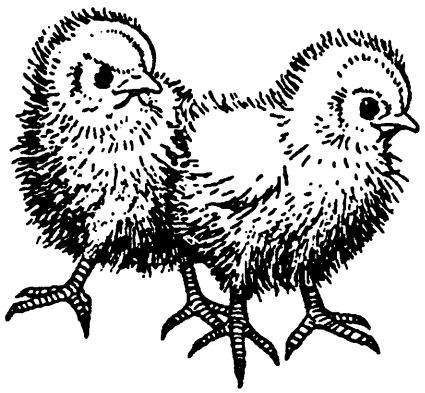
Raising small flocks of chickens



K.A. Holleman

Mass production of broilers and eggs has resulted in prices that usually make it uneconomical for a family to produce their own eggs or fryers. A small flock of layers can be an excellent project for youngsters who have delivery routes to serve customers who are willing to pay a premium for fresh, high-quality eggs. A small flock of broilers could be profitable if prior arrangements were made with neighbors and acquaintances to buy the broilers for home processing.

Bantams and exhibition or exotic breeds of chickens are often kept as a hobby—a source of enjoyment and education for youngsters and adults.

Regardless of the type of poultry project under consideration, it is desirable to determine as precisely as possible all potential costs and to provide adequate housing and equipment. A well-planned and well-managed poultry project can be a source of pleasure and, perhaps, some profit.

Layers

The best breed for production of white-shelled eggs is the White Leghorn, a small hen with a high rate of egg production. Some breeders have developed high-producing, slightly heavier hens, usually from American class breeds (sex-linked) that lay brown-shelled eggs. Usually it is not profitable to keep dual-purpose breeds for both egg and meat production.

Laying stock can be purchased as pullets at 16 to 20 weeks of age. Another possibility is to purchase hens from a commercial egg producer who has already kept them through one production year. By selecting the best layers in his flock it is possible to obtain, at a low price, hens that may give several months of good egg production. A third alternative is to rear your own replacements, especially if you plan to have two separate laying flocks, one started 6 months later than the other. One rearing facility could provide pullets 20 weeks of age to both flocks. Only day-old pullets should be purchased as Leghorn males do not grow fast enough or utilize feed efficiently enough to be grown out as fryers.

Kendrick A. Holleman, Extension poultry specialist, revised this information from *The Home Poultry Flock*, originally prepared by Department of Poultry Science faculty members, and revised in 1981 by *Charles M. Fischer*, Extension poultry specialist emeritus. All authors are from Oregon State University.

OREGON STATE UNIVERSITY EXTENSION SERVICE

Economic considerations

Consider these points in estimating the cost of rearing pullets to 20 weeks of age:

1. Chick cost—1.2 times the cost of each chick to allow for 10% mortality and some culling.
2. Feed to 20 weeks—about 20 to 22 pounds for Leghorns, 25 to 28 pounds for heavier breeds.
3. Equipment and house cost—initial cost spread over 2 broods per year for 10 years on equipment and 20 years on housing.
4. Litter—enough shavings, sawdust, etc., to cover the floor 4 to 6 inches deep.
5. Heat for brooding and electricity.
6. Labor—caring for birds, cleaning out house, etc.

Consider these points in estimating the cost of producing one dozen eggs:

1. Layer depreciation—cost of pullets at 20 weeks or at laying age (whether reared to that age or purchased at that age). The salvage or meat value of layers at the end of the laying year should be considered.
2. Feed for 11 months—about 90 pounds for Leghorns and 110 pounds for heavy breeds.
3. Equipment and house cost—initial cost spread over periods of 10 to 20 years, respectively.
4. Litter—enough shavings, sawdust, straw, etc., to cover floor 6 to 8 inches deep.
5. Electricity for artificial lights in fall and winter.
6. Labor for feeding, for collecting, cleaning, and delivering eggs, and for cleaning the house.
7. Transportation cost if eggs are delivered to customers.

With good management, a small producer should receive 20 dozen eggs per hen. Therefore, to arrive at an approximate cost per dozen eggs, divide the total cost per hen by 20 dozen.

