CITRUS COUNTY FAIR

POULTRY STUDY GUIDE



UF | IFAS Extension
UNIVERSITY of FLORIDA

Citrus County Fair Association
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CITRUS COUNTY FAIR POULTRY SKILL-A-THON

The "Skill-A-Thon" is a fantastic way to engage FFA and4-H members in challenging, hands-on activities. This program aims to help young people develop crucial life skills alongside their poultry project skills through a series of mini-learning stations. This guide is intended to equip participants for the Skill-A- Thon at the Citrus County Fair.

OBJECTIVES

1. Provide a learning laboratory that will enhance knowledge of the poultry industry.
2. Help youth feel more comfortable communicating with an adult.
3. Gain self-confidence and skills in one-on-one communication.
4. Develop responsibility for completing a project.
5. Develop critical thinking and problem-solving skills.
6. Provide additional opportunities to recognize youth for their accomplishments.
7. Have fun!

TOPICS

The topics are specific to each of the Citrus County fair's age groups for skill-a-thons.

1. Breeds of Poultry & Breed Classes (J, I, S)
2. Chicken Breed Characteristics (I, S)
3. Poultry Anatomy (I, S)
4. Poultry Combs (S)
5. Poultry Wings & Feathers (I, S)
6. Poultry Showmanship (I, S)
7. Preventative Healthcare (I, S)
8. U.S. Broiler Production (I, S)

AGE GROUPS

J: Junior (8-10 yrs)
I: Intermediate (11-13 yrs)
S: Senior (14 yrs and up)

BREEDS OF POULTRY

By Grace Pearce UF/IFAS Citrus County Extension Service



SUSSEX

- Speckled
- English
- Large



ORPINGTON

- Buff
- English
- Large



BRAHMA

- Light
- Asiatic
- Large



SICILIAN BUTTERCUP

- Mediterranean
- Large



LEGHORN

- Single Comb White
- Mediterranean
- Large



RHODE ISLAND RED

- Single Comb
- American
- Large



OLD ENGLISH GAME

- Black-breasted Red
- Game
- Bantam



JAPANESE

- Black-Tailed White
- Single Comb Clean-Legged
- Bantam



NEW HAMPSHIRE

- Single Comb Clean-Legged
- Bantam



SILKIE

- Bearded White
- Feather-Legged
- Bantam



SEBRIGHT

- Silver
- Rose Comb Clean-Legged
- Bantam



BOOTED

- Bearded Mille Fleur Feather-Legged
- Bantam

BREED CLASSIFICATIONS

Poultry breeds are categorized into two main groups: Large Fowl and Bantam. Large fowls are standard-sized chickens. Bantams are miniature sized versions. If each standard-sized chicken breed has poultry enthusiasts have developed smaller versions of each large chicken. Typically, Bantams are about one-fourth to one-fifth the size of their full-sized counter parts.

While every Large Fowl breed has a corresponding Bantam counterpart, not all Bantam breeds have a Large Fowl equivalent.

A "breed" is defined by a specific body shape or style, and these breeds are further divided into varieties based on differences in feather color or pattern. Additionally, unique features - such as comb shape or extra feathers like a "beard" or "top-knot"- help distinguish these varieties. Poultry breeds are further categorized into classes to organize their unique purposes and breeding intentions in relation to their origins. Large fowl (standard breeds) are classified based on their geographical origins, forming six distinct classes. In contrast, Bantams are organized into classes based on their physical traits or culinary applications.

Breed Classifications

CLASSES (5) for BANTAM BREEDS (61):

- ***GAME BANTAM:*** Modern, Old English
- ***SCCL (Single Comb Clean Legged):*** Anconas, Andalusians, Australorps, Catalanas, Campines, Delawares, Dorkings, Dutch, Frizzles, Hollands, Japanese, Javas, Jersey Giants, Lakenvelders, Lamonas, Leghorns, Minorcas, Naked Neck, New Hampshire, Orpington, Phoenix, Plymouth Rock, Rhode Island, Spanish, Sussex
- ***RCCL (Rose Comb Clean Legged):*** Anconas, Antwerp Belgians, Dorkings, Dominiques, Hamburgs, Leghorns, Minorcas, Red Caps, Rhode Island, Rosecombs, Sebrights, Wyandottes
- ***AOCCL (All Other Comb Clean Legged):*** Ameraucanas, Araucanas, Buckeyes, Chanteclers, Cornish, Crevecoeurs, Cubalayas, Houdans, LeFleche, Malays, Polish, Shamos, Sicilian Buttercups, Sumatras, Yokohamas
- ***FEATHERLEGS:*** Cochins, Frizzles, Brahmas, Faveroles, Langshans, Sillkies, Sultans, Booted Bantams (when bearded called D'Uccle)

CLASSES (6) for STANDARD BREEDS (53):

- ***AMERICAN:*** Plymouth Rock, Dominiques, Wyandottes, Javas, Rhode Islands, Buckeyes, Chanteclers, Jersey Giant, Lamonas, New Hampshires, Hollands, Delawares
- ***ASIATIC:*** Brahma, Cochin, Langshan
- ***ENGLISH:*** Dorking, RedCaps, Cornish, Orpingtons, Sussex, Australorps
- ***MEDITERRANEAN:*** Leghorns, Minorcas, Spanish, Andalusians, Anconas, Sicilian Buttercups,Catalanas
- ***CONTINENTAL:*** Hamburgs, Campines, Lakenvelders, Barnvelders, Welsummers, Polish (Bearded & Non-Bearded), Houdans, Faverolles, Crevecoeurs, LaFlechs
- ***AOSB (All Other Standard Breeds):*** Modern, Old English, Malay, Sumatras, Aseels, Shamos, Yokohamas, Phoenix, Cubalayas, Sultans, Frizzles, Naked Neck, Araucanas, Ameraucanas

