

Lesson 2: Selection and Evaluation

Selecting high quality poultry is a skill that is important to egg and meat production. By evaluating and selecting the most productive birds, overall improvement of the flock is achieved. It is important for commercial operations to develop and produce quality poultry in order to remain profitable and to maintain a positive reputation in the industry.

Poultry Parts

Figure 2.1 and Figure 2.2 identify the parts of a chicken and the parts of a turkey. It is important to be familiar with the common terminology of poultry to select and evaluate high quality birds.

Selecting Broiler Breeder Poultry

Broiler breeders are the parent stock used to produce hatching eggs for commercial broiler production. When selecting broiler breeders, look for evidence of a healthy, productive bird. The criteria includes general health, body weight, conformation, and performance data. Conformation is the type, form, and shape of the broiler. It includes feathering, fleshing, fat, and freedom from defects. Performance data is used to determine the genetic superiority of the breeding flock.

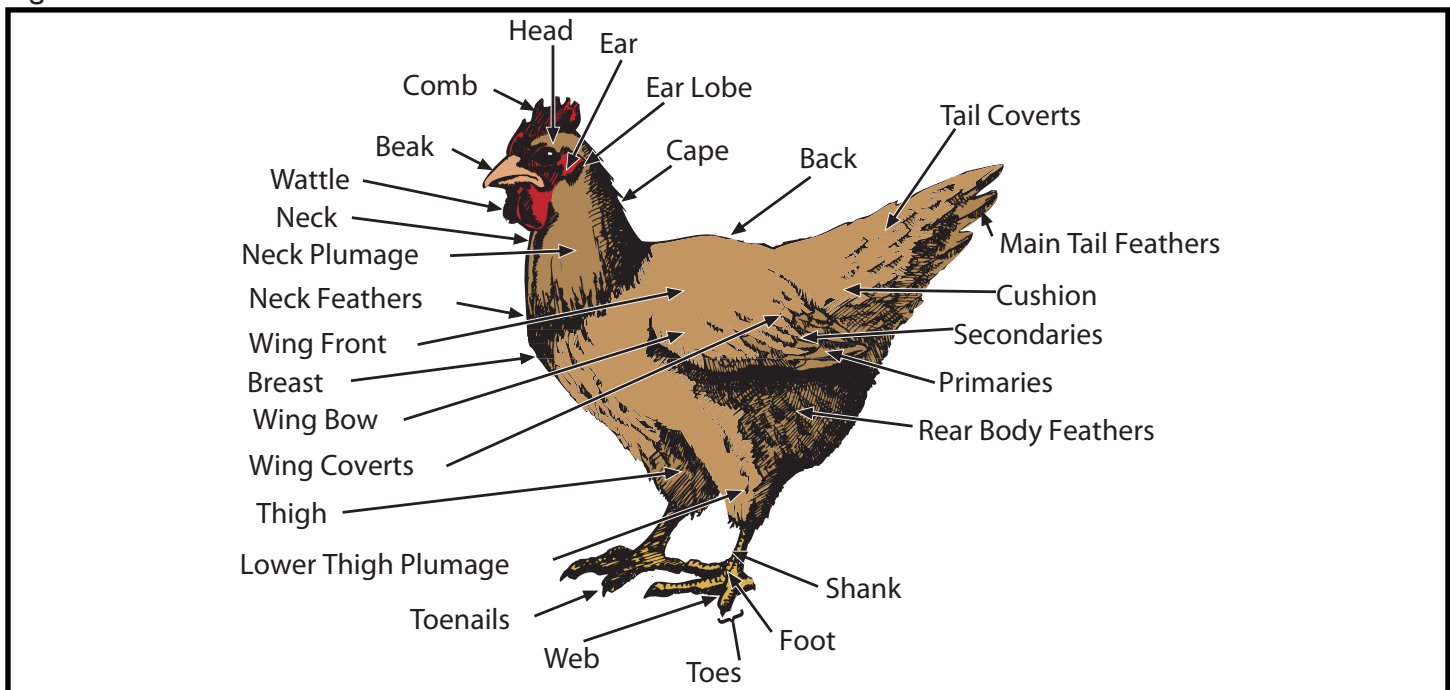
General health refers to indications of disease or other abnormalities that may indicate that the bird is not fit for humans to eat. In general, a bird in good condition has no severe abnormalities such as unusual growths or lumps, bloody diarrhea or yellow to green-tinted feces, bodily discharges, lameness, or fever.

A healthy bird is very vocal. Its rounded, bright eyes are very alert. The comb and wattles are bright red, with a smooth, sturdy, and waxy texture. The feathers around the vent (posterior opening, anus) are clean and dry as the rest of the body plumage is close-fitting and clean. An unhealthy bird may exhibit sluggish behavior. The comb may be coarse, discolored, and darker or lighter than normal. The feathers around the vent may be dirty and damp, and the body feathers may be disarranged. Figure 2.3 shows the head of a healthy chicken compared with an unhealthy chicken.

