

COOPERATIVE EXTENSION WORK  
IN  
AGRICULTURE AND HOME ECONOMICS  
STATE OF OKLAHOMA

W. A. CONNER, Director

OKLAHOMA AGRICULTURAL AND  
MECHANICAL COLLEGE AND  
UNITED STATES DEPARTMENT OF  
AGRICULTURE, COOPERATING

EXTENSION SERVICE  
COUNTY AGENT WORK  
STILLWATER, OKLAHOMA

*Distributed in Furtherance of the Acts of Congress of May 8 and June 30, 1914*

---

---

# 4-H POULTRY MANUAL

BY F. C. OLD,  
Extension Poultryman

---

## *Table of Contents*

General Rules .....	2
Club Member Score Card .....	2
Requirements by Years .....	2
Demonstrations and Improvement of Equipment .....	3
Explanation of Jackson Poultry Law .....	4
Calendar of Work by Months .....	4
Selection of Breed and Variety .....	4
Selection of Eggs .....	7
Natural Incubation and Brooding .....	8
Artificial Brooding .....	10
Care of Chicks .....	10
Pullets for Winter Egg Production .....	12
Feeding .....	12
Poultry Equipment .....	13
Essentials of Good Poultry House .....	13
Brood and Shipping Coops .....	13
Show Fitting and Exhibiting Contests .....	15
Fowls for Exhibition Contests .....	15
Sanitation and Disease Control .....	16

## 4-H POULTRY MANUAL

BY F. C. OLD,  
Extension Poultryman

All poultry club members are required to carry out their demonstration as instructed by:

1. Their County and Home Demonstration Agents.
2. The 4-H Poultry Manual.
3. The 4-H Poultry Report.
4. The Extension News.
5. Their Club Coach and Club Captain.

The poultry demonstration extends over a period of four years. Chickens and turkeys may be grown. If premiums are not offered on turkeys in the junior class, they may be shown to good advantage in the open class.

### CLUB MEMBER SCORE CARD

	Perfect Score	Actual Score
*Meetings attended this year, 10 points each .....	100	.....
*Contest, rally, public demonstration .....	100	.....
*Well carried out club demonstration .....	200	.....
*Score of exhibit .....	200	.....
*Club narrative .....	200	.....
*Financial statement .....	200	.....
*Club member score .....	1000	.....
Agent's score .....		.....

\*Note: This score should be supplied by the club member. The club score should be at least 600 to be considered a satisfactory or "B" demonstration and 800 or more to be an "A" demonstration. Each coach and captain should assist with reports.

### REQUIREMENTS BY YEARS

Growth, Care and Management of Fowls

4-H Exhibit

#### First Year

- |  |                            |
|--|----------------------------|
| 1. Start with standard bred stock.         | A trio: 1 cockerel, 2 pul- |
| 2. 50 or more baby chicks on hand May 1st. | lets.                      |
| 3. Grow 25 or more to maturity.            |                            |

#### Second Year

- |  |                       |
|--|-----------------------|
| 1. Begin November 1 feeding for egg production, first year club birds. | A young and old trio. |
| 2. Care for breeding pen of at least 50 birds.                         | 1 dozen eggs.         |
| 3. Grow 50 or more to maturity.  |                       |

**Third Year**

- |  |  |
|--|--|
| 1. Begin November 1 feeding for egg production, first and second year birds. | A young and old trio.<br>1 dozen eggs. |
| 2. Care for flock of at least 50 females.                                    | Best piece of equipment made.          |
| 3. Grow 50 or more to maturity.  |  |

**Fourth Year**

- |  |   |
|--|---|
| Poultry management of at least 50 birds. | A young and old trio.<br>1 dozen eggs.<br>Best piece of equipment made. |
|--|---|

**DEMONSTRATIONS AND IMPROVEMENTS OF EQUIPMENT**

Each member is expected to put on a public demonstration and make two pieces of equipment in each year's work.

**Public Demonstration**

**First Year**

- Selection of eggs.
- Set a broody hen.
- Use a water fountain.
- Making a nest.

**Improvement of Equipment**

- Feed box for storage.
- Catching hook.
- Hen nest.
- Water fountain.

**Second Year**

- Feeding baby chicks.
- Show fitting.
- Making a brood coop.
- Culling hens.
- Poultry judging contests.
- Selecting pullets for the laying flock.
- Feeding schedule for poultry.

