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G80-530 Brooder House and Equipment for the Home Flock

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Brooder Houses and Equipment for the Home Flock

This NebGuide discusses housing and equipment needs for raising home poultry flocks.

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This NebGuide lists and describes some of the types of houses and equipment that can be used to raise a home poultry flock. Other management suggestions are included in a series of NebGuides that are available from your county Extension office.

The Brooder House

A good house doesn't have to be expensive. Many types that can be used successfully are illustrated in this NebGuide. The purpose of a house is to protect poultry from wind, rain, rats, other animals and birds, and from sudden and extreme changes in temperature. The roof should not leak, the house should not have cracks in the walls, the doors and windows should fit snugly, and the window openings should be covered with 3/4-inch wire netting.

All poultry buildings--whether new or remodeled--should contain:

1. Floors which can be cleaned and disinfected easily. This usually means a concrete or asphalt surface.
2. Walls which can be washed easily.
3. A ventilation system. Built-in gravity systems, adjustable roof ridge ventilators and fans are often used.
4. Adequate insulation that is fire and rodent resistant.
5. Water piped into the house. The water system should be protected against freezing.

6. Electricity for artificial lights to provide a uniformly light "day" in the poultry house and to operate equipment as needed.

Adequate floor space is essential. At least 1/2 sq. ft. per chick is needed if birds are to be kept in the brooder house until they are six weeks of age. If birds have to stay in the brooder house longer than six weeks, 3/4 to 1 sq. ft. per chick is needed.

In urban areas or when a brooder house is not available, an outside electric brooder is simple to construct and relatively inexpensive. Heat for this type of unit is provided by four 40-watt bulbs and is controlled by a wafer thermostat. During cold weather, it might be necessary to increase the size of the bulbs to maintain sufficient heat.

Lighting

Lighting is an important, but inexpensive, consideration in poultry housing. Light control is essential for maintaining a successful laying flock. It is not essential for growing meat birds, but it is very helpful and will stimulate faster growth. A light socket for every 200 sq. ft. or less of floor space is adequate. All lights should be controlled with a time clock wired into the electrical circuit.

The best time clocks will provide both morning and evening lights, and will have an override switch that lets you turn the lights on or off if you need to disrupt the normal schedule for any reason.

Locate electrical outlet boxes near the water fountains. This will allow you to use water warmers if you raise birds in cold weather. The outlets should be high enough that the birds can't reach them, and yet close enough to the waterers that long extension cords aren't necessary. Ceiling outlets often work well.

Insulation

Insulation is any material that reduces the rate that heat is transferred from inside the brooder house to the outside, or the opposite in summer. All building materials have some insulation value. Normal construction materials such as wood or tin do not provide enough insulation, however, and should be supplemented with materials high in insulation value. The extra or added insulation material is normally installed inside the house. Your local lumberyard or county agent can give you a list of the insulation "R" values for different materials.

Insulation serves several functions. It conserves heat in the brooder during cold weather, and reduces the rate of heat build-up in hot weather. As a result, an insulated building is cooler in the warm part of the afternoon and warmer in the cold early morning hours. In addition, surface condensation (sweating) can be controlled in an insulated building.

In Nebraska, it is recommended that the walls of a brooder house have an "R" or insulation value of 9-14, and that the ceiling have an "R" value of 16-18. These recommendations are especially true if you are going to raise (brood or grow) birds in either hot or cold weather. Nice spring or fall weather would not require these high "R" values. However, birds are always more comfortable and will grow better in a well-insulated house.

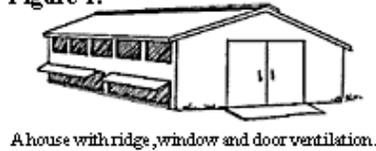
Ventilation

Ventilation of the home flock brooder house is of major importance and is a continuous process. The purposes of ventilation are to remove moisture from inside the building, remove excess heat in hot weather, remove gases from manure, and provide fresh air for birds.

Do not tightly close a cold brooder house in an effort to raise the temperature inside. The result is

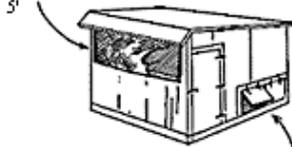
usually a severe moisture buildup, condensation on the roof and walls, and only a small temperature rise. If winter moisture buildup is a problem, the house must be ventilated even though it may be cold. During the summer the house must be ventilated if it overheats. It must also be ventilated when gases and odors accumulate. It is a continuous process and must be watched constantly.

