

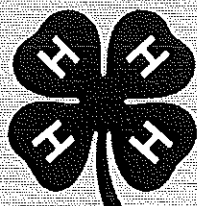
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4-H MARKET BROILERS

**By F. John Struwe-Extension Assistant
Earl W. Gleaves-Extension Specialist-Poultry**

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4-H BROILERS

By F. John Struwe-Extension Assistant
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To Members and their Parents/Guardians:

The Market Broiler Project is an excellent opportunity to gain experience in producing market poultry for human consumption. Many dimensions of the poultry production business can be experienced on a small scale. Selecting healthy chicks, providing adequate care, dealing with health and nutrition concerns and managing the finances of a project for a profit are all valuable lessons.

The comprehensive nature of the project suggests younger members should begin on a small and simple scale. With a year or more of experience, the 4-H'er should begin to expand his/her knowledge and be willing to keep records in greater detail for a better understanding of the poultry business.

The record book provides for a detailed analysis of the project - much more than a young, beginning member will be able to handle. Younger members should review the record book with parents before the project begins to determine which records will be kept and which should be left for another year.

Adult supervision will be especially important during periods of bad weather, when major management decisions need to be made regarding feed levels, health problems or marketing. Recognizing the ability of the youngster is a key factor in planning the project.

Introduction

This project can be done by the youngest 4-H'er as well as by the more experienced member. The animals are small and easy to handle. Unlike many larger animal projects, large amounts of money, time and space are not required.

Members will learn about poultry in general and broilers (chickens raised for meat) in particular. They will also learn to manage the birds and their environment, to feed animals to market weight, and to either sell the animals or process them for home consumption.

The 4-H'er also may learn something about the poultry industry and how quality poultry meat is produced. If the birds are shown there will be the fun and excitement of the show, as well as the fellowship with other 4-H'ers who have broiler projects.

This project will help you -

1. Learn how to manage poultry and take responsibility for their care.
2. Learn to keep records and understand their importance in determining the economics of raising birds.
3. Learn how to select broilers for a market show and how to show the birds.
4. Learn to process the broilers grown in the project.
5. Use poultry as a tool in other 4-H projects.

Choosing a broiler and getting started

Buy only well-bred chicks with a history of excellent growth and body conformation from hatcheries free of pullorum diseases. Follow a well-developed management program that fits your situation.

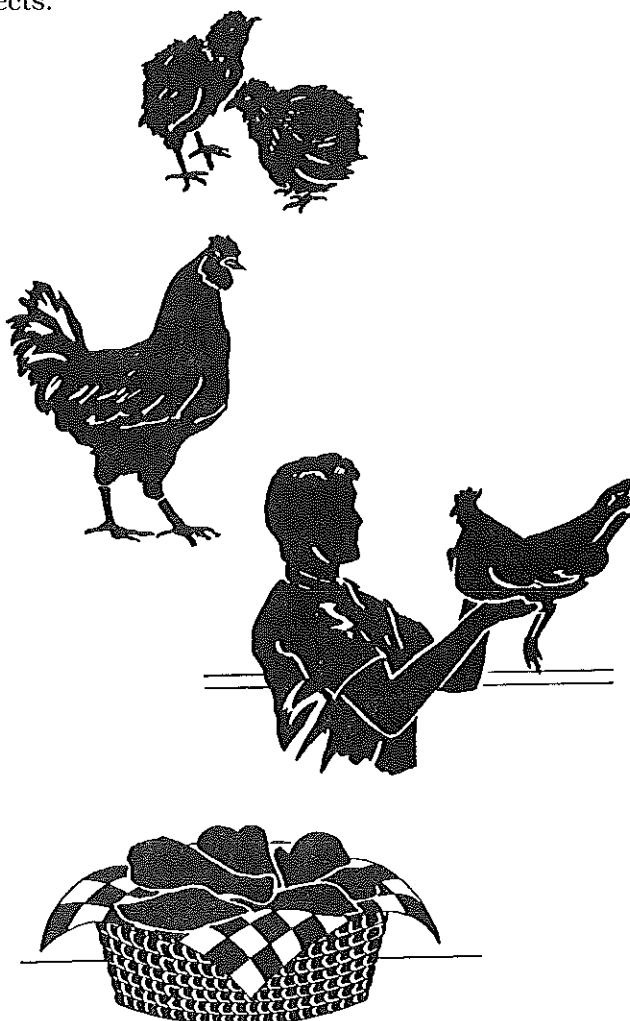
Buy chicks from a hatchery that is a member of the National Poultry Improvement Plan. Try to buy from a local source if they provide quality chicks, information and service to their customers.

