

# Poultry Management

For

4-H Club Members



CIRCULAR 350

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# POULTRY MANAGEMENT

## FOR 4-H CLUB MEMBERS

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### NUMBER OF CHICKS IN PROJECT

The ability to handle and care for chicks properly should govern the number of chicks that a 4-H Club member will buy or hatch. Club members should consider the amount of experience they have had with handling chicks; brooder housing space and equipment; amount of feed available, or cash available to purchase feed if it must be purchased; cash available to pay cost of extra labor if needed; and other necessary expenses involved.

Many boys and girls start with 25 chicks. However, this number is not considered enough for an entirely successful project. One half of the chicks are likely to be cockerels, and some of the pullets will not be good enough to keep. Also there is usually some mortality. It is better to start with 100 to 300 chicks, if that many can be handled properly.

### CHOOSING THE BREED AND VARIETY

Which is the best breed or variety is a question often asked by poultry growers, and especially by people who are starting a project for the first time.

There is no particular best breed or variety. Strain is more important than breed or variety. Personal preference and economic performance should govern the strain and breed chosen. Different people have different desires as to color and shape in choosing a breed or variety. Some give special consideration to producing meat breeds, while others like a high egg-laying breed. The difference is usually

shown in the quality of stock, physical equipment, and general management given the birds. Oklahoma boys and girls, no doubt, will be able to make more progress if they choose Standard-bred birds from the more common breeds and varieties. The common breeds are better established here in our state which offers a grower a greater opportunity, particularly in the selection of birds from R. O. P. breeding or for birds from show flocks.

Quality is a foremost factor in successful poultry production, and junior poultry growers should keep in mind the fact that good stock should be considered for best results.

### **BABY CHICKS**

Only high quality chicks should be purchased or hatched. There are two general sources of chicks—from a high quality breeder, or from a high quality hatchery operator. Both plans of buying are satisfactory; however, it is usually more desirable to purchase chicks from a breeder or hatchery operator not too great a distance from the home of the purchaser. Distant buying may cause delay in transit, chicks may be heated or chilled, or they may suffer from hunger or thirst. If the boxes of chicks can be picked up and taken to the owner's house, there will be fewer losses and a more satisfactory arrangement.

### **PREPARATION FOR THE ARRIVAL OF CHICKS**

Getting the brooder house and equipment in readiness before the chicks' arrival is important in preventing losses and getting the chicks off to a good start. If a new house is to be built, consider the size in regard to number of chicks to be brooded, location in regard to drainage, wind currents, space, fire hazards, and convenience to the caretaker. If an old house is to be used, do not overlook the cost of repairing and cleaning.

The size of the brooder house will govern the number of chicks to be produced. For example, a 10 x 12 house is large enough to care for 150 to 250 chicks. Approximately one-half to one square foot of floor space should be provided for each chick, depending on the breed. Overcrowding causes poor growth and chick losses due to dampness, lack of fresh air, and poor sanitation.

Floors and interior walls of used brooder houses should be scrubbed with hot lye water. Mix a 1-pound can and one bar of soap to 10 gallons of hot water and scrub the floors and walls thoroughly. After the interior of the house is dry, disinfect with any standard disinfectant.

Windows are important in the brooder house, and they should be constructed for easy opening, either by sliding or hinging to swing inside the house. They may be constructed so that they can be removed if so desired.

## BROODER HOUSES

Brooder houses may be grouped into two classes, movable and immovable. The moveable house is constructed of lumber and is usually built on skids for easy moving.

The Oklahoma shed type brooder house is 12 feet long, 10 feet deep, 8 feet high in front, 6 feet high in back, and constructed by the use of boxing and battens. This brooder house has proved popular for general farm use. It will accommodate 200 to 250 leghorn chicks, or 150 to 200 heavy breed chickens, depending on how long chicks are confined to the brooder house.

The movable brooder house has some advantages since it can be moved to fresh soil, green pasture, more desirable drainage, near shade, and perhaps to a more desirable watering location.