- **CLASSES (4) of DUCKS (14):**

HEAVY: Pekin, Aylesbury, Rouen, Muscovy
MEDIUM: Cayuga, Crested, Swedish, Buff
LIGHT: Runner, Campbell, Magpie
BANTAM: Call, East Indie, Mallard

- **CLASSES (3) of GEESE (12):**

HEAVY: Toulouse, Embden, African
MEDIUM: Sebastopol, Pilgrim, American Buff, Saddleback Pomeranian
LIGHT: Chinese, Tufted Roman, Canadian, Egyptian, Steinbacher

ONE CLASS FOR ALL TURKEY (8): Royal Palm, Bronze, Narragansett, White Holland, Black (Spanish Black), Slate, Bourbon Red, Beltsville Small White

CHICKEN BREED CHARACTERISTICS

By Grace Pearce UF/IFAS Citrus County Extension Service

- ***Sussex*** - Speckled - English - Large Fowl: This breed originated in England. Comb, wattles, and earlobes are bright red. Cock's comb is single, medium size, straight, and upright. Plumage is mahogany bay and each feather is tipped in white with a black bar. Main tail feathers are black tipped in white. These are a good all-around farm fowl: alert, attractive, good foragers, broody, and good mothers. They are one of the best dual-purpose birds: used for meat production (about 7 to 9 lbs.) and egg production (brown eggs.)

- ***Orpington*** - Buff - English - Large Fowl: This breed originated in England. Comb, wattles and earlobes are bright red. Cock's comb is single, medium size, straight, and upright. Plumage is a rich, golden buff. These birds are docile, good mothers, broody, and able to withstand cold temperatures. They are general purpose birds: used for heavy meat production (8 to 10 lbs.) and egg production (brown eggs.)

- ***Brahma*** - Light - Asiatic - Large Fowl: This breed originated in China. Comb, wattles and earlobes are bright red. Cock's comb is pea shaped, small and firm. Shanks and toes are yellow with a black and white feather covering. Plumage is silvery white with a black and white cape. Main tail is solid black with increasing white towards the base of the tail. These birds are a favorite among fanciers for show. They go broody, are good mothers, and are able to withstand cold temperatures. They are general purpose birds: used for heavy meat production (9 to 12 lbs.) and are fair layers (brown eggs).

- ***Sicilian Buttercup*** - Mediterranean - Large Fowl: Breed originated in Sicily. Comb and wattles are bright red with white ear lobes. Cock's comb is cup-shaped, smooth and fine with a deep cavity. Plumage is reddish orange with a black tail and dark, buff cape with black spangles. The hen is golden buff with black spangles and tail. These birds are small, sprightly and non-broody. They lay a fair number of small eggs and are ornamental fowl (7 to 9 lbs.) and large white eggs.

- ***Leghorn*** - Single Comb White - Mediterranean - Large Fowl: This breed originated in Italy and is the most numerous breeds in America today. Comb and wattles are bright red and the earlobes are white. Comb can be rose or single. Plumage is white with a large tail. These birds are small, sprightly, noisy and good foragers, capable of considerable flight, and like to move around. They are noted mostly for egg production (about 4 to 6 lbs., white eggs.)

- ***Rhode Island Red*** - Single Comb - American - Large Fowl: This breed originated in Rhode Island, USA. Comb, wattles, and earlobes are bright red. Cock's comb is medium length, straight and upright. Plumage is rich, dark red with greenish black sickles in the tail. They are hard, dual-purpose birds, the best layers in the American group, and good for the small flock owner. Used for meat (6 to 8 lbs.) and egg production (brown eggs.)

- ***Old English Game*** - Black Breasted Red - game - Bantam: This breed originated in England. Comb, wattles, and earlobes are bright red. Cock's comb and wattles are neatly dubbed. The head and neck plumage is orange red. The tail, wing fronts and coverts, breast and body are black. These birds are small, hardy, extremely active, very noisy, broody, aggressive, and capable of considerable flight. They are bred for show (22 to 24 ounces, white or lightly tinted eggs.)

- ***Japanese*** - Black Tailed White - Single Comb Clean Legged -Bantam: This breed originated in Japan. Comb, wattles, and earlobes are bright red. Cock's comb is single, large and firm. Wattles are large and smooth. Plumage is white with a greenish black. Sickles are black and laced in white. The birds weigh 22 to 26 ounces.

- ***New Hampshire*** - Single Comb Clean Legged - Bantam: This breed originated in New England. Comb, wattles, and earlobes are bright red. Cock's comb is single, firm, medium length, and upright. Wattles are medium length, uniform, and free of folds. Plumage is chestnut red with a reddish bay head, golden bay neck, and black tail. These birds are competitive and aggressive. Hens go broody and make good mothers. They are meat chickens with fair laying ability (30 to 34 ounces, brown eggs.)

- ***Silkie*** - Bearded White - Feather Legged - Bantam: This breed originated in the Far East. Comb and wattles are deep mulberry, and earlobes are light blue turquoise. Cock's comb is walnut shaped, moderately small, lumpy and almost round. Crest is medium size, soft, and full. Wattles are very small; natural absence is preferred. Shanks and toes (five toes) are leaden blue and well covered with feathers. Plumage is white, downy or silky and hair like (feathers are without webs.) Beard is thick and well feathered. (Weight 32 to 36 ounces.)

