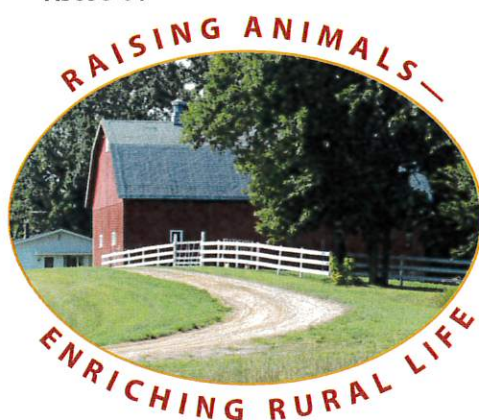




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Guide to Raising Healthy Chickens

Adam Hady and Ron Kean

There was a time in U.S. history when it was common to see poultry being raised on most farms as a source of eggs, meat, and a secondary income. After World War II, the poultry industry began to experience very drastic changes. As production systems became larger and more specialized, poultry products became cheaper and more available to the American consumer.

As operations became bigger and more specialized, the number of poultry-producing farms became fewer and fewer.

There has been a resurgence in home-raised flocks, as small farms look for ways to diversify and take advantage of new marketing opportunities, as well as to engage in a rural lifestyle.



Table 1. Minimum space requirements

Species (age)	Requirements (ft ²)
Layer type (pullets)	1.5
Layer type (adult)	2
Broiler type	2–3

The decision

Are you contemplating raising poultry on a small scale? Whether as a hobby or as a source of food or extra income, the raising of poultry must be carefully considered and planned. Questions to be considered include the following:

- What are your goals?
- Is it necessary that this venture generate income?
- If so, is there a market?
- How long do you intend to be in the business?
- What are the time requirements—hours/day, days/year, and busiest time(s) of the year?
- What are the required investments—initial, maintenance, monthly, and yearly?
- Do you have all necessary facts regarding zoning restrictions/requirements?
- What is unique about undertaking this operation in Wisconsin versus other states?

Housing

As with all animals, appropriate housing must be considered. While housing for poultry need not be new or elaborate, it should provide a clean, dry, adequately ventilated, and draft-free environment. Housing for chicks will require supplemental heat during the brooding period. Housing should also provide adequate space for each bird (table 1). It is essential that special consideration be given during the winter months, as supplemental heat may be needed for adult birds. Litter management is also very important at this time of year. There should be a litter layer at

least 2–3 inches deep to help provide insulation from the cold. Keeping the house and litter dry will reduce cold-related injury and disease. The housing must also offer protection from predators. In most cases, it will be necessary to keep the birds enclosed in some sort of pen. Regular or electric fences may be used, as may small portable pens if they are moved to a new range on a regular basis. You may be able to allow the birds to range freely, but predators are often a problem in the absence of some form of protection.

Equipment

Very little equipment is needed for raising poultry. The basics are a water system and a feeding system. Feeding and watering equipment should be easy to clean and provide adequate space for the number of birds (see table 2). There are many types of feeding systems ranging from a simple open dish to hanging feeders. Watering systems are just as varied with systems ranging from a pan to and an automatic system.

Table 2. Feed and water space requirements in linear inches/bird

Age	Water space (in)	Feeder space (in)
0–4 wks	0.25	1
4–8 wks	0.5	2
8–16 wks	1	3
16+ wks	1	4

Brooding chicks

The heat source is the first piece of equipment to consider when brooding. A heat lamp with a 250-watt bulb will accommodate as many as 50 chicks. There are other commercial brooding set-ups available that utilize a variety of energy sources. You will also need a brooder guard, which is simply a ring that is placed around the chicks to prevent drafts and corners. This is necessary to counteract the chicks' tendency to pile on one another in corners.

Laying hens

Extra equipment that should be taken into consideration for laying hens includes a roost and nest boxes. Typically, 8 inches of roost space per bird is recommended. One nest box or one square foot of nest space should be provided for every four or five birds. There are many types of nest boxes available. In general, nest boxes for standard chickens are 9–14 inches wide, 12–14 inches tall, and 12 inches deep.

