Post-Peak Feeding: Feed Reduction by "Timed Feeding"

Broiler breeders are predisposed to becoming overweight and over fleshed, which can affect persistency of lay and fertility. Additionally, overweight hens tend to lay more floor eggs, because it can be difficult for them to access the nest boxes. Therefore, it is important to monitor weight gain and adjust feed amounts to keep hens on weight targets.

Introduction

Feed amounts for broiler breeders follow a standard pattern of weekly feed increases beginning at placement and continue until peak production. Around peak production*, feed amounts are slowly decreased. It is important to accurately adjust the decreases in feed amounts, because reducing amounts too much or too soon can negatively impact production. Similarly, underestimating feed amount reductions can cause over weight hens.

Determining feed reduction amounts post-peak

A feed cleanup time up to 3 hours for mash feed is considered normal. A flock that consumes the daily ration in less time may not be receiving the nutrients needed and may be hungry. Extended cleanup times of 3.5 to 4.0 hours will result in over weight birds, poor uniformity and excess feed amounts in peak production. Extended cleanup time can also lead to selective eating - birds selecting coarse particles and leaving the fine particles. This will cause a loss of uniformity and performance (egg numbers and female fertility). Furthermore, selective eating can reduce vitamin and mineral intake as these may be part of the fine feed materials.

Hen appetite and feed cleanup time can be good indicators that a feed reduction is needed. However, knowing how much to reduce feed amounts can be difficult. One method to consider to control feed consumption post-peak is "timed feeding". Timed feeding can be used with either chain or pan feeders.

Timed feeding is an option that is meant to prevent extended cleanup times before they begin. Timed feeding is based on the calculated peak feed amount and the amount of time it takes for that feed to be distributed in the house. The reduction in feed amounts after peak are set by the birds appetite. The peak feed amount weighed in the hopper and distribution time do not change. The amount of feed actually available will change due to the rate of consumption, because as the birds' appetite decreases and feed intake slows, less feed will flow into the feeder system within the same amount of time.

Before integrating a timed feeding method into your feeding program, Cobb highly recommends discussing this technique with a member of our Technical Service Team. Timed feeding will require some adjustments specific to each facility and may not be suitable for all house configurations.

***Peak production is the point at which the average percentage of production for the past 5 days begins to decrease.**

Timed feeding step-by-step

Limiting the feeder run time prevents the flock from losing appetite and ensures they receive enough feed to meet nutritional requirements needed to maintain egg production and gain weight at the proper rate. This method allows the flock to indicate how much feed it wants to consume versus guessing how much feed to reduce when feed cleanup time becomes too long.

Step one:

Calculate the peak feed intake volume that will be required based on the energy (kcal) level of the breeder feed.

- Peak energy requirement is 470 kcal/bird/day
- Breeder 1 feed that provides 1320 kcal/lb

Feed intake calculation:
(470 kcal/bird/day ÷ 1320 kcal/lb) X 100 birds = 35.6 lb/100 birds/day.

Step two:

Starting on the first day the peak feed amount is fed, time how long it takes for the weighed amount to enter the house with the feeders running continuously. Repeat this for the first five days that the peak feed amount is fed. Calculate the average time for the 5 days and record it (see table right for example).

Example of Timing to Empty Feed Hopper Recorded for 5 Consecutive Days	
Day	Total time to empty the feed hopper (minutes)
1	45
2	43
3	47
4	50
5	45
Average*	46

****The average time will vary depending on chain speed, feed gate opening, auger speed (pan feed system), and feed form (crumble or mash), so each house should be evaluated separately.***

Step three:

Continue to weigh the peak feed amount each day, but only let the feeders run for the amount of time calculated in step 2. When the feeders stop after the allotted time, read the scale to see how much feed the flock actually consumed and record that amount.

Step four:

Continue weighing the peak feed amount for the life of the flock and using the same distribution time calculated in step one.

If the entire peak feed amount begins to enter the house before the allotted feeder run time, and if body weight gains have not exceeded the expected target, consider increasing the feed weighed in the hopper. Monitor daily egg production and weekly body weight gains. Feeder run time can be adjusted if needed.

