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Poultry Manure as a Fertilizer

Animal manures have been used for many centuries as a natural crop fertilizer. Poultry manure has a relatively high nitrogen content when compared to other manures. Manures also help to supply other essential plant nutrients and they can add organic matter to the soil to which they are applied.

The most common method to determine the amount of manure to add to a particular area of land is to consider the amount of plant nutrients that are in the manure and apply based on the nitrogen needs of the plants in the soil. Broiler house litter typically has a N-P-K ratio of 3-3-2, meaning that 3% of the material applied will be nitrogen, 3% will be phosphorus and 2% will be potassium. Layer manure that has no litter will be

approximately 1% N, 1% P and 0.5% K.

It is also important to remember that not all nitrogen in the manure will be in the same form. Some of the nitrogen will be in the form of ammonium. This ammonium is volatile and you will lose some of it to the atmosphere.

Finally, remember that all fresh manures potentially contain bacteria that may be pathogenic. Make sure to compost manure that will be applied to vegetables or other edible products.

For additional information please see the EDIS publication [here](#).

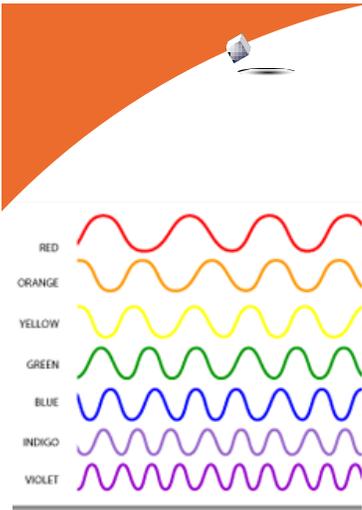


Egg Size & Grade



In the United States and other countries, table eggs are marketed to the consumer according to their size and grade. Many people automatically link these two factors when talking about eggs, such as “Grade A Large”, but they are different and one characteristic does not determine the other. Most eggs that are purchased in grocery stores are marked with a seal from the USDA. This means that the eggs were graded using the USDA Standards for Grading. All eggs that are sold at retail must be Grade B or higher, but it is doubtful that you will find many Grade B eggs at your grocer. Along with the grade, eggs are packaged based on size, or weight per dozen. There are six sizes of eggs that you may be able to find. These sizes and their weight per dozen are in the table. For additional information on eggs grading, please click [here](#) and [here](#).

Egg Size	Oz. per Doz.
Jumbo	30
Extra Large	27
Large	24
Medium	21
Small	18
Peewee	15



Representation of the differences in wavelength of visible light. Wavelength decreases from red to violet. Note that wavelengths are not to scale. For more information, click [here](#).

There are more than 25 billion chickens on planet Earth. That's around 3 chickens for every human and more than any other bird species.

Incandescent Bulb Wattage	Equivalent Lumens
40	450
60	800
75	1,100
100	1,600
150	2,600

Brightness is measured in lumens, although older incandescent bulbs were typically referred to by wattage. The table above give the equivalent lumens for comparison to wattage. For more information, click [here](#).

Molting in Chickens

Have you noticed some of your chickens losing feathers during the last couple of months? Have your hens also decreased their egg production or stopped laying entirely? If so, your chickens are most likely going through a molt.

Molting in chickens is defined as the shedding or loss of old feathers to make way for new growth. Molting is normal in chickens and other birds and can occur in both males and females. Wild birds will typically shed older feathers before the cold weather season or before migration. This seasonal molting in wild birds is not associated with reproduction or egg laying.

The domesticated chickens that we have today have been bred over time to produce more eggs than their wild counterparts. Because of this, there is a link between egg production and molting in domesticated chickens.

Hens that are kept on a natural daylength cycle (no additional light beyond natural sunlight) will typically molt after they have been in production for 8 to 12 months. It can take up to 4 months for the molting cycle to be complete and you may notice a decrease in egg production during this time.

Molting is controlled by the reproductive organs (ovaries or testes) and the thyroid gland. In hens, a decrease in estrogen will be the main cause of a molt. It is because

this decrease in estrogen also affects the reproductive system as a whole that we see a decrease in egg production during the molt.