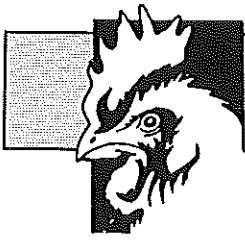
The best chickens for meat production are commercial meat hybrids developed from breeds such as the Cornish, Plymouth Rock and New Hampshire. These crosses and hybrids have been

bred for the most efficient conversion of feed to meat. They feather rapidly and mature early. Some purebred birds are used for home flock meat production, but they generally do not grow as rapidly as the crosses or hybrids, and they consume more feed. Leghorn males make very poor and costly meat, even when they are obtained free. Meat-type chicks are usually purchased as a straight-run (males and females mixed).

The goal

The birds should reach a market weight of five pounds between six and seven weeks of age. For heavier birds, keep them longer. Today's hybrid broiler raised under good conditions will often exceed these results. This is especially true when small numbers of birds are raised in show projects.





Housing

The broiler project does not require a lot of space. This is a good project for members in urban areas and on small acreages. The chicken house should offer protection from the weather and predators. Most of the birds will be grown in the spring and summer so brooding heat will not be a major problem. However, ventilation will be necessary when outside temperatures reach 90°F and above. The house needs to be dry and draft free. The doors and windows need to close and fit snugly. Hail screens should be placed over any windows that will be opened in warm weather. It is important to remove the excess heat and moisture from the house by either fans or natural ventilation systems. The floor of the house should be concrete or wood. If the floor is wood, the building should be set up off the ground on eight-inch concrete blocks to help keep the floor dry and prevent rat and mouse damage. All floors should be covered with wood shavings, finely ground corn cobs, cane pumice or other litter. Litter should be 2-4" deep to keep the birds clean and dry. It should be changed frequently if the birds are to be shown. There must be electricity for the heat lamps during brooding and for lights. The birds are grown under 24 hour light so they can be active whenever they choose.

Space requirements for broilers are shown in Table 1. These requirements will determine how many birds you can put in the house.

Table 1. Space Requirements for Broilers

Age, weeks	Sq. ft/bird
0-4	1/2
4-8	1
Show birds*	2

*Birds selected for the broiler show will require more space and additional care to maintain a show quality appearance.

Brooding

Your chicken house needs to be ready before the birds arrive. You do not want your birds sitting in the chick box while you get the house ready.

The first step in the broiler project is to set up the brooding facility. To get your chicks off to a

good start, the temperature in the brooder ring should be 90°F (32°C) in the late spring and summer. In early spring the temperature should be 95°F (35°C). Most brooding situations in your broiler project can be taken care of with electric infrared heat lamps. For a lot of birds you may need a brooder stove, either gas or electric. Figure 1 shows a typical brooder ring. The ring can be made of stiff cardboard, particle board or commercial draft shield material purchased from a hatchery. The chicks are a good indicator of the proper temperature. When they are comfortable they will be spread out over the entire area under the heat source. When they are too cold or drafty they will be huddled in a small group to try to maintain heat. They will pile and smother each other if they get too cold.

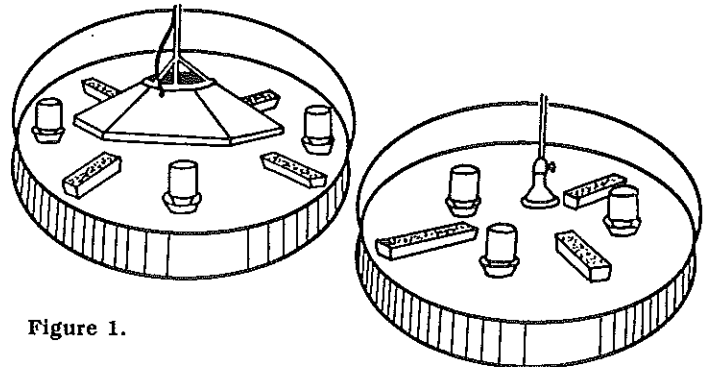
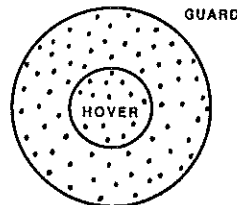


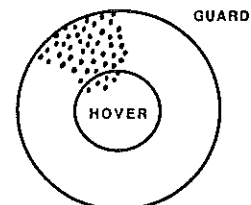
Figure 1.

You may require more than one heat lamp to keep chicks from piling up. Usually a chick needs about six or seven square inches of brooder space. You need to adjust the size of your ring to the number of birds you are starting.

