

Raising Turkeys as a 4-H or FFA Project

Perhaps you have raised broilers, roasters or even fancy chickens as your 4-H or FFA project for several years. You have experienced success, overcome challenges and now are looking for a new project. You have seen the majestic tom turkeys display themselves. You have seen the champion turkey sell in the *Fur and Feather Sale* at the county fair. You are now “hooked” and thought “Turkeys are for me!”

Raising turkeys can be a rewarding enterprise. But the nature of the turkey, its size and cost set up a whole different set of challenges from other poultry. Learn all that you can before you start. Talk to experienced growers and lean on them during your project. Set your goals and strive to achieve them!

Turkey Facts

Each year, United States turkey farmers produce about 250,000,000 turkeys. That’s about 7.1 billion pounds of turkey live weight or 5.6 billion pounds dressed weight. Over 10% of our production is exported to other countries, with Mexico being our largest customer.

The average American consumes 16.4 pounds of turkey per person per year. Only 31% of that turkey is consumed during the holidays. 69% is enjoyed throughout the year.

Turkeys: Production and Value, by State and United States, 2009 ¹				2010 Per Capita Consumption in Pounds	
State	Number Raised ²	Pounds Produced	Value of Production 1,000 Dollars		
<i>Head</i>	<i>1,000</i>	<i>1,000 Pounds</i>		Chicken	82.2
AR	29,000	568,400	284,200	Beef	59.6
CA	15,000	390,000	202,800	Pork	47.7
IN	15,000	543,000	271,500	Turkey	16.4
MN	45,000	1,161,000	580,500	Lamb & Mutton	0.9
MO	18,500	610,500	305,250	National Turkey Federation	
NC	35,500	1,089,850	523,128	U.S. Leading Processors	
OH	5,200	203,320	105,726	Million lbs.	
PA	9,000	181,800	99,990	Butterball, LLC	1,300.0
SC	11,900	433,160	220,912	Jennie-O Turkey Store, Inc.	1,286.0
SD	4,500	186,750	82,170	Cargill Value Added Meats	1,095.0
UT	3,200	81,600	40,800	Farbest Foods, Inc.	374.0
VA	17,000	448,800	215,424	Sara Lee	330.0
WV	3,300	96,690	46,411	Kraft Foods, Inc./Oscar Mayer	290.0
Oth Sts ³	35,259	1,154,585	594,581	Perdue Farms, Inc.	271.0
US	247,359	7,149,455	3,573,392	Foster Farms	256.6
¹ Revised.				House of Raeford Farms, Inc.	247.5
² Based on turkeys placed Sep 1, 2008, through Aug 31, 2009. Excludes young turkeys lost.				Virginia Poultry Growers Coop.	224.0
³ Includes State estimates not shown and States withheld to avoid disclosing data for individual operations.				Dakota Provisions	200.0
Source: USDA Poultry Production and Value 2010				Cooper Farms	195.0
				Hain Pure Protein Corp.	182.0
				Michigan Turkey Producers	170.0
				West Liberty Foods, LLC	164.5
				Turkey Valley Farms	132.0
				Zacky Farms, LLC	131.3
				Prestage Foods	131.0
				Norbest, Inc. (Moroni Feed Co.)	102.8
				Northern Pride Turkey	40.0
				White Water Processing Co.	30.3
				National Turkey Federation	

Taxonomy of the Turkey

To understand the turkey, it is important to understand its scientific classification. This will help to recognize birds that have similar physical and behavioral characteristics.

	Turkey	Guinea Fowl	Pheasant	Chicken
Kingdom:	<i>Animalia</i>	<i>Animalia</i>	<i>Animalia</i>	<i>Animalia</i>
Phylum:	<i>Chordata</i>	<i>Chordata</i>	<i>Chordata</i>	<i>Chordata</i>
Class:	<i>Aves</i>	<i>Aves</i>	<i>Aves</i>	<i>Aves</i>
Order:	<i>Galliformes</i>	<i>Galliformes</i>	<i>Galliformes</i>	<i>Galliformes</i>
Family:	<i>Phasianidae</i>	<i>Numididae</i>	<i>Phasianidae</i>	<i>Phasianidae</i>
Sub Family:	<i>Meleagridinae</i>		<i>Phasianae</i>	<i>Phasianae</i>
Genus:	<i>Meleagris</i>	<i>Agalastes</i> <i>Guttera</i> <i>Acryllium</i> <i>Numida</i>	<i>Arusianus</i> <i>Catreus</i> <i>Chrysolophus</i> <i>Crossoptilon</i> <i>Ithaginis</i> <i>Lophura</i> <i>Polyplectron</i> <i>Pucrasia</i> <i>Rheinardia</i> <i>Syrnaticus</i> <i>Phasianus</i>	<i>Gallus</i>
Species:	<i>M. gallopavo</i> <i>M. ocellata</i>	<i>N. meleagris</i> (domesticated helmeted)	<i>P. colchicus</i> (Common Pheasant)	<i>G. gallus</i>

There are two species of turkeys. The best known is the common turkey (*Meleagris gallopavo*), a game bird native to North America. *M. gallopavo* became the domesticated turkey. The other species is the ocellated turkey (*Meleagris ocellata*) which is found wild in the Yucatan Peninsula of Central America. The ocellated turkey is smaller than the common turkey. It resists domestication, though the Aztecs did raise them in pens.

History and Naming of the Turkey - Confusion with Guinea Fowl

The common turkey was probably first domesticated by the Indians of pre-Columbian Mexico. The birds were first taken to Spain about 1519, and from Spain they spread throughout Europe, reaching England in 1541.