Immovable houses can be constructed on a larger scale of heavier material, such as brick, rock, tile concrete, or clay tile. Much care should be given to the location of a brooder house if it is to be permanently located. Factors affecting a permanent location are drainage, space for growing young stock, convenience to caretaker, in regards to advertising and access to highway, and from a farm beautification viewpoint.

Gas, oil, electric, wood, coal, and infra-red brooders, are all being operated on Oklahoma farms. Regardless of the kind being used, it should be operated according to the manufacturer's recommendations. No two kinds of brooders operate exactly alike. **See your county agent for information on infra-red brooding.**

The brooder stove should be set up and operated 24 to 36 hours before the arrival of the chicks. While waiting for the stove to be

come adjusted, the floor litter can be put in place. Some of the cheaper litters are cottonseed hulls, coarsely ground corn cobs, dry sawdust and shavings, and coarse sand. All of the commercial litters are satisfactory and are usually available at most hatcheries and feed stores.

### **WATERING SPACE**

Provide four, 1 quart water fountains for each 100 chicks during the first two weeks. Provide fountains of 5-gallon minimum capacity per 100 chicks up to four or five weeks. Expand water capacity in proportion to the number and size of birds after that age.

### **FEEDERS FOR GROWING CHICKS**

Four feeders, three feet long, six inches wide, and four inches deep, will accommodate 100 growing chicks until they are five or six weeks of age. More feeders should be added as the chicks become larger. After the chicks are six weeks old, the feeder can be raised off the floor by placing a 2 x 4 inch support, 18 inches long, under each side to support a 1 x 4 inch board that runs the length of the feeder. This 1 x 4 is used for the chicks to stand on while they are eating.

*When to Start Feeding Chicks:* Chicks should be fed as soon as they are put in the brooder house. Mash should not be fed on newspapers, as this is one way of spreading disease.

*The Feeding of Mash:* Mash should be kept before the chicks constantly. It is necessary to provide two feeders, three feet long, for each 100 chicks, for the first two or three weeks, to give the necessary feeding space. As chicks become older, more space and larger feeders should be provided.

### **GROWING BIRDS**

Aside from a good feeding and watering program, growing birds need space on clean range and green feed and plenty of shade. If natural shade is not available, nine posts can be driven 10 feet apart and three feet high and covered with old chicken wire stretched tight to provide artificial shade. The wire over the posts can be covered

with two layers of gunny sacks, hay, straw, or other material to break the sun's rays.

Feed and water should be provided the chicks on range to prevent thirst and hunger.

Pullets being grown out for layers should be well fed and kept in good condition to prevent molting. They should have access to plenty of mixed grain, oats, mash, green feed, oyster shell, grit, and water.

They should not be forced to roost in hot houses. Provide openings in front, back, and ends of the house during summer months to make it just as cool as possible.

Selected pullets should be plump, well developed, with strong heads, full breasts, legs well set and wide apart. They should have wide backs, and a tight coat of feathers. Some consideration should be given to feather pattern even though special attention is being given to egg production.

## LAYING HOUSES

There are many different designs of laying houses on Oklahoma farms, and many different kinds of materials have been used in building these houses. Some are more satisfactory than others due to location, size, ventilation, sanitation, and general arrangements.

### Location and Materials

1. Type
2. Location
  - a. Well drained soil to prevent dampness.
  - b. Unrestricted air movement (air drainage) is essential.
  - c. Convenient for caretaker and sufficient space to prevent fire hazard.
3. Materials
  - a. Boxing and battens (new or used), hollow tile, concrete blocks, native stone and siding are all suitable if properly used.
4. Foundation
  - a. Concrete foundation, four inches wide and deep enough for a solid footing.

- b. Foundation should extend six to eight inches above level of the land where house is located to insure dryness of floor.
  - c. Use line of rods for reinforcements around foundation.
5. Floors
- a. Floors to be built up until they are within 1½ or 2 inches of top of foundation.
  - b. Crushed rock, gravel, dirt, or concrete may be used for floors.
  - c. Keep 4 to 6 inches of litter on floor, for warmth and aid in cleaning.
6. Ventilation
- a. Open front with removable or hinged muslin or cello-glass panels.
  - b. To increase fall and winter egg production, use artificial light mornings, long enough to give the flock 13 or 14 hours of light. All-night lights can be used.
  - c. In a house 20 x 20 feet in size, use two lights 15 or 25 watts in size.