Figure 1.



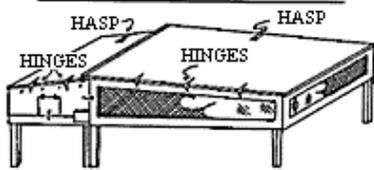
A house with ridge, window and door ventilation.

1" MESH
POULTRY NETTING--
USE PLASTIC ON
OUTSIDE DURING
COLD WEATHER



ONE 5' DOOR MAY BE
USED INSTEAD OF TWO
DOORS AS SHOWN

A smaller house with window and door ventilation



An outside electric brooder and grow pen.

The least expensive ventilation system to use is natural ventilation. Windows or panels located in the top one-half of the wall that lean back inside at the top and latch at different angles, and that can also be raised from the bottom or be removed completely, can provide the basis for such a system (*Figure 1*). This system works best if the windows or panels are located on all four walls of the building. Panels, not windows, should be used on the north wall. Low hanging doors can also be used in extremely warm weather after the birds are older.

Prevailing winds, air temperature, age of the birds, moisture and gaseous conditions all determine how far to open the windows and whether the air flow is directed toward the ceiling or allowed to flow straight into the brooder. During cold weather and with young birds, drafts at the level of the birds must be avoided. Air must come in on one side or end of the building and escape on the opposite wall to ventilate properly. With the window or panel method in the summer time, it is best to allow the wind to enter the house on the side facing the direction of the wind and let it escape through the opposite wall. The other two walls should be closed to avoid short circuiting of the air. On windless days, it may be necessary to open all four walls. On cold days, the windows or panels might be opened only slightly at the top on one wall; at most, open two on the sides facing away from the wind.

The important key to determining how much air to move and from where to where is the comfort of the birds. The house needs to be dry, as close to 70°F as possible, and as free from undesirable gases and odors as possible. No amount of ventilation will keep a dirty, dusty, manure-laden house comfortable.

Various kinds of roof ventilators can be used to help move air. Some of them rotate from wind forces; others have adjustable openings to fit weather conditions. They are difficult to manage, fill up with dust, birds' nests or frost, and seldom provide adequate air movement. Open-ridge ventilators move adequate air (*Figure 1*), but they do not keep out snow or rain. Baby birds cannot tolerate extreme air movement so the open-ridge is not good to use in a brooder house. Managing natural ventilation takes practice and constant attention.

A mechanical ventilation system helps to eliminate some guesswork. These systems involve electric fans, air inlets, thermostats and timers. To be most successful, each house needs a system designed specifically for it. If you are interested in this type of ventilation, your county agent can put you in contact with someone to help with the design.

A word of caution about using a mechanical system for the home flock. The cost can be high and management problems do not end with the installation of the equipment. It must be examined, cleaned and adjusted constantly, and it breaks down. It is easier to manage than natural ventilation, but it does not totally eliminate management problems.

Brooding Equipment

To give day-old chicks a proper start, the brooder must provide a temperature of about 95°F in winter and 90°F the rest of the year. Some types of brooders (warm-room, space-type heaters) heat the entire room or house. Others (cool-room) warm the area near the birds, while the rest of the room remains relatively cool. The cool-room system generally works best in Nebraska. Cool-room stoves are usually heated with gas or electricity.

Gas Brooders

Gas brooders with a hover are the most common stove in use today. They require little labor, have constant automatically controlled temperature, are easy to raise and lower, are out of the way, have a low fuel cost, and cause little danger of fire. Their disadvantages are moisture condensation in the house during extremely cold weather and that they can be expensive, especially if a fuel tank must be bought just for their use.

Electric Infrared Bulbs

Electric infrared bulbs have a low initial cost, are easy to work under and around, and can be used for supplemental heat with gas and electric hovers. Their disadvantages are that they warm only what they shine on, go off during power failures, and do not always provide enough heated areas for cold weather brooding. However, if managed properly, these brooders can be satisfactory for small broods of birds.

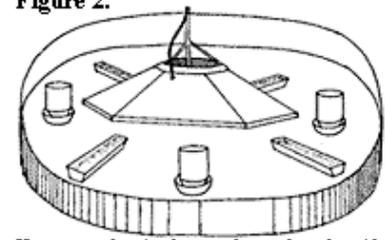
Feeder

Feeder size and length must change with age of the birds. In the beginning, allow one inch of feeding space per chick, and use a chick-size feeder filled completely for the first week. Arrange the equipment as shown in *Figure 2*.

