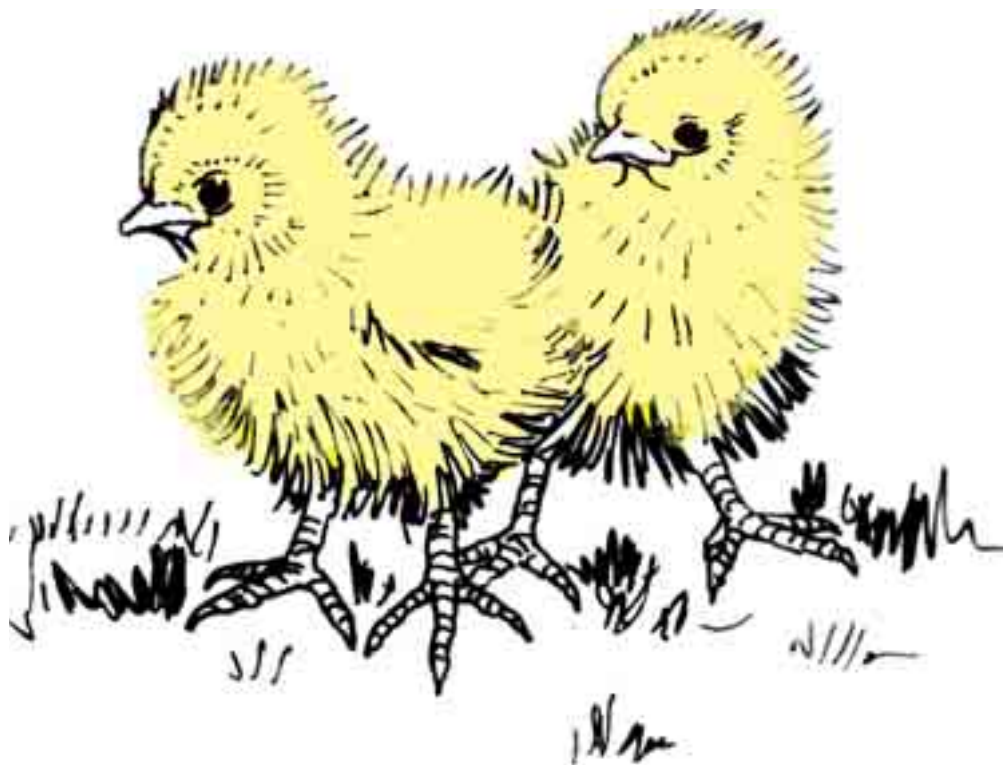


THE BROILER PROJECT



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Raising broilers can be fun. Broiler projects are suitable for youth of all ages, from beginners to those with many years of experience. Also, broiler projects are well suited for those with limited space for housing animals. By following recommendations and setting up a daily routine of care, young people can have a successful and rewarding show project.

The broiler project involves raising chicks from one day of age to market weight at 42 to 49 days of age. The broilers require some type of housing to provide protection from predators and to create an environment to promote growth; however, the facilities and space for broilers do not need to be expensive or elaborate. The primary objective of producing broilers is to optimize growth, so 4-H'ers involved in the broiler project will need to be concerned with the following: housing, brooding, heating, lighting, feeders and waterers, feeds and feeding, and health.

Housing

Broilers need to be housed in a clean and dry environment. The broiler pen needs to have some form of protective siding (such as 1-inch chicken wire), a roof, ventilation, a form of heating (brooders or heat lamps), and feeding and watering equipment.

The site selected for broiler housing is critical. The site should be high and, if possible, the floor of the pen should be at least 6 inches above ground level to prevent flooding.

The broiler pen needs to be big enough to provide 2 square feet of floor space per bird, and the pen should be at least 36 to 48 inches in height. A roof is necessary to protect the broilers from rain and direct sunlight. The sides of the pen can be made of wire that can be covered with

plastic or visquine to protect broilers

from cold weather and wind. Also, broilers can be raised successfully on the floor of a shed or garage.



Broilers need some form of bedding or litter to help keep them warm and to absorb moisture. Wood shavings, sawdust or rice hulls are good litter choices. The floor of the broiler pen should be covered with a layer of litter at least 3 to 4 inches deep. The caked litter should be removed every day. Also, the rest of the litter should be turned or stirred up once a day to make it absorb more moisture and last longer between changes. Change the litter weekly, depending on the dampness of the bedding.