## **Sanitation**

1. Disinfectants
- a. House should be cleaned thoroughly at least once each year and sprayed with a standard disinfectant.
  - b. Scrub floor with strong lye solution of 1 pound of lye and one bar of soap to 10 gallons of water.
2. Mites and Blue Bugs
- a. Paint roosts, nests, and back wall with carbolineum to control mites and blue bugs.
3. Super Phosphate
- a. Sprinkle super phosphate over droppings once each week. Use 12 to 14 pounds of phosphate for each 100 hens. This prevents fly breeding and makes an excellent fertilizer.
4. Floor Litter
- a. Keep litter on floor at least 4 inches deep at all times. Litter aids in disease control, helps to keep eggs clean, and adds warmth.

- b. Change litter when it becomes wet.
- c. Cottonseed hulls, shavings, ground corn cobs, straw, prairie hay, and sand are all good litters. Also, all commercial litters are satisfactory.

## FEEDING FOR EGG PRODUCTION

The production of eggs is a process of transforming raw materials into a finished product ready for human food. Feeds for poultry are used as building materials for making bones, muscles, feathers, nerves, and tissues and as a source of heat and energy. The efficiency of the flock will depend upon the kind and quality of feed given the birds, the equipment used and the general management methods applied.

Poultry feeds should be based upon the feed requirements of the birds, the nutritive value of the different feeds produced in the respective section of the country, and the particular purpose for which it is being used.

Since feed is high in price and limited in quantity, every pound fed to the hens should be utilized to the best advantage; therefore, a carefully planned feeding program should be followed.

Here are some suggestions regarding practical methods of giving the feed to the birds, the kind of feeds easily accessible to Oklahoma poultry growers, and the average amount for one hen for one year.

1. *Mash*: Mash is primarily an egg-building material, and for best results should be kept before the hens at all times in a suitable mash feeder.
2. *Oats*: Whole, dry oats, of high quality, are an important part of the feeding program. A mash feeder can be used in feeding oats. Allow the hens an opportunity to have a liberal quantity of oats daily. Some flock owners keep oats before the birds at all times, others give the birds a liberal feeding of oats in the morning, while some others leave the feeders open only until noon, allowing the birds access to oats for half a day. All are considered satisfactory.
3. *Grain*: There are a number of grain mixtures. A very good one is composed of one part yellow corn, one part wheat, and one part kafir, milo, or feterita. If the hens have access to mash



and oats at all times, allow them to eat all the grain they want in 15 to 20 minutes at night.

4. *Oyster Shell and Grit:* Oyster shell and grit are essential parts of a good feeding program. The oyster shell helps to build egg shells and also provides some mineral. Chickens have no teeth; therefore, it is important that they have grit in their gizzards to assist in breaking down the food to aid digestion. Half-gallon molasses buckets, attached to the wall of the hen house, three or four inches from the floor, are satisfactory containers for oyster shell and grit.
5. *Water:* Water should be kept before the birds constantly. The bird's body is 55 percent water and the egg is 73 percent water. The feeding program likely will fail unless there is a liberal supply of fresh, clean water before the birds at all times.

On the basis of feed for one hen, the following approximate amounts of feed are needed for a year's supply:

Laying Mash	45 lbs.	Oyster Shell	3 lbs.
Grit	2 lbs.		
Yellow Corn	} 45 lbs.		
Wheat			
Kafir			
Oats			

One 20 x 20 unit laying house and one 10 x 12 brooder house, with necessary interior equipment, is recommended to accommodate 100 hens for annual replacement.

### MASH FEEDERS FOR LAYERS

#### Rules to Observe in Construction:

1. It should be large enough to hold at least one day's feed supply with one filling.
2. It should be durable, yet light enough to easily move about in the house.
3. There should be 4 inches of feeder space for each grown bird.
4. A roller or paddle should be constructed to prevent the birds from roosting on it.
5. The feeder should have two coats of house paint or aluminum paint on it before being used.