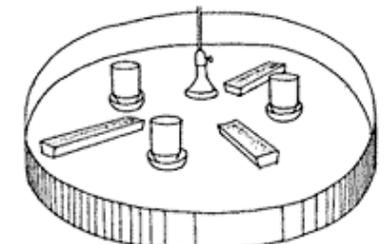
A larger growing feeder (broiler size) is needed when chicks are about four weeks of age. Allow two inches per bird. The round cylinder hanging feeder can be used as a starting and growing feeder if adjusted correctly for height and flow rate (*Figure 3*).

Always keep feeders adjusted to allow birds to feed at the level of the back. This means that feeder height must be continually adjusted as birds grow.

Figure 2.



Hover-type electric or gas cool-room brooder with jug or canister waterers, starter feeders and a brooder guard.



Infrared electric brooding lamp (cool-room) with jug or canister waterers, starter feeders and a brooder guard.

Waterers

Waterers also need to change as birds grow. The first 10 days to two weeks, baby chicks are not very big and do not require a lot of water. However, a good supply of clean, fresh water should be before them at all times. Two or three one-quart jars with fountain bases are sufficient for each 100 chicks. More jars can be used to require less frequent filling. Use an easy-to-clean glass or porcelain base for the jars.

After the first 10 days to two weeks, the quart fountains can be replaced by one three- to five-gallon fountain per 100 chicks or one-half inch of automatic trough waterer per chick. At least two fountains

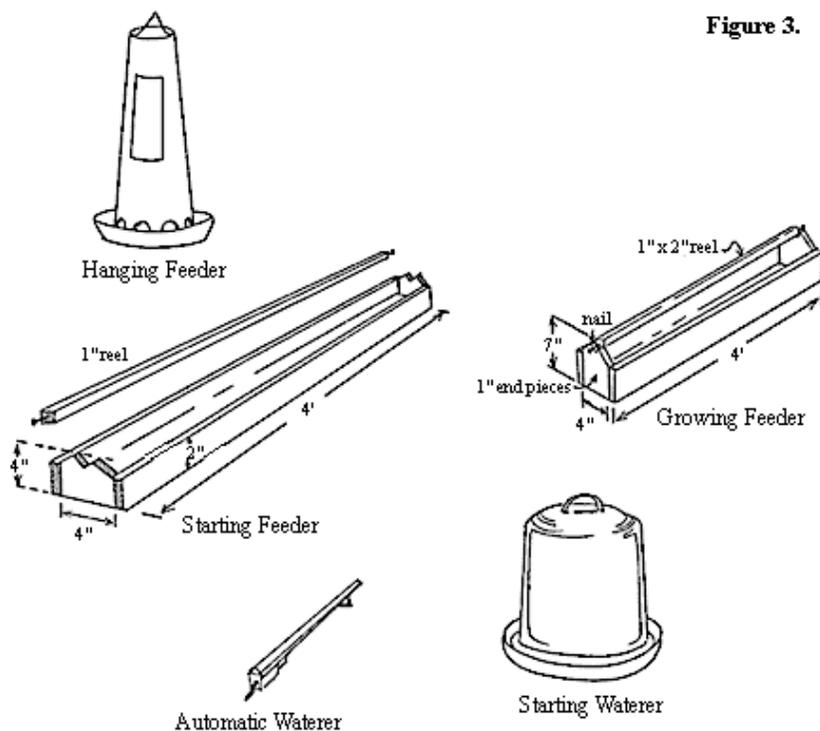
are needed for each brood regardless of the number of chicks.

Brooder Guard

A brooder guard should be placed around the brooder or heat lamp to keep day-old chicks from piling in corners (*Figure 2*). Use a solid guard to help prevent drafts. It should be 12 inches or more in height and made of material such as corrugated cardboard. It needs to be long enough to encircle the brooder, with about two feet between the guard and the edge of the hover. An additional 10 to 12 feet of length is needed for enlarging the circle as birds grow. The guard can be removed completely after the birds are about 10 days old.

Other Equipment

Other equipment used in brooding include thermometers to check temperatures at edge of hover; garden push hoes, wide putty knives and brooms for cleaning; and sprayers for disinfectants.



File G530 under: POULTRY
D-1, Production Handling
Issued January 1981; 15,000

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