Brooding

Broilers need a source of heat to keep them comfortable. For the first week, the chick's environment needs to be in the range of 90 to 95 F. Reduce the temperature gradually, five degrees each week, until the broilers are three to four weeks old or until the pen temperature is 70 F.

During the first week of brooding, a cardboard or tin brooder guard (brooder circle) can be used to keep the chicks near the heat source. The brooder guard should be 18 inches tall. The diameter of the brooder guard will depend on the number of chicks. For example, a brooder guard for 50 chicks should have a minimum diameter of 5 feet. When chicks are seven days old, remove the brooder guard and allow chicks to move around the entire pen.

Heating

The first seven days of brooding are the most critical for properly heating and caring for broiler chicks. If chicks are chilled, they won't

grow properly. If chicks are too warm, they can become dehydrated. This may lead to death or delayed growth. Thus, it is important to begin operating the heat source at least 24 hours before the chicks arrive. In that 24-hour period, the heat source should be set to warm the brooding area to 90 to 95 F as well as to heat the litter adequately. Use a thermometer to check the pen temperature. (Note: Monitor the temperature at the floor level.) After the first seven days, reduce the brooding temperature gradually by five degrees each week until the broilers are about four weeks old.

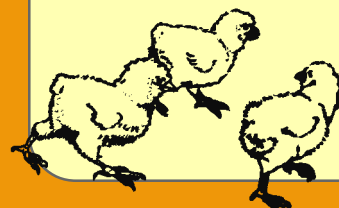
Electric heat lamps (infrared bulbs) or gas or electric hover-type brooders can be used for the heat source. The electric heat lamps are a good and popular source of heat. One 125-watt bulb is needed for each 25



Before Chick Arrival

1. Clean and disinfect the poultry house and equipment (about two weeks ahead).
2. Cover the dry floor with litter (3-4 inches of shavings, sawdust, rice hulls).
3. Prepare and set up the brooder guard (18 inches high).
4. Place feeders and waterers in a circle around the brooder.
5. Operate the brooder for at least 24 hours before chick arrival. The temperature should be set at 92-95 F, and the temperature should be reduced 5 degrees each week until the chicks are three to four weeks old, or use one 125-watt bulb per 25 chicks.
6. Fill the feeders and waterers a few hours

before the chicks arrive.



chicks. A light with a red finish can be used to dull the light. Also, the heat lamp should be secured so that it cannot fall into the litter, and all electrical wiring needs to be adequate for the size of bulb used.

When using a heat lamp, you can change the brooding temperature by adjusting the height of the heat lamp above the floor. The temperature should be monitored with a thermometer at chick level and by observing the chicks' response to the heat source. Cold chicks will huddle together under the heat source; hot chicks will move to the outer limits of the brooder guard, and comfortable chicks will stay in a semicircle around the heat zone. This guide can be used to adjust the brooding temperature when using a heat lamp.

Age (days)	Height of Heat Lamp (inches)	Approximate Temperature (°F)
0-7	18	95
8-14	21	90
15-21	24	85
22-28	27	80
29-35*	30	70-75

***Use the heat lamp only if air temperature gets cold. Brooder heat is generally not needed after 28 days; however, do not let the temperature go below 70 F.**

Lighting

Light should be provided 24 hours a day for broilers. Twenty-four hour light (natural and artificial) will increase feeding time, increase weight gain and improve feathering in broilers. One 40-watt bulb is needed for each 200 square feet of pen space. Hang the bulb at least 6 feet above the broilers.

Also, you should expose your chicks to lights-out for a short period, 10 to 15 minutes, once or twice early in the project. This will prevent panic or piling if the electricity goes off during the project.

Feeders and Waterers

Broilers must have adequate feed and water space to grow to their maximum potential, and the amount of required feeder and waterer space increases as the broilers get bigger. Keep the feeders and waterers clean at all times.