- Brood coop.
- Dry mash hopper
- Roosts and dropping board.
- Exhibit coop.
- Catching crate.

**Third and Fourth Years**

- Control of poultry pests.
- Operating an incubator.
- Judging poultry.
- Candling eggs.
- Caponizing.
- Schoolhouse poultry shows.
- Grading and packing eggs for the market.

- Oats sprouter.
- Exhibit coop.
- Remodel poultry house.
- Shipping crate.
- Colony house.

**REFERENCES**

References for club coaches and captains: Farmers' bulletins.

**First Year:**

- 1108 Care of baby chicks.
- 1110 Lice, mites and cleanliness.
- 1040 Illustrated poultry primer.
- 1107 Brood coops and appliances.

**Second Year:**

- 1115 Selection and preparation of fowls for exhibition.
- 1116 The selection and care of poultry breeding stock.
- 806 Standard varieties of chickens: 1. American class.
- 889 Back-yard poultry keeping.

**Third Year:**

- 1112 Culling for egg market.
- 1111 Management of growing chicks.
- 898 Standard varieties of chickens. II. Mediterranean and Continental classes.
- 1377 Marketing poultry.

**Fourth Year:**

- 1113 Poultry houses.
- 287 Poultry management.
- 849 Capons and caponizing.
- 624 Natural and artificial incubation of chickens.
- 1052 Standard varieties of chickens. III. The Asiatic, English and French classes.
- 791 Turkey raising.

The American Standard of Perfection.—Each club member, club coach, club captain, or 4-H club should own a Standard of Perfection.

A Standard Poultry Journal.—Each poultry club member and club coach should be a reader of a good poultry journal.

**EXPLANATION OF THE JACKSON POULTRY LAW**

Each member and club coach will be expected to have a knowledge of the Jackson Poultry Law. This law provides a special fund for conducting a schoolhouse poultry and egg show in each school district, at each county seat, and state show at a central point each year. Estimates for poultry shows must appear in the budget before it goes to the county excise board. This law is fully explained in Article XX of the Oklahoma School Law. Each school board, county superintendent, county and home demonstration agent and school teacher will have a copy of the school law in their possession.

**CALENDAR OF WORK**

**November.**—Feeding for egg production. Housing. Sanitation. Schoolhouse poultry shows. Judging. Green feeds.

**December.**—State poultry show. Enrollment. Disease prevention. Mating breeding pens. Improving equipment.

**January.**—Care of breeding pen. Lice and mite control. Sanitation.

**February.**—Make equipment. Mix feed for laying hens and baby chicks.

**March.**—Incubation and brooding. Clean up premises. Hatch early.

**April.**—Sanitation.

**May.**—Swat the rooster. Fatten broilers. Sanitation.

**June.**—Summer care of chicks and old stock. Sanitation.

**July.**—Cull hens and weak pullets. Sell surplus cockerels. Sanitation.

**August.**—Cooperative marketing of eggs. Cull. Shade and water.

**September.**—Reports. Housing. Sanitation.

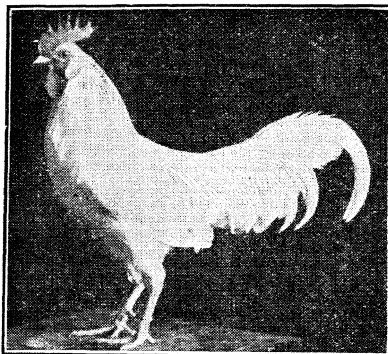
**October.**—Enrollment. Place pullets in laying house. Sanitation.

**BREED AND VARIETY**

- A. Points to be considered in the selection of the breed and variety:
  1. The breed and variety which you naturally like.
  2. The breed which is the most popular in your community.
  3. The breed which is represented by the best standard individuals from which eggs or baby chicks can be secured.
  4. The breed of the greatest commercial possibilities.

5. The type to which the community is the best adapted.
  - a. Light egg type.
  - b. Dual purpose type.
  - c. Heavy meat type.

