

# Department of Animal Science

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## RAISING YOUR OWN BACKYARD CHICKENS IN TENNESSEE

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*Tom Tabler, Department of Animal Science; Jorge Urrutia, Department of Poultry Science, Mississippi State University; Yi Liang, Departments of Biological and Agricultural Engineering/Poultry Science, University of Arkansas; Pramir Maharjan, Tennessee State University Department of Agricultural and Environmental Sciences; Shawn Hawkins, Department of Biosystems Engineering and Soil Science; and Jonathan Moon, Department of Poultry Science, Mississippi State University*

Long before COVID-19, many families found maintaining a small flock of backyard chickens to be a rewarding and enjoyable experience. With the ongoing pandemic, many additional folks, both urban and rural, have recently ventured into the world of backyard chickens. A home chicken flock can be a valuable experience for both adults and children. It teaches responsibility and caring for other living creatures. The home flock can also be a source of fresh, high-quality poultry products. However, a backyard poultry flock requires an investment of time, labor and expense. It also requires sound animal management and care, an effective biosecurity plan to prevent diseases (particularly considering the ongoing avian influenza situation) and a well-designed feeding program for optimum flock performance. Let's look at some of the basics.

### Where to begin

Raising your own backyard chickens may seem like a good idea but be aware that there are bumps in the road. It is likely less expensive to buy meat and eggs from the store than to produce it yourself at home. And there's work to be done (lots of it) before chickens ever show up in your backyard. However, Extension is here to help you if you are committed to taking the plunge. Always start with the end in mind. What is your end goal—fresh eggs, meat, pets, teaching your children to care for animals, 4-H or FFA projects, showing your birds or simply enjoying the various personalities your chickens will display? Whatever the goal, don't call up the mail-order hatchery tomorrow and order chicks.

Start planning months before the first chicken arrives. Check local city/county/state ordinances to make sure regulations do not prohibit poultry flocks in your area. You don't want to spend money on housing, fencing and chickens and learn later that you can't have chickens. If you can have chickens, inquire about the limit on numbers and whether roosters are allowed. Some locations allow hens but no roosters. Roosters crow, which often causes municipalities to ban roosters. If chickens are legal, consider the importance of good neighbor relations. Visit your neighbors and let them know you are considering chickens so that they aren't blindsided when your chickens arrive.

Decide how many chickens you will have and then consider housing and pen space. Be flexible because you may want to increase your flock size later. Chickens will need food, water, protection, and care 24/7/365, including weekends, holidays, vacations, etc. It's best to pen the flock instead of letting chickens run free. This will keep them at home where they can't bother the neighbors, lessen the disease threat, and protect them from predators. Critters such as coyotes, skunks, opossums, snakes, hawks, owls, dogs and cats like chicken dinners just as much as we do; and many of these predators are just as common in urban areas as they are in the country. Understand that chickens come with expenses. The chickens, housing and feed all cost money, especially the feed, which is roughly 70 percent of the cost of maintaining chickens. Also, if you start with baby chicks, you will have 6 months of time and expense invested in the flock before the hens are old enough to lay eggs. Still, chickens are less expensive than other farm critters and benefit from the fact that they are:

- Small (compared to cattle, hogs or horses)
- Relatively inexpensive
- Easy to acquire
- Don't require a lot of land

## Selecting a breed

There are more than 400 varieties of chickens so decide what best suits your wishes. Again, start with an end goal in mind. Are you interested in:

- Breed preservation
- Dual-purpose chickens
- Egg production
- Meat production
- Developing a new breed

Where you want to get to will guide you on your path. Take the climate into consideration. American breeds do better in cooler climates. Mediterranean breeds do better in warmer climates. Birds with large combs do better in hot areas (large combs may freeze in cold areas), birds with small combs perform better in colder regions. Tables 1 and 2 list popular dual-purpose and egg-laying breeds.

Table 1. Common dual-purpose chicken breeds.

<b>Breed</b>	<b>Egg production</b>	<b>Egg size</b>	<b>Egg color</b>	<b>Disposition</b>	<b>Foraging ability</b>
Rhode Island Red	good	large	brown	calm	fair
Dominique	fair	medium	brown	calm	good
Orpington	fair	large	brown	calm	poor-fair
Plymouth Rock	fair	large	brown	calm	fair
Delaware	fair	large	brown	calm	good
Wyandotte	fair	large	brown	calm	fair
Brahma	fair	large	brown	calm	good

Table 2. Common egg-laying chicken breeds.

