

# 4-H Poultry: Unit 1



A small flock of chickens does not require much space or money, and if you manage your flock well, you can earn some money. You might start with a small flock of 25–50 chickens, or you can help your parents in growing and managing a larger flock.

Here are some things you can learn in your poultry projects:

- breeds of chickens
- brooding temperature
- how to feed and water chickens
- how to keep them healthy
- care and handling of eggs
- recordkeeping

## Types of Flocks

After you decide that poultry is the 4-H project you want to enroll in, then you must decide what type of chickens you want. Do you just want to grow them for meat and eggs for the family? To produce eggs to sell? Or will you join with your parents in growing broilers?

### *The Home Flock*

Choose a small flock of 25–50 birds to furnish eggs or meat for home use. Here are some recommended breeds:

- Rhode Island Red
- New Hampshire
- sex-link
- White Plymouth Rock

These birds lay brown-shelled eggs. They are used to produce both meat and eggs. They have large bodies and eat more feed than the egg-laying type. They are gentle and easy to manage.

You can buy straight-run chicks—about half pullets and half cockerels—or you may buy all pullet chicks. When the chicks are about 9–10 weeks old, separate the pullets and cockerels. Keep the pullets, and sell or use the cockerels for food.

### *The Egg Flock*

For an egg-producing flock, select one of these birds:

- production-type Rhode Island Red
- Leghorn
- hybrids
- sex-link

These birds have smaller bodies than broiler chicks, and they do not eat as much feed. They also lay more eggs.

### *The Broiler Flock*

If your parents raise broilers, assisting them can be your project. You and your parents may work out an agreement so that you receive a percentage of the income for work you do in the broiler operation.

Cross-bred chicks are used for broiler production. These chicks grow fast and produce broilers in 6–7 weeks. A pound of meat is produced on less than 2 pounds of feed. The principles of brooding broilers are the same as for other chickens.

Small broiler flocks are hard to sell. Processing plants prefer to buy large flocks. This is one reason it is better to be in partnership with your parents on broiler production.

## Production Principles

Whether you decide to grow a home flock, egg flock, or broiler flock, you must know and do certain things to be successful with your project. We call these the principles of production. These production principles are the same for all three types of flocks: heat, water, feed, and sanitation.

## Brooding Chicks

The brooding period is from the day the chicks hatch until they are 8–10 weeks old. This is a very important period in the chick's life. You must provide your chicks

with certain things during the brooding period:

- a warm, dry, clean place to live
- plenty of clean water
- fresh air, but no drafts

### Housing

You will need some type of house or brooding shelter. This may be a shed or building you already have. You might want to build an outdoor brooder. Your parents, county agent, or 4-H club leader can help you decide on the housing.

Keep the floor dry. Pine wood shavings make good floor litter. You should start with 4–6 inches of dry litter on the floor.

The chicken house should have windows or openings for fresh air at all times. Do not let the chicks get too hot or too cold.

### Equipment

#### Brooders

You will need a brooder or heating device to keep the chicks warm. Provide heat for your chicks as shown below:

Age of Chicks	Temperature
1 day–1 week	90°F
1–2 weeks	85°F
2–3 weeks	80°F
3–4 weeks	75°F
4 weeks–adult	70°F

After 6 weeks, keep the temperature near 70°F as long as needed. Adult birds can usually maintain body temperature without adding heat.

Gas brooders will usually handle 500–1,000 chicks. Do not start more than 350 chicks under a 500 size brooder or more than 750 chicks under a 1,000 size brooder.

An infrared heat lamp is ideal for brooding 100 or fewer chicks. Many 4-H club members use this type brooder. They hang the lamps 16 inches above the litter.

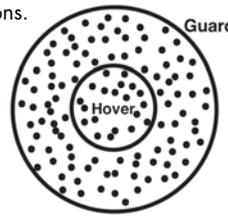
It is hard to measure temperature accurately with a thermometer under an infrared bulb. Approximate temperatures can be measured using a thermometer with the bulb end covered with black electrical tape.

Watch the chicks closely to see that they are comfortable. When the temperature is about right, chicks bed down in a doughnut-shaped ring or spread out evenly under the light. If they crowd together, it is too cold. If they crowd near the brooder guard, it is too hot. See **Figure 1**.

If you need to increase the temperature, lower the bulb. Raise the bulb to reduce the temperature. After the bulb is adjusted for starting the chicks, you can raise it an inch once a week to provide the right temperature.

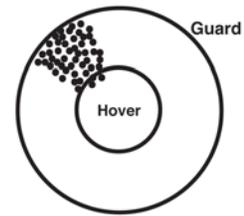
#### Just Right

A contented peep and evenly distributed chicks around the hover indicate comfortable conditions.