Broilers

After the brooding period, equipment required for broilers is very minimal; basic needs are feeding and watering systems. Other equipment concerns will depend on the system in which the birds are being raised. For example, if raising pastured broilers, movable pens will be a consideration. In confinement, fans or a ventilation system will be necessary during the summer months.

Lighting

Lighting is an important aspect in poultry production, and egg production in particular. During the winter months, supplemental lighting will be required in order to keep hens laying eggs; 14–16 hours of light is optimal for egg production. Lighting is also important for young chicks, and 24 hours of light is needed for the first 48 hours. Natural light can be used successfully for growing meat-type birds, although there is some evidence that extended exposure to light leads to extended feeding times and, consequently, an increase in growth rate.

Breed selection

Getting started with any system must include deciding which breed of birds to raise, among the hundreds of breeds and varieties that exist. So, how do you decide? The best way is to first determine which primary purpose you'd like the breed to fulfill. Next, consider each breed of chicken within that category and select a breed that sparks your interest. You'll be more likely to spend time with the chickens and take pleasure in them if you choose a breed that you enjoy.

Chickens may be categorized into four broad types: egg, meat, dual purpose, and Bantam.

Egg-type breeds

Egg-type breeds are usually finer-boned, lighter-weight chickens that excel in egg production. These birds are moderate- to fast-growing and will begin to lay eggs at 20–25 weeks of age. A more refined type of bird, the egg-type lacks the muscle structure to make them a quality table bird. Breed examples include Leghorns, Minorca, and Buttercups. The Leghorns are generally the best producers, and many of the egg-type breeds are now used more for ornamental purposes. There are also several "sex-link" varieties, which are often very good producers of brown-shelled eggs. These varieties are hybrids, and are called sex-links because their coloration varies between males and females.



Meat-type breeds

Meat-type breeds have a heavy structure and grow to become a high-quality table bird. The commercial broiler birds (usually sold as Cornish-Rocks) are extremely efficient and fast growing, providing a hand-somely dressed bird in eight weeks or less. There are also a few pure breeds of chicken considered as meat-type chickens. These breeds are not as efficient at converting feed to gain and take longer to finish out. The Cornish breed is an example, and was used as the foundation stock for most of today's commercial meat-type chickens.



Dual-purpose breeds

As the name implies, these are birds bred to provide both eggs and meat. They are the most common breeds found in backyard flocks in Wisconsin. Slower-growing and somewhat-heavier birds, they tend to be a calmer, hardier bird for Wisconsin's climate. Breed examples include Australorp, Plymouth Rocks, Orpington, and Wyandotte.

Bantams

Bantams are "miniatures" of the larger or standard breeds. These birds have all of the characteristics of their standard counterparts, except that they are roughly one-third the size. Although some may be fairly good layers of small eggs, Bantams are generally kept as ornamental fowl.

Is egg color important? In chickens, egg color is determined by the breed. A general rule of thumb is that if the chicken has a red earlobe it will lay a brown egg, and if it has a white earlobe it will lay a white egg. Some hens also lay eggs with blue or green eggshells. There is no difference in the internal components of the eggs, but some people enjoy having eggs of different colors.

Sources of chickens

There are several possible sources of chickens, and each has positive and negative aspects.

Hatcheries

Many hatcheries sell day-old chicks, which are generally both fairly inexpensive and disease free. Show quality is difficult to judge in day-olds, and most hatcheries will not sell fewer than 25 chicks so that the group is sure to stay warm during shipping.

Breeders

Breeders usually offer high-quality stock, especially if you are planning to show the birds. You can often buy smaller quantities. Good health is less certain than in chicks from hatcheries, but day-old chicks are still usually a safe bet. Plan to pay more for the chicks, because the breeder may have more money invested in a smaller number of chickens.

Swap meets, auctions, and alternative sources

Chickens are typically very inexpensive from these sources. You can often purchase mature birds, so you can see what you are getting. As good health is always more questionable from sources such as these, there is a definite risk involved in purchase.