Breed	Egg production	Egg size	Egg color	Disposition	Foraging ability	Broody
Leghorn	excellent	large	white	Very flighty	good	no
Sex-link	excellent	large	brown	calm	poor	no
Australorp	excellent	large	brown	calm	poor	yes
Minorca	excellent	x-large	white	flighty	good	no
Ameraucana	good	large	blue-green	calm	good	yes
Fayoumi	good	small	tinted white	very flighty	excellent	somewhat
Hamburg	good	small	white	very flighty	good	no
Ancona	good	large	white	flighty	good	no
Maran	good	large	dark brown	flighty	poor	yes

## Housing

Chickens need protection from weather, predators, injury and theft. Keeping chickens confined with fencing and a covered run is the best protection from predators (Tabler et al., 2013). Bury the fencing wire and turn it outward for 10-12 inches under the surface to prevent predators from digging under and reaching the birds. Fencing wire must have small enough holes to prevent chicks from crawling out and predators from crawling in. Carefully select the site to house your poultry. How close will the poultry housing be to your house? The closer the better if predators attack. The housing and pen should be on high ground to assist drainage and keep the chickens out of the mud during wet weather. Will you have electricity and running water to the chicken housing? Chickens should have access to dry, draft-free housing that is easy to clean. Housing may be movable or fixed. Minimum space requirements for various types of poultry are listed in Table 3.

Table 3. Minimum space requirements for various bird types (Clauer, 2009).

Bird type	Square feet per bird (inside)	Square feet per bird (outside)
Bantam chicken	1	4
Large chicken	2	10
Laying hen	1.5	8
Quail	1	4
Duck	3	15
Pheasant	5	25
Goose	6	18

## Getting chicks

Finding chicks when the time comes will likely be the easiest part of getting into the chicken business. Multiple online mail-order hatcheries will ship chicks to you by way of the US Postal Service. This is possible because the egg yolk is a source of energy for up to 3 days for newly hatched chicks. Most hatcheries have a minimum number of chicks that must be purchased. You can mix and match orders, but you should know what breeds you want and how many chicks when you make the order. Some hatcheries may sex chicks (for a fee) if you only want males or

females. Others may only ship straight run chicks (chicks that are not sexed before being sold). If you get your chicks from an online hatchery, make sure the hatchery participates in the National Poultry Improvement Plan (NPIP). This guarantees that your chicks are healthy and disease-free.

Managing a small flock of chickens can be divided into three stages with different management intensities: 1) brooding, 2) growing and 3) egg production/breeding. Brooding will require the most intensive management on your part. It is the time from delivery to 14 days when the chick's most rapid development takes place. Survival depends on how quickly the chicks adjust to their new environment. They need your help to provide proper housing, protection, temperature, ventilation, feed and water. How well you manage FLAWS determines how well chicks adjust. **FLAWS** stands for **F**eed, **L**ights, **A**ir, **W**ater and **S**anitation. Brooding depends on six critical basics:

1. Pre-placement preparation
2. Feed management
3. Light management
4. Ventilation/air quality management
5. Water management
6. Temperature management

The growing stage covers the period from 14 days until the birds are harvested for meat or are sexually mature. At this stage, the birds know how to find feed and water and maintain their own body temperature. Therefore, management is not as intensive in the growing stage. For best performance, do not allow birds to run out of feed. Monitor feeder height because, if too low, birds will waste large amounts of feed. Keep good quality water available at all times. Birds consume twice as much water as feed on a pound for pound basis.

Age at sexual maturity varies by breed. However, most females start to lay eggs between 18 and 22 weeks of age. Lighter-weight breeds tend to mature faster than heavier breeds. Adequate water is a major component of eggs and production will drop if water is restricted or unavailable for long periods during the day. Layer feed will contain additional calcium and phosphorus to keep eggshells hard. Do not feed layer feed to growing birds as it contains too much calcium for hens not in lay. Provide hens with a nest box or someplace to lay their eggs once sexually mature. Sexually mature hens will lay eggs without a rooster. However, the eggs will not be fertile. If you want fertile eggs to hatch baby chicks, you'll need a rooster. A rooster may also help protect the flock from predators.

## Predators

Chickens are prey animals and poultry keepers must do everything possible to protect their birds from predators. Chicks and young birds are most vulnerable and should be restricted to areas that protect them when predators are most active-- late evening, overnight and early morning. If a predator does make it to your flock, it will be a repeat visitor and the problem will only worsen over time. You must remove the predator (not an option with hawks and owls that are federally protected), provide better protection or expect more losses. Table 4 lists common predators and their signs.