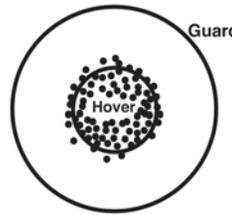
#### Too Drafty

When the chicks chirp and wedge behind the hover, there is a draft.



#### Too Cold

If too cold, the chicks will chirp and pile up under the hover.



#### Too Hot

If the chicks move away from the heat source and are drowsy, the temperature is too warm.

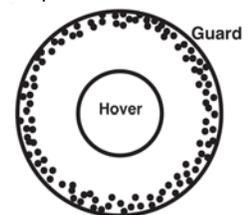


Figure 1. Watch the chicks closely to make sure they are comfortable.

Provide two 1-gallon water founts or four 1-quart founts for 100 chicks. If you use trough-type waterers, provide at least one 3-foot waterer for 100 chicks. Allow at least three-fourths of an inch of watering space per chick throughout the brooding period.

#### Feeders

You will also need feeders. Teach chicks to eat during the first day or two by putting feed on paper or in chick box lids.

Allow 1 inch of feeder space for each chick for the first 2 weeks, 2 inches up to 6 weeks, and 4 inches through 12 weeks.

Use small feeders. They usually measure 24–36 inches long. One 24-inch feeder will take care of 50 chicks for the first 2 weeks. To calculate feeding space, count the length of both sides of the feed trough. A feed trough 24 inches long provides 48 inches of feeding space. As the chicks grow, change to longer and deeper feeders.

You can also use tube feeders. Use three tube feeders for each 100 chicks.

Remember these two things about feeding chicks:

- Always keep the edge or rim of the feeder the same height as the chickens' backs.
- Never fill your feeders more than half full. If you fill feeders full, chicks will waste feed.

### Getting Ready

Before your chicks arrive, be sure you are ready for them. Clean your house and equipment. Scrape and sweep out all old litter, manure, dirt, and dust. Use

a hose and wash the house to knock down dust and cobwebs.

Disinfect using lye water or a strong detergent. If you use lye water, be sure to ask your parents or county agent how to mix and use it. Disinfect equipment, but be sure to rinse it in clean water afterward.

After the floor of your house has dried, put 4–6 inches of clean, dry litter on the floor. Arrange equipment so it will be ready when chicks arrive.

## Starting Your Chicks

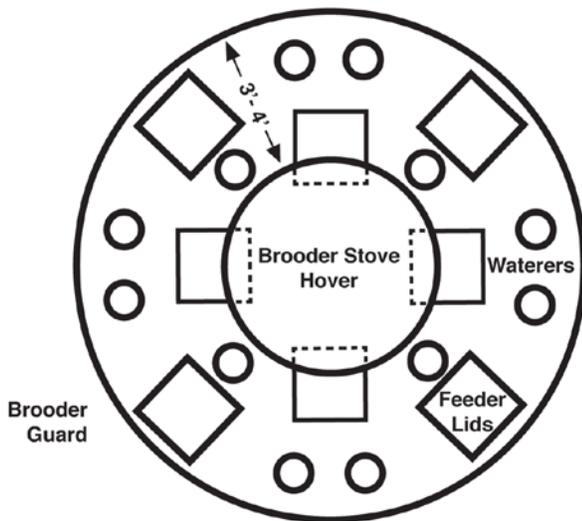
Start your brooder or heating device at least 24 hours before the chicks arrive so the temperature will be up to 90°F. The temperature will be 90°F 2½ inches from the floor or litter.

Cover the shavings inside the chick guard with paper for the first 3 or 4 days.

Fill the waterers so the water will become warm. Baby chicks do not like cold water.

Put some feed on the paper or in chick box lids.

You may wish to arrange your equipment as shown in this drawing:



## Watering

Provide your chicks with clean, fresh water at all times. Wash the waterers at least once each day and disinfect them at least once each week to help prevent diseases.

## Feeding

Start your chicks on a starter mash. Feed the starter mash for the first 6 weeks. Then change to a growing mash. Continue feeding the growing mash until the pullets start to lay.

Keep dirt and litter out of the feeders.

## Vaccination

We recommend vaccinating against Marek's disease, fowl pox, Newcastle disease, and bronchitis. Other vaccinations are available, but these four are extremely important. Your county agent or feed dealer can help you with this.

## Sanitation

Keep your brooder house dry to prevent diseases.

Keep all visitors out of your brooder house. They often bring disease germs on their clothing or shoes.

Don't allow other chicks to mix with your chicks. They might spread a disease in your flock.

If your chicks get sick, contact your county agent. He or she will help you determine what the disease is and how to treat it.

