen mortality. Feed restriction, however, has reduced some of the negative effects that are thought to be genetically related. Implementing various feeding programs may have positive or negative effects depending on an operation's management system, Wilson noted.

Influences of feathering

Low dietary protein levels may affect feathering. Micronutrients because of differences in feed intake also have a negative effect on feathering, therefore, uniformity of feeding is important. Uniformity is especially important in early development because that's when the most important set of feathers are made, Wilson suggested. "There are lots of variation in the studies out there regarding low protein diets," she said.

Recent studies with broiler breeders indicated that low protein levels in pullet diets can cause poor feather cover, however, it does not always cause feathering issues. Other studies show that high energy diets in laying caused poorer feather cover when compared to standard energy diets. Hens got less feed volume, took less time to eat and spent more time sitting, Wilson explained.

Poor ingredient quality may also add to feathering issues, she added. Not only do poor feed ingredients lead to problems with picking

but it can also have a negative impact on the quality of feathers causing them to be brittle and break.

Crowding of a facility, low brooding temps and shifts in temperature can all influence feathering as well.

Managing uniformity

“We have to have a more uniform flock to maintain laying,” said Wilson. Uniformity is making sure all pullets have the same availability to feed. “We can’t change what houses look like due to expense so we have to dictate feed availability,” she said. Poor uniformity results in poor production, she added.

Chickens are creatures of habit, she explained. To maintain the hormonal balance in laying birds, producers need to make sure they do not create an excessive anticipation of feed.

Today we are seeing some negative effects of feed restriction and feed restriction programs that were not obvious 10 years ago, explained Wilson.

“In general, poor flock uniformity results in lower egg production,” said Wilson. If producers over feed the birds then they must pull back on feed allowance to prevent laying birds from getting too big.

If producers withhold feed from the layers, to decrease weight, they might hurt the overall uniformity of the house. Although some appreciate the way it may look on paper, it doesn’t help with the wellbeing of the birds and their reproduction system.

Consistent timing of feeding the birds also has to do with handling uniformity. Therefore, much of the industry has went to time clocks for employees. When birds get off their routine and become hungry and or bored they often look for something to peck; this leads to more feather licking and cannibalism, Wilson said.

Wilson suggested that increased fiber in Leghorns' diet may reduce the amount of feather licking, pulling and cannibalism seen by management.

Feeding methods

With current diet formulations, every day feeding is stressful. It doesn't give enough feed volume to the birds. In fact, in most every day feeding situations, feed only goes three quarters of the way around the house and the rest of the track is empty, Wilson explained. "I don't think our animal welfare types want to believe it, but feeding every day is actually more stressful for some of the birds," Wilson said.

Skip-a-day feeding is not as stressful on feed day because the birds eat freely. "There is space for everyone to eat," Wilson said. It is stressful on off feed day because there is nothing to eat. However, all the birds experience this rather than the quarter of the house that goes without feed in everyday feeding.

Broadcast on the floor [spin feeding] is somewhat less stressful because it takes them longer to find the feed and eat. "This method has worked well for a lot of folks," Wilson added.

Mash versus crumbles

The consistency of feed may vary in some situations. Mash is consumed at a slower rate than what crumble is. However, crumble feed has positives too as the birds get the full package rather than it being picked over. "Mash is still more common and I don't see any change coming there," Wilson said. Crumble feed is more popular in European countries, she added.

Feed restriction

"There is nothing positive about the stress that birds feel while having their feed restricted," Wilson said. It is important that producers are cautious during restriction because the birds still need to be healthy enough to reproduce. At the

greatest point of restriction, the birds are getting about 20 to 30 percent of what they would eat, she added. “Give me a quarter of what I would normally eat and I wouldn’t be too happy either,” Wilson said.

Feather picking and cannibalism amongst the birds may have to do with hunger, she suggested. Birds have a tremendous appetite and are not satisfied by the volume of feed they are getting –less volume, less feeding time, more difficult to achieve a uniform flock during restriction.

Professionals alongside producers have spent lots of time managing genetic traits to make sure birds gain the way they see fit. They have also selected for traits such as health, fast feed conversion and breast deposition. To keep from having to restrict feed intake, Wilson says professionals and producers should spend more time studying appetite and how to properly manage that variable.

Wilson’s final thoughts

The basics of breeder management are still important; feed restriction and uniformity are hard to achieve together but Wilson explains uniformity is a necessity. By examining feeding methods, we can make some changes that will help production and fertility. Solving the problems related to feathering, pecking and cannibalism is just as important as ever, Wilson said.

10 questions for broiler breeders’ managers to ask about their broiler breeder flocks

If producers cannot blame poor feathering on a single cause and no single impact, then Wilson

posed 10 questions for management to ask themselves to troubleshoot with the feeding issues that lead to poor feathering.

- Flock uniformity, are the low-end birds getting enough, can we improve our bottom 15 to 20 percent?
- Look at nutrients consumed. Is our bottom getting enough protein and micro nutrients?
- Should we add fiber to the diet to increase the volume of feed offered? Would these changes also improve flock uniformity and reduce feather licking/pulling?
- Are their milling issues?
- Is our bird density too high in rearing? Do we have enough feeder space?
- Are we placing too many males in the hen house — 10 to 12 males/100 is too many, stealing more feed from hens and too much competition at male feeder?
- Overmating and excessive feather wear on the hens?
- Do we have slatting of the hens (young and old)?

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