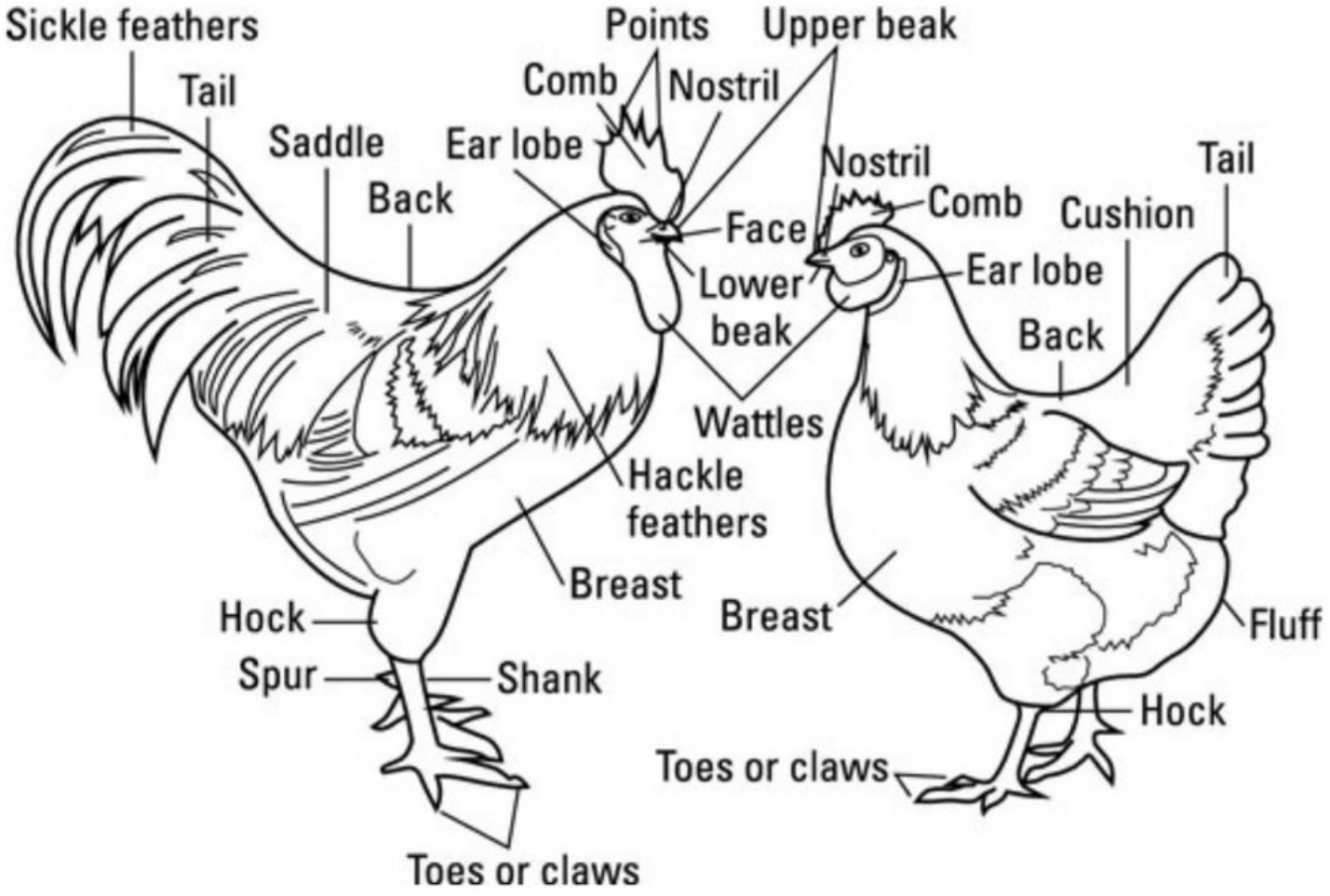
- ***Booted*** **-** Bearded Mille Fleur - Feather Legged - Bantam: This breed originated in Germany. Comb, wattles, and earlobes are bright red. Cock's comb is single, medium size, firm, and straight on head. Wattles are very small; natural absence is preferred. Shanks and toes are slate blue with a black feather covering tipped in white. Plumage is bright red with a white spangle on the end of each feather and separated by a black bar. Tail feathers are black with a white spangle at the end. Beard and muff are thick and full, with a mane-like appearance. (Weight 22-26 ounces.)

- ***Sebright*** **-** Silver - Rose Comb Clean Legged - Bantam: This breed originated in England. Comb and earlobes are purplish red, and wattles are bright red. Cock's comb is rose shaped, firm, and square in front. Wattles are broad and well rounded. Plumage is silver white edged in black. Tail does not have sickles. Birds are bred for show and make good layers. (22 to 26 ounces.)

Bantam breed variety next to the standard large breed variety.