Feeding

Feeding your birds will be the largest expense you will incur as a poultry owner. Commercial feeds are readily available and usually come in three forms, namely a starter, a grower finisher, and a layer ration. Starter rations are usually about 22% protein and should be fed until the birds are approximately four weeks old. At this point, birds are switched to a grower finisher diet that contains roughly 17–20% protein. For breeding and laying hens, a layer ration is recommended. Layer rations are generally around 16% protein and contain higher levels of calcium. A consideration for layers is access to additional free-choice calcium sources such as oyster shell. Grit may be provided but is not essential with commercial mashes.

If you are planning on developing a home recipe, consult a nutritionist or your local Extension office for guidelines.



Biosecurity & health

Biosecurity involves the prevention of disease outbreaks. The following are a few simple strategies.

- Keep housing and equipment clean and sanitary.
- Keep wild birds, rodents, and so on away from the birds' area.
- Limit the amount of human foot traffic through the birds' area.
- Group birds in separate areas by age.

It is also wise to keep new birds separated from the main flock for one month prior to intermingling.

Regulations

There are many state and local regulations and ordinances governing poultry production in Wisconsin. A first step would be to determine the zoning regulations for your municipality or jurisdiction.

Sale of table eggs

No license is required to sell table eggs directly from the farm (the consumer comes to your farm to buy the eggs). These eggs can be sold only to the consumer of the eggs. To sell table eggs wholesale or at farmers' markets, contact the Department of Agriculture Trade and Consumer Protection (DATCP) Food Safety division at 608-224-4700.

Sale of broilers/roasters

No license is required to sell broilers/roasters from your farm, provided fewer than 1,000 birds are sold annually in this manner. To sell more than 1,000 birds, to sell wholesale, or to sell at farmers' markets, contact the DATCP Food Safety division at 608-224-4700.

Live birds and hatching eggs

To sell live chickens or hatching eggs, it must be determined that the birds or eggs come from a pullorum/typhoid-clean source. This can be done through blood testing of individual mature birds or by participation in State or Federal flock programs. For more information on testing requirements and flock programs, contact the DATCP Animal Health division at 608-224-4872.

Additional resources

University of Wisconsin—Extension Animal Science—poultry page
www.uwex.edu/ces/animalscience/poultry/index.cfm

University of Wisconsin Center for Integrated Agricultural Systems
www.cias.wisc.edu

The Feather Site—poultry page
www.feathersite.com/Poultry/BRKPoultryPage.html

American Poultry Association
www.amerpoultryassn.com

Texas A&M University Poultry Science Virtual Library
gallus.tamu.edu/library/dother.html

Penn State Agriculture Alternatives
agalternatives.aers.psu.edu



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Guide to Raising Healthy Chickens (A3858-1)

I-06-2008

Poultry

for small farms
& backyards



Adam A. Hady and Ron Kean

UW
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Poultry in Urban Areas

There has been a significant boom in the number of people interested in raising poultry in the United States. This is true even in urban areas, where keeping chickens poses some challenges that are different from those of raising poultry in rural environments. While many cities and municipalities have restrictions on urban poultry—or prohibit it outright—the strength and popularity of the local foods movement means that in many areas these ordinances are being reconsidered.

Examples of owners successfully raising poultry in urban areas are many; this publication will outline some best practices and look at a few of the challenges that the urban poultry person will need to address to avoid problems that might otherwise occur.

Benefits of raising chickens

There are many benefits to raising poultry; the first that may come to mind is having fresh eggs on hand. However, those who raise poultry enjoy many other benefits as well:

- Just like the family dog, chickens make good pets and can be a source of relaxation and companionship.
- Many people gain a sense of pride and satisfaction from raising well-cared-for, healthy birds.
- Some families find raising poultry is a great way for their children to learn about animal care and responsibility, better understand food systems, and gain a general insight to basic life processes.
- Chickens may help homeowners “go green.” Poultry waste is an excellent source of nutrients for plants, providing many of the key ingredients for composting and keeping fertilizer costs down. Many poultry owners use their birds to keep kitchen waste out of their trash bins, as chickens will eat many vegetables—especially leafy greens—and unseasoned meat scraps. Caution: be sparing with kitchen waste that contains a high amount of salt, as this can cause wet droppings from diarrhea and may have a negative effect on egg production and shell quality.