Nutrition

It is best to purchase a commercial feed and thus avoid the possibility of not providing sufficient amounts of certain nutrients. Replacement pullets should receive a chick starter or broiler feed (20-22% protein) from day-old to 6-8 weeks (about 2 to 4 pounds per chick for Leghorns and 3 to 5 pounds for heavy breeds); a developer (grower) feed (16% protein) thereafter to 20 weeks (about 16 pounds for Leghorns and 20 pounds for heavy breeds); and a layer ration (16% protein) from 20 weeks on. If eggs are to be hatched, a breeder ration instead of the regular layer ration is recommended. It is best to not store feed for more than about 2 or 3 months.

Lights

A good lighting program is essential for maximum egg production. Replacement pullets should be provided at least a total of 13 to 14 hours of light at 22 weeks of age. Day-length for laying hens should never be allowed to decrease below 13 or 14 hours during the laying period. Thus laying hens should be provided artificial lights from September to April. One 25-watt incandescent bulb (clear or white frosted) per 100 square feet of floor space will give an adequate light intensity.

Broilers

Commercial broilers are crossbreeds, usually involving Cornish and White Plymouth Rock breeds and sometimes the New Hampshire breeds. They will attain a weight of 4 to 4.5 pounds at 7-8 weeks with 8 to 10 pounds of feed. Some of the fast-growing males can reach a weight of 4.5 to 5.5 pounds at 6.5 weeks. Broiler chicks usually are purchased straight-run (males and females mixed), and perhaps already beak-trimmed.

Economic considerations

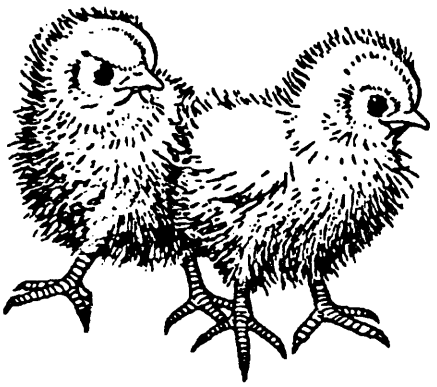
Consider these points in estimating your cost of producing broilers:

1. Chick cost—hatcheries usually give 2% extras, which often will cover mortality.
2. Feed required to 7 weeks—8-10 pounds.
3. Equipment and house cost—initial cost spread over 5.5 broods per year for 10 to 20 years, respectively.
4. Litter—enough to cover floor 4 to 6 inches deep.
5. Heat for brooding and electricity.
6. Labor to care for birds and to clean house.

The estimated cost per pound can be determined by dividing the total cost per bird by 4.0 pounds.

Nutrition

Broilers should have a complete feed available at all times. A special "pre-starter" sometimes is used for 1 week to get the chicks off to a good start (about .25 pound per chick). A regular broiler starter feed may be used up to 4.5 weeks (about 2.75 pounds in addition to the special feed) and a finisher feed from 5 to 7 weeks (about 5.5 pounds per bird), or a single broiler feed furnished from 1 day to 7 weeks. Either system will give satisfactory results, but be careful to determine which feed is being purchased and use it accordingly. Feed can be purchased as mash, crumbles, or pellets. Crumbles or pellets usually give a better growth and feed conversion, but may aggravate cannibalism problems.



Recommendations for managing broilers, replacement pullets, and layers

Floor space. Allow .75 to 1 square foot for broilers; 1.5 to 2 square feet for Leghorn replacement pullets; 2 to 2.5 square feet for heavy-breed replacements; 2 to 2.5 square feet for Leghorn layers; and 2.5 to 3 square feet for heavy-breed layers.

Feeder space. Broilers and replacement pullets need 1 lineal inch for day-old to 2 weeks, 2 lineal inches for 2-6 weeks and 3 lineal inches after 6 weeks, or 1 hanging tube feeder per 30 birds; layers need 3 to 4 lineal inches per bird or 1 hanging tube feeder per 25 birds. Since chickens eat from both sides of most feeders, a feeder 4 feet long provides 8 lineal feet of feeder space.

Water space. Broilers and replacement pullets need water jars to give 1 gallon capacity (using quart, half-gallon, or gallon containers) per 50 chicks for day-old to 2 weeks. (At day-old, feed may be provided on flats for easy consumption.) From 2 to 10 weeks they need 1 gallon capacity per 16 chicks or 0.4 inch trough space per chick; and after 10 weeks they need 1 gallon capacity per 12 birds or 0.6 inch trough space per bird; layers need 1 gallon capacity per 10 birds if using fountains, or 1 inch trough space.