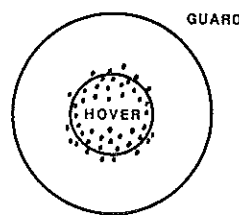
Just Right
A contented peep and evenly distributed chicks around the hover indicates comfortable conditions.



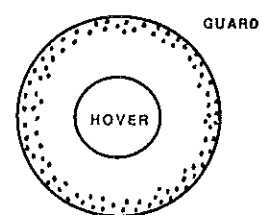
Too Drafty
When the chicks chirp and wedge behind the hover, there is a draft.



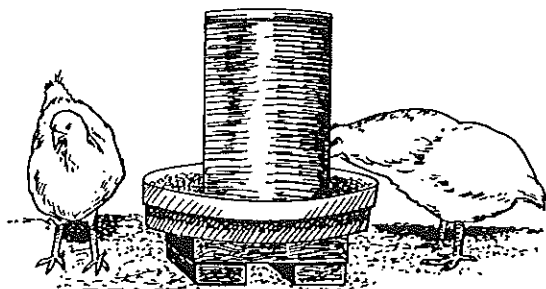
Too Cold
If too cold the chicks will chirp and pile up under the hover.



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



Allow 1 inch of feeder space for each chick in the brooder ring. Keep the feeder full so the birds can easily find and eat the feed. Larger feeders are used when the ring is taken down at about two weeks of age. A hanging feeder is best; it prevents feed wastage and keeps the birds from sitting in the feed. Birds on the feeders are unsanitary and can cause breast blisters. Keep the feeder at the same level as the birds' backs. This means you must constantly adjust the feeders as the birds grow.



Feeder space (Table 2) is important in the broiler project. The birds should be able to eat at will for maximum growth and efficiency.

Table 2. Feeder Space Per 100 Chicks

Age, weeks	Total linear space	Number of feeders and length	
	Ft	No.	Ft
0-4	12	2	3
4-8	20	2	5
8-12	30	3	5
12 or older	40	4	5

Use jars with fountain bases to provide water for the chicks. Two or three one-quart jars are enough for 100 chicks. You may use more waterers than needed and place them as shown in Figure 1. Keep the water fresh and the bases clean to ensure adequate water consumption (Table 3). After two weeks you can replace the jars with larger three to five gallon waterers. One waterer of this size is enough for 100 chickens. If you have a water trough, allow one-half inch of trough space per bird.

Remember, water is the most important nutrient in your broiler's life. Make sure birds have plenty of water during hot weather by increasing the amount of water space by 25%.

Table 3. Water Consumption

Age, weeks	Gallons/100 birds
1	0.5
2	1.0
3	1.5
4	2.0
5	2.5
6	3.0
7	3.5
8	4.0

Feed

For a small broiler project your best source of feed is a commercial ration purchased from a feed company. This would be especially true for the Ak-Sar-Ben broiler project. Start the birds on a starter mash of 22% protein for the first four to six weeks. At this point, switch to an 18 to 20% finisher ration. This ration might have an antibiotic for growth promotion and a coccidiostat to control coccidiosis. The growth promotant is not essential but the disease control offered by the coccidiostat might be important.

Birds for show may need special rations to control weight gain. You may also feed a show ration during the latter week of growth to enhance pigment.

Show Ration Formula:

1 part corn gluten meal
3 parts whole yellow corn meal
4 parts broiler feed

or 1 part whole yellow corn meal
1 part broiler feed

Remember pigment is only a small part of showing the birds. Conformation, fleshing and finish are much more important.

If you mix your own ration for the broilers, make sure all nutrient requirements are met (Table 4). For broilers, either an all-pelleted or a crumbled ration is preferred. Small fine nutrients do not separate in these types of rations. Broilers do not eat the fines very well.



Table 4. Some Nutrients Required by Broilers as They Grow

<i>Energy Base Kcal ME/kg Diet</i>	<i>Weeks</i>	<i>Weeks</i>	<i>Weeks</i>
	<i>0-3</i>	<i>3-6</i>	<i>6-8</i>
	<i>3,200</i>	<i>3,200</i>	<i>3,200</i>
Protein, %	23.0	20.0	18.0
Methionine, %	0.50	0.38	0.32
Calcium, %	1.00	0.90	0.80
Phosphorus, % available	0.45	0.40	0.35

Trace minerals and vitamins at recommended levels (available in a pre-mixed package).