When the birds became popular in England, they were called by the name turkey-cock, a name formerly used for the guinea fowl of the Near East. The confusion between these kinds of birds from related, but different, families is also reflected in the scientific name for the turkey genus: *meleagris* (μελεαγρίς) is Greek for guinea fowl. Two major reasons why the name 'turkey fowl' stuck to *Meleagris* rather than to the Helmeted Guineafowl (*Numida meleagris*) were the genuine belief that the newly-discovered Americas were in fact a part of Asia, and the tendency during that time to attribute exotic animals and foods to a place that symbolized far-off, exotic lands.

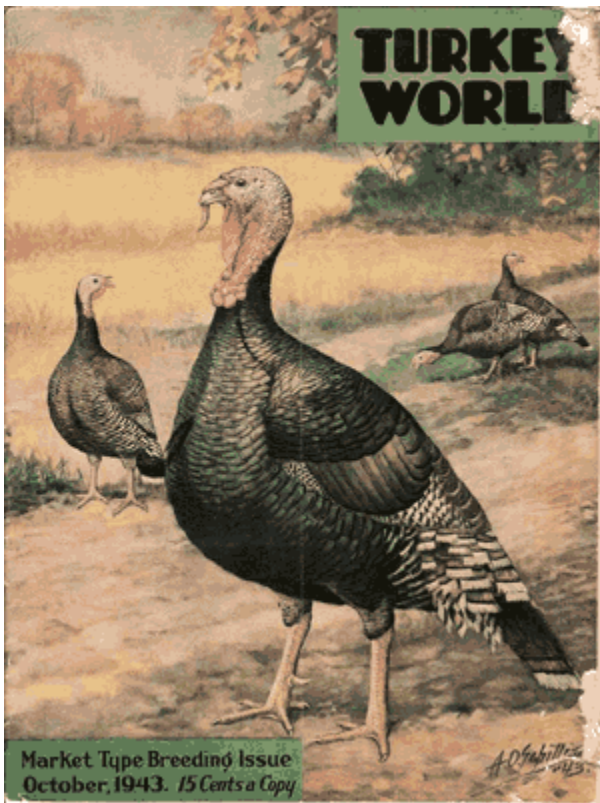
Guinea Fowl are indigenous to Africa. They were raised in domestication by the Egyptians as early as 2,400 B.C. They were highly prized by the Greeks by 400 B.C. and later by the Romans. However, they went out of existence in Europe for more than 1,000 years, until Portuguese sailors reintroduced them from West Africa, which is also known as "West Guinea."

It is interesting to note that in the United Kingdom guinea fowl are commonly called, “gleanies” in reference to their ability to “glean” for insects, small mammals, amphibians and reptiles. Misinterpretation of this common name may have solidified the name “Guinea Fowl” for this bird and “Turkey” for the American bird.

English colonists then introduced European-bred domestic strains of the turkey to eastern North America in the 17th century. These were crossed with the Eastern Wild Turkey, creating a bird with exceptional vigor. The resulting turkey was called the Narragansett, in recognition of the Native Americans that populated the New England states. Other varieties were developed and bred for local preference and feather colors. A standard for each variety was developed and they were admitted to the American Poultry Association Standard of Perfection.

Turkey history changed when an English turkey breeder, Jesse Throssel, moved to British Columbia, Canada in 1926. In 1927, he had his breeding stock of Bronze turkeys sent to him from England - just three birds. For many years, he had selected his birds for large amount of meat.

Some of these turkeys put on a great amount of breast meat, so much so that they began having difficulty mating naturally. Throssel sold some of his toms to breeders in Oregon. These birds were crossed with other high meat-producing turkeys and natural mating became even more of a problem. In 1934, the USDA developed a practical method of artificial insemination which allowed turkey breeders to use birds that were unable to mate naturally.



The turkey industry continued to develop best management practices to insure the best quality. Breeder Companies (family names) were advertising their genetics as the best. The breeders would show their turkeys for the distinct honor of winning and the added value they would command when selling poults.

But this “new” turkey was so different from the one in the Standard that breeders attempted to develop a new standard for this “improved” variety. The October 1943 *Turkey World* magazine featured a discussion of the proposed standard for the Broad Breasted Bronze. The 1943 Broad Breasted Bronze was a naturally mating bird.

Arthur O. Shilling, internationally famous poultry artist, was employed to paint a portrait of the ideal bird of this breed. The job assigned to Artist Shilling was one of the most difficult any painter ever attempted. A number of photographs were submitted to add to Schilling’s extensive knowledge of this turkey. Sketches were drawn and submitted to leading breeders and after many changes a sketch was approved. The final painting has drawn favorable comments from all who have inspected it.

Breeders especially were pleased that the artist caught the typical broad breast shape and at the same time was able to portray that all important characteristic - good balance of body parts. At great cost, Turkey World reproduced this painting on the cover of its October 1943 issue.

Commercial turkey producers of that time were under great financial stress. But they were proud of their industry and challenged themselves to put the best product on the dinner table.

They made their proposed standard to the American Poultry Association. After much discussion the A.P.A. decided that the “improved” Bronze and the “standard” Bronze were the same variety. It was at this point that the Broad Breasted Bronze separated from the A.P.A and became the commercial production turkey that it is today!

The BBB was “improved” to make its skin a uniform color by breeding it with a White Holland turkey. This produced the Broad Breasted White which, because of its white feathers, had less visible pin feathers. More and more turkeys were bred for maximum size and breast meat yield and to meet consumer demand. By the early 1960’s all commercially produced turkeys were “flightless” and required artificial insemination for reproduction.

