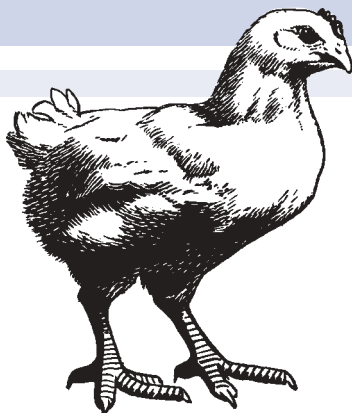


Growing Broilers for the State Fair

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Broilers are meat-type chickens that are usually five to eight weeks old when ready for processing. Broiler projects are popular with 4-H and FFA youth because they require less time, space, and money than many other projects.

Because the birds are from the same genetic source, differences in the conformation of the birds are due to the management practices of the competitor. A successful entry requires good management skills such as maintaining the proper environment, controlling disease, feeding good quality feed and keeping good records. Contestants also learn what selection criteria are necessary when choosing their pen of birds.

Class 2314 at the Kansas State Fair will be a special competition for commercial broilers. A set of guidelines is available in the Kansas State Fair Book. Competitors will start with day-old chicks and raise them to about five to six weeks of age. Out of this group of chicks, they will choose their best three birds to enter in the Kansas State Fair.

Housing

It is not necessary to build expensive housing and purchase expensive equipment to grow broilers successfully for the fair. The birds require a clean, dry area that can be well ventilated. It should be sturdy enough to prevent predators from reaching the birds. Some participants grow their birds in a corner of a garage, barn or other outbuildings using a temporary fence. Because broiler chicks grow so fast and gain so much weight in a short period of time, it is not necessary to make the fence more than 3 feet tall as long as the pen remains protected

from predators. At the K-State farm, the broiler pens are approximately 30 inches tall and are formed out of $\frac{3}{4}$ -inch plastic PVC water pipe that is coated with plastic netting. The birds will require about 2 square feet of floor space each. Housing for the broilers should be separate from housing used for other types of poultry.

Ordering your chicks

To enter the Kansas State Fair Market Broiler Show, you must purchase chicks through the local K-State Research and Extension office. Only 4-H members who intend to show the chicks may purchase them. A minimum order of 20 chicks is required. Because all the chicks come from the same hatchery and are from the same breeder farm, they will have similar genetics. This ensures that the difference in the birds at the time of the show is based solely on the exhibitor's decisions on how to manage and grow the birds.

Brooding the chicks

Before the chicks arrive, be sure that the house and pen are clean. Feeders and waterers should be cleaned and stocked with fresh feed. Broiler chicks should be grown on litter. Litter is something that's absorbent and fluffy to prevent the birds from injuring themselves. Examples are wood shavings, ground sawdust, wood products or rice hulls. Ground hay or newspaper makes poor litter because it is not as

absorbent. The litter should be free of sharp objects such as sticks or rocks.

Litter management is an important part of this project. If litter gets packed and caked, it could cause breast blisters to form on the birds. Caked litter also results in dirtier birds. As the birds grow, you may need to change the litter a few times. Use a rake or shovel to stir the litter thoroughly at least twice a day, and remove caked material.

For the first few days the birds will need some supplemental heat during the brooding period. If you have a large pen, construct a brooder guard made of material that will keep the chicks herded in the area of the feed, water, and heat source. For 50 chicks, a brooder guard of about 5 feet in diameter is adequate. Brooder guards are typically made out of cardboard or plastic that is taped together in a form of a circle. After a few days, the guard can be removed allowing the chicks to roam the entire pen.

Electric heat lamps obtained from a farm supply store or hardware store are excellent short-term heat sources for day-old chicks. One or two infrared bulbs are recommended depending on the temperature. If you are growing birds for the state fair you probably won't need too much heat since the chicks will be brooded during the summer. The heat lamps with aluminum shields, guards and clips make it easy to move the lamp around the pen or raise them as the conditions require. Be sure they are installed properly and secured so that they

cannot fall into the litter and cause a fire. Place the waterers and feeders close enough to the heat lamp that the chicks can reach them easily.

The brooding temperature of chicks is usually around 92°F. As a rule of thumb, this temperature can be reduced by 5°F for each week that the birds grow. A common mistake is providing too much heat to the birds. Rapidly growing broiler chicks will need heat only for a few days and then will probably require increased ventilation to keep the temperature down.

The best way to tell if chicks are comfortable is to observe their behavior. If they are too cold, they will crowd under the heat source. If they are too warm, they will move to the outside of the brooder guard. Adjust the height of the brooder as necessary.