After Chick Arrival

1. Introduce chicks to feed and water. Keep feed and water available to the chicks at all times. Provide fresh, clean feed and water.
2. Adjust the brooder light if needed. For brooders, maintain the temperature for the first week and then reduce the temperature 5 degrees each week. For heat lamps, raise the lamps when chicks appear to be too warm: 18 inches high for the first week and then raised 3 inches per week.
3. Observe the chicks closely and routinely.
4. Provide plenty of fresh air without drafts.
5. Keep the litter dry.
6. Walk among the birds daily.
7. Once the brooder/heat lamp is removed, provide another source of light.

There needs to be enough feeder space for all broilers to eat at one time. From one to 14 days of age, at least 2 linear inches of feeder space per chick is needed. Chicks will need at least 4 linear inches of feeder space from 15 days of age until the end of the project. Feeders should have feed in them at all times. To prevent feed wastage, fill the feeders only one-half full. Also, to prevent litter and defecation from getting into the feeders, raise the feeders off of the floor as broilers grow. The feeders should be kept at a height that is level with the birds' back height.

Broilers also must have access to fresh, clean water at all times. Feed consumption is directly related to water consumption, so adequate waterers are necessary to optimize growth. You will need at least two 1-gallon waterers per 50 chicks from one through four weeks of age. More waterers or larger waterers are needed for chicks over four weeks of age. You will need to provide at least 1 linear inch of water space per broiler. The waterers need to be cleaned and filled with fresh water daily. The height of the waterers needs to be raised as the broilers grow. The lip of the waterer should be level with the height of the broilers' backs.

Feeds and Feeding



Show broilers must be provided proper nutrition for optimum performance to result. Commercial feeds contain adequate nutrition to provide optimal growth. You should let your feed dealer know what type of feed you will need about two weeks before you get your chicks. This will ensure that you have fresh, quality feed when your chicks arrive.

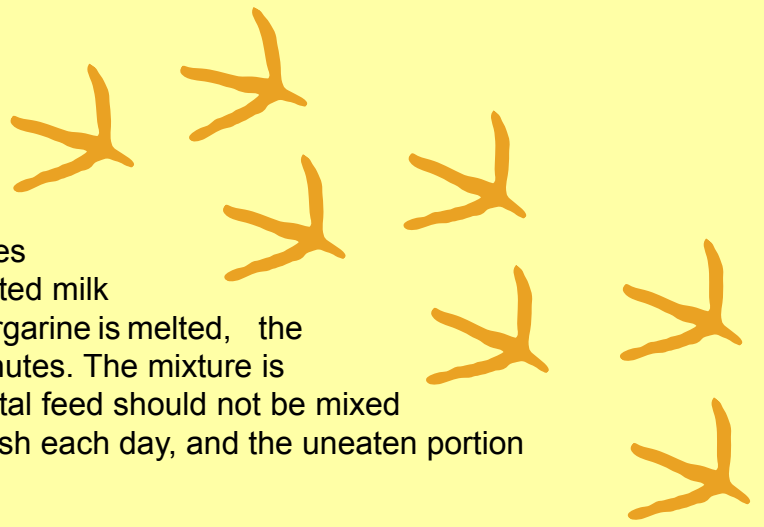
Broilers should be fed a high protein diet to stimulate growth. They can be fed a turkey or game bird starter (26% to 30% protein) for the first two weeks. Then, broilers can be switched to a broiler feed (20% to 23% protein) for the remainder of the project.

During the last two weeks before the show, you may want to use a supplemental feed to stimulate feed intake and increase growth. The supplemental feed simply can be the broiler feed moistened with milk and cooking oil. The supplemental feed should be fed several times a day, and you should not put out more supplemental feed than the birds can eat in 10 to 15 minutes. Also, fresh supplemental feed should be prepared at each feeding and any leftovers should be discarded. Do not save the prepared supplemental feed for a later feeding.

Another supplemental feeding option is to prepare a "cooked corn" supplement. There are several recipes for cooked corn supplements. One recipe calls for one part

corn gluten meal, three parts yellow corn meal and four parts broiler feed.

These ingredients are combined in a large boiler, and one stick of margarine per 20 ounces of corn meal and 2 ounces of fresh or evaporated milk for each ounce of corn meal are added. The margarine is melted, the mixture boiled and cooked for three to four minutes. The mixture is cooled and fed to the broilers. This supplemental feed should not be mixed with the regular feed. It should be prepared fresh each day, and the uneaten portion should be removed after about 20 minutes.