## List of Material

A feeder trough may be made by splitting a 1x12, making one part  $\frac{3}{4}$ -inch wider than the other, to equalize each side.

	No. of pieces	Size	Length	
A. Legs	4	2x4	15"	(These may be left off)
B End Support	2	1x4	22"	
C. Jump Board	2	1x4	5' 3"	
D. End	2	1x10	13"	
E. Trough	1	1x6 $\frac{1}{4}$	5' 0"	
E. Trough	1	1x5 $\frac{1}{2}$	5' 0"	(Split from 1x12)
F. Trough Lips	2	1x3	5' 3"	
G. Reel	1	2x2	4' 11"	

## WATERING EQUIPMENT

When running water becomes available on the farm, automatic watering equipment for the poultry flock should be installed, as it saves time and labor for the caretaker. Three factors affecting the farm flock water supply are recommended:

1. That a water stand be constructed three feet long, two feet wide, and six inches high, for the purpose of keeping the birds from kicking straw into the water, and for better circulation of air under and around the water container to help keep the floors dry, and improve the sanitation program.

The water stand can be made from used pieces of 1x4 inch material for sides, ends, and cross braces. The four legs are made from 2 x 2 inch pieces of material, and the top can be made from plaster lath or heavy wire.

2. The water container should be large enough to hold approximately five gallons at one filling. New type five gallon buckets are now available, and are proving satisfactory since they set on top of the water stand and are easily cleaned. Two water containers, not less than five gallons each, should be provided for 100 hens.

3. When running water is available, water lines should be run to the hen house, and an automatic water float or cutoff should be attached. This modern type cutoff allows the water container to fill to its capacity then the float automatically stops the water flow.

### NESTS FOR THE LAYING FLOCKS

Due to the high price of good materials for constructing hen nests, orange crates may be used for a substitute.

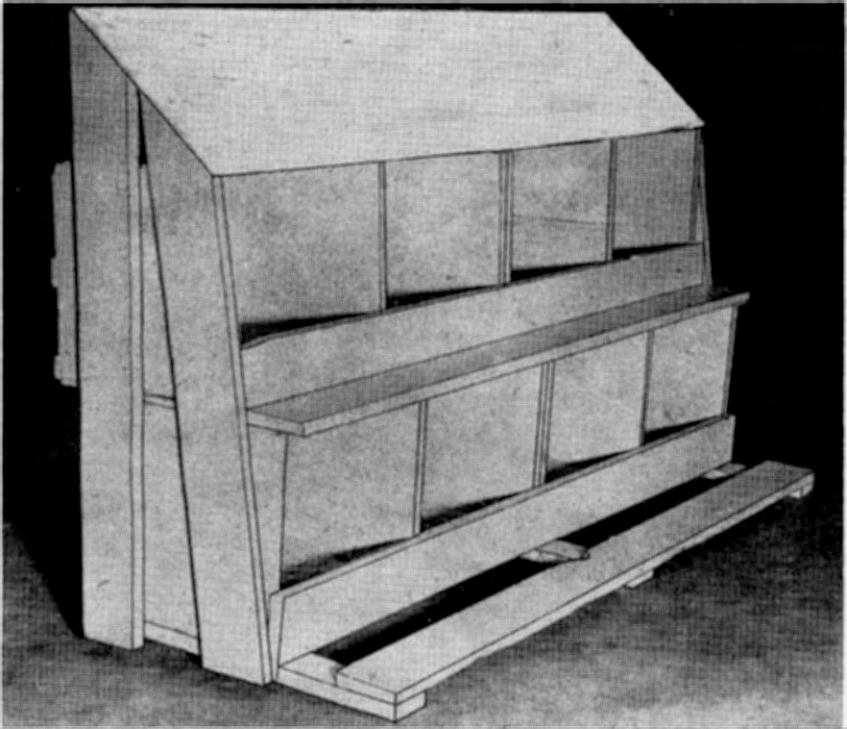


Figure 1.—These nests were constructed from orange crates. Such nests are easily constructed and durable. Notice that the top is sloping to prevent birds from roosting on nests.

