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Molting Small-scale Commercial Egg Flocks in Kentucky

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Introduction

Molting is a common event in the annual life cycle of most avian species. Each year chickens lose feathers and grow new ones, and this occurs in both wild and domestic birds. During molt, laying hens go out of egg production and feathers are replaced. Molting, regardless of what stimulates it, is more than just the replacement of the plumage. Hormonal and physiological changes occur as well.

When molting, feathers are typically lost in a particular order: head, neck, chest, body, wings, then tail. The feathers can all be lost at once, so the birds appear almost bald in places. Others may lose feathers gradually so that you may not even notice a feather loss at all. Chickens from commercial strains are bred to molt and re-grow feathers quickly. They can be through a molt in four to six weeks. The heritage-type chickens, however, may molt over a longer period of time. Sometimes the molt can take up to three to four months.

Molting of commercial layers serves not only to renew feathers, but it is also a physiological recovery period for the hens. Commercially, laying hens are molted at the end of one laying cycle to stop egg production and rejuvenate the reproductive tract and skeleton in preparation for a second egg production cycle. The goals of a successful molting program include a 20 to 25% loss in body weight; a stop in egg production; rejuvenation of the reproductive tract back to a pullet stage; and a quick return of hens into egg production.

Inducing a Flock Molt

Molting can be induced by a reduction in lighting and reduced nutrient supply. A molt can be induced by reducing the number of hours of light, preferably to eight hours per day. This light duration probably cannot be done with small flocks that are exposed to natural day length. Therefore, the change will be to maximum day length for the molt period, which will compensate for the natural increase in light during the spring and summer months. It is recommended, but not essential, that the hens be conditioned prior to the molt to assist in stopping egg production. This is done by having the lights on constantly for a week before molting. By increasing to 24 hours of light per day, the maximum decrease in day length when the lights are reduced to eight hours of light per day is achieved. Hens should be kept in the reduced number of hours of light until they have lost 20 to 25% body weight and have stopped egg production for around three weeks. This process typically takes about four to five weeks.

The season of the year when a flock is induced to molt will affect body weight loss and increase or decrease the time hens

are fed a molt diet. In the summer months, it will take a longer time for the hens to lose 20 to 25% body weight. Conversely, in the winter time it will take less time for the hens to lose the same percentage of body weight. Therefore, it is important to monitor body weight loss when inducing a flock to molt.

After the molt is completed, the hens can be stimulated to come back into egg production by increasing the number of hours of light to ten. Every week after that the number of hours of light is increased by half an hour until sixteen hours per day is achieved.

Another method for inducing a molt includes feeding a balanced, low energy, high fiber feed. It is best if the diet is low in salt. The feed should be provided all the time. Drinking water should also be constantly available as well. It is important that the diet be balanced in protein and minerals. The calcium and available phosphorus should be provided in a 2:1 ratio so that the skeleton can be replenished after the molt. Calcium content of the diet should be 1.0%. This will be adequate for skeletal development without being high enough to trigger development of the reproductive tract. Protein needs to be sufficient to allow for the rebuilding of muscle. Later, the protein will be needed for the reproductive tract to be restored. The essential amino acids are required for normal metabolic functions of the hen.

One method developed by Texas A&M University involves a mix of alfalfa meal and a layer ration. Their recommended mix is 80% alfalfa meal and 20% layer feed. The University of Illinois looked at the use of soy hulls and wheat middlings as shown in the diets in Table 1. A sample light and feeding schedule is shown in Table 2.

Table 1. Molt diets developed by the University of Illinois

Ingredient	Soy hulls (%)	Wheat middlings (%)
Corn	47.15	47.10
Soy hulls	47.15	--
Wheat middlings	--	47.05
Dicalcium phosphate	1.00	0.38
Limestone	4.10	4.87
Salt	0.30	0.30
Mineral premix	0.15	0.15
Vitamin premix	0.15	0.15
TOTAL	100	100

Table 2. Sample schedule for molting

Time	Light (hours/day)	Feed
-1 Week	24	Layer
Weeks 1-4	8	Molt
Week 5	10	Layer
Week 6	10½	Layer
Week 7	11	Layer
Week 8	12½	Layer
Week 9	13	Layer
Week 10	13½	Layer
Week 11	14	Layer
Week 12	14½	Layer
Week 13	15	Layer
Week 14	15½	Layer
Week 15	16	Layer

If you are using natural lighting, the hours of light in the post-molt stage will depend on the time of year and location. *Refer to University of Kentucky Cooperative Extension publication Raising Replacement Pullets for Small-scale Egg-production Enterprises* (ASC-232) for instructions on developing a post-molt lighting program.

Dealing with an Unexpected Flock Molt

A decrease in the number of hours of light is often the trigger for a molt. An unexpected molt could be due to defective timers or poor time clock management; however, physical stress, inadequate nutrition, dehydration, and extreme heat can also trigger a molt. If a molt occurs mid-cycle, you can prevent or reverse the reduction in egg production by increasing the amount of light per day as well as the protein content of the diet.

Refer to University of Kentucky Cooperative Extension publication *Why Have My Hens Stopped Laying?* (ASC-192) for more information on dealing with a flock of hens that have reduced or ceased egg production.

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