Litter. Broilers and replacement pullets need 4 to 6 inches; layers need 4 inches to start, with more added as needed to total 6 to 8 inches. Fir shavings, sawdust, peat moss, chopped straw, or other clean, dry, absorbent, mold-free material makes satisfactory litter. Remove any wet or caked areas as they develop. Clean out and replace litter after each group of replacement pullets or layers.

Broiler litter can be reused for 2 or 3 broods of broilers if no disease or parasite problems are encountered.

Brooder space. Broiler or replacement chicks need 7 to 10 square inches of space under the hover or brooder, or use one 250-watt heat lamp per 40-50 chicks. Since heat lamps eventually burn out, use at least 2 bulbs. Replacement pullets may develop enlarged eyes if brooded with heat lamps, but the effect of this on subsequent performance is not serious. Start all baby chicks with a temperature of 95°F under the hover and reduce this 5°F per week to 70°F. They should not need supplemental heat after 5 weeks, except in cold weather. Use a solid chick guard about 18 inches high around the brooder, about 1 to 2 feet from the edge of the brooder, for 1 to 2 weeks.

Roost space. Replacement pullets need 6 lineal inches per bird provided at 4 to 6 weeks of age. Layers need 6 to 8 lineal inches, depending on body size.

Nest space. Layers need 1 nest per 4 hens, or if using community nests, provide an area 1 foot square per 4 or 5 hens.

Health and sanitation. Thoroughly clean and disinfect house and equipment after each group of replacement pullets or layers, and at least every 6 months with broilers. Bury or burn (if you have the proper equipment) all dead birds. Keep all wild birds and rodents out. Consult a local veterinarian, your county Extension agent, or commercial field service representative for vaccination programs and disease problems in your area. The same people can be of assistance in case of a disease outbreak. If mites or lice get on birds or roosts, be certain to use an FDA-approved insecticide.

Cannibalism. Broiler chicks should be beak-trimmed to prevent feather picking and cannibalism. This may be done at the hatchery. Replacement pullet chicks properly beak-trimmed at 6 to 9 days should not need any further trimming, or they can be beak-trimmed at 1 day of age and again at 16 to 18 weeks. Use an electric beak trimmer, if available, and remove a third to a half of the upper beak and about a third of the lower beak. If cannibalism occurs, use commercially available antipick pastes; if it persists, the birds can be fitted with plastic or aluminum blinders or "specs."

Cages for layers

Performance of layers housed in single-bird cages is comparable with that of layers kept on litter. However, egg production may be 5 to 10 eggs less per hen per year with more than one hen per cage. Cannibalism can be a greater problem with several hens in a cage than with hens on litter. Layers kept in multiple-bird cages have more ragged feathers and are not as clean and neat looking as hens on litter.

Hens housed in cages are easier to inspect individually, require less space per hen, and do not produce as many soiled eggs. Certain health problems, such as worms and coccidiosis, are avoided by keeping layers in cages.

Pullets housed in single-bird cages need a cage at least 8 inches wide by 16 inches deep. White Leghorns housed in multiple-bird cages require a minimum of 0.4 square foot (58

Use pesticides safely!

- **Wear** protective clothing and safety devices as recommended on the label. Bathe or shower after each use.
- **Read** the pesticide label—even if you've used the pesticide before. Follow closely the instructions on the label (and any other directions you have).
- **Be cautious** when you apply pesticides. Know your legal responsibility as a pesticide applicator. You may be liable for injury or damage resulting from pesticide use.

