

Broody Control

Nature has provided the turkey with a way to generate offspring by laying a clutch of 10-15 eggs and then ceasing production. The hen will then want to sit on the eggs until they hatch. Through selection the tendency of the modern turkey to sit on eggs has been significantly reduced, however some of that natural urge still exists.

The desire of the hen to incubate her eggs, also known as the "onset of broodiness", is caused by the increased production of the hormone called prolactin. This hormone develops gradually over a period of four to five days right before the end of a clutch of eggs. The broody hen represents a loss of income. Broodiness must be kept at the lowest level possible if the breeder flock is to achieve maximum production.

Therefore, it is critical to recognize the symptoms of broodiness. Hens which are starting to "go broody" show the following symptoms:

- Become harder to move off the nest.
- Lay pattern shifts toward the end of the day.
- Number of hens on the nest at the end of the day increases.
- Oviduct becomes smaller and paler at insemination.
- Production starts to decline.
- Feed consumption starts to decline and the flock becomes less active.
- A tendon forms between the pubic bones pulling the bones closer together.

If any of these symptoms are present, it is critical to identify these hens for broody treatment.

In warmer climates, start looking for potential broody hens no later than 10 days after the onset of production.

In the winter months when the climate is milder, broodiness may not come on quite as fast, but still start looking for potential broody hens no later than 14 days after the onset of production. Please be aware that hens squatting in the dark out house may start production earlier and may need to be identified and put through broody treatment sooner.

An important aspect of broody control is the identification and elimination of factors which encourage broodiness. Table 1 details factors which encourage broodiness and gives some possible ways to reduce their effect and increase egg production.

Identifying Broody Hens

There are many ways to identify broody hens. The "paint and pull" method is a successful method that is simple to implement in most breeder programs and reduces the chances of missing hens because of inexperienced labor.

To use the "paint and pull" method, mix food coloring into a garden sprayer or a plastic spray bottle. Be sure not to dilute the solution too much because it has to stay on the bird throughout the day.

After the first collection, allow the hens 20 minutes to return to the nests. Then begin spraying the hens. We recommend that a different food coloring be used each day. A color chart should be set up so everyone on the farm knows what color is being used for that day. The next day switch to another color. After the last collection of the day, wait 20 minutes for the hens to get back on the nest. Any hen with the color of that day must be pulled off the nests for broody treatment.

There are many broody programs in the turkey industry. When implementing a broody program, it is crucial that the program is one the farm personnel will carry out on a daily basis. Following are options for broody control.

Table 1. Methods to Encourage Egg Production

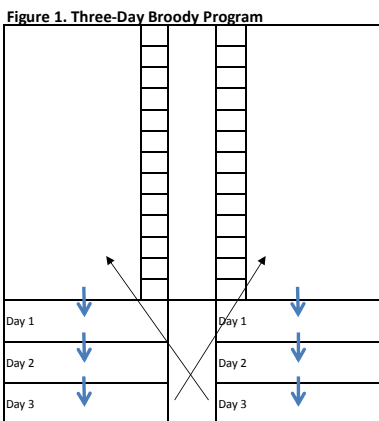
Factor Encouraging Broodiness	Methods to Encourage Egg Production
1. Presence of eggs in the nest over a period of time.	1A) Collect eggs frequently - at least every 45-60 minutes.
2. Hens laying or nesting on floor.	2A) Begin training hens to the nest when they are placed in the lay barn. Nests should be tied in the open position until hens start to lay eggs. Pick up any hens nesting on the floor and place them in the nests or side switch them. 2B) The hens may be having difficulties entering the nest. Improve nest access by ensuring nest gates are working properly, nest ramps are at the right height and not too steep, there is adequate nest litter and there is an adequate nest opening. 2C) There may not be enough nests for the hens. Five hens per nest is recommended. 2D) Eliminate dark areas in the house. 12 foot candles of light spread evenly throughout the house is recommended. 2E) Evaluate areas where floor eggs are found and discourage nesting, e.g. rounding out corners. 2F) Walk the floor frequently to move the hens, and pick up any floor eggs. 2G) Switch sides on potential floor broodies or run them through the broody program.
3. High percentage of eggs laid on the floor at night.	3A) Items 1A, 2A, 2B and 2C above. Open nests earlier or close nests later. 3B) During the dark period, light is entering main the pen from the broody pens or other source. Eliminate light leaks.
4. High number of hens in nests at end of the day	4A) Side switch late layers. 4B) Turn lights on earlier.
5. Hot weather – See <u>Hot Weather Management Bulletin</u> for additional recommendations.	5A) Ensure fans, cool cells, misters, foggers are working properly. 5B) Ensure wind speed of 600 feet per minute. 5C) Consider feeding a high density diet 5D) Flush water lines to keep cool water flowing to the birds 5E) Consider using electrolytes. 5F) Avoid activity in the heat of the day.

Broody Control Options

1. The Three-Day Broody Program

The First Day:

Once the hens are identified pull them off the nest and place them in the first pen (see figure 1). This pen should be made environmentally different by using a litter different from the main pen, for example, sand, dirt or gravel. Make sure the hens have plenty of feed, water and ventilation. Never deprive hens of these necessities because it may cause them to go completely out of production.



Leave the hens in this pen for a full 24 hours before moving them to the second pen. Walk the broody pens during every collection to keep the birds moving. Any hens which squat should be returned to the main pen.

The Second Day:

Move the hens from the first pen to the second pen after last collection of the day and before pulling hens from the nests (see figure 1). The litter in this pen needs to be different from day one pen. This can be achieved by using sawdust or sand on the floor.

Make sure the hens have plenty of feed, water and ventilation. Leave the hens in this pen for a full 24 hours before moving them to the third pen. Walk the broody pens during every collection to keep the birds moving. Any hens which squat should be returned to the main pen.