POULTRY ANATOMY

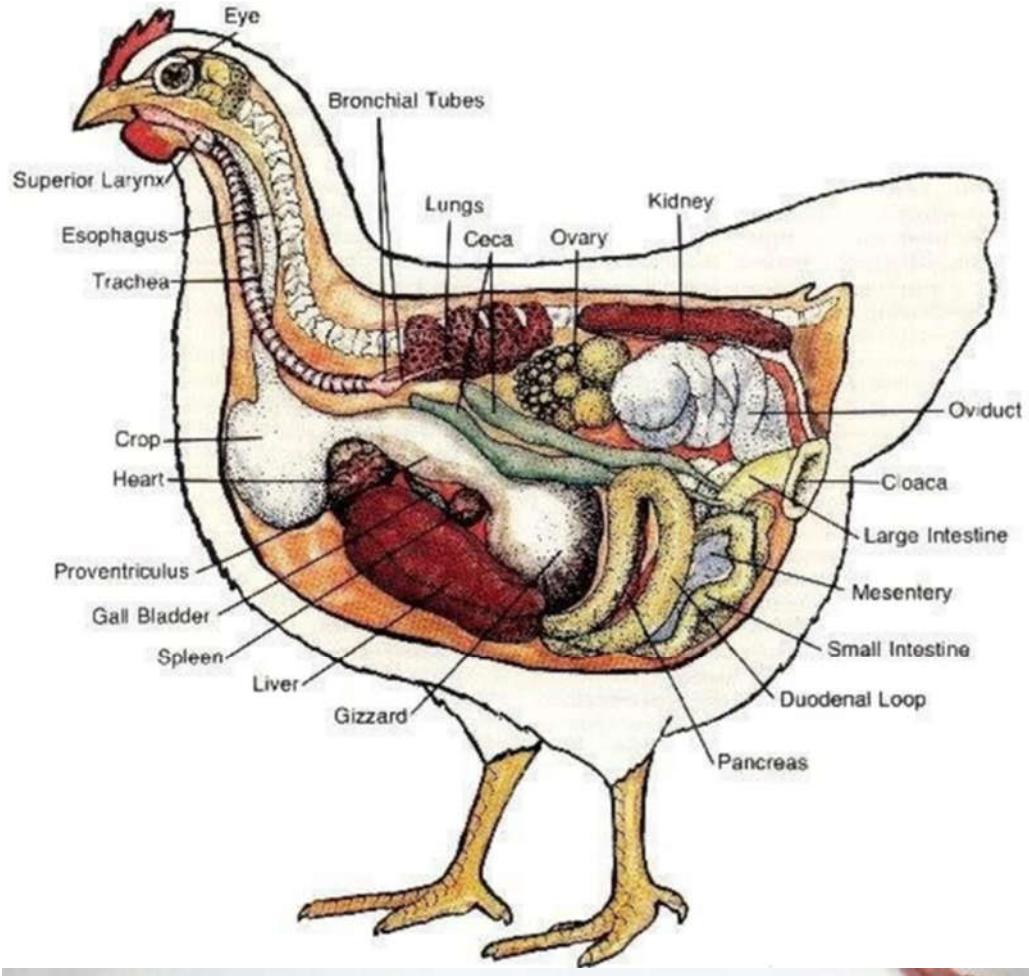


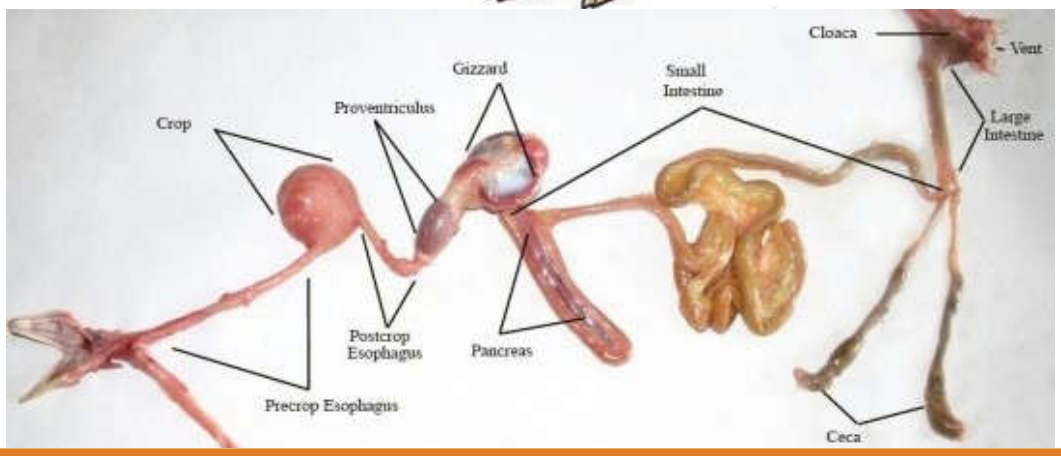
POULTRY EXTERNAL ANATOMY

The external anatomy of a poultry includes many different basic parts that both male and female birds share. However, there are some unique distinguishing differences between male and female birds including the size of the comb wattles, spurs as well as the characteristics of the hackle and cape feathers. Males have hackles, which are specific elongated feathers around the upper portion of the heck in certain birds, which are with shaper more pointed ends, whereas females have hackles with more rounded ends. Most males often have very striking color patterns, whereas the females may or may not have the same identical coloration and feather variety. The external anatomy includes:

- Ear
- Ear Lobe
- Comb
- Eye
- Eye Rings
- Nostril
- Beak
- Wattle
- Hackle
- Breast
- Shank
- Hock
- Spur
- Sickle Feathers
- Saddle
- Wings
- Thighs
- Tail
- Claw
- Toes

POULTRY ANATOMY





POULTRY INTERNAL ANATOMY

Several internal organs are essential for poultry to digest food. Their gastrointestinal anatomy includes:

- **Crop**
- **Gall Bladder**
- **Stomach**: composed of Proventriculus and Gizzard
- **Proventriculus:** portion where food stored
- **Gizzard:** muscular portion that grinds food into smaller particles
- **Small Intestine:** where digestion of food particles occurs and nutrients absorbed.
  Large Intestine: stores undigested waste and absorbs water, before excretion.

