Home Processing of Poultry

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Processing is the final step in the production of broiler chickens. As the saying goes "last, but certainly not least." The quality of the final product is dependent on proper processing. Processing of chickens involves the steps discussed herein.

Preparing the Chicken for Slaughter

Birds that are to be slaughtered should be taken off feed long enough before processing (about 12 hrs.) to allow the crop and intestinal tract time to empty. A full digestive system increases the chance of contamination of the carcass during removal of the viscera. Birds should be caught and placed in crate or coops during the night to avoid excitement and possible injury of the birds prior to slaughter.

Slaughter Procedure

When slaughtering birds their heads should be position downward to facilitate bleeding. This can be accomplished through the use of killing cones, shackles, or a rope around the feet.

After the bird is properly positioned the killing and bleeding step follows. Several important factors must be kept in mind. The bird must be slaughtered in a humane way that allows most of the blood to drain from the body and at the same time limit struggling to prevent damage to the carcass.

A widely used method that accomplishes these objectives is making a cut just behind he jaw. The cut should sever the jugular vein without cutting the esophagus or windpipe. (See Figure 1) A weight can then be hung from the beak to limit the movement of the bird. This is a humane method of slaughter because the bird becomes unconscious due to loss of blood from the brain.

Any method that involves beheading or wringing the neck accomplishes the killing but fails to produce a properly bled carcass. The heart stops when the spinal cord is severed.

Another procedure that works well is to debrain the chicken after beginning the bleeding. The procedure is to locate the slit in the roof of the mouth and insert a small bladed knife at a slight angle. Push the knifepoint toward the back of the brain, with the handle approximately parallel to the upper beak. (See Figure 1) A slight squawk indicates successful debraining. Debraining, if done, will allow dry picking or will facilitate picking when the sub-scald is used.

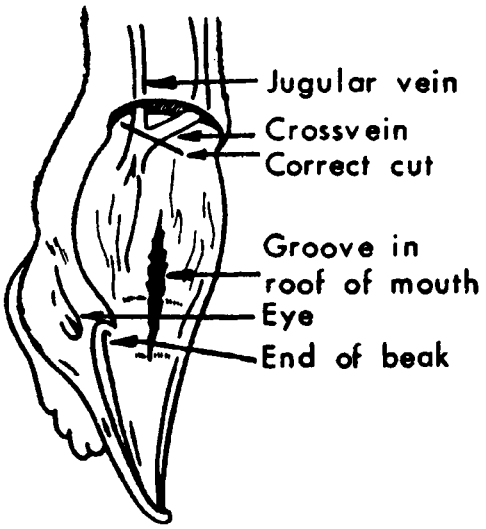

Figure 1. Proper bleeding and killing is important.

Scalding

Scalding involves submerging the carcass in hot water to relax the muscles holding the feathers. For small groups of birds a large bucket can work well. For larger numbers of birds a thermostatically controlled heated tank may be best. For birds that are difficult to scald (waterfowl, in particular) a wetting agent or detergent may need to be added to the water.

The type of poultry and the difficulty of picking should determine scalding temperatures. For waterfowl and mature birds a higher temperature and longer submersion time should be used. For younger birds a lower temperature and shorter time is recommended.

Semi-scald or slack scald is the name given to scalding for 30-60 seconds in 125-130°F water. By using this time and temperature the epidermal layer is left intact. Birds that are being slaughtered for an exhibit should be scalded in this way to improve the appearance of the carcass. Water that is too hot will cause the outer layer of skin to loosen and be lost. Loss of that skin also results in loss of some yellow pigment on the skin.

Sub-scald is the use of water at 138-140˚F for 30-75 seconds. The epidermal layer is broken down by this time-temperature combination but the feathers are usually much easier to remove. For home processing this method of scalding is recommended.

Hard-scald or full scald requires a water temperature of 140-150˚F. This method is faster and eliminates pinfeathers, but the birds tend to dry out and have a less desirable appearance. Waterfowl may be scalded at this temperature.

Whatever method is used the birds must be properly bled. No scalding should be done before all the movement has stopped.

Feather Removal

Birds should be plucked immediately after scalding. If mechanical pickers are used they should be adjusted for the size birds being picked. Mechanical pickers make the job much faster. Birds that are to be exhibited should be plucked by hand being sure that all pinfeathers are removed, and that there is no damage to the skin. This procedure requires a good deal of time if done correctly. Rubbing the feathers from the skin is frequently more effective than a picking motion.

Evisceration

Evisceration involves the removal of the contents of the body cavity plus the feet and head. To remove the head cut around the neck just behind the head, and twist. The neck skin should then be split down the back. A second cut made around the base of the neck followed by a twist will usually separate the neck from the body. Next the esophagus, trachea and crop should be separated from the neck skin. They can be left attached and be pulled from the body with the viscera.

The body cavity can be opened by making a small cut near the vent, extending the cut around the vent, being careful not to cut the intestine or contaminate the carcass with fecal material. (See Figure 2)

For exhibition birds the abdominal opening should be as small as possible to improve the appearance of the finished product. After the abdomen is open the viscera can be removed through the opening. It is very important to remove all the viscera, including the lungs that are attached to the back. After all the contents of the cavity are removed the bird should be thoroughly washed inside and out.

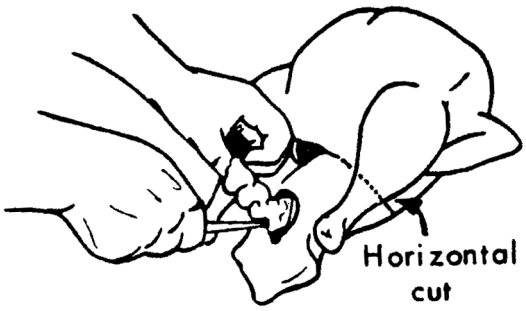

Figure 2. Opening the body cavity.

After the viscera have been removed the heart, liver, and gizzard should be separated and saved. The ends of any parts of the vascular system that may be attached to the heart should be removed by trimming off the top to expose the chambers. The heart should be washed and squeezed to force out any remaining blood. The green gall bladder should be carefully trimmed away from the liver. Next the gizzard should be split lengthwise and the contents washed away. The lining should then be peeled away from the rest of the gizzard.

After the evisceration procedure has been completed the carcass should be cooled as soon as possible. Ice water or a refrigerator can be used, however, the ice water will do the job a little faster. If birds are to be frozen the gizzard, heart, and liver can be wrapped in waxed paper and placed inside the body cavity. The birds can then be placed in a moisture-vapor proof bag and frozen.

For birds that are to be exhibited an effective way to preserve the carcass is to bag it and store it in finely crushed slush ice. Packing too tightly in ice, particularly ice that has large pieces can cause the carcass to have dents or distortions in the meat. This does not influence the flavor but does change the appearance that is important for exhibited birds.

Exhibiting the Dressed Poultry

When selecting dressed poultry for exhibition all birds should be similar in size and conformation. Birds with cuts or tears in the skin, bruises, or missing parts should not be included in the group to be exhibited. The judge will be looking for conformation, finish, and freedom from defects as well as uniformity. Placings will usually be higher if these factors are kept in mind and followed.

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Robert E. Whitson, Director of Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Vice President, Dean, and Director of the Division of Agricultural Sciences and Natural Resources and has been prepared and distributed at a cost of 20 cents per copy. 1003 JA