Such nests can be constructed in two tiers (See Figure 1). The top tier of nests should be set back six inches over the first tier. A piece of 1x6 which ties the bottom tier of nests to the top can also be used for a jump board. Tie the nest to the wall by use of braces.

The nests should be constructed without legs, leaving all space under nests open for use by the birds. One nest is needed for each five hens. The minimum nest capacity is 12 inches deep, 12 inches wide, and 12 inches high. For larger breeds of birds, flock owners may find that they would like to have the nest 12 inches high, 12 inches wide, and 16 inches deep.

Floors of the nests should be kept covered with clean litter at all times to help keep the eggs clean and to help prevent shell cracking. Some of the more desirable nesting materials are cottonseed hulls, coarsely ground cobs, coarse sawdust and shavings, and any of the commercial litters.

The top should be made sloping and covered with 1 x 12 or other desirable material to prevent birds from roosting on nests.

## JUDGING HENS FOR PRODUCTION

In former years the farm flock was usually culled once or twice per year. In recent years, however, culling is done any time that a bird goes out of production. The most profitable returns from poultry flocks are obtained by using a well-planned and continued culling program throughout all seasons of the year. General management of the flock has much to do in regard to the physical condition, number of eggs that a hen can lay, and external indications as to whether or not she is laying.

Hens in the average laying flock can be classed as good, medium and poor layers. The medium and poor layers should be removed to save feed, time and labor, and to provide more space for the better birds. Every bird must be a producer to pay for her keep and leave a profit for her owner.

1. *Why Cull?* Non-producing and low-producing hens and all males not needed, should be culled at once to prevent feed losses. Feed is the most important item in the poultryman's management program, and unless every individual bird is a producer, profits are cut. It requires from 7 to 8 pounds of feed to keep an individual bird for one month. It is essential that only producing hens be kept to maintain a flock profit.

2. *How to Cull:* Every bird should be handled. This can be done by closing the birds in a fairly small space, or by use of a flashlight if culling at night. This is the easiest way to prevent disturbance. By handling individual birds, they can be checked for body weight, general health, and body conformation. Desirable birds can be kept, and culls can be placed in a freezer locker, canned, or sold on the market. In handling a bird you will ask yourself these questions:
  1. Is this hen laying?
  2. How long, and how intensely has she laid?
  3. Is she likely to produce well in the future?

*Head:* The head reflects quite accurately the internal mechanism of production. Heavy layers are keen, active, and curious. They have a bright, red comb; clear, bright, wide-open eyes; soft, waxy, red comb; clean-cut, lean face, free from fat. Usually they have a short, stubby beak that is free from pigmentation.

The poor layer usually lacks in thrift, is out of condition, and her comb is shriveled, ashy or dry in color, and small. The beak will show yellow pigmentation and in general she is lacking in alertness and health. She is shy, retiring, unfriendly, and will show disturbance when handled.

*Body Conformation:* Heavy layers are usually compact, muscular, and solid, but not fat. It requires substance to hold up under the strain of heavy annual production, and for this reason too much refinement should be avoided.

Heavy laying hens are always comparatively deep from the back to the keel bone. The size of the hen must be considered in making the measurement. The abdomen should be soft and pliable and the pubic bones free from excessive fleshy fat.

A long broad back that carries the width uniformly to the pelvis is greatly desired. By running the thumb and index finger backward from the hip bones to the pelvic arch, this measurement can be made readily.

*Body Changes Due to Laying:* A laying hen has a large, moist vent, showing a wide, dilated condition in contrast to the small, dry, puckered vent of a hen that is not laying.

The abdomen of a laying hen is enlarged, the pelvic arch spread and the keel is forced down.

## SELECTION CHART

### Characteristics Identifying Layers and Nonlayers

Character	Condition in	
	Layers	Nonlayers
Comb	Large, bright red, smooth, glossy.	Dull, dry, shriveled, scaly.
Face	Bright red.	Yellow tint.
Vent	Enlarged, smooth, moist.	Shrunken, puckered, dry.
Pubic bones	Thin, pliable, spread apart.	Blunt, rigid, close together.
Abdomen	Expanded, soft, pliable.	Contracted, hard, fleshy.
Lateral processes	Prominent, pliable.	Hard to find, stiff.
Skin	Soft, loose.	Thick, underlaid with fat.

