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How to Produce Broilers and Roasters for Show

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Popular with 4-H and FFA members, poultry projects are an integral part of most youth livestock shows (Fig. 1). Broilers should be approximately 6 weeks old at show time. Roasters are broiler chickens that are 8 to 10 weeks old. Both projects are especially suitable for younger exhibitors with limited space to raise livestock projects.

When planning a project, contact the county Extension office, a 4-H leader, or an agricultural science instructor. Most shows limit the number of chicks exhibitors may order to 25, 50, or 75. Also, each broiler pen entry must contain three birds—birds not shown can be slaughtered for home use.

Figure 1. Raising chickens is a fun learning experience that teaches poultry production, marketing, and showmanship while developing leadership skills and pride of accomplishment.

Housing

Expensive housing and equipment are not necessary. You'll need a clean, dry, well-ventilated structure with a brooder or heat lamps to warm the chicks, and feeding and watering equipment (Fig. 2). Provide at least 2 square feet of floor space per broiler on day one.

Optimum housing is a structure that can be fully enclosed to avoid dramatic temperature fluctuations as the weather changes but also has openings to allow for ventilation and natural light. Windows and doors that can be opened and closed or covered with plastic sheeting to control temperature are a minimum requirement if you don't use mechanical ventilation. Many exhibitors have successfully raised quality show birds by making a simple pen in an existing larger structure such as a barn, garage, or workshop. This arrangement is acceptable as long as you can control the temperature and ventilation.

Fans controlled by thermostats or timers help optimize the environment in the pen. When using fans for ventilation (air exchange), always exhaust the air from the house and allow fresh air to enter the pen through controlled openings such as windows and doors. This process is called negative-pressure ventilation.

Figure 2. A storage shed can house show broilers.

Stir fans are also helpful. Position them 2 to 3 feet off the floor to blow air across the birds and cool them. Ceiling fans are less desirable and not recommended for use in a poultry house.

Air conditioners can also keep birds comfortable during hot weather. However, use air conditioning only during the hottest times of the year and hottest parts of the day. If birds become acclimated to a continuously air-conditioned environment, they may become heat-stressed when exposed to a non-air-conditioned environment at the show or during transport. Excessive heat stress can kill birds.

If the house has a concrete or dirt floor, be sure it is at least 6 inches above ground level to prevent flooding. The roof overhang should protect against rain blowing into the pen through open windows and doors.

Wall and ceiling insulation helps maintain the optimum temperature in the house, but do not allow the birds to have access to it. Cover insulation with a hard material such as wood, metal, or plastic.

Pen Preparation

Clean and disinfect the poultry house, feeders, and waterers at least 2 weeks before the chicks arrive. Because dirt and other organic residues will inactivate most disinfectants, clean all dirt, manure, dust, and old feed from surfaces before applying a disinfectant. Use a product that is labeled for use in poultry houses; read and follow the manufacturer's label instructions.

Prepare the pen for the chicks at least 2 days before you get them. Put at least 4 inches of litter on the floor of the pen. Rice hulls, wood shavings, or coarse, dry sawdust are an excellent choice. Hay or straw make very poor litter because they do not absorb moisture well and can become compacted and matted. In cold weather, turn on the heat source 48 hours before the chicks arrive to adequately heat the litter. Keep all sticks, boards, and sharp objects away from the broiler pen.

Brooding and Rearing

Build a brooder guard to keep chicks near the heat, water, and feed. A brooder guard for 50 chicks should be cardboard or wood, 14 to 18 inches high, and a minimum of 5 feet in diameter. When the chicks are 7 days old, remove the guard and allow them full freedom of the pen. If chicks tend to huddle in the corners once you remove the brooder guard, securely fasten wood panels or cardboard in the corners to discourage this behavior.

Electric heat lamps (infrared bulbs) are effective heat sources for brooding chicks. Use two 125-watt bulbs per 50 chicks. Secure the lamps well so they cannot fall onto the litter and create a fire hazard. Hang them so that the bottoms of the lamps are 18 to 24 inches from the litter. Depending on the temperature, raise or lower the lamps. You can also use gas or electric hover-type brooders. The optimum temperature under the heat lamps or brooders should be approximately 92°F to 95°F at litter level and should never exceed 100°F. Gradually reduce the temperature 5 degrees each week until the house temperature is 65°F to 70°F.

Place waterers far enough away from the lamps to prevent splashing water from cracking the hot bulbs. Place feed near the heat lamps so the chicks can easily access it near the heat source, but do not put it directly under the heat lamps. Excessive heat can destroy essential nutrients such as vitamins.

When chicks are comfortable, they will bed down around the perimeter of the heat zone. If cold, they will crowd near the heat source. If too warm, they will move to the outer limits of the brooder guard or pen.

Do not overheat the chicks. If too hot, they will become stressed and eat less feed. Conversely, chilling

can stunt chicks and increase their susceptibility to disease. The ideal temperature range once birds are 4 weeks old is 60°F to 75°F.