## Management

Make sure your chicks have plenty of feed and water and are comfortable. This means you should look at your chicks several times a day. Remove any sick or crippled birds at once.

Watch for feather picking. If feather picking starts, ask your county agent or feed dealer about beak trimming the birds.

## Records

Keep records at all times. Records tell you how well you have done with your poultry project. Keep a record of these things:

- number of chicks started
- number of chicks that died
- cost of chicks
- cost of brooding
- cost of feed
- all other costs

Use the record form at the back of this manual. A good poultry producer always keeps a complete record of the flock.

## Rearing Your Pullets

At the end of 10 weeks, your chicks have passed the brooding stage. They are now ready for the growing or rearing stage. It will take 12–14 weeks more before they begin to lay.

At this stage, remove all roosters. Roosters will only eat feed, which is a waste. If you started with all pullet chicks, you will not have any roosters.

You may rear your pullets in a house, or you may turn them outside. If you keep them in the house during the growing period, make sure they have plenty of room. Crowded conditions will encourage feather picking or cannibalism (picking each other). Give each pullet 3 square feet of growing space. Make sure your pullets get plenty of fresh air at all times.

## **Equipment**

Your pullets are now large enough to eat from large feeders. You can use the same size feeders you will use in the laying house. Give each pullet 4–5 inches of feeder space and about three-fourths of an inch of drinking space.

## **Sanitation and Disease Control**

Allow no visitors in your chicken house. Do not allow your pullets to come in contact with other chickens, especially old hens.

Parasites infest chickens. The most common are mites and lice. They infest chickens any time of the year but are most common in the fall. Your county agent can suggest the best insecticides to use.

## **Ranging Pullets**

If you let your pullets run outside, they can get by with less space during the growing period. For small flocks, you may use the same house they were brooded in by letting them run out during the day. Do not let your pullets range on land that has had chickens on it in the past 2 years.

Provide some kind of shade for your pullets. It is very important to keep the waterers and feeders in the shade.

Protect your pullets from stray dogs and other animals.

Use the same kind of feeding program as with confined rearing. Your feed bill may be a little lower because the birds will eat some green feed.

Keep records on your flock during the growing period. There is a form for this in this publication.

## **The Laying Flock**

When your pullets reach 20 weeks of age, it is time to confine them to the laying house. The hens will be easier to manage, and you will get fewer dirty eggs.

The laying house should be comfortable. Keep the house dry, and provide fresh air without getting the temperature too cold or too hot. Here are the requirements:

- 4–5 inches of dry litter on the floor
- 2½–3 square feet of floor space per hen
- 5 inches of feeder space per hen
- 1 inch of watering space per hen
- one nest for every four hens

Provide at least 14–16 hours of light daily using natural daylight or artificial electric lights. (Provide one 100-watt bulb for each 400 square feet of floor space.)

Keep clean, dry shavings or other material in the nests. This material should be 3–4 inches deep. Clean and adequate nesting material will ensure clean eggs and fewer broken eggs.

Feed a laying mash when the pullets begin to lay. The laying mash may be a complete feed in mash, crumble, or pellet form. This complete feed is usually about 15 percent protein, and it is all the feed the hens need.

You may need to place oyster shell in small pans or hoppers throughout the house. Oyster shell helps make strong egg shells.

Chickens are peculiar creatures. They like the same feed day after day, so avoid changing feed. Make a habit of feeding your hens the same hour each day.

Provide plenty of clean, fresh water. Clean waterers daily.

Gather eggs at least four times per day. This prevents broken and dirty eggs, and helps to keep egg quality high. Store your eggs in a cool place. The best temperature for eggs is 50–55°F. Eggs are always stored with the small ends down. Do not store cracked and dirty eggs with clean eggs.

Sell only clean, uncracked eggs. Know in advance where you are going to sell your eggs. If you have a small flock, you may be able to line up several customers and deliver eggs once or twice a week. With a larger flock, you may want to sell to a local grocery store.

In caring for a laying flock, many things become routine or habit such as feeding, gathering eggs, marketing eggs, and recordkeeping. There are many other important jobs, however, that you do every day:

- Keep nests clean and prevent hens from roosting in the nests.
- Remove culls and diseased birds from the flock.
- Remove wet spots or caked litter.
- Check birds for lice and mites.
- Keep rats and mice out of your laying house and feed room.
- Keep records. They can tell you if you are making money from your poultry flock. Record forms for use with your laying flock are in this publication.

# 4-H Poultry Record

For Year 20\_\_\_\_

Junior Report for \_\_\_\_ Year

My name is \_\_\_\_\_.

My parents are \_\_\_\_\_.

My address is \_\_\_\_\_.