Lighting

Most broilers are grown using 24 hours of light. The lighting increases body-weight gain and improves feather growth. One or two 40-watt bulbs hung over the pen is adequate for most small broiler projects. Some growers use a timer to turn off the lights for 30-minute periods once or twice during the night. In the event of a power failure, birds will be accustomed to the lights going out.

Feeding your broilers

Good nutrition is important for growing broilers. Consult your local feed dealer before your chicks arrive to be sure that the type of feed required will be available. Always use the freshest feed possible.

Most broiler starter rations are crumbles that contain 20 to 23 percent protein. Broilers are fed the starter ration for about three weeks, then switched to a grower ration for the remaining period. Grower feeds should be pelleted and contain 18 to 20 percent protein. Be sure to follow label recommendations if using medicated feeds.

Some participants develop their own special formulas for feeding broilers. It is important to remember that food intake will affect the growth rate tremendously. So any method that will increase food intake will probably increase the growth rate of your broilers. Work with the birds and move around the pen. This disturbs them and makes them move around the feeders and waterers. Stirring the litter will move the birds around.

Keeping the birds from becoming overheated will stimulate them to eat more feed. Any time you see the birds with their beaks open and breathing heavily, suspect that the birds may be too hot.

Another way to stimulate feed intake is to give the birds small amounts of feed that has been moistened with water, milk or cooking oil. You can do this several times a day. It has been observed that broilers prefer feeds with higher moisture levels, but this additional moisture can also lead to mold and spoilage. If you are going to moisten feed, make a ration that the birds can consume in about 15 minutes. Then remove it from the pen. You can give the leftover feed to other birds or the culls.

Be sure to have enough feeder space so all birds can eat at once. You can use the pan- or tray-type feeders for the first seven days. To help them find the food, use a baking pan or a piece of paper with some feed spread across it for one or two days. After about two or three weeks, consider feeding the birds from a tube feeder. Tube feeders can be adjusted easily as the birds grow. The feeder height should be about the height of the back of the bird when it is standing upright. Dry feed should be available at all times. If the exhibitor allows the feeders to become empty, the birds may grow at a slower rate.

Ventilation for your birds

The most common mistake with growing broilers is allowing them to become overheated. After about four weeks of age, broilers prefer a temperature of about 65 to 75°F. Because the Kansas State Fair occurs during the summer, it is likely that your birds will experience some higher temperatures. Be prepared to cool your birds by using supplemental fans or other types of ventilation to keep them comfortable.

Culling your flock

You should always cull your birds as the flock gets older. Small, sick, stunted, deformed or crippled birds should be removed during this time. These culls should still make adequate meat-type birds when they are processed, but is unlikely that they will be selected for a show. Culling the birds will allow more room for the remaining flock and will increase feeding and watering space for the remaining birds.

Start observing birds for superior uniformity and fleshing. Meat-type birds will sometimes have leg problems depending on feed source and management strategies.

Consult EP-113, *Leg Problems in Broilers and Turkeys*, for further information about some common leg problems that you may experience.

Flock Health

If obtained from a clean source and cared for properly, most disease problems with broilers are minimal. The broilers will be ready to show or processed for food in just six to seven weeks, so there is not a lot of time to be exposed to disease. It is important never to mix your broilers with other birds. The older birds may be resistant to some things to which the young chicks have never been exposed. If you do have older birds, keep them separated and visit the younger birds first when you do your daily chores.

Some exhibitors use medicated feed during the growth process. Be sure to read and follow all labels on medicated feeds. Some medications will require a withdrawal time that should be followed if the birds are going to be used for processing. If you have clean and well-maintained facilities, parasites should not be a problem. If you do notice a common ailment among the birds, contact your local animal health professional as soon as possible.

Cannibalism may occur. If so, remove the injured bird and move the offender to the cull pen. Generally, it is not necessary to trim the beaks of broilers for exhibition. It will

not be necessary to show proof of pullorum testing since the chicks originated from a clean flock.

Selection

The exhibitor will need to make some very important decisions when selecting the birds for their pen. Uniformity of the three birds that you select is important. In fact, it may be that your best one or two birds will not be selected. Select the three best birds that have good fleshing and uniformity.

Examine the birds and be aware of the following defects: cuts and tears on the skin, bruises and breast blisters from poor litter management, an abundance of immature feathers, patches of skin without feathers, lots of broken feathers or damage from cannibalism, crooked or otherwise abnormally shaped breasts, narrow backs that are crooked or humped, short body length and depth, and deformities in the wings and legs. Crooked toes or beaks are not as important as long as the birds are adequately fleshed. A few broken feathers may be acceptable, because these birds will not be shown in an exhibition class.