Table 4. Common predators of backyard chickens and signs they may leave behind.

Predator	Signs
Cat	Chicks or young birds missing
Dog	Birds usually mauled but not eaten; birds missing
Coyote	Bird missing; sometimes scattered feathers; digging around pens
Fox	Bird missing, with scattered feathers
Mink/Weasel	Dead birds neatly piled; back of head and neck eaten
Hawk	Bird eaten on-site, lots of feathers; birds carried to nearby trees and eaten; feathers under trees
Owl	Head and neck eaten; happens at night; lots of feathers; sometimes bird is missing
Opossum	Whole bird consumed, feathers and all; may leave wings or feet
Rat	Chicks or young birds missing; partially eaten chicks
Skunk	Entrails eaten but not muscles or skin; lingering odor
Raccoon	Breasts and entrails eaten, backs bitten, scattered feathers

## Biosecurity

A strong biosecurity program is a must for all backyard flock owners. Much of biosecurity is common sense. It means doing all you can to prevent an infectious disease from being carried onto your property and taking steps to reduce the likelihood that disease will leave your property (should it occur). Bio means life, and security means protection; therefore, biosecurity means life protection for your flock. Biosecurity is important to prevent the spread of disease, maintain healthy flocks and increase potential production and income from those flocks. There are three key components to biosecurity: 1) isolation, 2) traffic control and 3) sanitation. The two main pathways for disease spread are direct and indirect transmission. Direct transmission is physical contact between infected and healthy birds. Indirect transmission occurs when a disease agent is carried to susceptible birds by:

- Humans
- Feed
- Water
- Environment
- Shared equipment
- Rodents or other vermin
- Pets

There are several disease signs that chickens may display, and many respiratory diseases show similar signs, making an accurate diagnosis difficult without some help. Signs you may notice include:

- Sneezing
- Coughing
- Nasal discharge
- Swollen sinuses
- Watery eyes
- Twisted neck
- Decreased egg production
- Decreased feed and water intake
- Decreased fertility and hatchability
- Misshapen eggs
- Dehydration
- Huddling
- Depression
- Lethargy
- Increased mortality

If you suspect a serious disease such as avian influenza or something other than normal mortality in your flock, contact:

- Your local county Extension agent
- Your local veterinarian
- C. E. Kord Animal Health Diagnostic Laboratory (615-837-5125)
- University of Tennessee or Tennessee State University poultry Extension specialists:
  - University of Tennessee – 931-486-2129
  - Tennessee State University – 615-963-5823
- Tennessee State Veterinarian’s office (615-837-5120)

### Lighting and feeding

Laying hens require adequate light year-round to maintain egg production. Otherwise, hens will stop laying eggs in late fall when the days get shorter. Length of the photoperiod is more important than the intensity of the light. Maximum egg production is usually obtained with 16 hours of light each day. Hens usually lay an egg about every 25 hours. Supplemental light will be required to provide the sixteen hours of light that will keep hens laying throughout the winter.

Some backyard producers mix their own diets. However, it’s easiest to purchase a complete ration from the local feed/farm supply store or co-op. The feed tag on the sack is your guarantee that everything chickens need is in the sack. Place feed in a shallow feed tray that chicks can get in and out of easily, and place chicks on the feed to encourage them to eat. Begin by feeding chicks a “chick starter” feed in a mash or crumble form because baby chicks aren’t big enough to consume pellets. Make sure all birds can eat at the same time. Chickens establish a pecking order, so watch that the dominant birds don’t keep the timid birds from the feed.

Backyard chickens can be a fun, rewarding, educational and enjoyable experience. However, it’s not all fun and games. Your flock will depend on you for its survival and protection, and this will require time and money on your part. Plan out what your long-term goals are and work out the details before you begin, not as you go along. Become familiar with the rules and regulations on backyard chickens in your area and visit with your neighbors or homeowner’s association before bringing chickens home. Extension personnel can help you determine if backyard chickens are a good fit for you and your family. Your local county Extension agent can put you in touch with Extension poultry specialists at the University of Tennessee and Tennessee State University who can help you make informed decisions about backyard chickens.

### References

- Clauer, P. 2009. Small scale poultry housing. Virginia Cooperative Extension, 2902-1092.
- Tabler, T., F. D. Clark, J. Wells, W. Zhai, and H. Yakout. 2013. Managing the backyard flock. Mississippi State University Extension Service Publication 2768.



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