In recent years the Broad Breasted Bronze has fallen out of favor with commercial producers who typically raise white turkeys exclusively. White turkeys dress cleaner with less noticeable pin feathers and smoother skin.

Commercial turkey genetics have become concentrated in two large breeding companies. Aviagen Turkeys headquartered in Lewisburg, West Virginia, markets turkey strains under the brand names: Nicholas Turkey Breeding Farms, British United Turkeys America. Hendrix Genetics, headquartered in Boxmeer, Netherlands markets its strain of turkeys as Hybrid Turkeys.

Broad Breasted Bronze turkeys are commonly raised in small flocks and for niche markets. Even the large breeding companies are into providing producers with a variety of “colored” strains of turkeys.



Raising turkeys as a 4-H or FFA project can be a very educational experience and can grow into a wide variety of career opportunities. The poultry industry is eagerly searching for individuals who have the skills, dedication and knowledge to exceed in animal projects. Parents and adult leaders enjoy watching young people set and accomplish goals. Turkey projects offer great rewards, but require constant learning, daily chores and financial investment.



Whether turkeys are raised in large commercial operations or in small, backyard setting, growers must constantly be on the lookout for diseases or other problems.

External Anatomy of the Turkey

TAIL FEATHERS OR RECTRICES

There are usually 18 present, but a gobbler can lose a few when fighting. Tan- to brown-tipped on Eastern, Rio Grande and Osceola subspecies; ivory-tipped on Merriam's.

TAIL COVERTS

Tip colors vary with subspecies.

BACK AND BODY FEATHERS

Provide insulation and shed water. When upraised they refract sunlight to add to a strutting tom's grandeur.

PRIMARY WING FEATHERS

Marked by distinctive white bars (less barring on the Osceola). Toms rub off wing tips with extended strutting.

SPUR

Most spurs are black, some have red or blond tints. They appear as a short button on a jake; just less than a one-inch straight spur on a two-year-old; and as a sharp, curved, one-inch or longer spur on a three-year-old tom.

EAR OPENING

No flap to funnel sounds, but a tom hears extremely well.

HEAD CROWN

Predominantly white during the spring, sometimes with a reddish tint.

EYE

Set into the side of the head for monocular vision; a slight turn of the head allows a 360 degree field of vision.

SNOOD

Long and prominent on a mature gobbler, but no known function.

MAJOR CARUNCLES

Large and fleshy. Engorged with blood during the spring.

BREAST FEATHERS

Black tips give a gobbler a coal-black appearance.

BEARD

Three to four inches on a jake; seven to nine inches on a two-year-old; and 10 inches or longer on a three-year-old gobbler. Thickness varies. Some toms have multiple beards.

FOOT

Three long toes. The middle toe measures 2½ to 3½ inches on a gobbler.

Know the Difference Between Hens & Gobblers

It's easy to distinguish a gobbler from a hen by differences in their size, color, heads, and other characteristics.

Source: NWTF

Adult males have a naked, heavily carunculated (bumpy) head that normally is bright red but turns to white overlaid with bright blue when the birds are excited.

Other distinguishing features of the common turkey are a long red fleshy ornament (called a snood) that grows from the forehead over the bill, which elongates to 3 or more inches when displaying; a fleshy wattle growing from the throat; a tuft of coarse, black, hairy feathers (known as a beard) projecting from the breast; and more or less prominent leg spurs.

Female turkeys have pale pinkish-red head and neck features. They will display their tail feathers, while strutting on occasion, but not nearly as often or as significantly as males. They may have small, usually blunt spurs and sometimes, a small beard. Their snood seldom elongates more than ½ - 1 inch in length. Wattles are relatively small and pale colored.

Terminology

Christmas Turkey - In many European countries roast turkey has long been a customary Christmas dish. As a result, the European turkey market has a Christmas focus.

Crossbred – Animals that are the result of crossbreeding two or more purebreds are called crossbreds. Often the crossings are indiscriminant and result in a wide variety of colors and body shapes that only remotely resemble the breeds that they were from. Crossbreds do not breed true, therefore their offspring seldom resemble their parents. Crossing the different varieties of turkeys can result in a “rainbow” of different colored birds!

Hen – a female turkey

Hybrid – When two inbred animals are crossed, they produce hybrid offspring. The offspring inherit the best characteristics of each parent. Hybrids also receive a genetic phenomenon called hybrid vigor—extra energy gained by crossbreeding. They grow faster, more efficiently and reproduce better than either parent. Genetically, hybrids are said to be heterozygous because their pairs of genes are different. Breeding companies develop inbred lines that have been selected for specific economically important features. When two inbred lines are crossed, the offspring are called a hybrid line.

Inbred – Animals that are specifically bred for their commercially valuable traits that can be passed on to their offspring. Inbred turkeys are produced by breeding close relatives together for seven to ten generations. Genetically, these birds are highly homozygous for these traits (their pairs of genes are identical). Each generation is selected based on a very limited and specific criterion of production qualities, such as width of breast meat, feed efficiency or heat tolerance. These birds will only be developed and raised by the commercial breeding operation.

Incubation period – The period of time from the beginning of brooding eggs until they hatch is called the incubation period. The incubation period for turkey eggs is 25 days. The proper temperature for incubation in a forced air incubator is 99.5° F

Poult – a baby turkey

Purebred – Animals that breed true to color, body shape and other physical features. Technically, there is only one body shape, therefore there is only one breed of turkey (called “turkey”). The color various purebred color patterns are varieties!