Selecting your exhibition pen

Conformation

Conformation is a description of the overall shape of the bird and skeletal system. It will count for about 20 percent of the total score.

The breast bones should be long and straight and free from defects. The longer the breast bone, the more meat the breast will yield. The width of the breast and back

of the bird should be as wide as possible. Determine the distance from the breast bone to the back. Birds should be as full and deep as possible. A larger frame means that the bird will yield more meat.

Fleshing

Fleshing refers to the amount of muscle or flesh that occurs on the bird's frame. It will count for about 40 percent of the final score. On a broiler, most of the meat occurs in the breast, thighs, and drumsticks and this should be evaluated carefully. Give the most consideration to how much breast meat the bird is carrying. Feel the bird's breast muscle for its depth, length and thickness. Both the thighs and the drumsticks should be heavily muscled.

Uniformity

Uniformity refers to how well the birds match within your pen and will be about 20 percent of the final score. You want them to be as much of a carbon copy or clone as possible. Modern processing plants rely on uniformity to decrease the number of problems that occur in a processing plant. Exhibitors often find that their best birds do not match very well and must choose three other birds that have good uniformity.

Finish

Finish refers to the amount of fat that is found mostly just under the skin. The value of finish will be about 15 percent on a broiler carcass. Finish is important for eye appeal to the consumer. Look for the fat deposits between feather tracks on the side of the breasts and along the wing.

Be sure not to confuse skin pigmentation with the amount of fat on a carcass.

Skin pigmentation

Most consumers in the United States prefer a yellow pigmented bird. Pigmentation levels will account for about 5 percent of the value. Skin pigmentation normally occurs in the outer layer of the bird's skin. It is highly influenced by diet. Rations with high amounts of yellow corn or with added corn gluten meal normally result in adequately pigmented birds. Pigmentation is not an indication of finish (fat) or nutrition, so only a minor emphasis is placed upon pigmentation.

Handling your birds

Broilers should be handled gently to avoid bruising. Poor litter conditions, overcrowding or unclean conditions will result in dirty feathers. If you've done an adequate job raising the birds, washing them may not be necessary. But if you feel they need to be cleaned, refer to K-State Research and Extension Publication L-771. Remember, birds can be bruised easily when you wash them, which can result in a major defect. Do not allow the birds to pile or flap their wings against a hard object or broken bones and bruises may occur.

The best way to transport your birds to the fair is to place them in large cardboard boxes with adequate ventilation. Don't crowd them, remember that these birds are prone to heat stress and must have adequate ventilation. In the bottom of the box place 4 to 6 inches of good, clean litter. Cut plenty of air holes

in the sides. Stop and check them several times to be sure they are doing well. Do not allow the birds to bruise by hitting them against the container or allowing them to flap their wings. Some contestants will bring an additional one or two birds, in case a bruise occurs during transportation.

Broilers shown at the state fair must be identified by leg bands. Place the leg bands on your selected birds one or two days before you take them to the show.

Checklist for producing quality broilers

1. Be sure to preregister and obtain your chicks from the K-State Research and Extension.
2. Grow birds in a space with adequate ventilation, and protect them from predators.
3. Use quality feed.
4. Cull birds and be sure that adequate floor, feeder and water space is provided.
5. Keep the birds comfortable by monitoring temperature.
6. Birds should never be without food or water.
7. Manage the litter properly.
8. If providing supplemental moist feed, be sure that it does not spoil.
9. Observe the birds for proper health.
10. During times of extreme heat, be sure birds are adequately cooled.
11. Keep records of feed intake and cost in a diary, and record problems.

After the Contest

Your broiler chicks were developed for efficient production of meat, so they would not make good egg producers. At about seven weeks of age, your birds should be ready to process into a ready-to-cook product. Contact your local meat processing plant to determine if they custom-process poultry. Since all will not process poultry, your local K-State Research and Extension office also may be able to help you locate a processor. Otherwise, it's a project you can do yourself. Refer to EP-71, *Processing Farm Raised Poultry*, for helpful information about how to home process poultry.

Additional reading

Refer to the following K-State Research and Extension publications for more information:

Youth Producing a Whole-some Quality Livestock Product for the Consumer, 4H-672.

Production of Eggs and Home-Raised, Home Butchered Broiler and Turkeys, Food*A*Syst Program.

Poultry Nutrition for the Small Flock, EP-80.

Processing Farm-Raised Poultry, EP-71.

Management of the Small Flock of Chickens, MF-2390.

Guide in Selecting and Preparing Poultry for Exhibition, L-771.

Barbecuing Chicken, MF-2306.

Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned.

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