Even though the molt is controlled by gonadal and thyroid hormone production, it is usually an external factor that initiates the decrease in estrogen, thus resulting in the molt. This initiator is decreasing day length, which is discussed in a separate article. There are also other factors that can lead to a premature or partial molt including such stressors as feed and water shortages, disease or cold temperatures.

Molting is frequently used in commercial egg production. As hens age, their egg quality and production rate will decrease. Molting is used as a 'reset' for these hens. The process allows the hens reproductive system to rest and recuperate from high production levels. Hens that have been through a molt will most likely not lay at the same rate as their highest production, but they will produce at 85% to 90% of their highest production rate.

Remember that molting is a natural process that is usually brought on by decreasing day length. Not all hens will respond to decreasing day length with a molt, but many will. If you have additional questions about chickens and molting, please click [here](#).

Ask the Expert

This month's question relates to egg production: **Do I need a rooster with my hens for them to lay eggs?**

The short answer to this question is: No. Roosters are not necessary for the hen to lay eggs. Once she reaches sexual maturity, she will begin the process whether or not there is a rooster present. The catch to this question is, do you want to be able to hatch out your own chicks from your flock? If the answer to this question is yes, then you will need a rooster with the hens to fertilize the eggs. One rooster is enough for every 4 to 8 hens that you have.

If you have a question for the expert, email it to baker@ifas.ufl.edu.



Lighting Programs for Your Egg Producing Flock

One of the most important aspects for laying flock production is light. Poultry, including chickens, respond to light for many factors including growth and reproductive performance. Like most other animals, chickens can sense light through their eyes, but they also have cells in their brain called extra-retinal photoreceptors that respond to light.

Reproduction in avian species, including chickens, is stimulated by increasing day length. Most hens require a 'day length', or light period, of 14 hours to stimulate and stay in production. This cycle is needed as wild birds need to lay eggs, hatch the young and rear them to a certain age before cool weather and migration begins. Owners of domesticated laying hens can manipulate this natural process so that hens will lay eggs year-round instead of just in the spring and summer months.

Light is part of the electromagnetic spectrum, which also includes other waves such as radio waves, x-rays, microwaves and gamma rays. All parts of the electromagnetic spectrum can be categorized according to three different attributes: 1) wavelength, 2) intensity and 3) duration. This article will discuss these attributes as they relate to poultry.

The wavelength of light is often referred to as the color of light. Shorter wavelengths of light are in the blue and violet range, while longer wavelengths are in the orange and red range. Studies have indicated that, in general, blue light tends to calm birds, orange-red light tends to stimulate reproduction and blue-green light tends to stimulate growth.

One way that light bulbs are rated is their chromaticity. This is the warmth or coolness of the light emitted by the bulb and it is expressed in degrees Kelvin. Cool lights (those with mostly blue light) have a chromaticity of 4000K and higher, while warm lights (those with mostly red light) are rated at 3000K or lower. Chromaticity is expressed as the color temperature for incandescent bulbs and correlated color temperature for other bulbs.

Intensity is another light characteristic to consider if you are lighting your laying flock. There needs to be enough light to stimulate the receptors in the eye and the brain. However, light that is too intense can cause cannibalism, flightiness and stress. In general, one bulb that is 800 to 1000 lumens (60-watt equivalent) is sufficient for each 100 to 200 ft² of floor space in the coop. You will want to place the light so that it casts as few shadows as possible or use multiple lights, if necessary. Dust and other debris can also decrease the intensity of the light, so make sure that the bulbs stay as clean as possible. Finally, remember that if you are using compact fluorescent lights, they will require some time to warm up to their full intensity and may not achieve full intensity in extremely cold temperatures.

The final property of light to think about is duration. As stated previously, hens will need a perceived day length of at least 14 hours to simulate the reproductive cycle. Using a timer on your lights to add the extra time needed from natural daylight is an easy way to get the hens the light that they need. Many people add the extra light in the mornings as turning off the lights suddenly after dark can stress the hens. If you are introducing new pullets into the operation, it is not advisable to put them on a lighting schedule until they are around 16 weeks of age or weigh two (2) pounds. It is recommended to gradually increase the light period up to the required time and not introduce all of the light at once. Birds on lighting programs will typically need additional light 6 to 7 months out of the year, though the duration of the extra light will vary. Should you wish to place your flick on a lighting program, please consult with someone that is knowledgeable in the practices so that you do not cause problems in the flock.