Thanksgiving Turkey - In the United States the turkey is especially associated with Thanksgiving, traditionally dating back to the Pilgrims’ First Thanksgiving in 1621! Thanksgiving did not become a national holiday until President Lincoln declared a day of thanks during the Civil War in 1863. President Truman was presented the first Thanksgiving Turkey by the National Turkey Federation in 1947. President George H. W. Bush is credited with granting the first Presidential Pardon in 1989 to the Thanksgiving Turkey, which lived out its life at the National Zoo in Washington D.C. Of the 226 million turkeys consumed in the U.S. 46 million make it to the table for Thanksgiving, 22 million for Christmas and 19 million for Easter. The remaining 139 million are enjoyed throughout the year.

Tom – a male turkey

Young Heavy Market Turkey – Some markets call for turkeys (typically toms) that are dressed weight 30-50 pounds, under six months of age. These birds are commonly deboned and further processed into luncheon meat, turkey ham or a large number of other products.

Young Hen Turkey – Young female market turkey, dressed weight 12-16 pounds, typically 16 weeks old.

Young Tom Turkey - Young male market turkey, dressed weight 21-26 pounds, typically 20 weeks old.

Standard Turkey Varieties “Breeds” Source: American Livestock Breeds Conservancy

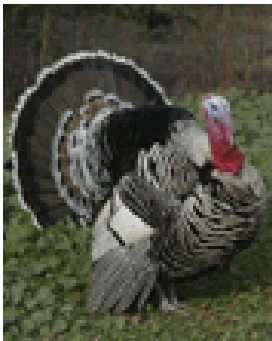
Technically, there is only one “breed” of turkeys since all turkeys have the same body shape. There are a number of standard “varieties” of turkeys recognized by the American Poultry Association. Their origins are commonly from the crossing of European turkeys *Meleagris gallopavo* and the Eastern Wild Turkey (*Meleagris gallopavo silvestris*). They are often referred to as “Heritage Varieties” and are relatively rare, have distinct flavored and textured meat and can reproduce on their own. The two strains that are used commercially (Large White, most common and Broad-Breasted Bronze). The following is a description of these varieties.



Bronze The name refers to its plumage, which bears an iridescent bronze-like sheen. The Bronze had been the most popular turkey throughout most of American history, but decreased in popularity beginning in the mid-20th century.

Bronze turkeys are the product of crossing domestic turkeys brought from Europe by colonists (which had been exported to Europe years before) with the Wild Turkey. These matings produced a bird that was larger and more robust than the European turkeys, and tamer than wild turkeys. Though the Bronze turkey type was created in the 18th century, the actual name was not used until the 1830s, when a strain developed in the U.S. state of Rhode Island was named the *Point Judith Bronze*. The name later spread to be used in reference to the breed as a whole, and was in the process simplified to just "Bronze". In the British Isles, the Bronze was associated with Cambridge, and was called the *Cambridge Bronze*, but again this name has been simplified to just "Bronze".

The Bronze was first admitted in to the American Poultry Association's Standard of Perfection in 1874. Later, beginning in the late 18th and early 19th centuries, some Bronze turkeys were selected for larger size



Narragansett Turkey were developed in Colonial America by English and other European colonists beginning in the 17th century. The Narragansett Turkey is unique to North America and is named for Narragansett Bay (Rhode Island) and the Native Americans that occupied New England at the time.

The Narragansett has plumage with black, gray, tan, and white feathers. It resembles the Bronze Turkey but has feathers of gray or dull black replacing the Bronze Turkey's distinctive coppery coloring. The Narragansett sometimes has bars of white feathers on its wings due to a genetic mutation not found outside the United States. It has a black beard, a horn-colored beak, and a mostly featherless head and neck which range in color from red to blueish white. The breed is prized for its excellent temperament combining a calm disposition with good maternal abilities. They mature early, are good egg producers, have excellent quality meat, and tend not to wander too far from home when allowed to range. Through selective breeding, young Narragansett Turkey toms weigh 22-28 pounds and hens weigh 12-16 pounds. They can run quickly, fly well, and prefer to spend their nights roosting in trees.

While never as popular as the Bronze Turkey, this breed was still valued for commercial agriculture across the United States in the early days of the U.S. Narragansett Turkeys are good at foraging for crickets, grasshoppers and other insects, and could be maintained with little supplemental feed.

This breed was recognized by the American Poultry Association in 1874. A fancy variety known as the **Silver Narragansett** was developed with white plumage replacing the tan and gray. They were never accepted by the American Poultry Association and are very rare. Silver Narragansett sports still occasionally appear in flocks of more typically colored birds.



White Holland turkeys were admitted to A.P.A. in 1874. It has white plumage and a deep black beard. The beak is pink to horn colored and the throat and wattles are pinkish-white. Shanks and toes are pinkish-white. The standard eye color is brown. The name “Holland” is a credit to the early Dutch colonists of New England and perhaps its European origin.

It was commonly used for commercial production in the early 1900s. It was desirable because of its white plumage which reduced the visibility of pinfeathers when plucked. In the 1950s, the breed was crossed with the Broad Breasted Bronze to create the Broad Breasted White. Standard weights are 33 pounds for a tom and 18 for a hen.



Black or **Black Spanish** or **Norfolk Black** was developed in Europe from the first turkeys brought there from North America by explorers. Despite the names “Spanish and “Norfolk” (England), birds of this type are to be found in many European nations. Keep in mind that all domestic turkeys have their origins in wild birds taken back to Europe by the Spanish explorers, domesticated there and brought back to the New World by the English colonists.