**The Egg Breed**



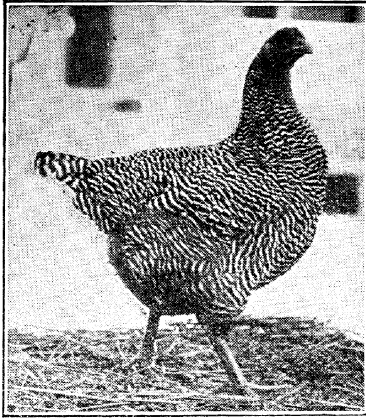
Single Comb White Leghorn Male

**The Meat Breeds**



Black Langshan Female

## The General Purpose Breeds



Barred Plymouth Rock Female      Single Comb Rhode Island Red Male

- B. Points to be considered in inspecting breeding stock:
1. Standard qualities according to the Standard of Perfection.
  2. Egg production of hens in their pullet year.
  3. Egg production of mother of male bird.
  4. Maturity of breeding stock.
  5. Character and amount of feed they receive.
  6. Health of individuals.
  7. Vigor of individuals.
  8. Environment under which stock was grown.

## Choice of Individual Birds

- C. Points to be considered in the selection of the breeding male:
1. Health.
  2. Maturity.
  3. Clear, bright eye.
  4. Broad, deep head; short, stout beak.
  5. Broad, flat back carrying width to tail.
  6. Wide between legs.
  7. Full chest.
  8. Standard length legs, stout and well set.
  9. Good quality of skin and feathers.
  10. Active oil glands.
  11. Lusty crower.
  12. Pugnacious.
- D. Points to be considered in the selection of the hen (culling) for past and present egg production. (July and August).
1. If a hen is laying now she will have:
    - a. A soft, red comb and wattles, and bright eye.
    - b. A wide, wet, smooth vent.
    - c. Pelvic bones wide spread (enough to allow an egg to pass through).
    - d. Abdomen deep and full.

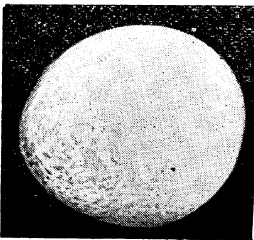
2. If the hen has had a long laying period she will have:
  - a. A bluish white vent.
  - b. Thin creased legs.
  - c. Ragged, worn and tight fitting plumage in July and August.
  - d. Yellow pigment disappeared from vent, earlobes, eyelids, corner of mouth, beak and shanks.
3. If the hen has quality for high rate of egg production she will have:
  - a. Thin, pliable pelvic bones, fairly straight and pointing to the rear, good width above.
  - b. Thin, silky, elastic skin covering the abdomen.
  - c. Good body capacity as shown by:
    - (1) Flat, long and wide back for the breed.
    - (2) Deep, full and well muscled chest.
    - (3) Straight breast bone of medium length.
    - (4) Wide between legs.

#### Selection of Eggs for Hatching

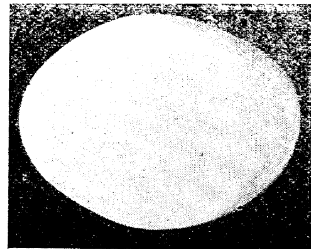
- E. Points to be considered in the selection of eggs for hatching:
1. The ideal hatching egg weighs 2 ounces, is about  $2\frac{3}{4}$  inches long,  $1\frac{3}{4}$  inches in diameter and typically egg shaped.
  2. Poorly shaped eggs, such as double yolked, eggs with a ridge, flat side, too long or too short or have a thin shell are not suitable for hatching. Abnormal eggs hatch poorly and produce weak chicks. Pullets from hens that lay small eggs are apt to produce small eggs.
  3. Very dirty eggs should be discarded. Spots of dirt should be removed from the shell with a piece of sand paper. The hatching egg should not be washed under any circumstances. Washing eggs destroys the outside "bloom" and allows excessive evaporation, and enables bacteria which are present in the dirt to go through pores of the shell into the egg.
  4. It is not necessary to turn eggs which are being held for hatching, until they are six or seven days old. It is not necessary to rest eggs for a time which have been shipped. They may be set immediately. Eggs should be gathered three or four times a day to prevent chilling.