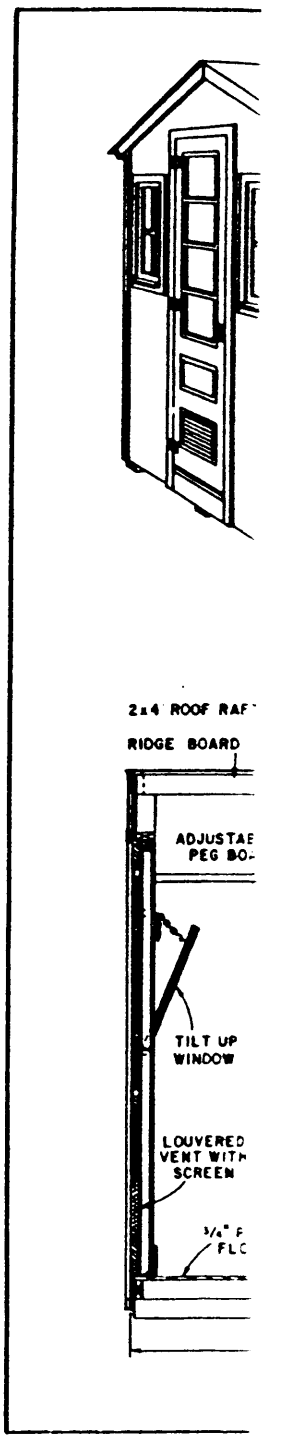
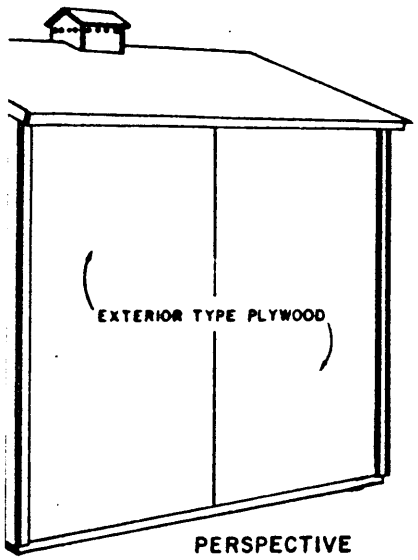
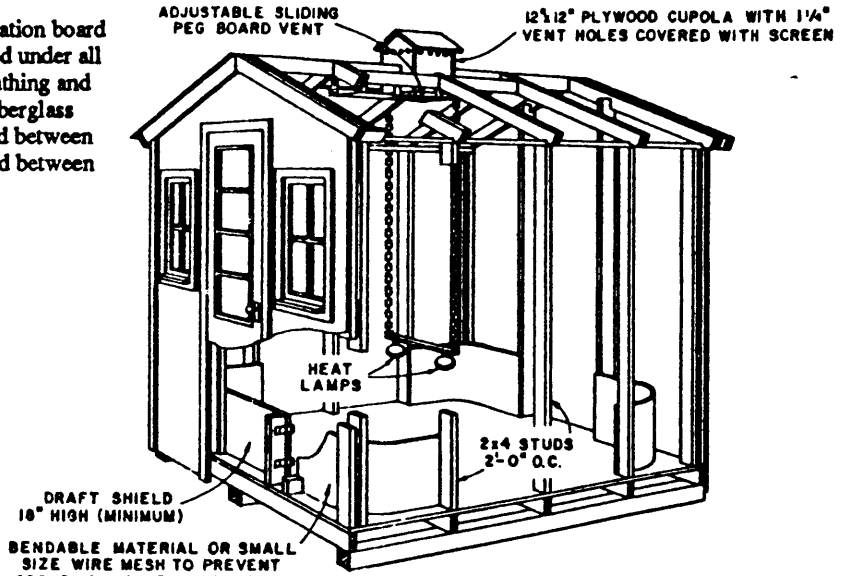


Figure 1.—Plans for a b

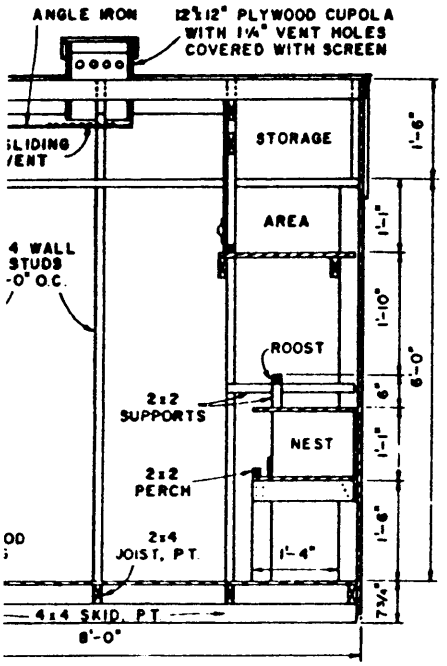


PERSPECTIVE
BROODFR HOUSE
LAYING HOUSE

NOTE: Insulation board may be placed under all sidewall sheathing and roofing, or fiberglass batting placed between wall studs and between roof rafters.