Turkeys were transported to the colonies in the holds of ships as a food supply for the transatlantic crossing from Europe to the New World. The turkeys consumed at the first Thanksgiving meal may have actually been from European birds, rather than Wild Turkeys native to the continent.

Black turkeys were crossed with the Wild Turkey to help produce varieties such as the Bronze, Narragansett, and Slate. Blacks were admitted to the A.P.A. Standard in 1874. Standard weights are 33 pounds for a tom and 18 for a hen.

Slate, or **Blue Slate** have a slate gray colored plumage. Lighter birds are sometimes called **Lavender** turkeys. Slate turkeys may actually be any number of shades between pure black and white, but only ash-gray birds are eligible for showing under the American Poultry Association’s “Standard of Perfection.” This variety was admitted to the standard in 1874. Standard weights are 33 pounds for a tom and 18 for a hen.

Royal Palm is a small domestic turkey variety. It is best known as an ornamental bird with a unique appearance, largely white with bands of metallic black. Primarily kept as an exhibition bird, it lacks the size for significant meat production. Toms usually weigh 16 to 22 lbs. and the hens 10 to 12 lbs.

A relative newcomer among turkey varieties, the bird first appeared in the 1920s on a farm in Lake Worth, Florida, apparently as a cross between Black, Bronze, Narragansett, and native turkeys. Years of selective breeding followed to stabilize the coloring, and the Royal Palm was finally accepted by the American Poultry Association's Standard of Perfection in 1971. In Europe, a turkey with similar coloration is sometimes called the Cröllwitzer, Pied, or Black-laced White.

Beltsville Small White is named after its physical characteristics - a relatively small size and entirely white plumage and its place of origin: the USDA's Beltsville Agricultural Research Center in Maryland.

The Beltsville Small White was developed beginning in 1934 in response to market research that said consumers wanted a turkey of small to medium size with no dark pinfeathers. In a breeding program at the Beltsville Center that lasted from 1934 to 1941, the USDA used White Holland, White Austrian, Narragansett, Bronze, and Wild Turkey genetics. The breed was used commercially in the 1940s, and was recognized officially by the American Poultry Association in 1951.

The Small White had accomplished its goal as a small carcass for the home market, but was soon outpaced by the Large White for its efficiency and diversity. By the 1970s, it had nearly disappeared. It retains interest among breed enthusiasts and those interested in a heritage turkey breed.



Bourbon Red is named for its unique reddish plumage and for Bourbon County, Kentucky. The standard indicates the Bourbon Red should weigh 23 pounds for toms and 14 pounds for hens at maturity. The breed's feathers are a dark base color, with white primary tail feathers characterized by a soft red band. The flight feathers are white and both tail and wings coverts are chestnut. The standard allows for a total of 30% red feathers in the tail before the bird is disqualified.

In the past, the variety has alternatively been called Kentucky Reds and Bourbon Butternuts. The bird originated in Kentucky and Pennsylvania in the late 19th century, and was created by crossing Buff, Bronze, and White Holland turkeys. It was first recognized as a turkey variety by the American Poultry Association in 1909.

It was selectively bred for utility traits as a meat bird, and was an important variety in the turkey industry throughout the 1930s and 1940s. Like most turkey breeds, it declined after this point with the commercial adoption of the Broad Breasted White. Populations began to recover in the early 21st century, and today it is one of the most popular heritage turkey breeds in the U.S.

Buff turkeys were accepted into the Standard of Perfection by the American Poultry Association in 1874. The original strain of Buff turkey was used in the development of the Bourbon Red breed, but had died out entirely by the early 20th century. This was partly due to the difficulty in selectively breeding the proper color pattern, and also to the rise of new commercial breeds on the market. In the 1940s, interest in a buff turkey was revived, and a new strain of the breed - called the New Jersey Buff after where it was developed.

Auburn is also known as the **Light Brown**. It is one of the rarest varieties currently in existence. It has been referenced by name in written records since the 18th century, and is named after the light reddish-brown color of its plumage. There is also an extremely rare variant of the Auburn, called the Silver Auburn.

This is an old variety that was listed in receipts when transporting turkeys to markets in "turkey trots" during the late 18th and early 19th centuries in Philadelphia. Auburn turkeys are sex-linked (toms and hens are different colors at hatching). Cross-breeding Auburn toms and Bronze hens will produce Bronze toms and Auburn hens thus making it quite easy to sex poults by color at hatch.

Auburn describes a variation in the typical bronze plumage color in which bronze is replaced with a red-brown pigmentation. At one day of age, the Auburn poult resembles the Bronze but with black stripes replaced with a red-brown coloration. In the adult bird, the bronze pigmentation is also replaced by a red-brown color. The barring present in the primary and secondary flight feathers is red-brown and white in contrast to the black and white typical in the bronze bird.

The **Midget White** is a breed of domestic turkey named for its white plumage and small stature. The breed is the smallest standard variety of turkey, and with toms at roughly 13 lbs and hens 8-10 lbs, it weighs only slightly more than the largest chickens.^[1]

The Midget White is sometimes shown in the same class as the Beltsville Small White, but despite the similarity was bred from different lines, mostly white commercial turkeys and the Royal Palm. A newcomer among turkey breeds, it was originally developed in the 1960s by Dr. J. Robert Smyth at the University of Massachusetts as a smaller complement to the Broad Breasted White. This anticipated demand never surfaced, and along with other rare breeds the Midget White declined as a result. The bird is relatively friendly and is especially well-suited to being raised on small farms and on a homestead. A strain of Midget Whites were raised for many years at the University of Wisconsin and will still be found around the state.