Management

Management is the day-to-day chores required in your project. How well you do these jobs will be reflected in how well your birds perform in the show and at the market. Use these good management practices:

1. Follow recommendations for brooding.
2. Provide adequate floor space, feed, water and light.
3. Do not mix birds of different ages. Older birds can sometimes give young birds a disease.
4. Trim bird beaks when necessary. This is usually not necessary for broilers.
5. Watch for disease and parasites; control those that do appear.
6. Remove diseased birds from the flock. Promptly burn or dispose of birds that die of disease to prevent the spread of the disease.

The timetable on page 7 might help you in the management of your project.

Special treatment for show birds

Birds for show need to be kept on deep litter (6-8 inches). The litter must be stirred daily and all caked manure removed so that soil doesn't stain feathers. Once a feather is stained it is hard to wash clean. These birds should be weighed at least once a week from about 4 weeks on to control uniformity. At this time select a small number of birds and separate them from the

large flock. It will be easier to work with just a few birds. If possible, the birds should be handled each day to keep them from getting excited during handling. This is also a time when many bruises and broken wing tips can occur. These defects will lower the placing of the bird at show.

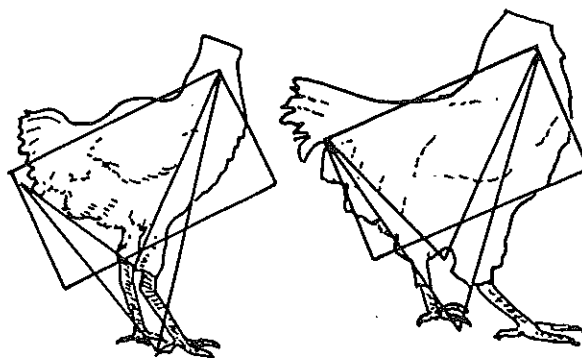
If possible, birds should be exercised in a grassy area each day. This will help keep a good muscle tone needed for show and allow the bird to eat green grass. This will help darken the pigment on the head and legs. With the amount of time needed for these extra chores, you can see the need for working with just a few birds. As the show time grows near, it may be necessary to wash and groom some birds. The procedure for grooming for show is described in "Selecting and Grooming 4-H Exhibition Poultry," Nebraska Cooperative Extension 4-H 191.

Selecting for weight may be necessary to meet certain show requirements. These requirements vary from show to show and you should find out about any rules covering weights before entering the show.

Defects and judging criteria

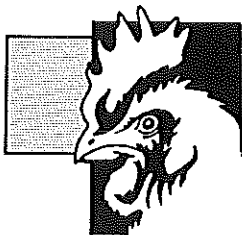
Market poultry is judged on the basis of conformation, fleshing, finish and uniformity (when showing two or more birds per pen). Pigmentation of broilers may receive minor consideration. Pigmentation is not related to finish.

Conformation: Refers to the skeletal frame or shape of the bird. It is not used to describe the amount and distribution of flesh on the bird. The ideal shape of a meat bird approaches that of a rectangle.



<u>What</u>	<u>When</u>	<u>Date Accomplished</u>
1. Order chicks so they will arrive 7 to 8 weeks prior to show.	3 weeks before you want to pick them up (11 to 12 weeks before show)	
2. Clean and disinfect brooder house with disinfectant containing Cresol.	2 weeks before chicks arrive	
3. Clean and disinfect equipment. Use a quaternary ammonium compound.	2 weeks before chicks arrive	
4. Put 6 inches of litter on floor.	2 days before chicks arrive	
5. Place brooder ring around hover or heat lamps.	2 days before chicks arrive	
6. Regulate brooder and run it.	24 hours before chicks arrive	
7. Put feed on paper plates or in small chick feeders at floor level. Allow 1 1/2 inches feeder space per chick.	Day 1 to Day 3	
8. When chicks arrive, put under brooder immediately. Check feed and water.	Day 1	
9. Provide one round tube feeder for every 25 chicks. Use chick feeders until birds can eat from large tube feeder.	Day 1 to end of project	
10. *Provide two 2-gallon waterers per 25-100 chicks.	Day 1 to end of project	
11. Feed a broiler starter containing at least 22% protein with a least 3% added fat.	Day 1 to 4 to 6 weeks	
12. Remove brooder rings.	Day 7 or 8	
13. Reduce brooder temperature 5°F or raise heat lamp 6 inches.	Weekly (remove heat source after 4th week if pen temperature is above 50°F).	
14. *Supply the birds with as much fresh air as possible (unless outside temperature is below 50°F).	After Week 4	
15. Feed a good commercial broiler finisher containing 18% protein and more than 3% added fat.	Week 4 to 6 to end of project	
16. Feed broilers one ounce of wet finisher per bird per day. Add water or reconstituted powdered milk to the finisher (mash, crumbles or pellets) until it forms a thick paste. Adjust quantity until birds consume all of the wet mash in 30 to 40 minutes each afternoon.	2 weeks before show	
17. Begin feeding broilers one ounce of corn chops per bird per day. Form a wet paste by adding reconstituted powdered milk to the corn chops and allow mixture to stand overnight. Feed the next morning.	10 days before show	
18. Provide 24 hours of light per day (40 watt bulb 5-8 feet above floor).	Day 1 to show	
19. Stir litter to prevent caking.	Regularly	
20. Check to see that chicks are comfortable.	Regularly	
21. Check for external parasites.	Regularly	
22. Be sure chicks have fresh air with no drafts.	Regularly	
23. Dispose of dead birds.	At once	
24. Keep records.	Regularly	