#### Egg Score Card

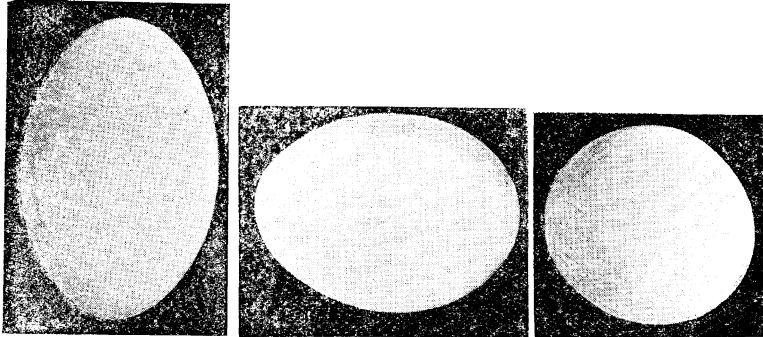
(See Standard of Perfection)



Wrinkled Egg



Ridged Egg



Oblong Egg

Perfect Egg

Short and Round

### NATURAL INCUBATION OR HATCHING WITH HENS

**Dimensions of the Nest.**—A comfortable nest for a sitting hen can be made by nailing 12-inch boards together in such a way as to have a bottomless and topless box. The dimensions should be 12 inches wide, 14 inches long, 12 inches high on 3 sides and 6 inches high on the fourth side. Two or more nests may join together. There should be a partition between each nest.

**Location of the Nest.**—The nest should be placed in a quiet, secluded, partially darkened place, and entirely separated from the laying flock. This bottomless nest should be placed upon clean, well drained ground, because moisture from the earth is desirable for good hatching.

**Nesting Material.**—Nests which do not rest on the ground should have a 2-inch layer of fresh soil in the bottom. Bright wheat straw, oat straw, prairie hay which has been broken into approximately six-inch lengths, make good nesting materials. The center of the nest should be hollowed out a little so that the eggs will stay well placed. Nesting materials should be about  $\frac{3}{4}$  inch deep.

**Selecting the Broody Hen.**—Pullets and hens of the lighter breeds, as a rule, do not make good setters. Plymouth Rocks, Rhode Island Reds and Orpingtons are considered the best setters. A healthy hen of medium size, which shows persistent broodiness should be selected for hatching. Her willingness to stay on the nest may be tested by using false or old eggs for a period of three or four days before putting the good eggs under her.

**A Setting of Eggs.**—The small hen should have 13 eggs under her, the medium hen 15, and the large hen 17. An odd number is used in order that the eggs will fit in the nest in a circle.

**Setting the Hen.**—The hen should have been treated with some good louse powder such as sodium fluoride applied by the "pinch" method, the nest disinfected, the nesting material and eggs placed and the plans com-



pleted before dark. The hen should be moved to the setting nest after dark. She should be held firmly by the wings and legs and placed on the nest in a careful manner. The legs and wings should be released gradually in order that she may feel the eggs before her full weight is allowed to rest upon them.

**Feeding for the Sitting Hen.**—Equal parts of wheat and corn are the only feeds necessary. Avoid laxative feeds. Plenty of grit and fresh clean water should be supplied. Since a majority of sitting hens are inclined to go without sufficient food, it is advisable to remove them from the nest at least once each day for feed, water and exercise. This plan protects the vitality and health of the hen during the incubation period.

**Hatching Period.**—The normal time required for hen eggs to hatch is 21 days. From the eighteenth day until the hatch is completed the hen stays on the nest the greater part of the time. As the chicks hatch they may get too far away from the mother hen unless the nest is well rounded. Egg shells should be removed from the nest frequently, at least three times a day.

### ARTIFICIAL INCUBATION

Artificial incubation requires a great deal of skill but the problems can be solved if care is taken and one pays attention to details. The following is a list of the steps in order:

1. Procure an incubator which is successful in the neighborhood.
2. Disinfect incubator with a 4% solution of some good stock dip.
3. Place in incubator room.
4. Incubation room should be well ventilated, of constant temperature and free from drafts.
5. Level machine with spirit level or pan of water.
6. Study manufacturer's directions.
7. Adjust as directed.
8. Start machine.
9. Adjust until two days readings are constant. (103° F.)
10. Fill trays with eggs.
11. Leave machine closed until temperature is again normal. (103° F.)
12. Turn eggs twice daily.
13. Always turn eggs before filling lamps in order to avoid oil getting on the eggs.
14. Most instructions mention that eggs should be cooled twice daily from the third day to the eighteenth day. Recent experiments show that this is not necessary if the machine is well ventilated.
15. Candle on the seventh and fourteenth days.
16. Keep incubator closed after the eighteenth day.
17. At the end of hatch, cool down machine to 100° F. and leave chicks for one day.
18. Darken door of incubator to prevent the development of vicious habits among the chicks.