Chocolate and others found around the world

Many other color variations of turkeys will be found as pure varieties such as the Chocolate and as crossbred varieties. Crossbreeding different varieties will produce beautiful variations of feather colors such as Pied, Brindle and mixed colors. The Sesame Street character, Big Bird, proudly displays dyed white turkey feathers.

Commercial Varieties of Turkeys

Broad-Breasted Bronze A great deal of confusion exists about the difference between **Standard and Broad-Breasted Bronzes** leading to many youth exhibitors entering their commercial turkeys in the “Exhibition” or “Breed” classes. Since the Broad-Breasted Bronze was never adopted by the American Poultry Association’s Standard of Perfection, a commercial hybrid Bronze **should be disqualified** by the judge if entered as a breeding bird.

Apart from the difference in size, the plumage of the Standard Bronze is usually lighter colored and more lustrous than that of the Broad Breasted. Both have a brown color which is highlighted by shades of copper and blue-green, and the plumage overall is very similar to that of the Wild Turkey.

Due to their size, the Broad-Breasted Bronze Turkeys have lost the ability to mate naturally and their existence today is maintained entirely by artificial insemination. They also cannot fly.

The article (left) which was published in the 1943 Turkey World magazine, describes the proposed Standard for the Broad-Breasted Bronze. Because commercial turkey growers were not interested in showing turkeys, the effort was abandoned. Today, they are raised exclusively as commercial hybrid strains.

Broad-Breasted White By the 1960's, the commercial white turkey had exceeded the bronze in popularity. This was due to the economic efficiency of the white, it's uniformity in end product and the fact that white pin feathers are nearly invisible! Today, nearly all commercially produced turkeys are hybrid commercial Broad-Breasted Whites. The Bronze are still popular among small and backyard producers because they have a more traditional appearance.

Like the Broad-Breasted Bronze Turkeys, the Whites are unable to fly, reproduce without artificial insemination or survive without human care.



Getting Started

Turkeys require considerably more space to grow than chickens. An adult turkey will exercise its powerful wings during the day. With a wing span of 6 feet, they must be given space to stretch! The building space requirement per bird for small flocks is considerably greater than large buildings. Young turkeys that are housed indoors should have 4- 6 square feet per bird, while fully grown birds must have 12 -16 square feet per bird. An 8' X 12' building would only house 5-6 large turkeys.

Plenty of outdoor ranging area will allow them the opportunity to keep their feathers neat and clean, while grazing for grass and plant material, bugs, small rodents, frogs, grit and other organisms. Commercial turkeys are unable to fly, so an open topped range pen is adequate. Exhibition birds will typically stay close to the buildings where they know that their food supply is located, but may require a covered pen, if allowed to range. They may roost in trees at night and may fly several hundred yards if scared. Either type of turkey must be protected from predators, especially owls at night.

The space requirement and the “gobbling” sound of male turkeys, restricts the location for growing turkeys to a rural setting. An agreement could be made with a nearby farm-owner to use facilities for raising your birds. Such agreements, if properly completed, could lead to expanded projects and even employment opportunities!

Equipment and facilities

The equipment and facilities that are necessary to raise turkeys are the same as for any poultry. An adequate water supply, typically a one-quart waterer at first and a gallon-sized or larger waterer is appropriate as they grow. Fresh, clean water is essential for proper poult health and growth. Simple chick feeders are used at first but a larger feeder will be necessary as the poults grow. Keep in mind that these birds will double their size in only a couple of days and will continue to grow rapidly through the next four to five months. They will need an ever expanding daily water and feed supply.

Brooding may be done in a facility as simple as a large cardboard box with a heat lamp suspended about two feet above the floor. Wood shavings may be used as bedding, but must be kept clean and dry. It must be stressed that these birds are bred for rapid growth and cleaning their brooder will be necessary quite often. More elaborate brooders with hardware cloth floors may be used, if desired and available. The temperature at poult level should be 95 degrees F for the first week and decreased 5 degrees for each week after that.

Overcrowding and uncomfortable temperatures can lead to cannibalism among turkeys. Turkeys establish a definite pecking order at a young age. Keep a close watch on poults as they grow to make sure that any bird that is picked, injured or beat on by the other turkeys is removed from the group. They will need to be isolated and raised separately.

Since most county fairs occur during the summertime, very little supplemental heat will be necessary for brooding, once they get started. However, young poults do not tolerate drafts. Solid sides to the brooder or draft-free housing should be provided. Adequate fresh air, dry bedding and good ventilation are essential to prevent respiratory disease. As the birds grow, additional space should be provided.

Proper shade and cooling is as essential for older birds as heat is for the babies. Never leave your birds in the hot summer sun without the opportunity to escape to a shady cool area. Today's fast-growing, large, muscular meat birds cannot tolerate over-heating for long.

Table 1. Recommended minimum density, feeder, and drinker space for turkeys.

AGE (WKS)	DENSITY (SQ FT/ POULT)	FEEDER SPACE (LINEAR INCHES/ POULT)	DRINKER SPACE (LINEAR INCHES/ POULT)
0 to 6 wks	1 to 1.5	1	0.5
6 to 14 wks	2 to 3	3	1.0
Over 14 wks	3 to 4	3	1.5
Range pens	1 acre/ 250 birds	3	1.5

Source of Poults

There are a number of commercial hatcheries that can provide hybrid Broad-Breasted White and Bronze Poults and are sold through catalog orders and delivered by mail. Many local feed suppliers team up with hatcheries that deliver chicks directly to the store. Day-old poults sell for \$3.50-\$5.00 each. These regularly scheduled “Chick Days” are exciting times at the feed mill and attract attention by all of the customers!