*Most important during warm weather



Length

The keel bone should be moderately long, straight, and free of defects such as dents or knobs.

Keel bone should carry well back between the legs.

Keel bone should be parallel to backbone.

Depth

The body should be full and deep.

Body depth must be balanced with width. Birds that are extremely deep but are narrow across the back and breast are called "slab sided" and should be avoided.

Width

Back should be long and wide with a broad, normal-shaped spring of rib.

Length, width and depth should be well-balanced—all are important in the final evaluation of the bird.

Fleshing: Refers to the amount and distribution of muscle or flesh on the bird. Breast, drumstick and thigh carry the bulk of the meat and should be examined closely.

Breast should be:

Well-developed and evenly muscled on both sides of the keel.

Wide and long, with the width of muscle carrying well back on the keel bone.

Sufficiently well-fleshed so that it has a rounded appearance, with the flesh carrying well up to the crest of the keel.

Drumstick and thigh should:

Be well-developed and carry a lot of muscle.

Have a rounded, bulgy appearance and be soft to the touch.

Finish: Refers only to the amount of fat in and immediately under the skin. Without good fat cover, a well fleshed bird loses a great deal of eye appeal.

Poultry should not be fat to the point of being wasteful. Abdominal fat should account for less than 10% of the total body weight. The amounts of fat in the skin between and in the feather tracts on the side of the breast are the best indicators of finish. There must be a noticeable amount of fat in these areas. The condition of the

web of the wing also indicates the amount of fat. The skin of the abdomen should feel thick when pinched with your fingers.

The amount of finish considered adequate will vary from judge to judge and will depend more or less on his/her personal preference. The only standard for finish is: To be of Grade A quality, the live bird must have a well developed covering of fat in the skin considering the class, age, and sex of the bird.

Pigmentation: Refers to the degree of skin color caused by yellow or yellow-orange pigments in the outer skin layer.

Skin color (pigmentation) is not an indication of finish.

Consumers prefer a chicken carcass with some color.

The amount of skin pigmentation considered adequate will vary from judge to judge and will depend on his/her preference. However, pigmentation is not nearly as important as conformation, fleshing and finish.

Uniformity: When birds are shown in pens of two or more birds, entry uniformity becomes an important factor. Every bird in the entry should be as near a carbon copy of the pen mate(s) in sex, size, conformation, fleshing, finish and even skin color, as possible.

If one bird has a defect, it will affect the rating of the entire pen.

Birds of different sexes or color patterns, or large weight differences will affect the rating of the entire pen.

Presence of Defects:

The presence of any of the following defects can lower the final placing of the bird or pen, or can eliminate it from the show.

General

Cuts and tears

Broken or disjointed bones

Skin or flesh bruises anywhere other than on the wing tip. Note: Wing tip bruises must not extend into any portion of the joint.

Breast blisters - includes mucous "sacs"

Heavy callouses or scaly condition on breast

Insect bites

External parasites (lice, mites, or fleas)

Extremely dirty birds

Sometimes in poultry with black or green shanks, there will be an extension of these pigments into the skin of the drumsticks, thighs and abdomen. These birds should be removed from the show.

Feathering

Multiple pin feathers, particularly those just coming through the skin and lacking sufficient brush to pick.

Areas of skin discolored because of broken quills or sunburned because of inadequate feather ("bareback").

A lack of feather covering over the keel area of well fleshed birds is not a defect and must not be considered as such.

Today's market birds generally have light colored feathers. However, feather color is important only if it detracts from the appearance of the ready-to-cook product. Generally speaking, any color is acceptable.

