



June 2008

AG/Poultry/2008-01pr

# Housing Backyard Chickens

*David D. Frame, DVM, Extension Poultry Specialist*

Owning a small flock of chickens is increasing in popularity, particularly in areas where local ordinances prohibit larger domestic animals, but allow for birds and/or small animals. Chickens not only furnish a ready source of home-grown meat and eggs, but also provide great pleasure as exhibition stock and even as pets. The purpose of this fact sheet is to give an overview of basic housing principles for small flocks of chickens.

## Objectives

Reasons for providing proper housing facilities for chickens include:

- Protection from predators;
- Protection from rain, snow, and other inclement weather;
- Protection from excessive heat and cold (i.e., moderation of extreme temperature changes); and
- Provision of feed and water space and nesting facilities.

## General Considerations

Chickens are very adaptable and no single best way exists to house them. Creative architectural construction may even be considered in building a “designer” chicken house in order to enhance the backyard landscape. Regardless of ultimate design, the following practical considerations should be observed. The building must:

- Be large enough for proper air circulation (i.e. ventilation) but small enough to keep from getting too cold and drafty in winter;
- Allow 1.5 to 2.0 ft<sup>2</sup> (0.14 to 0.19 m<sup>2</sup>) floor space per adult chicken;
- Provide easy access to feed and water; and
- Provide nesting areas for hens in egg production.

## Building Design

As previously mentioned, workable designs of chicken houses are highly variable and may even be extremely decorative in some cases. Many sites are available on the Web and in reference books that may help you in designing your facility. A few selected resources are listed here.

- **House design:**
  - “How to Raise Chickens” by Christine Heinrichs. Voyageur Press. 2007.
  - ISBN-13: 978-0-7603-2828-6
  - Virginia Cooperative Extension: <http://www.ext.vt.edu/pubs/poultry/factsheets/designs.html>
  - University of Minnesota: [http://www.ansi.umn.edu/poultry/resources/housing\\_small-scale.htm](http://www.ansi.umn.edu/poultry/resources/housing_small-scale.htm)
  - Appropriate Technology Transfer for Rural Areas (Range poultry housing): <http://ceplacer.ucdavis.edu/files/46820.pdf>
  - The Bantam Roost, “A Small Hen House”: <http://www.geocities.com/Heartland/Plains/4175/henhouse.html>
- **Energy management and solar heating concepts:**
  - <http://www.ces.purdue.edu/extmedia/AE/AE-99.html>

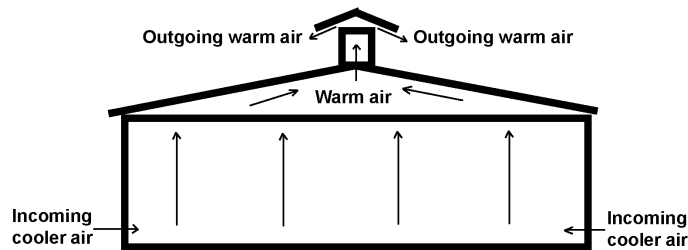
## Ventilation Basics

In order to provide a comfortable building for chickens, it is necessary to keep in mind a few basic concepts regarding ventilation:

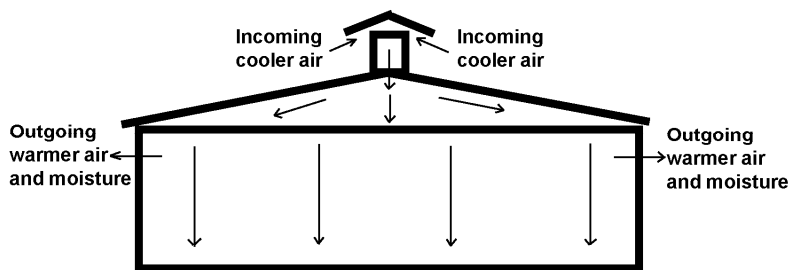
- Warm air rises and cooler air, being heavier, settles to the floor. Adequate air circulation and exchange is necessary to keep different air temperatures from stratifying and air from becoming stale.
- Warm air holds more moisture than cold air. For every 18°F (10°C) increase in air temperature, its water-holding capacity doubles. This concept is important in managing potential moisture buildup, particularly in well-insulated, tightly-sealed chicken houses.
- Ventilation needs in summer are different than in winter. During summer, warm stale air must be removed, allowing fresh air to

enter and circulate. During cold seasons, only enough cold outside air should be allowed in for adequate air exchange. It is preferred to bring this air in from near the roof of the building which allows it to warm as it drops towards the floor. This colder air will warm (by the birds' own body heat and/or with additional heaters) and pick up moisture. A method must be available to vent this air from the building allowing the cycle to continue. (Refer to Figures 1 and 2 for summer and winter ventilation concepts.)