Exhibition varieties of poults must be purchased from individual breeders. Arrange for your poults in the fall, so breeders have an idea of how many mature birds to keep over the winter. Delivery dates will vary because egg production from exhibition birds can be sporadic. Raising your own breeders and hatching your own poults can be very rewarding, but requires extensive skill, experience and facilities.

Commercial poults should be pre-ordered a month or two before the desired arrival date. They should arrive about five months before show day. Your birds will be judged on their “Market Ready” characteristics. Heat-stress of summer can reduce feed consumption and therefore delay proper finishing, especially the toms. Hen turkeys finish younger than toms (four months) and have a competitive advantage on show day over their male counterparts.

Exhibitors, parents and bystanders are often disappointed when the majestic toms don’t win the champion ribbon at a mid-summer fair. A tom may weigh 35 pounds and stand three feet tall in the show ring. While a hen will weigh a mere 18 pounds and is properly finished, bulging with muscle and will produce a marketable carcass on that day. The toms may need another month or two to be ready for slaughter.

Feed

Turkeys grow quickly and convert feed into high-quality meat. Feeding a properly balanced ration is important for best performance. A commercially produced, crumble starter ration containing 28 percent protein should be provided for poults from day one to four weeks. A turkey growing ration, either crumble or pellet, containing 26 percent protein should be fed for the next two weeks.

Table 2. Growth rate and cumulative feed consumption of Large White tom and hen turkeys.

AGE (WEEKS)	TOMS AVERAGE LIVE WEIGHT (POUNDS)	CUMULATIVE FEED INTAKE (POUNDS)	HENS AVERAGE LIVE WEIGHT (POUNDS)	CUMULATIVE FEED INTAKE (POUNDS)
1	0.30	0.21	0.28	0.19
2	0.60	0.59	0.61	0.59
3	1.29	1.47	1.08	1.22
4	2.20	2.75	1.84	2.30
5	3.34	4.48	2.76	3.75
6	4.67	6.69	3.83	5.57
7	6.19	9.47	5.03	7.86
8	7.88	12.80	6.34	10.57
9	9.73	16.82	7.74	13.72
10	11.72	21.58	9.22	17.29
11	13.83	26.87	10.75	21.37
12	16.06	33.00	12.33	25.76
13	18.37	39.79	13.93	30.52
14	20.77	47.29	15.53	35.44
15	23.24	55.49	17.11	40.61
16	25.75	64.08	18.65	45.77
17	28.30	71.58	20.15	50.88
18	32.23	83.81	21.57	55.77
19	34.22	92.07	22.90	60.37
20	36.32	101.72	24.14	64.37
21	38.02	109.15	—	—
22	40.58	116.12	—	—

From: Peter R. Ferket, Watts Electronic Publications, 2002
(www.wattnet.com).

The ration can drop one to two percent protein every two weeks for the next several months. The final ration should never be lower than 16% protein. Adding cracked or whole corn to the grower pellets through the final weeks will lower the average protein content. Range feeding alfalfa or grass will supplement protein. Grit should always be provided if cracked or whole corn is used. Always follow the feeding instructions on your feed tag and consult your feed dealer for specific recommended rations.

Organic feed can provide an alternate choice and will make your birds available to the organic niche market.

Typically, it will take about 2.5 pounds of feed per pound of growth for turkeys. As a result your turkeys will eat 50 – 75 or more pounds of feed each before they are ready for market.

Some project members are surprised to find that their turkeys eat a lot of feed in a short period of time and grow so rapidly. This means they will also produce a lot of manure! They should be cleaned frequently to maximize growth. Cleanliness during the entire growing period is essential to having a clean bird on show day.

Health Management

“An ounce of prevention is better than a pound of cure,” is more than a just an old saying when it comes to raising turkeys. Management is the key to maintaining the health of your birds.

Always purchase healthy, disease-free stock. Hatcheries regularly test and eliminate carriers of egg-borne diseases including pullorum, typhoid, paratyphoid and pleuropneumonia-like organisms (PPLO).

Turkey producers also reduce the threat of disease by separating their birds from other poultry. *Mycoplasma galacepticum* (MG see photo) and *histomoniasis* (blackhead) can be serious problems if turkeys are raised with chickens or on grounds where chickens have been within the previous three years. Vaccines are available for specific turkey diseases, but are usually not necessary for small flocks.

Keeping the pens and range areas clean and dry is essential for preventing disease problems. Medicated feeds can be used to control certain disease, but must be used according to recommendations and withdrawn before slaughter.



Source: thepoultrysite.com

If your flock becomes sick, contact your 4-H leader, FFA advisor, or experience poultry growers for advice. State diagnostic laboratories can provide analysis of dead birds. Veterinarians can also be consulted for recommendations. Some death loss is expected. But excessive mortality can be costly and very discouraging for the youth exhibitor.

Processing Turkeys

There are many good sources information on slaughtering and processing poultry. Read the information carefully. Ask questions of those who are experienced and perhaps set up a time with your project leaders to cooperatively process birds with other project members. State laws do allow for home-slaughter of poultry for personal use and intrastate sale in small quantities. There are a number of custom slaughter plants that will process meat chickens, inspecting them for wholesomeness, making them available for commercial sales.

Criteria used for Judging Turkeys

The poultry judge at the fair will base the selection of commercial turkeys on the USDA Standards for Grading Poultry as well as basic animal husbandry practices. Exhibition turkeys are evaluated according to the American Standard of Perfection.