Today's broilers grow fast and will gain about a pound of body weight for each 2 pounds of feed they eat. Thus, whatever type of feed and feeding program you use, it is important that your broilers always have feed available to them. That feed needs to be fresh and high quality.

Health

Your broilers must be healthy to eat and grow to their potential. Broilers must be healthy to be show quality birds, and officials will not allow unhealthy birds to be exhibited. Therefore, you must be concerned with disease prevention during your broiler project.

Disease and illness can be prevented by proper sanitation practices and by reducing exposure to disease organisms. You need to keep your broilers isolated and away from all other poultry. Do not put your broilers in the same pen with or in a pen close to other poultry.

Sanitation and hygiene are necessary to keep broilers healthy. The pen for your broilers must be cleaned and disinfected before you get the broilers. Once you put broilers in the pen, you will need to clean the pen daily. You should remove wet litter and feces every day. Also, stir the remaining litter so it will absorb moisture better. The litter should be changed at least weekly, depending on how wet it is. With good hygiene and sanitation practices, parasites should not be a problem for your broilers.

If your broilers do get ill, you need to consult a veterinarian. You need to remember that these are meat-producing birds, and many medications are not labeled for use in birds that are used for meat production. Do not administer any medications without first consulting a professional.

Selecting Broilers for the Show

Broilers should be culled continually throughout the project. All small, sick, stunted, deformed or crippled birds should be removed when they are detected.

Two weeks before the show, you should:

- a. Conduct a preliminary selection for the entry,
- b. Select (keep) two to three broilers for each one needed for the show,

Two days before the show, you should:

- a. Construct a temporary catch pen or coop.
- b. Weigh each broiler.
- c. Eliminate birds outside the weight range.
- d. Examine each “keeper” bird for defects.
- e. Select entry using judging guidelines.
- f. Separate selected birds and alternates in a special pen.

When selecting broilers for the show, keep the judging criteria in mind. The broiler judge will look at the following traits.

1. Conformation –

The judge will look at the overall shape of the bird. The bird should be rectangular. A long and straight breast bone, a long and wide back, and a full and deep body are the positive traits that the judge is looking for.

2. Fleshing –

The amount and distribution of muscle is fleshing. The judge will be looking at the amount of meat on the breast, thighs and drumsticks. The breast is the most valued part of the broiler and will be given the most consideration during judging.

3. Uniformity –

All three birds in a pen should be alike. They should be as similar as possible in size, shape, fleshing and finish.



4. Finish –

The judge will look for fat in and immediately under the skin. Well-finished birds will have a uniform layer of fat.

5. Skin pigmentation –

Skin color is a minor trait that the judge will evaluate. The skin should be yellowish.

In addition, you need to make sure that your show broilers do not have any of the following defects:

1. Cuts and tears
2. Broken and/or disjointed bones
3. Skin or flesh bruises
4. Breast blisters
5. Insect bites
6. External parasites (mites, lice, fleas)
7. Extremely dirty
8. Discoloration
9. Excessive pin feathers
10. Crooked, dented or V-shaped breast
11. Narrow, crooked, humped or hunched backs
12. Lack of body depth
13. Deformed legs and wings
14. Thin drumsticks and thighs
15. Lack of fat in heavy feather tracks

Going to the Show

When the broiler housing is kept clean and the shavings are changed often during the project, the broilers will be clean. There is no need to wash them. If you do wash the broilers, be very careful to avoid bruising and broken bones.

The type of carrier used to transport birds to the show is an important consideration for exhibitors. The carrier should allow transported birds to remain clean, comfortable and free of bruises and broken bones. A clean cardboard box can be an ideal carrier. Put 3 to 4 inches of clean bedding (shavings) in the bottom of the box, and cut air holes in the sides of the box. Each broiler should have 1 square foot of space within the box. Therefore, depending on the size of box used, you may need a few boxes to transport your pen of broilers. Be especially careful when putting birds into the box to avoid bruising. When carrying the box or boxes, be careful not to drop the box or do anything that may cause bruising.

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