### Characteristics Indicating Whether Previous Production Was Continuous or Brief

Character	Condition associated with	
	Continuous Laying	Brief Laying
Vent	Bluish white.	Yellow tint or flesh color.
Eye ring and ear lobe	White.	Tinted with yellow.
Beak	White.	Tinted with yellow.
Shanks	White, rather flattened.	Yellow, round.
Plumage	Worn, soiled.	Not much worn.
Molting	Late, rapid.	Early, slow.

### Characteristics of a High-Laying Strain

Time of maturity	Laying begins at about 6 months of age in the case of Leghorns and at about 7 months in the case of Rhode Island Reds, Plymouth Rocks, and similar breeds.
Rate of Production	Average of 180 or more eggs a year.
Broodiness	Birds are seldom broody.
Persistence of production	Hens are laying well in August and September toward the end of the first laying year or after it is completed.

## MOLTING

The molting test is very practical in the elimination of hens that limit their production to the spring and summer months.

Heavy laying hens usually show a rough weather-beaten appearance at the end of their year's work. The feathers become hard and brittle due to the absence of oil which is used up in production, thus changing the wearing qualities and making the feathers more easily broken. The lateness of molting indicates a reserve vitality. It is not in itself an accurate way of determining total yearly production, because of the great variation in cycles, but an estimate of the duration of production can be made.

The length of time that a hen has been molting or the time since she stopped laying may be determined by the molting of the primary feathers. It takes about four to six weeks to renew completely the primary feather next to the axial feather. The remaining primary feathers are dropped in order at intervals of one to two weeks. A high producer frequently molts several primary feathers at a time. In calculating the length of time a bird has been molting, all feathers shed at the same time should be considered as one feather.

## PREPARING AND EXHIBITING BIRDS AT SHOWS

A trio of chickens or a pair of turkeys can be shown at the community, county, or state fairs or state poultry shows, by any 4-H club boy or girl enrolled in poultry, provided the rules are followed governing the particular fair or show.

A trio should consist of one cockerel and two pullets raised by the club member making the exhibit. It is advisable for club members to exhibit an old trio consisting of one cock and two hens at the various fairs in the adult department. This will allow the club member a means of advertising, and also of comparing his exhibits with those of adults.

In almost every club member's flock, there are some birds worthy of exhibition. In order to select the birds for the show, it is necessary to become acquainted with the requirements of the breed and variety to be exhibited. This may be accomplished by obtaining the book entitled, **American Standard of Perfection**, and becoming familiar with the standard type and color of birds that are exhibited. After selecting a number of better birds on shape and color, each bird should be ex-

amined closely for defects and disqualifications. It is useless to enter birds which would be disqualified.

Club members can learn the disqualifications given in the **American Standard of Perfection**, listed under "General Disqualifications," and also the specifications listed under the breed and variety.

### **PRODUCTION JUDGING TERMS**

1. A hen with a softer and more pliable skin.
2. A hen with a tight, thick skin underlaid with a layer of fat in abdomen.
3. She has thin, pliable pubic bones that are wide apart.
4. No. 1 has flat shanks with color entirely bleached out.
5. No. 2 shows the greatest width across the back.
6. A hen with strong heart girth and lung capacity.
7. This Barred Rock hen has been the most persistent layer in the class, as indicated by refinement of the head, absence of yellow pigment, and old feathers.
8. A hen of low vitality as indicated by a long head; flat, thin beak; pale comb and narrow body.
9. A clear, bright, large, prominent eye, indicating good health.
10. This hen has a coarse, broad skull; wrinkled face; small, dull, sunken eye. She's fat and lazy.
11. A crow-type head as indicated by a long, straight, narrow beak and sunken eyes.
12. A bright, waxy comb and wattles that indicate health.
13. The new primary feathers, thick skin in abdomen and yellow color in vent and beak indicate that No. 1 hen has been out of production some time.
14. A complete set of primary feathers in the wing of No. 4 hen shows that she stopped laying early in the season.
15. She is a rapid molter.
16. A trifle coarse about the shank and head.