### ARTIFICIAL BROODING

1. Have brooder ready for chicks from incubator.

2. The temperature is best at 100° F. one inch from the floor at the outside edge of the hover.
3. Round out corners and slope sides with building paper to prevent crowding.
4. Place at least one inch of sand under hover.
5. Cover floor with fine cut alfalfa or straw.
6. Keep chicks close to the hover for the first few days by a strip of building paper or other material on end, circling the hover not more than three feet away.
7. Keep chicks in brooder house at all times for the first two weeks.
8. Allow chicks in the runs only on bright sunny days.
9. Decrease the temperature one degree per day until chicks no longer need heat.
10. Place flat roosts two inches wide in houses when chicks are about six weeks old.
11. Regularity in feeding is essential.
12. Prevent floor drafts and over crowding.
13. Provide plenty of ventilation.
14. Make chicks exercise by feeding scratch food in straw.
15. Clean brooder house frequently.
16. Growing chicks require an abundance of fresh, clean water.

#### CARE OF CHICKS

**Using the Brood Coop.**—As soon as the hatch is complete the hen and chicks should be removed to the brood coop. The chicks should be shut up with the mother hen for the first three days, at nights, and when the weather is bad and the grass is wet. The mother hen should be confined to the brood coop and yard until the chicks are weaned. This insures a more rapid growth and reduces the loss by storms, rats, hawks and the like.

The brood coop should be put on ground that has not been previously used by chickens, near shade, and away from the rest of the flock. The soil in the poultry yard should be frequently spaded or plowed.

Brood coops should be well lighted, well ventilated and have tight floors. The floors should not be attached to the walls of the coop, in order to facilitate cleaning and disinfecting. The walls and roof should be free from cracks and should be rain proof. If possible, the roof and also the walls should be covered with roofing paper.

Before a brood coop is used it should be scrubbed with boiling water and disinfected with crude oil or stock dip in order to make sure it is free from mites. All poultry equipment should be thoroughly disinfected weekly during the hatching and brooding season. While in use the floor and wall of the brood coop should be exposed to the sun on clear days. If sand or straw is used on the floor it will help to keep the floor dry and make cleaning easy.

Proper management of the brood coop, especially proper sanitation, is one of the most important factors in poultry raising. Neglect and carelessness of the brood coop has caused a greater loss to club members than any

one thing. Careful thought should be given to proper heat and ventilation at all times.

**Feeding Schedule for Chicks.**—Baby chicks should have the feed changed gradually and never suddenly. Just before the chick is hatched the yolk is taken into its abdomen. This is nature's way of caring for the chick until it is able to eat. The yolk is absorbed in 3 or 4 days. The chick should not be fed until it is 60 hours old.

There are many successful ways of caring for baby chicks and many more successful feeds. One of the main things to remember in feeding chicks is that more chicks are fed to death than are starved to death. On the other hand the chick may have all the feed it can consume and starve to death because the ration does not contain the variety of elements necessary for life. It is not always possible to secure all the ingredients of a certain ration or to follow a definite program of feeding.

The following method of feeding has given good results:

1. Do not feed before the chick is 60 hours old.
2. Give the chick free access to sand for at least an hour before feeding.
3. Give a drink of sour milk (be sure the milk is not spoiled).
4. Feed egg and bran starter consisting of raw egg and as much bran as will adhere. Instead of egg and bran starter, small scratch feed may be fed. Feed all they can eat for 15 minutes placed on a board or in a shallow pan.
5. Feed sour milk and small scratch feed for first week.
6. Begin third day feeding finely clipped sprouted oats, lawn clippings, or other succulent green feed at noon each day.
7. Begin eighth day feeding dry mash in self feeder. In addition to dry mash, keep sour milk, scratch feed, green feed, grit, and water at all times.
8. Feed this way until chicks are ten weeks old.
9. After the chicks are ten weeks old the feed may be coarser.
10. Separate cockerels from the pullets as soon as they can be detected and fatten the surplus for market.

There are many good commercial feeds on the market and unless a great number of chicks are being fed, it may be more economical to purchase the feed already mixed. The following ration is recommended:

Scratch Feed	Dry Mash
10 parts cracked corn	10 parts fine corn meal
10 parts cracked wheat	10 parts fine ground, sifted oats
10 parts steel cut oats	10 parts bran
(Parts by weight)	10 parts shorts
	2 parts bone meal
	2 parts alfalfa flour

### SUMMER CARE OF CHICKENS

1. It is essential for good pullet development that the cockerels should be separated from them at an early date.
2. Growing chicks need shade, exercise, sanitary conditions and a proper ration.

