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Basics for Raising Backyard Chickens

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This fact sheet is constructed to be used by local municipalities for training or as an evaluation tool in the permitting process for allowing poultry keeping in population-dense settings. It also serves as a condensed review of basic poultry keeping practices.

Backyard chicken keeping is increasing in popularity. There are many reasons for this. Perhaps it is to have a ready source of eggs and meat, or as a backyard help in pest control, or perhaps it is just because they are fun to watch. Whatever the reason, chickens can be a great source of enjoyment if properly managed and given appropriate care.

Figure 1. Hens enjoy the spring breeze.

Get Your Chicks Off to a Good Start

Baby poultry cannot generate enough heat to sustain themselves. That is the reason the mother hen keeps the young under her wings. The process of getting chicks off to a good start is called *brooding*. The brooding period is roughly the first 3 to 4 weeks of a chick's life. By then, most breeds are fully feathered and can generate enough heat on their own to get by.

Basic needs for brooding chicks are:

- Heat source, such as a 250 watt infrared light. Keep a temperature gradient from 110°F under the heat source to 84°F at edge of brooder ring. Decrease temperature about 5°F each week. However, if chicks appear too cold or hot, adjust accordingly.
- Clean water.
- Good quality chick starter feed.
- Clean litter (pine or cedar shavings are recommended).
- A circular confined area to keep the chicks from wandering away from the heat source.

Figure 2. Example of a brooder ring.

Housing

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^2 (0.14 to 0.19 m^2) floor space per adult chicken;
- Provide easy access to feed and water; and
- Provide nesting areas for hens in egg production.

Perches

Although not mandatory, it is usually a good idea to provide perches for the 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.

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. Again, there are no hard and fast rules for nest box construction. Commercial boxes are available from various retail sources, or you may construct your own.

- Nest box height and width should be 12 to 15 inches (30 to 38 cm); depth should be at least 12 inches (30 cm).
- One nest box is required for each four to five hens. Place nest boxes no less than 18 inches (46 cm) above 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.
- Maintain at least 2 to 3 inches of clean dry shavings in each nest box to reduce egg breakage and to minimize number of soiled eggs.
- A perch may be attached to each box to facilitate access, running parallel to the front of the box and located 6 to 8 inches out.

Don't Forget the Water

Remember, the nutrient consumed in the greatest quantity by a chicken is *water*. A direct relationship exists between the amount of water a chicken drinks and the amount of feed consumed. If inadequate water is available, not only will chickens decrease eating, but there will also be a negative effect on egg production and growth.

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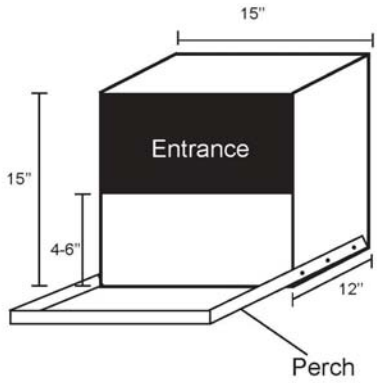

Figure 3. Example of a nest box design.

Although types and designs of drinkers vary, the fact that fresh clean water must be present at all times should never be forgotten. Fountain-type drinkers have the advantage of being affordable and easily moved around; however, because the reservoir holds only a finite quantity of water, it is necessary to watch carefully that they don't become empty.

Figure 4. Chicks shown drinking from a 1 gallon fountain-type waterer.

- Water should be changed frequently in order to prevent bacterial growth, over-warming (in summer), or freezing (in winter).
- A fountain-type drinker commonly available in most feed stores will hold 1 gallon of water. Each drinker will provide enough daily water for 12 to 15 adult chickens during cool weather and 6 to 12 during hot weather.
- Always provide at least two or three additional drinkers in excess of the estimated water

consumption for the number of birds in the chicken house. This provides a buffer for a short term water supply in the event of spillage or leakage. It also offers an opportunity for the more timid birds in the flock to satisfy their water needs without competing with more aggressive individuals for drinker space.