POULTRY COMBS



Single



Pea



Strawberry



Cushion



Walnut



Buttercup



V-Shaped



Rose

Single: A moderately thin, fleshy comb characterized by a smooth, soft surface texture. It is firmly attached from the beak along the top of the skull with a strong base. The upper portion displays five or six distinct serrations or points, with the middle points being taller than those at the front or back. The comb is always erect and considerably larger and thicker in males than in females, which may exhibit either a lopped or an erect comb, depending on the breed.

Rose: A comb that is solid, broad, and nearly flat on top, with a low fleshy structure ending in a well-developed spike. The spike may curl upward, as seen in Hamburgs; lie nearly horizontal, as in Rose Comb Leghorns; or follow the contour of the head in Wyandottes. The top surface of the main part should be slightly convex and adorned with small rounded protuberances. The general shape varies across different breeds.

Pea: A medium-length, low comb, the top of which is marked with three low lengthwise ridges, the center one slightly higher than the outer ones, the tops of which are either undulated or marked with small rounded serrations; a breed characteristic found in Ameraucanas, Brahmas, Buckeyes, Cornish, Cubalayas and Sumatras.

Walnut: A roundish, lumpy comb is wider than long with a skull. Grooves that give it the appearance of a walnut half. Most are red, but Silkie are dark-purplish.

Cushion: A low, compact comb of relatively small size, it should be quite smooth, possess no depressions or spikes, and not extend beyond the midpoint of the skull.

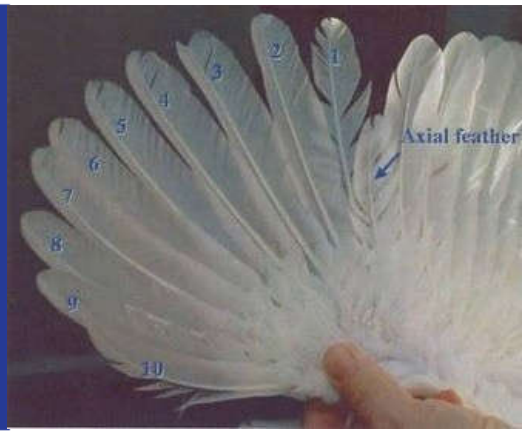
Buttercup: A comb that consists of a single blade arising at the juncture of the head and beak, rising up to the cup-shaped Crown, set squarely on the center of the skull. The rim of the cup shall bear an evenly spaced circle of points and be closed at the back. Points emerging from the center of the cup are a serious defect

V-Shaped: A comb characterized by two well-defined, horn-like sections joined at their base, as seen in breeds like Houdans, Polish, Crevecoeurs, La Fleche, and Sultans.

Strawberry: A low-set, compact comb with an egg or strawberry shape; the larger end is positioned near the beak, while the rear extends no further than the midpoint of the skull.

I,J,&S

POULTRY WINGS & FEATHERS

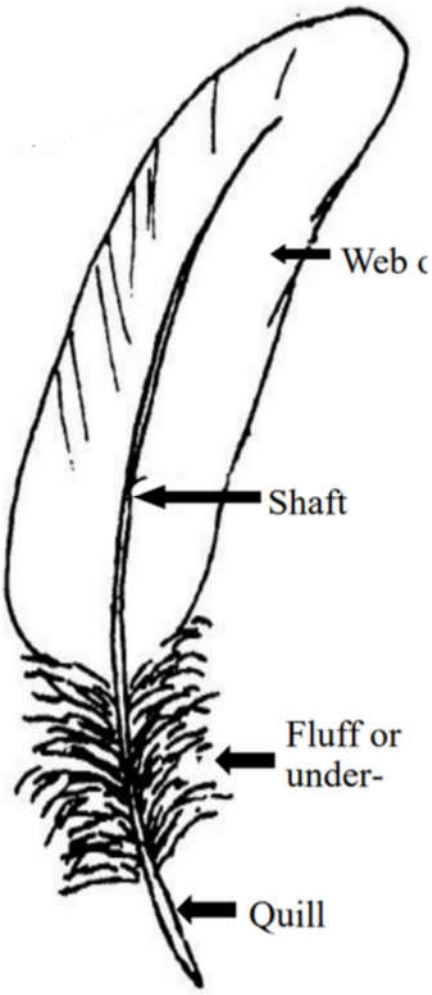


WINGS

A poultry's wing consists of various flight feathers. The axial feather serves as the divider between the primary and secondary feathers. The primary feathers, numbered from 1 to 10, are clearly defined. The axial feather distinguishes the primary from the secondary feathers in adult chickens, though it can be more challenging to identify in pullets and cockerels. During molting, hens begin to lose feathers starting from the axial feather outward.