Body weight of offspring is closely related to the weight of the broiler's parents at seven weeks. Evaluate birds at seven weeks and select only the larger birds.

Conformation refers to the general shape of the bird. The preferred shape of a broiler includes a crescent-shaped back, broad breast, and upright head. A bird with poor conformation has a wedge-shaped body, hunched back, crooked breasts, backs, and legs. The

Figure 2.1 - Parts of a Chicken



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Figure 2.2 - Parts of a Turkey

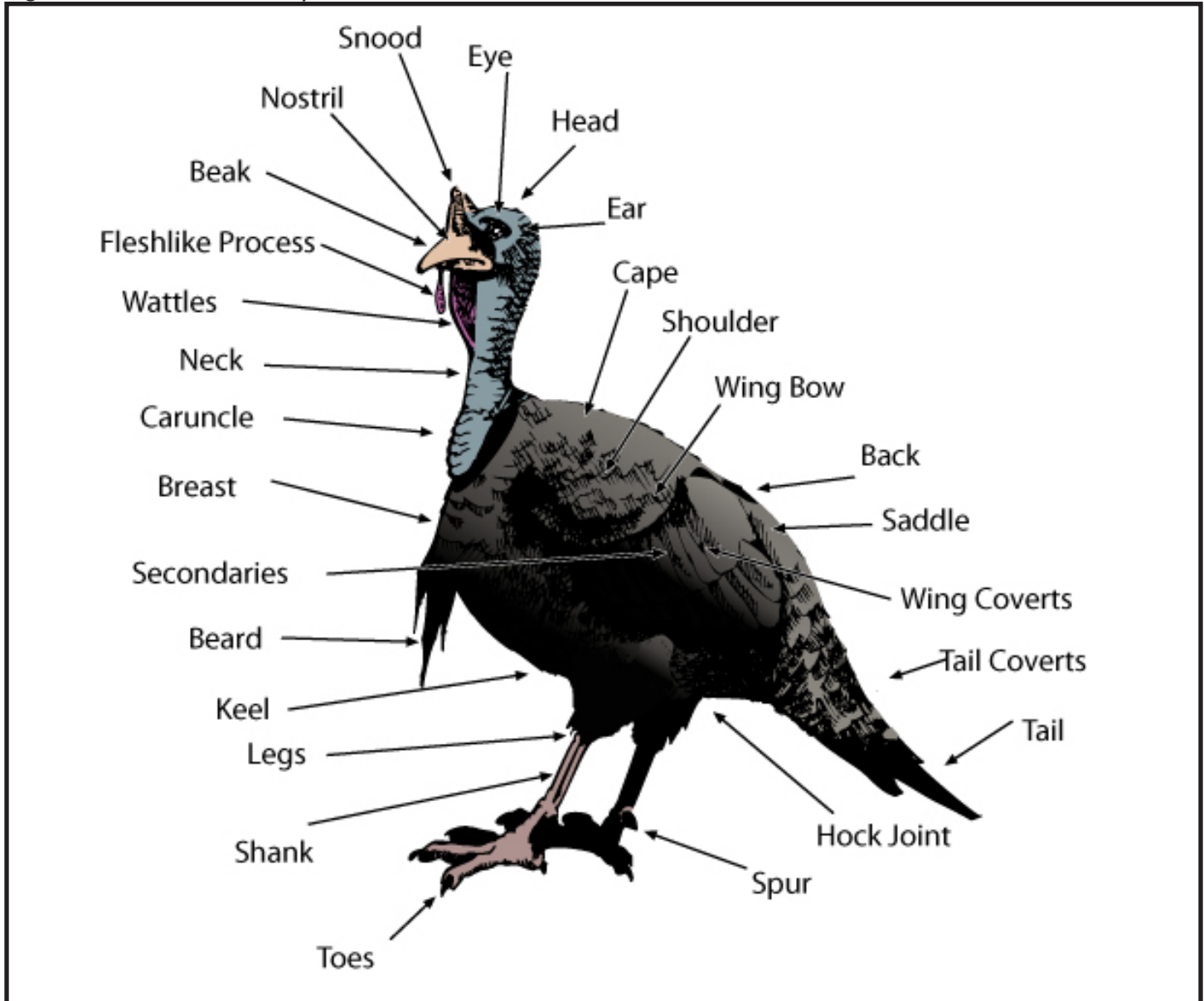
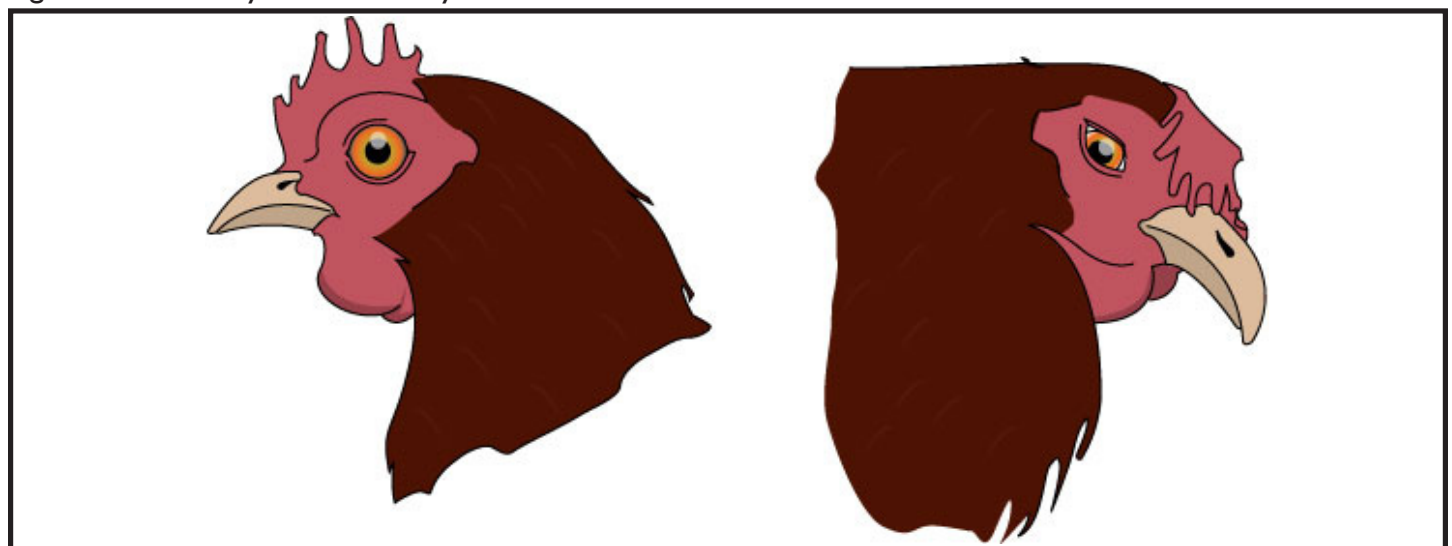