My birthday is \_\_\_\_\_ (month) \_\_\_\_\_ (date) \_\_\_\_\_ (year). I am in the \_\_\_\_\_ grade.

This is my \_\_\_\_\_ year in 4-H club work. I live in \_\_\_\_\_ County.

Answer as many of the following questions as you can:

What is a dual-purpose breed? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

List the breeds that are best for a small flock to furnish eggs. \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

What does a baby chick need to keep it comfortable, healthy, and growing? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

What temperature is recommended for starting baby chicks? \_\_\_\_\_

How much should the temperature be lowered each week? \_\_\_\_\_

How can you keep your chicks from wasting a lot of feed? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

How often should you wash your water fountains? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

What diseases can you vaccinate pullets against? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

What two parasites commonly affect chickens? \_\_\_\_\_

\_\_\_\_\_

## Brooding Record

Date chicks started \_\_\_\_\_ No. chicks started \_\_\_\_\_ Breed or cross \_\_\_\_\_

### Mortality (number of chicks that died):

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Total
1st Week							
2nd Week							
3rd Week							
4th Week							
5th Week							
6th Week							
7th Week							
8th Week							
9th Week							
10th Week							
						Total	

### Feed Used

Chick starter	_____lb.	\$_____cost	No. chicks dead to end of brooding period _____
Grower	_____lb.	_____cost	Pounds of feed used per chick started _____
Broiler feed	_____lb.	_____cost	Pounds of feed used per chick raised _____
Other	_____lb.	_____cost	Income (birds sold or used as broilers) _____
Total	_____lb.	_____cost	Expenses _____
			<b>Net profit or loss</b> _____

Cost of fuel	\$_____cost
Cost of chicks	_____cost
Cost of feed	_____cost
Other expense	_____cost
<b>Total</b>	_____cost

## Pullet Growing Record

Junior Report for \_\_\_ Year

(Starts at 10th week and ends at the completion of week first eggs are laid.)

\_\_\_\_\_  
Name of club member

\_\_\_\_\_  
Date project started

\_\_\_\_\_  
Address or county

\_\_\_\_\_  
No. birds @ 10 weeks

**Mortality (number of pullets that died):**

10th week _____	18th week _____
11th week _____	19th week _____
12th week _____	20th week _____
13th week _____	21st week _____
14th week _____	22nd week _____
15th week _____	23rd week _____
16th week _____	24th week _____
17th week _____	25th week _____
Total _____	

## Vaccination Record

Date	Fowl Pox	Bronchitis	N.C.	Cost

Total cost of vaccinations \_\_\_\_\_

## Pounds Feed Used

	Grower	Other	Cost
10th week			
11th week			
12th week			
13th week			
14th week			
15th week			
16th week			
17th week			
18th week			
19th week			
20th week			
21st week			
22nd week			
23rd week			
24th week			
25th week			

**Total Feed Costs** \_\_\_\_\_

No. birds that died in growing period \_\_\_\_\_

Pounds feed per pullet for the growing period \_\_\_\_\_

Brooding costs \$ \_\_\_\_\_

Pullet growing costs \$ \_\_\_\_\_

Total cost to date \$ \_\_\_\_\_

## Laying Flock Record

Junior Report for \_\_\_ Year

Get a Monthly 4-H Poultry Record (F183) from your county agent to keep in your laying house. This form will provide space for daily egg records and feed consumption records and costs.

Date hens start to lay \_\_\_\_\_ Number hens at start of laying \_\_\_\_\_

Number of hens that died or were removed from the flocks:

1st month _____	7th month _____
2nd month _____	8th month _____
3rd month _____	9th month _____
4th month _____	10th month _____
5th month _____	11th month _____
6th month _____	12th month _____

Eggs Produced	Monthly Totals	Egg Sales
1st month		\$
2nd month		
3rd month		
4th month		
5th month		
6th month		
7th month		
8th month		
9th month		
10th month		
11th month		
12th month		
Total		

## Feed Used

Layer	_____ lb.	\$ _____
Oyster shell	_____ lb.	_____
Other	_____ lb.	_____
Total	_____ lb.	_____
Feed per hen for period	_____ lb.	_____
Av. no. eggs per hen	_____	_____
Total egg sales	_____	_____
Total costs at start of lay	_____	
Feed and other costs during lay	_____	
Total	_____	
<b>Net profit or loss</b>	\$ _____	

(Include in your records all eggs used at home.)

Ask your county Extension agent for additional copies of this record form.



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Publication 255 (POD-01-16)

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Extension Service of Mississippi State University, cooperating with U.S. Department of Agriculture. Published in furtherance of Acts of Congress, May 8 and June 30, 1914. GARY B. JACKSON, Director