FEATHERS

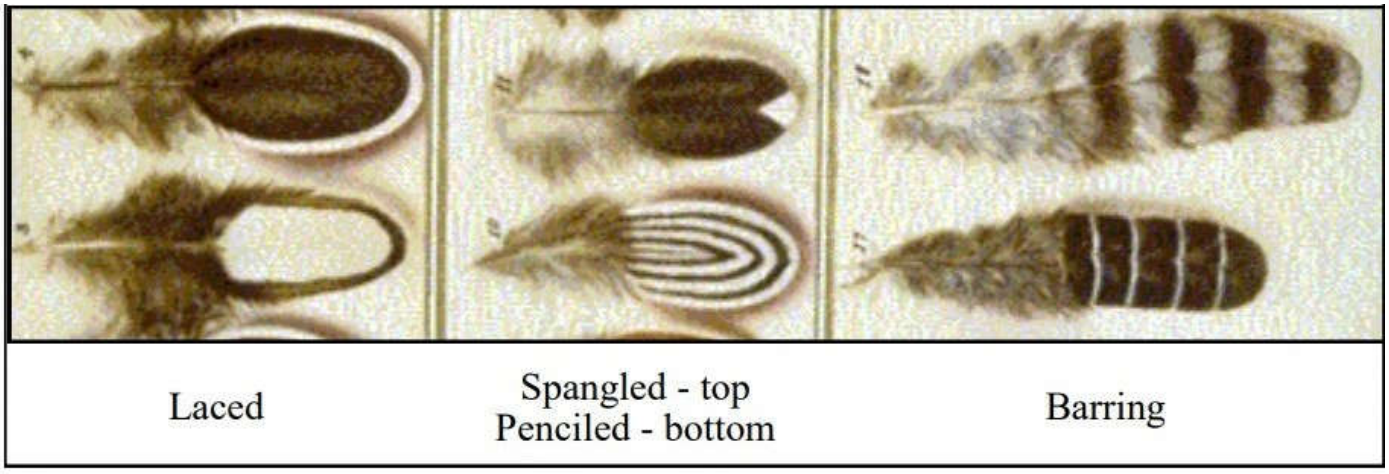
All birds have feathers, which serve several vital functions. Primarily, feathers provide insulation, allowing birds to maintain their body temperature across various environments. Additionally, specific types of feathers are essential for flight, enabling birds to soar through the skies. Feathers also play a role in camouflage and attraction; a bird's individual plumage can help it blend into its surroundings or attract a mate.



FEATHER TYPES

- ***BEARD:*** Feather projecting below beak
- ***CREST:*** Feathers projecting upwards from the head
- ***EAR TUFTS:*** Feathers projecting from the ear
- ***LESSER SICKLES:*** Long curved feathers of the tail, below the sickles
- ***SADDLE FEATHERS:*** Feathers covering the back or saddle before the tail coverts; in cocks they are long and pointed
- ***TAIL COVERTS:*** Short feathers covering the base of the main tail feathers in cocks, and most of the tail in hens
- ***SECONDARY FEATHERS:*** The long flight feathers of the inner part of the wing

DIFFERENT TYPES OF STANDARD FEATHER VARIETIES



POULTRY SHOWMANSHIP

PROCEDURE	HOW IT'S DONE	REASON
1) Remove the bird from the coop	Always remove the bird's head first with one hand over the back and the other under the body, with your fingers around the legs.	This prevents the bird from struggling to get away and being overly excited.
2) Pick up and hold the bird. *(Remain standing at attention until the judge releases you).*	Pick up your bird by spreading your fingers and placing your hand, palm up, under the bird's breast as it faces you. As your palm touches the breast, you will find that the legs will be placed between your fingers. As you lift the bird, gently grasp the legs with your fingers closed.	This makes the bird feel at ease. It isn't so likely to struggle, and it is easier to handle.
3) The judge will ask you to pose the bird on the show table.	Place the bird on the table and set up the bird's legs straight. You should take a step back, stand at attention, and do not rest your legs	Your bird should not move, walk or fly away. If it moves both legs, you can pick it up and set it back down.
4) Examination section follows the posing. When instructed, start with the bird's head.	Hold the bird alert and point at eyes, look and touch comb, feel wattles, examine beak, and point to ears.	You are noting the eyes, comb, wattles, shape of head, beak, and ears, and any defects present.
5) Examine wings. *(Different guides have multiple correct ways of accomplishing and the following ones. You may choose another order, but be sure to include each area of the bird.)*	Open the left wing and check the primary and secondary feathers for signs of molting. Take a closer look at the skin on the inside for mites. Repeat steps for the right wing.	You are noting the color, absence of feathers, slipped wings, split wings, and twisted feathers.
6) Examine the body plumage	Run your fingers over the neck, back, and breast area to feel for smoothness.	Note the color and quality of feathers. Look for the presence of lice.
7) Examine the tail Run your hand down the tail.	Run your hand down the tail. Press the tail feathers toward you. You may count the feathers.	You are looking for color and feather quality, and for any signs of molting.
8) Examine shanks and feet	Place your free hand on the back of the bird and turn it upside down. Look at the color on the front and back of the shanks and feet, counting each toe.	You are noting color, cleanliness, and defects. Look at the feet of a hen for pigment loss.
9) Examine the body	While still holding the bird upside down in the palm of your hand, note the width of the body, check the abdomen, and the vent area.	The judge will check and verify the points they are interested in.
10) Return the bird to the upright position and hand it to the judge.	You always do this headfirst.	

PREVENTATIVE HEALTHCARE &HEALTHYENVIROMENTS

By Grace Pearce UF/IFAS Citrus County Extension Service

INTRODUCTION

Animal caretakers are responsible for providing safe, secure, and healthy environments. Providing healthy environments for poultry in Florida's hot temperatures is essential. Maintaining a healthy environment requires knowledge of heat and heat management. If not managed, excessive heat exposure can lead to heat stress. Heat stress leads to reduced feed intake, weight loss, poor breeding efficiency, changes in behavior, and, in extreme cases, death.