The judge will examine and handle the birds for disqualifying factors. These factors would eliminate the bird from being slaughtered for human food. At the county fair, disqualified birds will receive a pink ribbon. Disqualifying characteristics include: crippled-unable to stand and move normally, blind, crooked breast bone, breast blisters, broken bones, skin cuts, bruised flesh, illness and parasites (removed from the showroom by superintendent), absence of fleshing and finish (fat). Birds that are entered in the wrong class (ex. Tom in a Hen class) will also be disqualified.

Properly fitted and groomed meat birds are raised in clean conditions and are bathed prior to the show. Beef, sheep, swine and dairy project members are very aware of this fact. Birds that are objectionably dirty or stained portray a poor image to the consumer and will receive a pink ribbon.

Judging Score Card

Desirable Market Weight and Age (20 points)

Most fairs establish the optimal weight and age range for market turkeys. They typical industry standards are:

Hens – 14-16 pounds, 14-16 weeks old, yielding a dressed carcass that weighs 12-14 lbs.

Toms – 26-30 pounds, 20-22 weeks old, yielding a dressed carcass that weighs 22-24 lbs.

Bigger is not always better. The industry establishes the size standard for commercial birds. Uniformity is important in the processing and packaging line of a modern slaughter plant. Extremely large or small birds slow the line and result in higher overall cost. Even though youth project members may have niche markets for large birds, the judging standard will be the typical industry standard. Youth project members may be disappointed when their 50 pound tom turkey does not win the class.

Conformation (20 points)

Like all animals, turkeys should be structurally sound. They need to walk on a proper set of feet and legs and move freely and easily. Obvious extremes in body shape and structure are undesirable and lack eye appeal. Turkeys are most commonly judge “on the run” rather than in a cage at county fairs, so that the judge can evaluate conformation.

Fleshing (20 points)

The amount of muscling is determined by feeling the width of the breast and back particularly over the loin region. The breast meat is the most valuable cut of meat on the meat turkey because it yields white meat which commands the highest market price. The loin width is an indicator of muscling throughout the carcass much like the loin eye area of a beef steer or market hog. Bone thickness also indicates muscling. The more muscling an animal has, the larger the bone must be to support the muscle. Excessive bone is not desirable because it decreases dressing percentage.

Finish (20 points)

Fat provides flavor and tenderness to meat. Adequate fat is desirable, yet excessive fat reduces feed efficiency, overall yield and dressing percentage. Hens tend to fatten faster than toms due to the effects of the sex hormones estrogen and testosterone. Industry producers typically sex poults at day-old and separate them, providing specific rations for each sex. Hens typically are slaughtered 4-6 weeks earlier than the toms because they finish more quickly.

General appearance (20 points)

As in other meat animal species, females tend to offer more eye appeal than males because estrogen causes a rounder body structure, thus a meatier and youthful appearance in the live animal. Here is where a clean, properly groomed bird will excel over the competition!

Judging Turkey Showmanship

Poultry Showmanship is an important part of the poultry project. Turkey exhibitors should accept the challenge of competing with their project. Those who compete with a turkey are often given extra credit for competing with a large, rather independent bird. The judge evaluates your knowledge and your handling of your bird. The criterion for showmanship (listed below) is the same, no matter which species you show.

Showmen are expected to dress in “show whites” (unless a club shirt or club uniform is used). Long-sleeved shirts and long pants are standard, because they prevent the bird from scratching your arms and legs. Keep your clothes clean for showmanship. Since commercial birds are messy and show day is often hot, you should bring an extra set of clean clothes for showmanship. Always keep focused on the judge, show secretary and leaders for instructions and details.

Your bird’s appearance on show day reflects your bird’s care throughout its life. A bird in a clean, well-bedded environment and properly fed and watered will, appear healthy and exhibit appropriate body size and condition with good feather quality. Washing the bird and oiling its feet will make it look its best.

Because of their size and the heat of summer, many judges will not require turkey showmen to bring the bird to their show table. Other judges may require turkeys be “led” with a show stick, out of their cage, into the arena and back to their cage, much like pigs are shown. Practicing and training the bird in this technique will impress the judge. Note: Because exhibition turkeys can fly, they are never shown outside of a cage!

Make sure you know your bird. Information such as: age, type of feed used, feed ingredients, incubation period, diseases, variety, history, taxonomy, parts of the bird, the judging criteria for your bird. Study this information sheet, 4-H poultry materials, the Standard of Perfection, and other poultry books. In close competition, especially in senior divisions, you will be expected to know about birds other than your own. Answer questions completely and directly.

Talking to your judge, maintaining eye contact, speaking loudly enough to cover the other noises in the poultry barn are all signs of poise. Standing up straight and speaking with confidence are signs of maturity.

Showmanship Scorecard

Personal Appearance (15 points)

- Clean, conventional clothing,
- Follows instructions and keeps focused

Appearance of the Bird (20 points)

- Clean, unbroken feathers
- Good body condition/ size (for its breed),
- Healthy, Tame and Manageable

Showmanship (25 points)

- Handling while bringing bird to judge’s table
- Placing bird into and removing from show coop
- Posing and presenting the bird to judge
- Transferring bird to another person
- Examining and identifying parts

Knowledge (25 points)

- Class, breed, variety and gender
- History, origin, purpose
- Raising techniques
- Fitting and grooming techniques
- Strengths and weaknesses,
- Defects and Disqualifications
- Other

Poise (15 pts.)

- Speaks clearly, loudly and succinctly
- Demonstrates confidence, eye contact
- Maturity (for age group)
- **Smile!**

Have fun raising turkeys!

Your turkey project can become a life-long learning experience. Enjoy the birds and the people that you meet along the way!

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