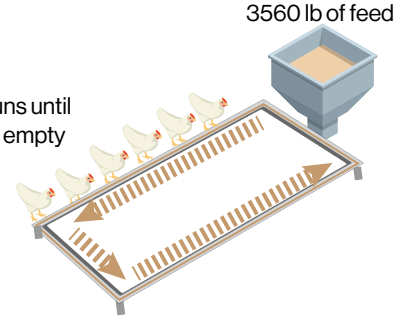
An Example of a Timed Feeding Program

1 Calculate peak feed amount

Peak feed = 35.6 lb / 100 birds / day
House with 10,000 birds
Total feed to be distributed daily = 3560 lb

3560 lb of feed

Feeder runs until hopper is empty

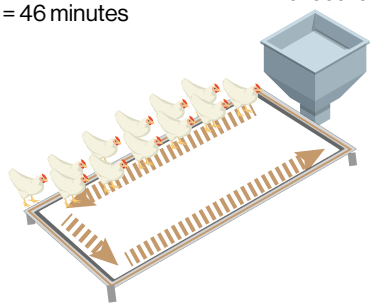


2 Determine distribution time over an average of 5 days.

Day 1 - 45 minutes
Day 2 - 43 minutes
Day 3- 47 minutes
Day 4 - 50 minutes
Day 5 - 45 minutes
Average over 5 days = 46 minutes

No feed left

46 minutes (average) to empty the hopper



3 Continue to weigh out peak feed amount and shut off feeders after 46 minutes.

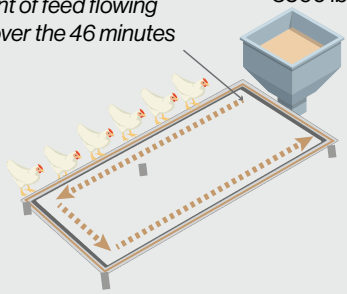
Peak feed = 35.6 lb / 100 birds / day
House with 10,000 birds
Total feed to be distributed daily = 3560 lb

Run feeders for 46 minutes.
Stop feeders after 46 minutes.
Read the scale to see how much feed was actually consumed and record that volume.

When the birds start to reduce feed intake, the amount of feed flowing into the system over the 46 minutes will decrease.

3560 lb of feed

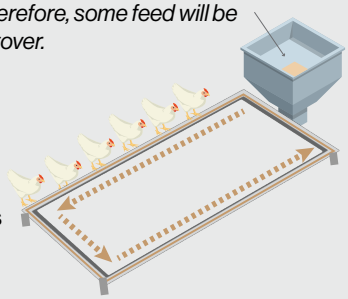
Run feeders for 46 minutes



Therefore, some feed will be leftover.

100 lb of feed remains after 46 minutes.

Stop feeders after 46 minutes



3560 lb weighed in hopper - 100 lb remaining = 3460 lb consumed
3460 lb consumed ÷ 10,000 birds = 34.6 lb / 100 birds / day

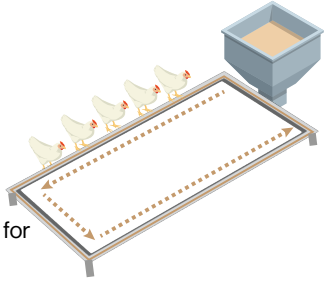
4 Continue weighing the peak feed volume and using the same distribution time.

Peak feed = 35.6 lb / 100 birds / day
House with 10,000 birds
Total feed to be distributed daily = 3560 lb

Run feeders for 46 minutes.
Stop feeders after 46 minutes.
Read the scale to see how much feed was actually consumed and record that volume.

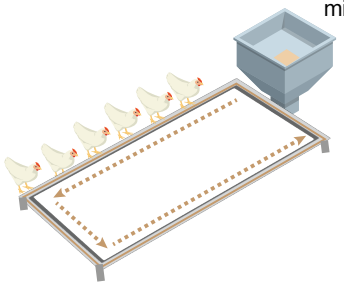
100 lb of feed leftover + 3460 lb of feed added = 3560 lb feed

Run feeders for 46 minutes



125 lb of feed remains after 46 minutes

Stop feeders after 46 minutes



3560 lb weighed in hopper - 125 lb remaining = 3435 lb consumed
3435 lb consumed ÷ 10,000 birds = 34.35 lb / 100 birds / day

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