It is important to understand the reasoning behind a lighting program for your flock. It is also important to consider the properties of light that will affect your flock: wavelength, intensity and duration. For additional information, click [here](#).



The incandescent light bulb has been used for many years as a light source. Although not expressly invented by Thomas Edison, the light bulb was further advanced by his research. For additional information, click [here](#).

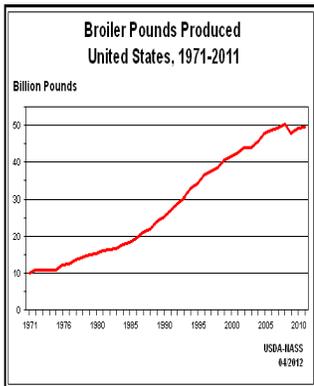
There are 4 cities in the United States with "chicken" in their name:
 Chicken, AK
 Chicken Bristle, IL,
 Chicken Bristle, KY
 and
 Chicken Town, PA



The compact fluorescent bulb has become the new standard of light bulbs as incandescent bulbs are phased out. Compact fluorescent bulbs use 1/5 to 1/3 of the power of a comparable incandescent and last eight to fifteen times longer. For more information, please click [here](#).

Many Factors Could Affect Flock Egg Production

Most hens will begin laying eggs when they are between 18 to 22 weeks of age. They will typically lay for 9 to 12 months before ceasing production and going through a molt. Peak production in hens occurs around 30 weeks of age but gradually declines over the course of the laying cycle. Sudden drops in egg production can cause alarm for the grower and can be attributed to many differing causes. The list below outlines some of the causes for a sudden decrease in production.



Increase in the pounds of broiler meat produced in the United States over the past 40 years. For more information on the commercial US poultry industry, please click [here](#) and [here](#).

In Gainesville, GA,
it is against the
law (city
ordinance) to eat
fried chicken with
anything other
than your fingers,
including a fork.
For more
information click
[here](#).

- **Aging Hens or Molt**—Hens will decrease in production over time. They will resume egg production after a molt, but will never reach their peak production. Molting (see page 2) in a flock will cause a sudden drop in egg production.
- **Improper Nutrition**—Laying hens require a completely balanced ration for maximum egg production. Imbalancing the ration with scratch, table scraps or other items may cause drops in production. Incorrect levels of salt, calcium, vitamin D, protein and fat in the diet can also cause issues with laying efficiency.
- **Toxicosis**—A toxicosis refers to a toxic level of some molecule within the animal. There are many ingredients in a bird's diet that can cause a toxicosis if they are fed in excessive levels. If you are feeding a balanced ration, this should not be a problem. Other toxins that can cause problems with egg production include mycotoxins (toxins from molds), botulism toxin and plant toxins such as those from crotonalaria, nightshade and ornamentals.
- **Management Issues**—Birds that run out of water or feed for more than a few hours will most likely see a drop in production. Make sure to always have a good supply of each for your birds. In the warmer months, extremely high temperatures can cause problems with egg production. Adequate water and ventilation are essential during these times.
- **Short Daylength**—Most hens will need at least 14 hours of light each day to sustain egg production (see page 3). Many flocks will decrease or even stop production during the cooler months of the year due to short daylength.
- **External Parasites**—A large infestation of external parasites can cause a drop in egg production. Common external parasites include: Northern Fowl Mite, Lice, and Fleas.
- **Internal Parasites**—Internal parasites can also cause a drop in egg production. Roundworms (nematodes) and tapeworms are two of the most common internal parasites.
- **Disease**—Most diseases will cause a drop in egg production. Keep an eye on your flock for potential signs of disease and consult with your veterinarian or poultry professional.
- **Others**—Additional problems that may cause an apparent drop in egg production include: 1) predation of eggs by snakes and other animals, 2) egg eating by hens in the flock, and 3) egg hiding by hens.

University of Florida | Institute of Food and Agricultural Sciences Baker County Extension Service

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Hours: M—F 8:30am to 5:00pm (Closed Noon to 1:00pm for Lunch)

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