Figure 2.3 - Healthy and Unhealthy Chicken Head



feathers should lay well, be close fitting, smooth, and unbroken. A chicken with poor feathering may have twisted feathers, broken quills, or bare spots on the skin, which may result in sunburns. The most important factor when evaluating feathering is the presence of pinfeathers. These are the feathers just coming through, or still under the skin. The less pinfeathers, the better the quality of the bird. Pinfeathers are difficult to remove during processing.

Fleshing refers to the commercially important muscles that make up the shape of the bird. Quality meat poultry will have thick, rounded breasts that are wide through to the keel. The back will be toned all the way down the length of the vertebrae. The legs are thick and meaty. A bird with poor fleshing may have a breast that is inverted instead of protruding. Also, the legs and back may be thin.

The most common problem associated with fat coverage in broilers is a lack of the healthy layer of subcutaneous fat. Evidence of little fat can be seen by either thin skin over the abdominal area, the area where the skin over the thigh is connected to the breast, and under areas with heavy feathers. Fat can be easily measured by gently pinching the skin of the abdomen. Hardness indicates fat; softness indicates little fat.

Defects in broilers are damages caused to the bird that result in downgrading of the meat. When selecting birds, avoid those with defects that includes insect bites, bruises, calluses or watery blisters on the breast. Discoloration and bare areas, a result of the bird picking, are also considered defects.

Such defects of birds are often a result of improper handling or raising of the bird. For this reason, it is important to handle birds properly while examining for selection.

General disqualifiers include black feathers found in cockerels, green or black pigment found on the shanks, crooked toes (greater than a 90-degree bend), swollen hock joints, and infected foot pads.

Performance data for selection of broiler breeders is measured by the growth rate. Rapid growth reduces the time to market and results in feed consumption savings. A positive growth rate often reflects good breast width, body depth, and fleshing.

Turkey Breeder Selection

The criteria for selection of broiler breeders can also be applied to the selection of turkey breeders with only a few slight differences. Conformation is even more important because turkey carcasses are often marketed whole and at higher weights. Rather than watching for a droopy, coarse-textured wattle and comb, an unhealthy turkey may have sagging caruncles. Caruncles are the fleshy protuberances on the naked portions of the head, face, and neck of the turkey. Turkeys are susceptible to certain diseases and infections. Vaccination records should be checked for all breeding stock.

Selection of Commercial Layers and Pullets

Commercial layers are selected and evaluated by their pigmentation, general health, and conformation.