- When planning number of drinkers to place in the chicken house, consider that in cool weather each adult chicken will consume about 0.05 to 0.08 gallon per day; in hot weather, 0.08 to 0.16 gallon per day.

Feed Quality Is Important

- Feed quality will affect feed consumption. Ensure that the feed is not stale, rancid, or moldy.
- Immediately remove obviously moldy, rancid smelling or any other questionable feed. Such feed will, at best, not be eaten; and at worst, cause disease or nutritional deficiencies if consumed.
- Purchase feed as fresh as possible. Vitamins will start to degrade if finished feed is stored for prolonged periods. Plan your schedule so that new feed is purchased at least every 2 months.
- Always store feed away from heat, moisture, and direct sunlight. Protect from rodents.

Feeder Styles

Feeders come in a wide array of sizes and designs from egg carton lids for starting newly hatched chicks to sophisticated automatic adult feeding systems. Trough feeders are usually used to start off young chicks. Bucket feeders of various sizes are popular and appropriate for both growing and adult chickens. The advantage of bucket feeders is that they can store a few days' worth of feed, thereby alleviating daily hand feeding; however, care must be taken not to let old feed accumulate in them and become stale and moldy. Clean and brush them out often. Use the appropriate size of bucket feeder for the class of poultry being raised. Using too large of feeders with chicks will prevent them from being able to reach the feed. Also chicks might get inside the lip of the feeder and not be able to get back out. Feeders with too narrow of a lip for adult birds will cause excessive spilling and wasted feed.

- Feeders should be raised off the ground, and generally positioned level with the mid to upper breast region of the chickens being fed.
- A good rule of thumb is to allow 1 linear inch of feeder space per chick and 2 to 3 linear inches per adult chicken.
- Always keep feeders in an area where it is protected from moisture, wild animals, and free flying birds, preferably inside the chicken house.
- Purchase feed from a reliable commercial feed manufacturer.
- It's OK to let your chickens forage around for bugs and greens, but always provide them access to the appropriate type of formulated balanced feed as well. Totally "free-ranged" poultry will rarely be able to consume a proper balance and quantity of nutrients necessary for their maximum rate of meat and egg production.

Figure 5. Example of one type of feeder commonly used to start chicks.

Feed Consumption Guidelines

There is great variation in feed consumption patterns of chickens depending on breed, feed source and environmental conditions. The following information, however, serves as a guide for feeding large fowl breeds of poultry.

<u>Meat-type</u> strains (Commercial-type broilers, roasters, "Cornish-Rock" crosses)

0-2 weeks.	22-24% protein chick starter
2-4 weeks.	20-21% protein grower
4 weeks to market . . .	18-20% protein finisher*

<u>Layer strains</u> (Commercial-type leghorns, brown egg layers)

0 to 6 weeks.	20-21% protein chick starter
6 weeks to prior to egg production	16-19% protein pullet grower or developer
At onset of egg production.	16-18% protein layer diet**

<u>Dual-purpose breeds</u> (Plymouth Rock, Rhode Island Red, New Hampshire, etc.)

0 to 6 weeks.	20-21% protein chick starter

6 weeks to prior to egg production.	15-19% protein pullet grower or developer
At onset of egg production	16-18% protein layer diet**

*These recommendations are based on common protein levels for feeds available in most local feed stores. It is assumed that the finished feed is balanced for energy, vitamins, and minerals in relation to specific protein content.

**Do not feed a layer diet to chickens not in egg production (too high in calcium).

Varmint Control

Maintain a rodent control program around the poultry house. When building the floor, integrating heavy gauge wire mesh beneath the subflooring is recommended to discourage entrance of predators and other varmints. Cover windows and vent openings with good quality poultry wire to keep out birds. Make sure doors and windows fit tightly. 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.