Conformation

Breast bones which are:

Dented

Crooked or curved

Knobby

V-shaped

Slab sided (birds which are much deeper than they are wide)

Not parallel to backbone

Backs which are:

Narrow

Crooked

Hunched or humped

Legs and wings that are deformed

Bodies that are definitely wedge-shaped

Defects such as crooked toes or beaks are not important and should be disregarded

Fleshing

Breasts which:

Do not carry muscle width well back to the end of the keel

Are V-shaped or concave rather than full and rounded (U-shaped)

Drumsticks and thighs that are thin

Backs that are not well-fleshed along the vertebrae and around hip bones

Finish

Lack of fat cover:

In the skin between and in the heavy feather tracts on the breast

In the collar of the wishbone

Where the thigh skin joins the breast

Around the tail, head and abdominal region

Profit or loss

You shouldn't plan to own and raise a home flock to make a lot of money. However, you may want to raise your own broilers because you prefer heavier or fresher chickens than you can find in most grocery stores. Or, you may keep a small flock for the same reasons that some people keep a garden. A well-managed home flock can be a good source of fresh poultry meat. However, home flock producers should not plan to raise more birds than their family, friends or neighbors can use either live or dressed.

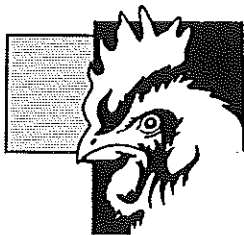
Economically, commercial broiler production in the Southeastern United States is tough competition for the home flock owner in Nebraska. There is limited commercial production in the state; consequently there is no organized live market for broilers. Commercial producers can ship in dressed birds at a price difficult for home flock owners to match.

However, some 4-H'ers have been able to establish a market for a heavier bird preferred in rural Nebraska. With such a market, many 4-H'ers have been able to raise broilers for a profit. Each individual must evaluate his or her situation before raising a large number of birds.

Each year scholarships are awarded at the Midwest Poultry Convention to 4-H'ers and FFA members who had poultry projects and the records to substantiate them. A good set of records is important because they tell the 4-H'er how well the project worked and how it could be improved. The record book for this project is a separate publication numbered 4-H F 66.

Marketing

Poultry may be sold live, dressed or ready-to-cook. Before deciding whether to sell poultry live or to process it on the farm, consider the markets available and price variations. Live birds may be sold at the farm or delivered to an auction house,



dealer, broker or processing plant. Home-processed poultry may be sold from the home only. Only birds processed in a USDA inspected plant may be sold in retail outlets. Pick a method that is available and will make the most money.

Remember that top-quality dressed or ready-to-cook birds come only from live birds in prime condition at slaughter time.

Meat processing

Meat Quality

Quality means acceptability of the product to the consumer. There are certain standards or grades which define various levels of quality.

Live poultry grades are based on the following specifications:

Health and vigor - The Grade A bird looks alert and is in good health.

Feathering - Grade A birds must be well feathered over the whole carcass with only scattered pinfeathers.

Conformation - Birds should have good conformation, fleshing and fat covering.

Fleshing - Breast meat should carry well back on the keel in Grade A birds.

Fat - Carcasses lacking fat will appear blue (flesh shows through skins).

Defects - Defects such as breast blisters, insect bites, heavy callouses, etc., will lower the quality of live birds.

Reject - Bird which is unfit for human consumption. (Emaciated or diseased birds are examples.)

Poultry Meat Processing

Catching the Bird. Catch birds by the shank and handle gently to prevent bruising. Commercially, the birds are usually caught at night to keep them as calm as possible.

Weighing. Weigh your birds before slaughter to calculate dressing percentages. Birds processed commercially are usually weighed on the truck.

Bleeding. The best way is to hang birds by the shank. You may construct a special funnel to help in the bleeding operation. Birds in processing plants are placed on automatically conveyed shackles.

Bleed your birds by severing the jugular vein just below the jowls so that the windpipe and esophagus remain uncut. (This is commonly called the "Modified Kosher Method.") This keeps the spinal cord intact and allows the bird to bleed to death. This method is widely used in modern processing operations.

Scalding. When the bird has finished bleeding and is dead, the scalding procedure begins. There are various scalding methods.

1. **Hard scald** - Birds are immersed in water 160-180°F for 30 to 75 seconds. This method makes the feathers easy to remove but also discolors the skin considerably. Today, this method is not used commercially except for waterfowl.

2. **Sub-scald** - Birds are placed in water 138-140°F for 30 to 60 seconds. With this method, not only are feathers easier to remove, but skin color is more uniform. However, it is necessary to keep the skin surface moist and covered to prevent discoloration. Sub-scalded carcasses should be frozen rapidly (at -15 to -20°F) to achieve good color.