3. A young orchard, grove, cotton or cornfield furnishes shade and exercise.
4. The proper ration of scratch and mash feed should be kept on the range for the growing chickens.
5. It is often necessary to supply green feed during dry summer months, such as sprouted oats, cabbage, or other tender green.
6. Late hatched and slow maturing pullets may be hastened into maturity by supplying milk and a moist mash to the ration at noon each day.
7. Exceptionally early hatched pullets may be kept from maturing too soon by gradually decreasing the meat scrap and the milk in the ration.

### PULLETS FOR WINTER PRODUCTION

1. Pullets should be placed in the laying house by October 1st.
2. Pullets selected for the laying house should have:
  - a. Maturity.
  - b. Vigor.
  - c. Vitality.
  - d. Health.
  - e. Future layers should have a reserve of fat; if too thin increase the scratch feed, if too fat decrease the scratch feed.
3. Care and management.
  - a. Spray poultry equipment if mites are present.
  - b. Treat pullets for lice.
  - c. Watch for sick birds.
  - d. Make birds exercise by feeding scratch in litter.
  - e. Supply a good ration of scratch, mash, green feed, water, oyster shell, grit and water.

Scratch Feed	Dry Mash
Place in order of their value.	200 lbs. bran
Use equal amounts of any three.	100 lbs. shorts
Oats	100 lbs. ground corn
Corn	100 lbs. finely ground barley
Wheat	50 lbs. alfalfa flour
Barley	125 lbs. meat meal
Kafir	20 lbs. dried buttermilk
Hegari, darso, milo	40 lbs. cottonseed meal
	6 lbs. salt

### FEEDING

The **scratch mixture** should be fed twice daily, preferably in litter about 8 inches deep on the floor of the hen house. Feed about  $\frac{1}{2}$  of the mixture in the morning and  $\frac{1}{2}$  in the afternoon. In the morning give what the fowls will clean up within an hour, and at night enough to satisfy them fully.

**Feed dry mash** in a self feeder or mash hopper.

**Green feed** should be supplied at all times. If poultry is confined in small yards they should be fed leaves of lettuce, clover, alfalfa, cut grass from the lawn, sprouted oats or barley.

Poultry need grit to help grind their feed. Fine pieces of gravel and commercial grit are satisfactory.

Milk, meat scrap or tankage supply a part of the materials needed for bone building, but it is advisable to keep granulated bone for growing chicks.

Oyster shell is a necessity for laying hens. This is the shell forming material.

### POULTRY EQUIPMENT

Poultry club members are expected to construct at least two pieces of equipment each year. The club member should give careful attention to the essential features in the construction of all equipment. The final score on equipment is based upon workmanship, quality and quantity of work done.

At least one equipment demonstration should be put on each year at a club meeting by a poultry breeder, club coach, club captain, or an outstanding club member.

### ESSENTIALS OF A GOOD POULTRY HOUSE

1. **Fresh Air.**—The oxygen in the air is necessary since the body heat is made by burning the stored fat in the body of the hen. Chickens will consume about four times as much oxygen per body weight as a man.

2. **Sunlight.**—Sunlight is a great germ killer and dryer. The house should be so constructed that sunlight will fall upon all of the floor if possible.

3. **Dryness.**—Damp houses almost always contain some chickens with colds and roup. Damp straw in the house molds and causes trouble in the breathing organs of the chickens.

4. **Freedom From Draughts.**—Draughty houses are unhealthy and uncomfortable for the chickens.

5. **Economy of Construction.**—It is very desirable to keep the cost of building down to a minimum and still build a good house.

6. **Durability.**—Build for permanence and few repairs.