HEAT & HEAT STRESS



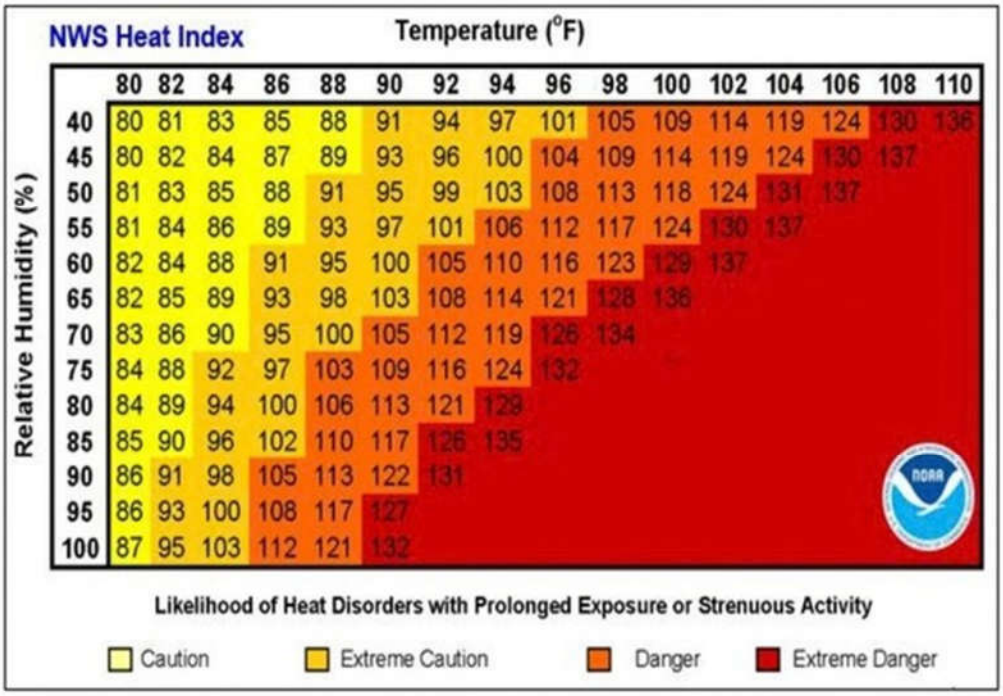
High temperatures are not only uncomfortable, but they also pose a significant stressor for livestock. The risk of heat stress increases when factors such as humidity, wind speed, and solar radiation (sunlight) are considered. Florida's subtropical climate heightens the likelihood of heat stress. Additionally, various poultry species may have varying levels of adaptability to hot, humid conditions.

HEAT INDEX

To assess the potential for heat stress, ranchers, livestock producers, and exhibitors can utilize a heat index. This index integrates temperature, humidity, wind speed, and solar radiation to assess animals' stress levels in their specific environment. The National Weather Service (NWS) oversees the Heat Index used by weather stations nationwide to forecast heat conditions.

The Heat Index measures the combined effect of temperature and relative humidity. You can access the relevant table online at the website NWS Heat Index(https://www.weather.gov/safety/heat-index).

OSHA HEAT SAFETY TOOL



PREVENTATIVE HEALTHCARE & HEALTHY ENVIROMENTS

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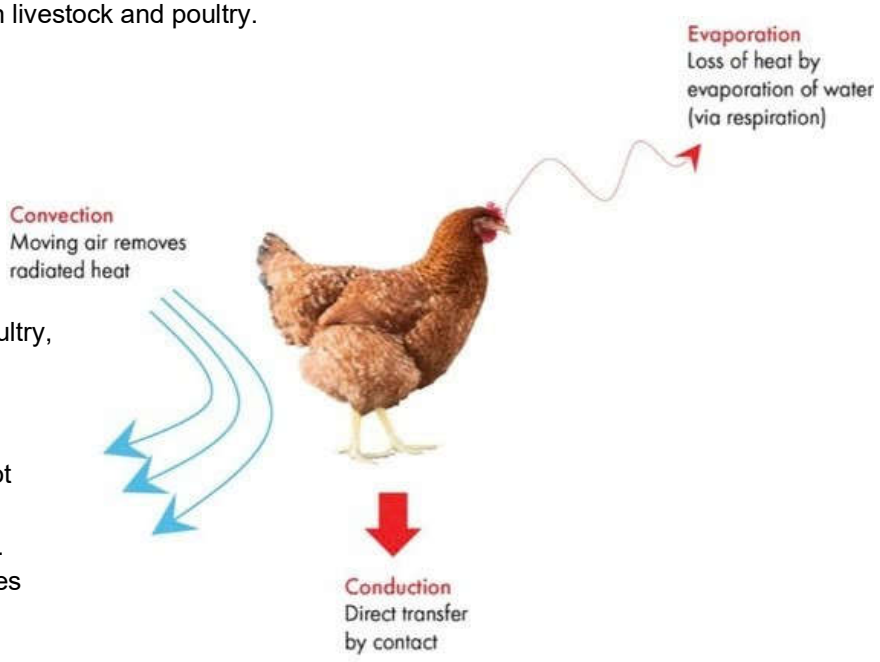
SIGNS OF HEAT STRESS

Livestock exhibitors understand the importance of maintaining the health and well-being of their animals. Preventive healthcare aims to detect potential issues before they escalate into serious problems. The following are symptoms that may indicate heat stress in livestock and poultry.