3. **Semi-scald** - This method uses water temperatures of 123 to 130°F for 90-120 seconds. The semi-scald leaves the skin intact and allows for more flexible marketing. However, feathers are harder to remove.

Picking. Feathers are removed in the processing plant by a machine with rotating rubber fingers that beat and rub the feathers from the carcass. You may remove the feathers from a small number of birds by hand. You should pull the feathers soon after removal from the scald water. Weigh the bird after feather removal.

Singeing. Hair-like feathers may be removed by passing the carcass quickly through a flame.

Remove oil gland

Evisceration. Methods vary but the following steps will give an idea of the procedure involved.

1. Remove shanks and feet.
2. Open skin down the back of the neck. This allows you to fold the neck skin around for a neater appearance.
3. Loosen crop, trachea and esophagus.
4. Open abdomen between keel and vent.
5. Pull viscera and giblets out of body cavity.
6. Clip liver, gizzard and heart away from viscera. Remove gall bladder from liver. Remove pericardial sac from the heart and squeeze the heart out. Clean gizzard by splitting and removing gravel and grit. (The gizzard normally cleans more easily if cooled first.)
7. Ovaries, testes and lungs may be removed by using special scraping tools. (Processing plants normally remove lungs by suction.)
8. Thoroughly wash carcass inside and out with cool water.

For an illustrated guide to the above procedures see NebGuide HEG81-144 "Home Processing of Chickens."

Chilling. The carcass is chilled as fast as possible to reduce growth of microorganisms. (Reduce temperature to below 40°F as fast as possible.) The bird normally is chilled by placing it in ice—slush. You can use water with ice cubes. The carcass should be aged 8 to 12 hours in ice slush before freezing for optimum tenderization.

Packaging and Freezing. Birds should be packaged in a clear plastic film, which is a good barrier to moisture and vapor. Suitable films are usually available locally.

The ready-to-cook carcass should be placed in a plastic bag close to the size of the bird. All excess air should be squeezed out. Twist the package closed so it fits snugly around the bird. Tie the package with a twist tie or string.

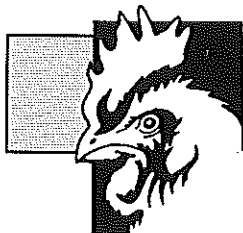
Freeze the bird at a temperature of -10 to -20°F. Allow plenty of air movement around the package to speed up the freezing process.

Now that you have completed your broiler project you may use this information in other projects. You may want to do a poster presenta-

tion on broiler facts. Your club may want to put on a barbeque for a local group. The size of the

barbeque could vary from a few birds to a couple of hundred. The club may set up a quiz bowl at the fair for 4-H'ers studying poultry or broilers. With the knowledge gained you may want to help a superintendent at a county fair or state show. This will help develop your leadership qualities.

One final note. Remember to show your birds, have a good time with others that share your interest, and practice good sportsmanship.



GLOSSARY

Beak trim (debeak) - to remove the front portion of the beak with a hot blade or cutter, used to prevent cannibalism.

Breast blister - usually a sac holding fluid on the edge of the keel bone. Caused by friction as the bird sits on a hard object.

Broiler - a chicken grown for meat, usually a hybrid.

Brooding - usually refers to the period when the birds need supplemental heat, or the nursery portion of the growing period.

Fines - the dusty part of the feed that is left in the feeders, very small in size.

Growth promotant - a drug that prevents harmful bacteria from growing in the bird's intestine, thus allowing for more efficient growth.

Hybrid - the offspring of two different pure breeds.

Keel bone - the breast bone.

Litter - any material used to absorb moisture and manure from the growing birds.

Market weight - the weight at which you choose to sell your birds.

Pile - when the birds climb on top of each other and suffocate the birds under them.

Ration - the feed the bird eats.

Smother - to suffocate from lack of oxygen.

Straight-run - birds that have not been sexed, both male and female are in the group.

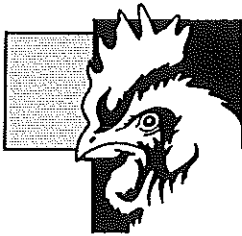
Ventilation (natural) - the movement of air by natural means such as wind or heat convection.

Ventilation (mechanical) - movement of air and moisture by fans.

Viscera - the intestine of the birds.