Layers lose yellow pigmentation from the skin and shanks as they lay eggs. This loss of color is called "bleaching." The pigment bleaches from the pigmented areas in a definite order according to the approximate number of eggs she has laid. When a hen ceases to produce, the pigments return to the body. Bleaching occurs in the following order: vent, eye ring, ear lobe, beak (corner of the mouth toward the tip), bottom of the feet, loss from front, back, and sides of shank, and the hock and top of toes.

A highly productive hen will have good general health. The comb and wattles of a productive bird are bright-red, waxy, smooth, and full. The eyes are bright and round, and the eyelids and eye ring are bleached. The beak should be in the process of bleaching or already bleached.

The vent should be fully bleached, supple, and moist. An unproductive laying hen will have small, scaly, discolored wattles and comb. The eyes will be droopy

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and sunk in, the beak will be yellow, and the vent will be dry and yellow.

The conformation of a quality hen with a high rate-of-lay will have a broad head, smooth face, large body capacity, soft and flexible abdomen, supple skin, and flat, smooth shanks. The pubic bones should be thin, flexible and spread wide enough to fit two to four fingers between them. A hen with a poor rate-of-lay will have a long, crow-shaped head, thin back, poor body capacity, hard abdomen, leathery skin, and round, scaly shanks. The pubic bones will be close together and not flexible.

Pullets are sexually immature chickens that are less than 22 weeks of age. The pullet should show signs of reaching sexual maturity by good comb and head development. They are evaluated for their potential to be highly productive layers. A healthy pullet shows no sign of disease. The eyes are round and prominent and the head should have smooth skin of a normal color associated with the breed. A strong, wide back, broad body, and roomy heart girth indicate quality body conformation. Pullets should have smooth feathers with no bare spots, and the skin color on the shanks should be of normal color for the breed. Legs should be straight and even with no abnormalities in the feet and toes.

Proper Handling Techniques

Proper handling is crucial in selection and evaluation of poultry. Handling poultry provides the ability to observe areas of the bird that are impossible to see from observing a standing bird. Appropriate handling helps reduce defects and injuries to the bird. Chickens and other commercially important poultry are naturally nervous creatures. It is important to have good control of the bird so it cannot get away and possibly injure itself.

To catch a bird, gently put one hand above the back of the bird and quickly, yet gently, pin the bird down. (Figure 2.4)

Slide the other hand under the breast until it is resting in the palm of the hand. Steady the bird by putting a

Figure 2.4 - Catching the Bird



Figure 2.5 - Steady the Bird

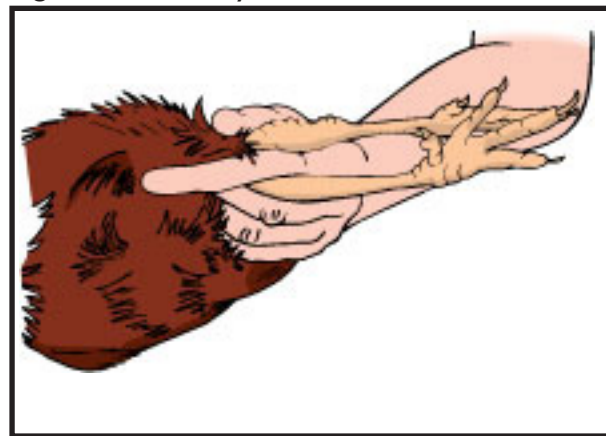


Figure 2.6 - Measure Abdominal Capacity



hand on its back and holding the wings down. Place the index finger between the hocks. Put a thumb around one leg and the rest of the fingers around the other leg. (Figure 2.5)

Gently lift the bird while keeping the other hand on its back. Hold the bird's head down with the back resting against the examiner's stomach. This will allow observation of the vent, abdominal capacity, and bleaching of the feet and shanks. The pubic bones and the softness of the abdomen can also be checked. To measure the abdominal capacity, place fingers between the keel bone and the pubic bones. Count how many fingers fit; this is the abdominal depth. To measure the abdominal width, turn the bird towards the examiner with the head under the elbow. Repeat measurement with fingers at a 90-degree angle. (See Figure 2.6)

To check for molting in wing feathers, keep the hen tucked under the elbow. With the other hand, gently open the wing and count the feathers. Return the bird to the coop with the breast in the palm of the hand and fingers holding the legs as before. Place the bird in head first and be sure both feet are completely on the floor before releasing it.

Summary

In the poultry industry, birds are selected and evaluated on their general health, conformation, body weight, and performance data. The qualities in a broiler breeder will vary from the layer and pullets but the same criteria is evaluated. Turkey breeder selection is very similar to selection of the broiler breeder. Handling the birds is an important part of the evaluation process. It must be done properly to avoid injuring the birds during the examination.

Credits

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