When outside temperatures permit, partially open the house to improve airflow and remove moisture. When the outside temperature is low, you may need to supplement with heat. In hot weather, use fans, evaporative coolers, or air conditioning to cool birds if house temperatures exceed the desired target temperature and the birds begin to pant. Since the best way to cool birds is through air movement at the birds' level, the first course of action is to use fans to move air across them. If they need additional cooling, consider using evaporative coolers or air conditioning.

Lighting

Provide 24 hours of natural and artificial light per day for broilers and roasters to improve feathering and increase weight, especially during the summer months. Hang a 40-watt bulb at least 6 feet above the birds after removing the heat lamps. Fluorescent and LED lights that have an output in the 5,000 Kelvin color spectrum (cool) are acceptable for raising broiler chickens.

Feeding

To attain maximum growth, keep feed available to the birds at all times. At least 2 weeks before the chicks arrive, place an order with your feed dealer for the type of feed you will need so that you will have fresh feed on hand.

Optimum performance depends on proper nutrition. It is essential that birds receive high-quality poultry feed containing at least 21 percent protein. Lower-protein feeds will not satisfy the nutrient requirements for maximum growth.

Many successful exhibitors start chicks on a high-protein (26 to 31 percent) turkey or game bird starter for the first 7 to 14 days to stimulate growth, switch to a broiler starter (24 to 26 percent protein) for the next 2 to 3 weeks, and feed a broiler finisher (21 to 23 percent protein) for the remaining feeding period.

All birds should be able to eat at the same time. There must be adequate feeder space for each bird so that their feed intake is not restricted. For the first 7 days, you will need one feed pan per 25 chicks. Pulp egg flats or cartons (not foam) also work well as chick feed pans (Fig. 3).

Figure 3. Pulp egg flats or cartons work well as feeders for the first 7 days.

For the first 4 weeks, use one tube-type feeder for every 15 birds. Tube feeders hold an ample supply of feed, can be adjusted easily as the birds grow, and are less likely than horizontal trough feeders to cause bruises. After the birds are 3 weeks old, keep feeders and waterers adjusted so that the lip of the trough portion is level with the birds' back height when they are sitting. That way they can eat and drink without having to stand continuously and will eat more (Fig. 4).

An adequate level of vitamins in the diet prevents leg weakness. To ensure ample vitamin intake, add water-soluble poultry vitamins to the drinking water at the manufacturer's recommended level for the first 3 days. Do not add vitamins past this period—continued high levels can create health problems.

Broilers and roasters respond to attention. Walk among the birds and stir the feed three to five times a day to provide necessary physical activity for the birds and increase their feed consumption and growth. It is not necessary to "exercise" chickens.

Feeding small amounts of broiler feed lightly moistened with animal fat (grease) several times a day stimulates older birds to eat more and increase growth. This supplemental feeding practice is particularly helpful in hot weather with birds more than 4 weeks old. But, do not put out more moistened feed than the birds can eat in 10 to 15 minutes. Wait until feeding time to moisten the feed. If it sits too long at warm temperatures, it can become rancid.

Figure 4. Keep feeders and waterers at a level that is even with the backs of the birds when they are sitting.

Water

To encourage feed intake, keep clean, fresh water available at all times. At a minimum, use one chick waterer per 25 chicks for the first 7 days, one 2-gallon waterer per 50 chicks for the first 4 weeks, and one 2-gallon waterer per pen after the birds are culled at the end of the fourth week. Empty, scrub, and refill waterers with fresh water at least daily. Sanitize the waterers with a 10 percent bleach solution at least once a week or more often if a film forms in the water trough.

Consider using nipple drinkers for starting chicks (Fig. 5). Cleaner and easier to maintain than trough drinkers, nipple drinker systems keep the litter drier and promote chick health. Chicks are naturally attracted to the water droplets on the ends of the nipples and easily find water. However, when the chicks are 3 weeks old, add fountain drinkers with a trough to the pen. As the birds get bigger, they will prefer the trough drinkers and drink from them more easily. You do not need to remove the nipple drinkers already in place when you add the trough drinkers.

Figure 5. Nipple drinkers are an efficient way to provide clean drinking water to chicks.

Water temperature is also important. Use room-temperature water when filling the drinkers for small chicks. Cold water can chill small chicks. As the birds become fully feathered and the house target temperature reaches 70°F, tempering the water is no longer needed. In fact, providing larger birds with cool water helps reduce heat stress during warm weather.

Feather Picking and Cannibalism

Feather picking and cannibalism should not be a problem with modern commercial broiler strains. Broilers kept under optimum conditions with plenty of available feed and water should not cannibalize each other. If it does occur, it is likely that the birds are experiencing stress such as excessively bright lights or high temperatures, a lack of available feed and water, a feed nutrient deficiency, or overcrowding. Take corrective action to alleviate the stress causing the cannibalism and apply anti-peck compounds to the injured spots on the birds being pecked.

Bird Health

Keep all other poultry away from broilers and roasters. Do not give medication unless the birds are sick or stressed. Most medications require a prescription from a veterinarian. Using medications without a veterinarian prescription or medications that are not FDA-approved and labeled for use with poultry might result in disqualification from the livestock show if the show management conducts drug testing of the birds.