Some Common Poultry Diseases

Disease	Signs	Comments	Treatment
MAREK'S	Lameness, droopy wing, incoordination, unthriftiness, weakness, paleness, gray irregular pupil of the eye	Buy birds that are vaccinated	None
GUMBORO	Sudden onset, rapid drop in feed and water consumption, mucoid diarrhea with soiling of the vent feathers, sitting in hunched position, picking vent, bloody diarrhea	Found only in chickens, chicks most susceptible, usually infected at day 1	No specific treatment. Good hygiene is vital, vitamin-electrolyte therapy is helpful.
FOWL CHOLERA	Acute outbreaks, hens die on nest, greenish-yellow diarrhea, increased water consumption due to fever, lameness from joint infection, off feed	Found in all domestic fowl, usually strikes birds older than 6 weeks	Sulfa drugs: sulfadimethoxine, sulfaquinoxalene, sulfamethazine, sulfamerazine
COCCIDIOSIS	Weakness, ruffled feathers, bloody droppings, little interest in feed or water, can have high mortality	Usually a disease of young poultry	Buy feed with a coccidiostat: Amprol, Coban, Stenerol, BioCox
NEWCASTLE	Sudden onset, rapid spread, hoarse chirp in chicks, water discharge from nostril, paralysis, twisting of neck, severe drop in egg production, mortality 10-80%	All birds of all ages susceptible, caused by a virus	None specific; antibiotic for 3 to 5 days to fight secondary infection.
INFECTIOUS BRONCHITIS	Rapid onset and spread, chilling, chirping, watery discharge from eyes and nostrils, labored breathing	All chickens susceptible, caused by a virus	None specific; antibiotics for 3 to 5 days to fight secondary infection
MYCOPLASMA GALLISEPTICUM (MG)	Sticky, serious exudate from nostrils, foamy exudate in eye, swollen sinuses	Buy birds from MG free hatchery	Erythromycin tylosin, lincomycin spectinomycin
MYCOPLASMA SYNOVIAE (MS)	Lameness, swollen joints, weight loss, stilted gate	Buy birds from MS free hatchery, can be transmitted by the egg	Tylosin, spectinomycin, chlortetracycline
PULLORUM	Death of chicks at 5 to 7 days, huddling, depression, diarrhea, weak knees, pasted vent, gasping, chalk-white feces	Disease from parents transmitted by the egg, buy birds from a pullorum free hatchery	Sulfon amides and antibiotics will reduce mortality



Some Common Poultry Parasites

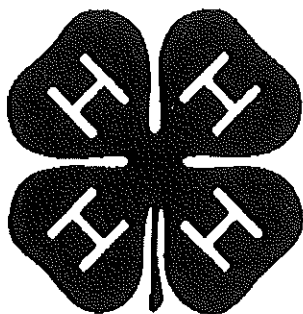
Parasite	Signs	Comments	Treatment
LICE	Poor weight gains, poor egg production, scratching, discoloration of vent, tail and breast	Very common, entire life cycle is on bird	Sevin, Rabon, Malathion, Coral, RaVap
MITES			
Northern fowl mites	Red or black specks, or debris around vent, decrease in egg production or weight gain, mites often seen on eggs	Can transmit fowl pox, Newcastle disease, ornithosis, and other diseases	Thoroughly clean building and treat hiding places with a poultry miticide, Atroban, Insectrin, Permethrin
Chicken mites (Red mites) (Roost mites)	Anemia, high mortality in young birds	Mites feed at night, less likely to be seen in daylight	Same as above
Depluming mites	Loss of feathers, unthriftiness, increased susceptibility to disease	Mites cause birds to pull out feathers due to irritation	Same as above
Feather mites	Loss of feathers, unthriftiness, increased susceptibility to disease	Feather mites are host specific and will not infect humans	Same as above
Scaly leg	Thickened skin on shank	Slow spread through flock	Dip feet and legs in motor oil, diesel oil or kerosene
DARKLING BEETLE	No specific signs of symptoms but beetles can be seen in litter	Intermediate host for tapeworm, may transmit botulism, Marek's disease, and Gumboro	Clean house and litter, spray building with malathion
CHIGGERS	Numerous pimple-like skin lesions	Lesions may cause downgrading at slaughter more common in warmer climates	Keep birds off range
TICKS	Anemia, skin lesions, occasional paralysis	May transmit disease, more common in warmer climates	Keep birds off range
MOSQUITO	Anemia, drop in egg production, mortality	May transmit a variety of poultry diseases	Remove any pools of stagnant water



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Thornberry, F.D. Tex-Hen Topics. Texas Agriculture Extension Service. Texas A&M University, College Station, TX.



Pledge:

I pledge—My HEAD to clearer thinking,
My HEART to greater loyalty,
My HANDS to larger service, and
My HEALTH to better living,
For my club, my community, my country,
and my world.

Motto: "To make the best better."

Colors: Green and white.

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