Figure 6. House mouse. Average litter size is six and one female can have up to eight litters per year. Average range is 15 to 30 feet. A mouse can last longer without water than a camel. (Photo from KoreanRodent_pm39-HouseMouse.)

Lighting

Laying hens require at least 14 hours of light to maintain good egg production. Most experts recommend 16 hours of light per 24 hour period. Artificial lights wired into a timer will accomplish this during fall and winter, when daylight is decreasing. Decreasing daylight will cause hens to quit laying and go into a molt.

Egg Production

Hens do not need roosters present to produce eggs. Increasing day length, not the presence of males, is what stimulates egg production. A rule of thumb is that four to five hens will supply two to four eggs per day during their production cycle. Pullets (young females) reach sexual maturity and are capable of laying eggs when about 5 to 7 months of age; however, this can vary considerably depending on breed and strain of chicken.

Molting

Molting is a natural process that chickens go through. It is nothing more than a resting part of the physiological cycle of birds. During the molt the hen will go out of egg production and lose feathers. Under natural conditions, this occurs in the fall or winter. However, modern layer strains have been bred to maintain high egg production over a long period. Therefore, you may find your flock laying eggs and losing feathers at the same time. The laying cycle causes the feathers to become worn and broken. After the molt, the hens will have a new covering of feathers. Hens generally produce fewer eggs with each molt. Eggshell strength may also be reduced with each subsequent molt.

Be a Good Neighbor

- Chickens do not respect property lines. Keep your chickens enclosed and confined to your property.
- Properly dispose of used poultry litter. In many instances, used litter can be incorporated into the garden soil or composted; however, improper composting or storage may create excessive odor and fly problems. Proper composting requires careful management of moisture, aeration, and temperature.
- Although in most circumstances chickens pose a relatively low risk of giving disease to humans, there are a few infections that can be transmitted back and forth. Proper care and handling of eggs and processing of poultry carcasses are critical to avoid problems.
- The commercial poultry industry is a significant and vital part of the agricultural economy of the U.S. It is important that these flocks be protected from serious diseases that would adversely affect each one of us. Small backyard flocks if not properly managed, might significantly increase the probability of disease exposure to the commercial industry.
- Past history has shown that diseases such as exotic Newcastle disease (END) can occur in the small flock poultry community. The discovery of END would have devastating economic consequences from death loss as well as the loss of trade with other countries.

Figure 7. Always think about what you can do to protect your own birds and your neighbor's birds from disease.

ENJOY!

Poultry raising can be an inexpensive and fulfilling hobby and pastime. Good wishes in embarking on this exciting opportunity!

For additional information contact your county Extension agent or Extension poultry specialist.

References

Frame, David D., *Housing Backyard Chickens*, AG/Poultry/2008-01pr, http://extension.usu.edu/files/publications/publication/AG_Poultry_2008-01pr.pdf

Frame, David D., *Principles of Feeding Small Flocks of Chickens at Home*, AG/Poultry/2008-02pr, http://extension.usu.edu/files/publications/publication/AG_Poultry_2008-02pr.pdf

Leeson, S. and J. D. Summers, Commercial Poultry Nutrition, 3rd ed. University Books, Guelph, Ontario, Canada. ISBN 0-9695600-5-2. 2005.

Sainsbury, David, Poultry Health and Management, Blackwell Science. ISBN 0-632-05172-8. 2000.

Frame, David D., *Molting and Determining Production of Laying Hens*, AG/Poultry/2009-01pr, http://extension.usu.edu/files/publications/publication/AG_Poultry_2009-01pr.pdf

Frame, David D., *Considerations in Raising Small Backyard Flocks of Poultry in Population-dense Communities*, AG/Poultry/2009-02pr, http://extension.usu.edu/files/publications/publication/AG_Poultry_2009-02pr.pdf

PelGar International, *House Mouse*, http://www.pelgar.co.uk/mouse.htm

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