

Accurate weighing of parent stock females to monitor flock progress

by Pete Sbanotto, Cobb-Vantress.

The proper sampling and accurate weighing of breeder pullets and hens during their life is both important and necessary. Knowing the flock's status on weight and body composition gives the producers and technical service personnel the information necessary to make the proper decisions for long term performance. This information is vital at any stage during rearing and production, as feed management decisions based on incomplete or inaccurate weights could easily cause the flock to become underweight or overweight. Weights which are above or below the recommended standards could compromise the ideal body composition, and in either case could result in a 10-15 egg per hen decrease in life-of-flock hatching egg production.

Rearing

There are techniques for the proper rearing of pullets that should be observed at all times. Although some locations are using the electronic platform scales to collect many weights during the course of every day, there are a few challenges with this method.

First, if the pullets and cockerels are raised together, setting the scale weight limits to exclude the male weights from the female weights becomes at best an art of estimating the break-over point. Platform scales will give a more accurate result if used where the sexes are raised separately.

Also, it has been noted that the total number of weight recordings in a day does not reflect that many different chickens, as some of the birds will stand on the scale multiple times during the day. It is best to move the scale location within the house several times during the life of the flock to get a better sampling of weights.

While the actual bodyweight of the pullet is an easily documented measurement of the flock's progress, primary breeder companies are concentrating on attaining the proper body composition during the time prior to light stimulation of the flock. To know the body composition of birds in the flock, it is necessary for the technician to handle birds often. Birds should be weighed every week



from seven days of age through peak production and the weights recorded, and should always be weighed individually on an off-feed day, or before feeding if the flock is fed daily. Recording individual weights allows the calculation of flock uniformity. Handling of the birds during the weighing process gives the technician an opportunity to make any needed adjustments in a timely manner.

The number of birds to be weighed varies. Basically, weighing pullets in two or three locations in each house or pen is best. It is important that after birds are penned for weighing, weigh every bird in the pen. Do not reject any weights.

A more accurate sampling may be attained by opening up the catch pen and moving away, allowing time for the birds to walk into the pen without driving them.

If the weights of the flock are not following the recommended guideline, an investigation must be made quickly to determine the cause. Possibilities include disease challenges, temperature or air quality issues, not enough feed space for all birds to eat, slow feed delivery times, feed formulation or quality problems, or even feed weigh scales that are not accurate.

There are some certain times during rearing where weights are critical. The first would be at around four weeks, where the technician can decide if the flock has been started properly. The proper weight and protein consumption (grams of crude pro-

tein consumed by each bird) should be calculated at this time, and compared to the recommendations from the primary breeder.

The next critical time is at 15-16 weeks. From this time until light stimulation, consistent and proper weight gains are important. A weight gain of 33-35% in the period between 16 and 20 weeks is needed to flesh the pullets properly and add some fat reserves in order to prepare the birds properly for day length increases. If the weights are above standard at 16 weeks, it is difficult to accomplish the proper fat deposition without the flock becoming overweight.

The tendency is to try to bring the overweight flock back to the recommended standard, and doing this retards the development of the body composition. A female that is put into light stimulation before her body composition tells her that she is prepared for reproduction will not respond to the day length increase by maturing her reproductive tract and developing egg follicles. Instead, she will gain weight and put on fat until she is ready for production, but the stimulation of the large day length increase is already lost.

Production

Research at the University of Georgia, USA, has shown that when the pullets are moved to the production house, feeding should be done daily, as the maturing pullet needs consistent nutrient inputs to mature properly. Again, the flock needs to be weighed at least weekly from housing through peak production.

The weighing of hens is sometimes compromised by the fact that the hen has a certain amount of feed remaining in her system after consuming her daily ration. Accurate weights have been generally considered to be 'empty' weights, in order to get the true weight of the hen without the added complication of guessing how much to adjust the weight because of feed in her system.

Contrary to this belief, recent research at the University of Arkansas shows that hen weights tend to remain constant all through the day at any time beginning at two hours after feed cleanup. This would indicate that

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the technician gathering the flock data does not really need to wait until after mid day to do the weighing, and the results would still be just as accurate.

The weights shown in Fig. 1 were taken by including all birds of the same pen during each weighing so no sample error would enter into the data. These hens were being fed 139g per bird (30.55lb/100) on an every day basis. The weight patterns are typical of any age for hens in production, and are consistent and repeatable over a wide range of hen ages and weights, even including onset of lay. This research concludes that hens can be weighed at any time after two hours post cleanup with no change in the accuracy of

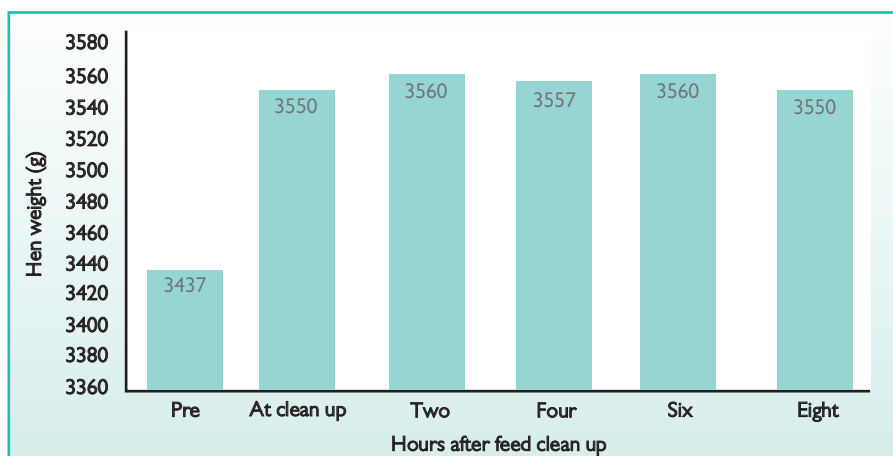


Fig. 1. Results from weights taken at 40 weeks and four days of age.

the hen weights. This could help the technician make more productive use of the complete workday if there are several flocks to be weighed in a day's time.

Hen weights need to be monitored throughout the life of the flock to know if the flock is progressing properly. In the period from onset of lay (normally defined as the week of 3% production) to peak, the flock needs to gain from 18-20% in weight.

If the weight gain is not that much, a determination of the body composition and fat reserves should be made, as this indicates that the hen may not be receiving enough nutrients for production and weight gain, which could affect persistency of lay.

Conversely, too much gain (over 20%) indicates that the hen is receiving more nutrients than she needs and could easily become overweight which also affects persistency. Hen weights are a good tool to monitor the flock status, but other factors are also important in determining the feeding protocol.

For example, if the flock is gaining properly, but the feed consumption time is excessively short or long, it indicates the direction that the flock weight could take in the following couple of weeks. Feed consumption times greater than 3.5-4.0 hours would indicate that the flock could be receiving too much feed, and that the weights would be expected to go up. Conversely, if the feed is cleaned up in less than 1.0-1.5 hours, we would expect the following week's weight gains to be less than expected.

Hens should be weighed at least every two weeks after peak to assure that the feed is being reduced properly. Weighing may need to be done more often in instances where weight gains are not meeting expected standards. Although every flock is a bit different, a common goal is to reduce the peak feed amount by 12-14% over a period of several weeks.

This percentage would need to be modified according to the weight of the flock as it ages. The hens need to be gaining slowly after peak for the best persistency. Constant weight monitoring will allow accurate feed withdrawal. ■