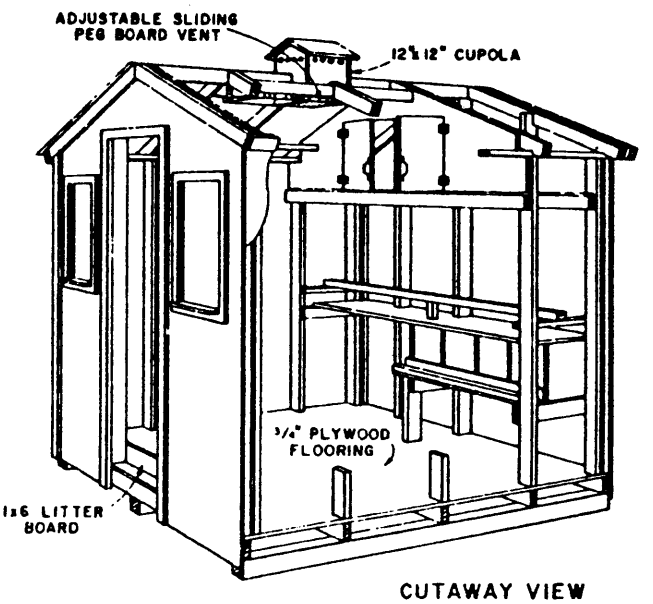


CUTAWAY VIEW
OF 8'x8' BROODER HOUSE



SECTION
LAYING HOUSE

NOTE:
P.T. - PRESSURE TREATED



CUTAWAY VIEW
OF 8'x8' LAYING HOUSE

NOTE.
CAPACITY 15-20 HENS
4-NESTS
ROOST & STORAGE AREAS.

For adaptations of this plan for bantams and pigeons, write the Poultry Science Department, Oregon State University, Dryden Hall 208, Corvallis, OR 97331-3402.

NOTE:
BASED ON: UNIV. OF WISCONSIN PLANS NO. WP 5702, 5703, 5704 AND 5705.
CONSULT LOCAL HEALTH AND BUILDING CODE AUTHORITIES BEFORE STARTING CONSTRUCTION.

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
AND
UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

POULTRY & PIGEON HOUSES
BROODERS-LAYERS-BANTAMS

6232

: 8 X 8 foot poultry house (see page 7)

square inches) per hen, but they will perform better if provided 0.65 to 0.75 square foot (94 to 108 square inches) or more per hen. Heavy breed layers need a minimum of 0.65 to 0.75, or preferably 1, square foot per hen. Multiple-bird cages should be at least 16, but not more than 24, inches deep and 16 to 18 inches high. Most are from 8 to 18 inches wide, although they can be wider. Cages more than 24 inches deep do not allow sufficient feeder space for layers.

Cages can be purchased or homemade. Cage floors should slope about 1 inch per 6 inches of cage depth (an angle of about 10 degrees) so that the eggs will roll out. With a steeper slope eggs will roll faster and result in more cracked eggs; with a lesser slope eggs will not roll out as well and may result in more cracked eggs from hens stepping on or pecking at eggs that have not rolled out. The cage floor should be heavy welded wire with a mesh not more than 1 inch wide and should be well supported to prevent sagging. It is desirable for the cage floor to extend about 8 inches beyond the cage front, with a curved lip to stop eggs gently when they roll out.

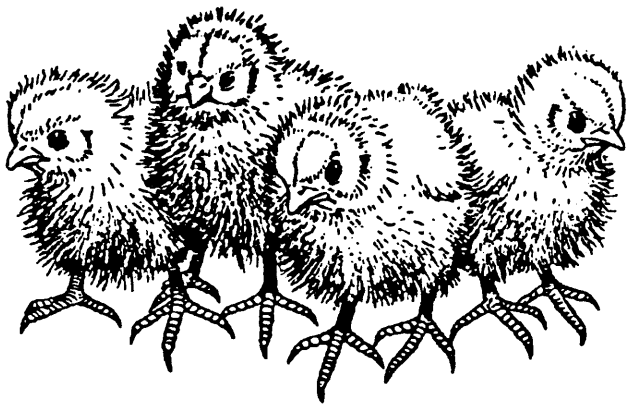
A common arrangement for cages is to place two rows back to back with a feeder on the front of each row and one water trough between the two rows. Water troughs should be V-shaped and about 1.5 to 2 inches deep. Feed troughs should be about 4 inches deep, 6 to 7 inches wide at the top, and slope inward to 3 to 4 inches wide at the bottom. There should be a .5- to 1-inch lip at the top of the feed trough to reduce feed wastage.