Problems associated with raising chickens

Providing the proper space, nutrition, and housing are the keys to raising healthy chickens—see *Guide to Raising Healthy Chickens* (A3858-01), available at learningstore.uwex.edu. In addition, owners have to be aware of the potential problems associated with poultry, especially in urban areas. Typically, issues that may arise involve noise, odors, pests, and concerns about disease. Poultry owners must be attentive to and cooperative with their neighbors, who may have a different tolerance for backyard chickens in an urban setting.

Noise and odor

Most animals make noise and have an odor to some degree. Properly provided for, chickens raised in an urban backyard aren't necessarily any noisier or smellier than dogs.

One concern frequently mentioned when talking about raising poultry in the city is that chickens will crow early in the morning or that a flock will be unusually loud. In fact, only roosters crow, and they can crow at any time of the day. Because of this, many municipalities have banned roosters from urban settings or placed restrictions, such as limiting the number of

roosters allowed. In addition to restrictions on roosters, many ordinances restrict the total number allowed in a flock as well.

There are many ways to help muffle the sounds that chickens make during the course of the day. Insulation will reduce the amount of sound coming from the chicken coop. For chicken coops with outdoor "runs," or areas where chickens can exercise, partial fences and landscaping such as small shrubs and bushes can help reduce sound as well as enhance the appearance of the housing.

Proper lighting is an important part of noise control as well. Birds are active when there is light, so a coop that allows you to control both natural and artificial light means you will have greater control over when the birds are active and more likely to make noise. Keep in mind that to get the most out of egg production, chickens need 14 to 16 hours of natural or artificial light per day.

Odors are another source of concern in urban environments, where neighbors are usually close to one another. Most poultry odor is associated with ammonia produced in poorly ventilated and moist coops. The solution is to properly ventilate the housing area, which will help keep the bedding dry. You may need to consider dehumidification during times of high humidity and other seasonal weather conditions.

Pest management and control

Controlling flies and other insects is very important to all poultry producers, but may have an even larger impact in an urban area. The best way to prevent flies is to keep the litter dry, as fly eggs and larvae (maggots) need moisture to develop. Keeping the pens clean will reduce problems with flies and insects; most small flock owners clean out their coops regularly, so manure buildup is not an issue. During certain times of the year or under particular weather conditions, however, traps or chemical control may be necessary.

Rodents can be another problem. Storing your feed securely and using feeders that minimize waste will reduce issues associated with rodents. Proper coop design and keeping the area immediately surrounding the coop free of weeds and grass will help keep rodents at a distance as well.

Concern about disease

As with any animal they share a space with, there is always the chance of humans picking something up from their backyard chickens. For example, some diseases found in other common household pets such as caged birds and reptiles can also be found in poultry. What follows is a short list of diseases that **could** be transmitted from birds to humans. However, the risks are very low when poultry is kept in a healthy and clean environment.

Salmonellosis: This is often what people think of when they have a concern about chickens and disease. There are about 2,500 different species of *Salmonella*; a few of them can be carried by chickens and potentially make people sick. The one that usually makes the news (*Salmonella enteritidis*, or SE) can be contracted by consuming undercooked eggs or from contamination from raw chicken meat. Only rarely will contact with fecal material lead to infection, and a good hand washing with soap after handling any chicken will take care of this. The same risk and remedy applies to other pets, including dogs, turtles, iguanas, and pygmy hedgehogs.



Influenza: There has been evidence in **some other countries** that chickens can transmit the influenza virus to humans. In the United States, the specific subtypes of the virus that affect humans have not been found in poultry for many years. However, the influenza virus can occasionally mutate from one subtype to another. In order to prevent future outbreaks, the USDA conducts an aggressive program to depopulate flocks that may have these other influenza subtypes, even if they aren't highly pathogenic.

Psittacosis: This bacterial disease can be contracted from poultry, although such occurrences are very rare. Caged birds such as parrots are more common carriers of psittacosis. If infection occurs, the disease can be treated with antibiotics.

Tuberculosis: While rare, there have been cases of people contracting tuberculosis from birds, although is not a common disease in poultry. Typically, people with a compromised immune system are most at risk.