- Bunching together in shaded areas
- Excessive head shaking
- Abnormal behaviors
- Loss of coordination
- Trembling



Poultry, along with humans, cattle, swine, poultry, rabbits, sheep, and goats, are homeotherms meaning they can control body temperature within a range of temperatures. Poultry are exposed to many heat sources. Poultry do not sweat; however, they do have other ways of controlling temperature through heat transfer. They have highest internal temperature ranges of the listed livestock species.

HOW TO HANDLE THE HEAT

Heat transfer in poultry occurs through three primary mechanisms: conduction, convection, and evaporation.

- ***Conduction*** – the transfer of heat to the ground
- ***Convection*** – heat dissipation through air movement
- ***Evaporation*** – moisture loss from the respiratory tract

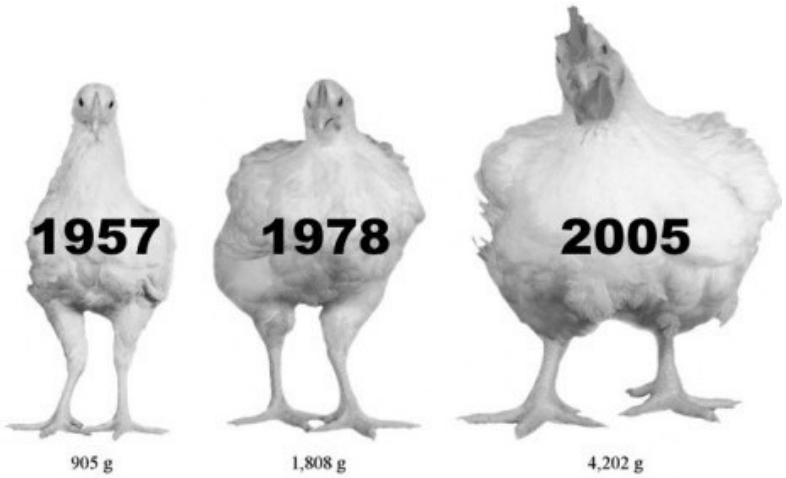
In poultry, convection also occurs via vasodilation, where blood-swollen wattles and comb bring internal heat to the surface, where it is lost to the cooler surrounding air.

- ***Vasodilation -*** heat loss through wattle and combs

Effective management strategies include providing shade, ensuring good ventilation, and maintaining access to fresh water. It's important to note that darker coats absorb more solar radiation, and high-producing poultry maybe more vulnerable to heat stress.

Temperature Range	
	°F
Poultry	105.0 - 107.0
Rabbit	101.0-103.0
Beef	100.5 - 103.0
Swine	101.5-102.5
Goat	101.5 -103.5
Sheep	101.5 -103.5

U.S. BROILER PRODUCTION



INTRODUCTION

WHAT IS A BROILER?

Broilers are young poultry specifically bred and raised for meat production. These birds are selectively developed to achieve exceptionally rapid growth rates and high feed efficiency, resulting in robust muscular builds. In recent years, they have been bred to have larger breasts than in the past. This is due to artificial selection and production practices that focus on factors such as genetic selection, feed efficiency, and industry advancements to achieve the ideal body type. Since the 1950s, broilers have more than doubled their market slaughter weight while shortening the time required for growth. Broilers are the most common type of chicken sold at slaughter because they are younger and have tender, meaty flesh, in contrast to roosters, which are slaughtered later in life. Modern commercial breeders primarily focus on Cornish varieties due to their artificial selection for efficient meat production.

U.S. PRODUCTION

The United States ranks as the second-largest producer of broilers, trailing only Brazil. In 2020, more than 9 billion broilers were produced, valued at $21.7 billion and weighing over 60 billion pounds. After processing, 45 billion pounds of ready-to-cook products (including tenders, nuggets, and whole birds) were available for consumers. This reflects the ongoing increase in production. Back in 1970, the poultry industry produced approximately 10 billion pounds of broilers; by 2020, production had surged to over 60 billion pounds. These advancements are due to poultry genetics, feed efficiency and industry innovations leading the nation.

POULTRY GENETICS

Poultry genetics has made an exciting leap forward with the introduction of new broiler breeds to the market. In Citrus County, the Pen of Meat Poultry Project has introduced a hybrid of Cornish and Plymouth White chickens. This genetic cross capitalizes on the superior traits of both breeds, combining the weight and meatiness of the Cornish with the white flesh and rapid growth of the Plymouth.

FEED EFFICIENCY

Some breeds exhibit greater efficiency in converting feed into body weight. To calculate Feed Efficiency, use the following formula:

FE = Total Feed Fed (lbs.) / Daily Gain of Bird (lbs.)

Feed efficiency is very important for any producer as it ensures that the animal grows at a rate that is not excessively costly to feed. A lower feed efficiency means it takes an animal less feed to gain mass, therefore achieving the same growth rates at lower costs.

INDUSTRY IMPROVEMENTS

Enhanced housing and healthcare improvements have contributed to the growth of poultry production in the U.S. By emphasizing preventative healthcare measures, such as immunizations against common diseases like Marek's Disease and Coccidiosis, producers and officials can ensure that birds are healthy prior to slaughter. No broiler (or chicken) in the U.S. is allowed to be marketed after antibiotic use. Therefore, all chicken sold in stores is antibiotics- and growth hormone-free.