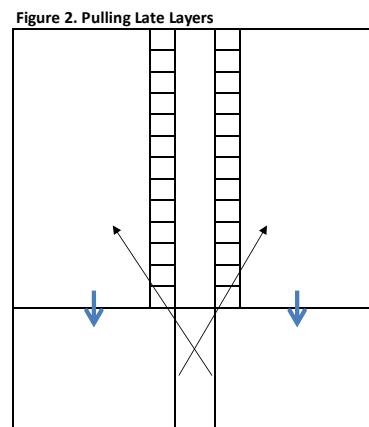
The Third Day:

Move the hens from the second pen to the third pen after last collection of the day (see figure 1). The environment needs to be different from the second pen, for example shavings can be used as litter. Make sure the hens have plenty of feed, water and ventilation. Walk the broody pens during every collection to keep the birds moving. Any hens

which squat can be returned to the main pen.

After the hens have been in this pen for 24 hours and after removing all the squatters, it may be useful to check the remaining birds for the effectiveness of the broody treatment. One way to do this is to evert the hen and observe the oviduct, which should be moist and enlarged. Another way is to measure the distance between the pubic bones. If you can place three fingers between the bones, the bird is ready to return to the main pen. If the hen does not break, she can be put through the broody cycle again or removed from flock.

2. Pulling Late Layers. After the last collection, any hens that return to the nest within 20 minutes should be moved to the broody pen (see figure 2). The next day check the broody pens at every collection. Any hens that squat should be returned to their original pen. At the end of the day, hens that are still in the broody pen should be moved to the pen opposite their original pen or run through a Three Day Broody Program.



3. Phase Lighting. Another option, called phase lighting, involves increasing the photo period by four hours **for one day**. The best use of phase lighting is as a supplement to the regular broody control program and can be used on an insemination day.

For example, if you inseminate on Monday morning and if the lights normally come on at 4:00 a.m., set the time clock so that the lights come on at midnight. This is four hours of increased light. Phase lighting tends to do two things: 1) It helps keep production at a high point, and 2) It tends to shift the birds from laying later in the afternoon to earlier in the morning.

Phase lighting can be used in conjunction with any other broody control program that you are presently using. **(Do not forget to return the time clocks to their regular time the next day after the phase lighting).**

4. 24 Hours Of Light In The Broody Pen. In this option the broody hens are kept in the broody pen for only 24 hours during which time they are exposed to 24 hours of light. (Do not expose the hens to 24 hours of light for more than one day. Long term exposure to constant light can cause serious production problems.)

Floor Broodies

Broody hens can be found not only in the nest but also in the main pen. Because these hens make their nests on the floor, they are called floor broodies. The best cure for floor broodies is prevention. When the hens are moved to the lay barn, begin training them to the nests. Often, using a nest litter different from the floor litter and tying the nest gates open will aid in enticing the hens to the nest.

In addition, walk the floor area, and if any hens appear to be nesting on the floor, move them around or put them in the nests. Once egg production begins, walk the floor removing floor eggs and moving the hens at each egg gathering. Brightening up the floor area, removing dark areas and rounding out corners or blocking the hen's access to corners will also help in reducing floor broodies.



Occasionally floor broodies will occur in large numbers. In this situation they should be identified by spraying them with food coloring. When the hens are inseminated, they can be pulled out and pen switched or put into the broody program.

Additional Considerations

Frequent collection of the eggs will also reduce broodiness. The eggs should be collected every 45-60 minutes to prevent the hen from sitting on the nest for long periods. When collecting eggs, all the hens should be pushed at least 3 feet (1 meter) away from the nest. This will deter the potential broody hen from returning quickly to the nest and give another hen the opportunity to enter the nest and lay her egg.

The egg gatherer can have a large impact on broodiness. It is up to the egg gatherer to identify potential broodies as

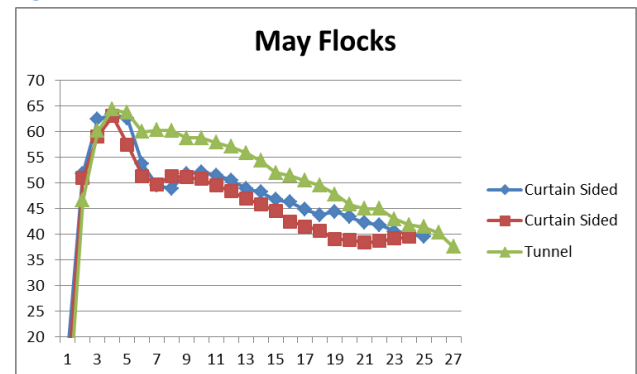
well as factors that may encourage broodiness and take corrective action before a problem occurs.

Broodiness and Hot Weather

Broody problems tend to be more severe in warmer climates. Thus, the broody program that works best in one area might not be the best in another area. Anticipation and proper preparation will most certainly provide improved results. No one system seems to universally work for everyone. "Trial and success" seem to be the only way for each farm or company to determine which program or system works best.

Broodiness should not be confused with heat stress. Hens that are heat stressed tend to peak well then go out of production. Figure 3 shows production from three sister flocks. They were raised on the same brood/grow farm then split on to three different lay farms. One farm was a tunnel ventilated cool celled farm and the other two farms had curtain sided barns with hanging fans and foggers. In 24 weeks of lay the tunnel ventilated farm produced 86.4 eggs per hen compared to 76.3 and 80.3 on the curtain sided farms.

Figure 3



All flocks are different and all production systems vary. It is up to management to determine what broody program works best for their situation. At Aviagen Turkeys, we are dedicated to working with our customers to design a broody control program that works best for them and allows them to produce the least cost egg