Histoplasmosis: This fungal disease is actually caused by a soil fungus. While birds are not carriers, histoplasmosis can grow in old poultry or pigeon manure and is commonly connected with church belfries, barns, and other places where droppings accumulate. As long as a poultry house is cleaned regularly, this should not be an issue.

Parasites: Because chickens belong to the class *Aves* and humans to the class *Mammalia*, poultry and people are not closely related. Thus, there is little risk from the spread of parasites, which generally adapt to a specific class. Mites and lice from birds, for example, will not live on humans for more than a few hours. Likewise, internal parasites that are adapted to the poultry gut typically won't be a problem for humans. One protozoa, *Giardia*, can occasionally affect both birds and humans, although this is more commonly seen with caged birds such as parakeets and canaries. Most hobby flock owners routinely monitor and treat their birds for parasites nonetheless, to keep them healthy.

Other issues to consider

There are other issues specific to raising poultry in urban settings that you should consider before deciding to raise chickens or allowing chickens to be raised in your community.

Waste disposal

To safely keep poultry in an urban environment, you must have a secure plan regarding the disposal of poultry waste. If you have a waste storage container, make sure that it can be sealed and is rodent-proof. Composting poultry waste has become popular; homeowners have many options for purchasing or building compost bins. Poultry waste, which has a high nitrogen component, should not be directly applied to young and growing plants for fear of nitrogen burn. After it is composted, however, poultry waste makes for a safe, stable, odor-free fertilizer.

Can you have poultry in your town?

If you are thinking of keeping chickens in your city or town, the first thing to do is to check with your local officials to see if zoning or municipal ordinances limit or prohibit the raising of poultry, as is the case in many cities. Common restrictions include the distance between poultry housing and the lot line, the number and types of poultry that can be kept, and the need for permits and/or inspections.

Across the country, many groups are working with their municipalities to make it legal to raise poultry in areas where it was previously prohibited. If your city or municipality does not allow this, there are many resources to draw upon that will help your community decide whether an ordinance change is advisable. Keeping poultry in urban settings can be a contentious issue, so keep the following guidelines in mind:

- Be respectful of all positions
- Refer to poultry as pets and not livestock
- Start small and stay organized
- Be willing to educate neighbors, friends, and community members
- Include both the pros and cons of urban poultry and be prepared to provide ideas and solutions to concerns that people have
- Do your research and know your local resources



Developing rules and best practices

For communities that do allow backyard poultry, establishing good rules and best practices is the best way to protect citizen rights and property. A good system of regulation means poultry keepers will have the freedom to raise poultry while governmental bodies will have the tools necessary to minimize and settle any conflicts that arise. For more information on best practices, contact your county extension office:

UW-Extension, Cooperative Extension website (with links to county extension websites): www.uwex.edu/CES/



Housing

When selecting housing for your chickens, consider the following factors:

- The location of the enclosure: Where is it in relation to nearby residences?
- The size of the enclosure: Does the housing provide the proper space?
- The design of the enclosure: Is there adequate protection from the weather and predators?
- The appearance of the enclosure: Does it fit into the surroundings? Is it well maintained?

Raising poultry in any setting is fun and rewarding. By taking your neighbors and the community into consideration, you can successfully enjoy raising poultry in an urban setting.

Resources

University of Wisconsin-Extension resources

"Egg Safety and the Backyard Flock," available at: foodsafety.wisc.edu

Guide to Raising Healthy Chickens (A3858-01): learningstore.uwex.edu

Main poultry education website: www.uwex.edu/ces/animalscience/poultry/resources.cfm

Pasture Poultry Ark (A3908-02): learningstore.uwex.edu

Polk County home composting information: polk.uwex.edu/hort/Composting.html

Producing Poultry on Pasture (A3908-01): learningstore.uwex.edu

Richland County poultry website: Richland.uwex.edu/ag/Poultrylinks.html

Other resources

Mad City Chickens: www.madcitychickens.com

North Carolina Extension small flock management resources: www.ces.ncsu.edu/depts/poulsci/tech_manuals/small_flock_resources.html

University of Kentucky small and backyard flocks: www.ca.uky.edu/smallflocks

Urban Chickens: urbanchickens.org

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