Manure under cages should "cone-up" and partially dry out as it is deposited—especially if the house is dry enough and there is no water spillage. Manure under the multiple-bird cage does not cone-up as well as that under single-bird cages, is usually wetter, and requires more frequent removal to prevent odors and fly breeding. Spray the manure occasionally with an approved larvacide or insecticide to reduce fly populations.

Specialty projects

Bantams

Bantams are about one-fourth to one-fifth the size of normal chickens. Adult bantams will consume about 20 to 25 pounds of regular layer feed per year and lay eggs weighing about 11 to 16 ounces per dozen. They start laying at about 6 to 8 months of age. If allowed, they will incubate their own eggs and make excellent mothers. One male can mate with 1 to 15 females depending on the breed. Nests should be about 6 inches wide, 8 inches deep, and 9 inches high. Bantam chicks should be given a good starter chick feed.



Although bantams are small, they need 1.5 to 2 square feet of floor space and should be provided a sun porch or even a range. They need 4 or 5 inches of roost space per bird. Bantams have the same disease problems as normal chickens.

"Rock Cornish Game Hens"

These are simply young broilers 4 to 5 weeks of age with a live weight of 2 to 2.75 pounds. Their care is the same as required for young broilers, except that they only need .5 square foot of floor space.

Roasters

Roasters are broilers kept beyond 7 to 8 weeks, often as long as 6 months. They may have a live weight of 9 to 11 pounds. Roasters require considerably more feed per pound of meat produced than do broilers.

Roasters kept after 7 or 8 weeks of age need 2 square feet to 16 weeks and 3 square feet after 16 weeks. Roasters should be given cracked corn in the afternoon, beginning with a small amount at 8 to 9 weeks of age and gradually increasing this until they are getting equal amounts of grain and broiler finishing feed at 15 weeks of age. Granite grit should be furnished once a week when cracked corn is fed.

Breast blisters may be caused by irritation of breast on floor, feeders, waterers, etc., and can be a serious problem with roasters. Litter should be at least 4 to 6 inches deep, clean, dry, and loose. Wet or caked litter will aggravate the problem. Provision should be made to keep birds from sitting on feeders or other sharp objects which might irritate their breasts.

The poultry house

Figure 1 (pages 4-5) shows plans for a basic 8 X 8 foot poultry house that can be used for a brooder house, laying house, or it can be adapted for bantams and pigeons. It will hold 15 to 20 laying hens, 60 to 70 broilers, or 35 to 40 bantams.

The walls can be made of conventional exterior or marine grade plywood. While only two windows are shown, both in the front wall, additional windows can be placed in the side walls if required. The windows need not be made of glass but could be simply frames covered with burlap. This would serve two purposes—reduce the amount of light and therefore reduce the possibility of cannibalism, and provide for air movement.

As additional ventilation is required, the windows can be slid down the side walls or tilted in. Ventilation is adequate when the relative humidity and ammonia odors do not make the caretaker uncomfortable.

The roof can be sheet metal, wood shingles, or any other type desired. For composition shingles or roll roofing, the sheathing should be solid. Insulating the roof and sidewall will help save brooding fuel and prevent water freezing in extremely cold weather. A vapor barrier will help prevent moisture condensation.

The 4 X 4 inch skids on which the house rests should definitely be

pressure-treated. Placing the skids on concrete blocks will further extend their useful life.

Equipping the poultry house

For broilers and replacement pullets necessary equipment includes feeders, waterers, heating units or brooders, and perhaps roosts for replacements. Layers will need roosts and nests, but will not need heating equipment. A hanging tube feeder is good with this type of house for broilers, replacements, and layers. Waterers can be purchased or homemade.

Heating units can be of several types. For a small operation, infrared heating lamps are suitable. Radiant-ray infrared heating lamps or radiant-ray infrared units are available in various sizes. A small hover-type brooder, either electric or gas, would be suitable for operations that can use this size equipment.

Extension Service, Oregon State University, Corvallis, O.E. Smith, director. This publication was produced and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Extension work is a cooperative program of Oregon State University, the U.S. Department of Agriculture, and Oregon counties.