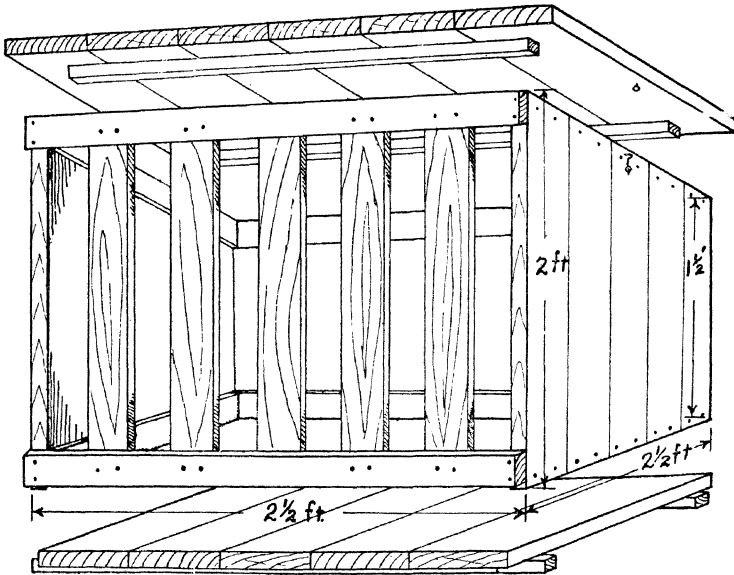
7. **Convenience.**—The house should be conveniently arranged inside and located conveniently with reference to the other buildings of the place.

8. **Room.**—Plenty of floor space, roost, and nest room should be furnished for the hens. Three square feet of floor space per bird, one nest for six hens and eight inches of roosting space for each hen.

### BROOD COOPS

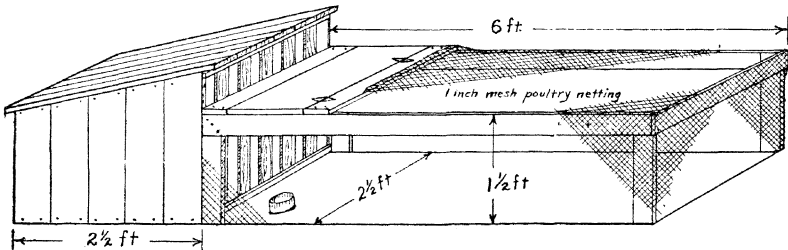
“A” shaped and box brood coops can be made from dry goods boxes or other available material. The “A” shaped coop is collapsible so that it can be easily cleaned and stored away in winter. A wire screen door (one inch mesh or smaller) should be placed over the front at night. This will prevent the rats and other enemies from entering the coop and killing the chickens.

Brood coops should be well lighted, well ventilated, and have tight floors. The floors should not be attached to the walls of the coop, in order to facilitate cleaning and disinfecting. The walls and roof should be free from cracks and should be rain proof. If possible the coop should be covered with roofing paper. A properly constructed coop is a good place to hatch chickens.



Brood Coop for the Hen and Chicks

Drawing shows a simple brood coop for hen and chickens. The bottom of this coop fits just inside the coop, and is not fastened to it. The top is fastened down by means of a screen hook on each side of the coop. One of the slats in the front is left loose so that it may be slipped out.

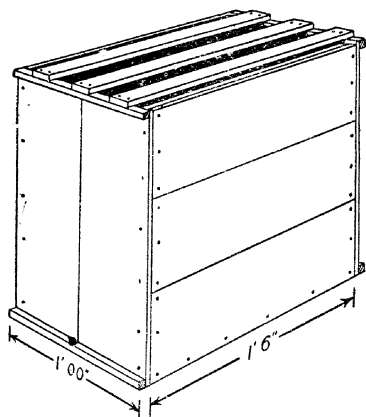


Hatching and Brood Coop

Drawing shows a hatching coop. The nest is made by banking up a little dirt higher than the ground around it. With an arrangement of this kind there is no trouble with the hen getting on the wrong nest. The top of this coop is hinged in front so as to make it convenient to set the hen.

When shipping fowls by express to poultry shows it is very essential to have them crated in solid, substantial shipping coops in order to have them arrive in good condition.

This coop may be made from dry goods boxes, or almost any half-inc. material.



Coop for shipping exhibition fowls

The following dimensions should be used in constructing this shipping coop:  
 For one hen or cock, 12 inches wide, 24 inches long, 24 inches high.

For four hens and cock, 24 inches wide, 24 inches long, 24 inches high.

Additional equipment which is not mentioned above may be added, which is as follows: Bin or box for the storage of grain, watering and catching devices, grain sprouting device, dropping boards, nests, fencing, gates, litter and feed cart.

