June 21 is Important Date for Chicken Egg Production

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Most everybody knows that June 21 is the longest day of the year. In Kansas, this means we have sun for 14 hours and 55 minutes on that day. Exposure to light stimulates a hen to lay eggs, and the length of the day determines when they begin laying and when they stop. Longer days in the spring induces egg production while shorter days in the fall prompts hens to go into a rest period.

We get many calls from people who notice that egg production has dropped. This is good to note because production is often a leading indicator of flock health. However, if this happens in the fall, this could be due to slowing of the natural egg cycle of hens if you are not using artificial light in your hen house and the days are getting shorter. Because a small light bulb is enough to stimulate egg production in hens, flock owners can choose to extend the egg season through winter by simply adding light to the henhouse to keep the “day” longer. It is an easy process, but beware that understanding how light affects the egg cycle may be a bit confusing.

If you have a mature laying hen, when the days start getting longer in spring, light stimulates a little gland called the pineal gland near the midbrain that secretes hormones to start the egg laying process, and this requires around 13 hours of light per day. So long as the day length increases, the gland keeps getting “reset” to the longer photoperiod. This reset time is important to remember when using light to manage egg production.

On June 21, the photoperiod is longest, and this resets the hen to the longest day of the year at 14 hours and 55 minutes in our state. However, we need to add a little more because there is something called “civil twilight” which is the time before and after sunrise or sunset when it is still bright enough to do basic tasks outdoors. This amount of light may also help set the gland or egg clock on a chicken. Most Kansas poultry keepers “round up” to 16 hours of light per day to keep laying hens in production.

After June 21, without using lights, the days start getting a bit shorter each day, until at some point, there is not enough light to stimulate the hen to keep laying. In Kansas, this starts happening about when the Kansas State Fair is held in early September. At this time, you might see egg production begin to drop and some birds begin shedding feathers as they begin to molt. Hens do not lay while molting.

The decrease in light does not result in an instant drop in egg production, but is influenced by breed, condition, age, etc. If you purchased chicks late in the spring and you have young pullets, they may have matured as the day length has decreased, and you will probably get eggs in the fall from these birds. In fact, if you have new pullets, it is recommended that you light stimulate the pullets and get eggs all through winter.

If you want to have eggs during winter, then you will need light to stimulate the birds for 16 hours a day. Many flock owners use 16 hours of total light per day as the maximum number of hours of light to keep hens in egg production, so it is easy to remember. You do not need to keep a light on all day, but you need to have artificial light added to the day so that the total of natural plus artificial light is 16 hours. You can use a light timer, and a 40-watt LED bulb in the hen house or roosting area and this should stimulate the birds to lay.

The strategy to manage hens you just purchased as chicks or pullets in the spring is to light them for 16 hours after June 21, keep them going full speed all through winter and spring, then pull the plug on your bulb on June 21 the following year. This means that those birds have been laying a good, strong first cycle, and after June 21 the gland will begin to register less light each day until they molt and rest in the fall. A rest period into late October/November is good for them to

replenish calcium for eggs and build new feathers. The period of rest varies by breed but somewhere around 8 weeks would probably work for most home flocks. If you want eggs for the holidays, then you need to start your lights again after the rest. If you don't start lights, most breeds of chickens will not start laying again until early spring.

One caution on setting your lighting times is the presence of stray light. Stray light could affect the stimulation of your birds for egg production. If this light sneaks in all night long, it could even reset the clock on your hens to 24 hours! Two major sources of stray light are barn and yard lights and light that comes from bulbs or heaters intended to keep birds warm in winter. First, mature birds in good health and feather cover, with a place where they can stay dry and out of the wind, do not need the heat from a light bulb in the hen house in Kansas. Dealing with the stray light from a barn light is more difficult, especially with the new LED style lights that can spread bright light over a wide area. You will need either to move your hens, put the barn light on a timer, or substantially shield the light away from your birds.

Do not forget to check on your timers occasionally. Power outages and daylight changes could affect your 16- hour cycle. There is one type of timer that reads the natural light, then adjusts the start time as needed while keeping the dark period steady. This saves energy costs and requires less monitoring.

Using light to manage your birds is a great strategy to get more eggs during the year. Keeping a well-managed egg production cycle is also useful for maintaining egg quality. Time for rest in the fall allows your birds to molt and have new feathers before winter arrives, while also building up calcium supply for thicker eggshells in the next cycle.

For more information, please contact the local K-State Research and Extension Office.