**Figure 1.** Concept of summertime ventilation.



**Figure 2.** Concept of wintertime ventilation.



In small chicken houses, these factors can generally be sufficiently controlled without employing power ventilation (i.e. fans). The judicious and well-placed use of windows and vents will usually suffice. During summer, natural convection and/or gentle breezes will usually be adequate to drive air out the upper vents, or cupola, and bring in fresh air through windows or lower vent openings. Place upper vent openings on the side opposite of wind direction (i.e. leeward side).

## Perches

Although not mandatory, it is usually a good idea to provide perches for your chickens. Perches will allow

birds to stay off the floor – particularly as they roost at night. Most breeds seem to enjoy spending time on perches. Manure will tend to accumulate in greatest concentration under the roost area, thereby helping to keep the rest of the bedding material in the house cleaner. A good rule of thumb is to allow 6 to 10 inches (15 to 25 cm) of linear perch space for each chicken housed.

Perches should be located in an area of the house that will not interfere with daily chores such as feeding, watering, and egg gathering. Construct the perches so they are removable or are hinged for lifting out of the way for easier cleanout of manure. It is worth the extra effort to build them right in the beginning – it will save

you a lot of time and effort during house cleanup. Perches should not be more than about 3 feet (0.9 m) off the ground; otherwise, there may be an increased tendency to bruise feet or cause egg rupture as the hens mount the roost. Plan at least 12 inches (30 cm) clearance under the perches; final height and dimensions will depend on individual building design and convenience of being able to clean out the manure underneath them.

Any suitable building material may be used to construct perches: 2 x 2 inch (5 x 5 cm) material with rounded tops is ideal. Space the perch bars 14 inches (36 cm) apart.

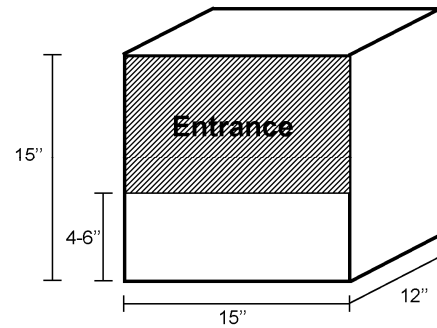
## Nest Boxes

Nest boxes are essential furnishings of any hen house because she will seek a secluded place to lay her eggs. Properly constructed and maintained nest boxes provide a clean environment for laid eggs and facilitate gathering them. Also, nests make it easier to identify and remove “broody” hens. (A broody hen is one that has ceased laying eggs and desires to raise a clutch of chicks. She will remain in the nest box for prolonged periods, become territorial, and not allow entry of other hens needing to lay eggs.)

Again, there are no hard and fast rules for nest box construction. Commercial boxes are available from various retail sources or you may wish to construct your own. Nest box height and width should be 12 to 15 inches (30 to 38 cm); depth should be least 12 inches (30 cm). Figure 3 illustrates a generic nest box design that is functional for most applications.

- One nest box is required for each four to five hens.
- Place nest boxes no less than 18 inches (46 cm) off the floor.
- A front panel, 4 to 6 inches (10 to 15 cm) high, is necessary to provide seclusion and keep eggs from rolling out of the nest.
- A perch may be attached to each box, running parallel to the front of the box and located 6 to 8 inches out, to facilitate access.

**Figure 3.** Generic nest box design.



## Predator Control

- Maintain a rodent control program around the poultry house. An excellent fact sheet on rodent control is found at <http://osuextra.okstate.edu/pdfs/F-8207web.pdf>
- When building the floor, integrate heavy-gauge wire mesh beneath the subflooring to discourage entrance of predators.
- Cover windows and vent openings with good quality poultry wire to keep out birds.
- Make sure doors and windows fit tight. Caulk and seal all cracks and crevices. Small rodents can gain entry through holes the size of a nickel or quarter.
- Keep the poultry house locked to discourage theft and uninvited visitors.

## Additional Housing Considerations

- Allow adequate space within the structure for feeders and waterers. (Feeding and watering equipment not discussed in this fact sheet.)
- Position equipment for ease of cleaning, egg gathering, and general upkeep.
- Before beginning to build, consider anticipated high/low temperatures, potential snow load, other environmental conditions, and local ordinances.
- For specific recommendations in your area, contact your local county agent or Extension poultry specialist.

Utah State University is committed to providing an environment free from harassment and other forms of illegal discrimination based on race, color, religion, sex, national origin, age (40 and older), disability, and veteran's status. USU's policy also prohibits discrimination on the basis of sexual orientation in employment and academic related practices and decisions.

Utah State University employees and students cannot, because of race, color, religion, sex, national origin, age, disability, or veteran's status, refuse to hire; discharge; promote; demote; terminate; discriminate in compensation; or discriminate regarding terms, privileges, or conditions of employment, against any person otherwise qualified. Employees and students also cannot discriminate in the classroom, residence halls, or in on/off campus, USU-sponsored events and activities.

This publication is issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Noelle E. Cockett, Vice President for Extension and Agriculture, Utah State University.