### SHOW FITTING AND EXHIBITING CONTESTS

**4-H Poultry Exhibit.**—Poultry club members should exhibit at least a trio of birds and a dozen eggs at the schoolhouse poultry show, township county and state fairs and the state poultry show. The trio should consist of one male and two females. The exhibit requirements of first year members is a young trio, and a young and old trio for second, third and fourth year club members. A pen consists of one male and four females. Prizes should be offered on singles instead of trios. Each variety should be judged separately. The exhibitor of the champion trio at the county fair is entitled to attend the 4-H Club Camp of his choice during the state fair week. A premium should be offered on poultry equipment at all contests.

### FOWLS FOR EXHIBIT CONTESTS

1. With the assistance of the American Standard of Perfection as a guide examine your birds for:
  - a. Disqualifications and defects.
  - b. Standard requirements of breed and variety.
  - c. Glossary of terms.
  - d. Score card.
  - e. Instruction to judges.
2. Should be early hatched and well matured. All fowls that are to become good layers and are to be exhibited should be hatched by May 1st.
3. Feed feather conditioner such as oil meal or sunflower seed in mash.
4. Train for exhibit contest in small coop.
5. Leg Bands.—As soon as exhibit birds have been selected they should be leg banded. All birds must be leg banded before entered in exhibit contest or poultry show.
6. The shipping coop should be substantial and roomy as indicated in this manual.
7. Attend the show in order to become acquainted with breeders and customers, and to secure the opinion of the judge on all birds exhibited.

8. Final preparation before show. Wash birds.
- In warm room free from draughts.
  - With soap suds and warm water. Work soap suds to base of feathers.
  - Rinse in tepid or lukewarm water.
  - Rinse in bluing water (not too blue) which is somewhat cooler.
  - Rinse in cool water.
  - Dry with towel, rubbing with feathers.
  - Take bird by feet and allow it to use wings.
  - Place in clean coop in room having a temperature from 80 to 85 degrees.

**Eggs for Exhibit Contests.**—With the assistance of the egg score card select one dozen eggs of standard weight, color, shape and size.

**Poultry Equipment for Exhibit Contest.**—Since all poultry demonstrators are expected to make two pieces of equipment each year, they should exhibit their best article at each contest.

### SANITATION AND DISEASE CONTROL

Disease	Symptoms	Treatment
White diarrhoea in chicks	Pasty, brownish white diarrhoea	Test breeding birds with agglutination test. No cure for infected chicks; they carry disease if they recover.
Coccidiosis	High death rate young chicks, muscular weakness. Bloody droppings.	1 tablespoon epsom salts per 100 chicks in drinking water. $\frac{1}{3}$ teaspoon powdered catechu in gallon drinking water. 30 grains sulpho carbolate compound per quart drinking water.
Cholera	Birds found dead, yellowish green droppings	Kill and burn diseased birds. Disinfect, 30 grains sulpho carbolates in quart of drinking water. Vaccinate with fowl cholera serum as a cure and preventative.
Roup	Swollen eye. Clogged nostrils, canker mouth.	Kill and burn first cases. Correct drafts in house. Disinfect. Vaccinate with antigenous or mixed infection bacteria.
Intestinal worms	Weakness, listlessness, worms shown in intestines when killed.	Starve birds. Overnight steep one pound tobacco in water for 100 birds, feed in mash to birds. Follow in two hours with epsom salts, 1 pound epsom salts to 100 birds. Move birds to clean quarters, disinfect yards with strong salt water.
Nutritional deficiency disease	Birds walk unsteadily, finally become prostrate. Many have eye trouble.	Disease caused by lack of proper food, bird may recover if given a teaspoon of cod liver oil twice a day and fed sprouted oats with other feed.
Leg weakness	Paralysis of legs in young chicks.	Correct feeding trouble. Add oyster shell, rolled oats, lime water, green feed and cod liver oil ( $\frac{1}{4}$ spoon per day), milk.
Lice	Listless, irritated, loss of egg production. Ruffled feathers, continual picking.	Use sodium fluoride by the pinch method, placing a pinch on the body at several points of the body or dipping with a solution of 1 gal. water, 1 oz. sodium fluoride. This must be done on a sunny day in late spring, summer or early fall.
Mites	Birds lose weight, may die, rough feathers. Pale combs and face.	Burn litter, clean up house. Spray house—1 gal. kerosene, 1 gal. waste cylinder oil, $\frac{1}{2}$ pint stock dip, paint with carbolineum.
Egg bound	Hen nests often. Attempts to lay egg. Suffers acutely.	Remove egg with sterile lubricated fingers. Inject a tablespoon of liquid petrolatum. Keep hen on light diet.