If you live in an area with a large mosquito population, vaccinate chicks purchased from May to early November for fowl pox by the time they are 14 days old.

Because parasites such as intestinal worms are seldom a problem when birds are properly managed and sanitary conditions maintained, it is not necessary to deworm broiler and roaster chickens.

Culling

Rigidly cull the birds during the entire growing period to optimize performance. Remove small, sick, stunted, or deformed birds. Reduce flock size when the chicks are 4 weeks old by removing the smaller and poorer fleshed birds. Keep two to three birds for each one needed for the show. Reducing flock size increases floor and feeder space per bird and reduces social pressure, thus improving fleshing, uniformity, and finish of the birds. With fewer birds in the pen, manure production will be less, so litter quality will also be easier to maintain.

If the birds are being raised for a sex-separate show—meaning cockerels (young males) and pullets (young females) are shown separately—and you might need a pen of pullets for the show, separate the birds according to their sex before culling so you can keep enough pullets. Pullets are generally smaller than cockerels, so if the birds are not separated according to sex prior to culling, it is possible almost all the pullets will be culled based on size. By separating the birds by sex before culling, you can keep an adequate number of birds of each sex.

Selecting the Exhibition Entry

At show time, examine the birds carefully for physical defects that would cause them to be sifted. These include:

- Cuts and tears
- Broken and disjointed bones
- Skin or flesh bruises anywhere other than on the wing tip
- Breast blisters
- Insect bites
- External parasites (lice, mites, or fleas)

Carefully consider the following factors when selecting the show entry:

- **Conformation** (skeletal system or shape of the bird)
  - **Length.** The breastbone should be long, straight, free from defects such as dents or knobs, carry well forward and back between the legs, and parallel to the backbone.
  - **Width.** The back should be long and wide with a broad spring of ribs.
  - **Depth.** The body should be full and deep. Body depth must be consistent with breast width. Length, width, and depth are well balanced.
- **Fleshing** (amount and distribution of muscle or flesh on the bird)
  - The breast meat is the most valued part of a bird and should be given maximum consideration. The breast muscle should be wide throughout the length of the keel bone. The muscle should carry well up to the crest of the bone. A dimpled breast is desirable (the breast muscle protrudes from the body farther than the breastbone).
- **Uniformity**
  - Each broiler should be as near a carbon copy of its pen mates as possible in size, shape, fleshing, and finish. If one bird has a defect, it affects the rating of the entire pen.
  - Because roasters are usually shown as a single bird, uniformity is not a factor with roaster entries unless you show pens of two or three birds.
- **Finish** (amount of fat in and immediately under the skin)
  - Finish is usually adequate on well-fleshed birds. Without satisfactory finish, a well-fleshed broiler loses a great deal of "eye appeal." The fat deposition between feather tracts on the side of

the breast is the best indication of finish. Do not confuse finish and pigmentation.

- **Skin pigmentation**
  - Skin pigmentation results from the deposition of yellow or yellow-orange pigments in the outer skin layer. It is not an indication of finish. Place little to no emphasis on pigmentation.

Handling and Transportation

Properly raised birds are usually reasonably clean. Washing birds is not recommended.

Large cardboard boxes are ideal carriers. Never place more than four broilers or two roasters in a box when transporting them to a show. Do not crowd. If possible, transport each broiler in a separate box to prevent them from scratching or damaging one another during transport. Put 4 inches of litter in the container so breasts will not bruise or become reddened. Be certain to cut adequate air holes in the sides. Avoid bruising birds while putting them in or taking them out of the container and take extra precaution to prevent them from hitting their wings on anything else. Above all, do not drop the container.

Important: Check birds carefully for bruises one final time before presenting them to the sifter.

Keys to Success

Review this publication often and closely follow suggestions. Follow recommended management practices during the entire brooding and growing period.

- Provide quality feed.
- Ventilate properly.
- Maintain a comfortable temperature range.
- Never allow birds to be without feed and water.
- Do not exceed vitamin recommendations.
- Cull closely and provide adequate floor and feeder space.
- Keep litter in good condition.
- Provide supplemental feed in the correct manner.
- Do not medicate unnecessarily or overmedicate.
- Observe all show rules and regulations governing purchasing and showing broilers and roasters.

Family Safety

Public health agency investigations have implicated improper handling of poultry with occasional outbreaks of disease in humans. Follow these guidelines to protect your family from bird-transmitted disease:

- Do not bring live poultry of any age into the home.
- Always wash your hands thoroughly with soap and warm water after contact with live poultry.
- Do not allow toddlers to handle poultry.
- Avoid contact with poultry manure.
- Wash your hands, countertops, dishes, and utensils with hot, soapy water after handling raw poultry.

Photo Credit

All photos courtesy of Craig Coufal.

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For More Information

Download L-5537, *Getting Started with Show Broilers,* at Texas A&M AgriLife Extension Service, http://www.agrilifebookstore.org.

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