

Choosing a Variety and Obtaining Poults

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Introduction: Definition of a Heritage Turkey¹

The American Poultry Association (APA) lists eight varieties of turkeys in its Standard of Perfection. Most were accepted into the Standard in the last half of the 19th century, with a few more recent additions. They are Black, Bronze, Narragansett, White Holland, Slate, Bourbon Red, Beltsville Small White, and Royal Palm. The American Livestock Breeds Conservancy also recognizes other naturally mating color varieties that have not been accepted into the APA Standard, such as the Jersey Buff, White Midget, and others. All of these varieties are Heritage turkeys.

Heritage turkeys are defined by the historic, range-based production system in which they are raised. Turkeys must meet all of the following criteria to qualify as a Heritage turkey:

1. Naturally mating: the Heritage turkey must be reproduced and genetically maintained through natural mating, with expected fertility rates of 70-80%. This means that turkeys marketed as “heritage” must be the result of naturally mating pairs of both grandparent and parent stock.

2. Long, productive, outdoor lifespan: the Heritage turkey must have a long productive lifespan. Breeding hens are commonly productive for 5–7 years and breeding toms for 3–5 years. The Heritage turkey must also have a genetic ability to withstand the environmental rigors of outdoor production systems.

1. “Definition of a Heritage Turkey” prepared by Frank Reese, owner & turkey breeder, Good Shepherd Farm; Marjorie Bender, Research & Technical Program Manager, American Livestock Breeds Conservancy; Dr. Scott Beyer, Department Chair, Poultry Science, Kansas State University; Dr. Cal Larson, Professor Emeritus, Poultry Science, Virginia Tech; Jeff May, Regional Manager & Feed Specialist, Dawes Laboratories; Danny Williamson, farmer and turkey breeder, Windmill Farm; Paula Johnson, turkey breeder; and Steve Pope, Promotion & Chef, Good Shepherd Farm.

3. Slow growth rate: the Heritage turkey must have a slow to moderate rate of growth. Today’s heritage turkeys reach a marketable weight in about 28 weeks, giving the birds time to develop a strong skeletal structure and healthy organs prior to building muscle mass. This growth rate is identical to that of the commercial varieties of the first half of the 20th century.

Turkey Varieties

Producers interested in raising or breeding heritage turkeys have several fascinating varieties of turkeys to choose from. A number of these varieties have been recognized by the American Poultry Association (APA). “Standard turkeys,” as they are known, have an approved physical description set out in the Standard of Perfection published by the APA. The standard varieties have been around for decades – many for more than a century. Most have a history as production birds, and all can and have been exhibited. There are additional varieties that are not recognized by APA – some with long histories and others of recent creation. If these non-standard varieties meet the definition of “heritage” they may be marketed as such. These many varieties, both standard and non-standard, offer a diverse selection of options for producers. They exhibit a wide range of colors and vary in size as demonstrated in the table below:

Size may be a deciding factor for some producers. The Midget White variety may be a good choice for a small family farm whereas several varieties, such as Black, Bourbon Red, or Standard Bronze, may be ideal for producers looking to market a larger bird.

Aside from their differences in appearance, each turkey variety has a unique history, which may be useful for producers trying to develop local and niche markets. A good example is the Jersey Buff turkey, which may have a certain appeal for consumers in the New Jersey or New York areas. Likewise, the Bourbon Red may well appeal to consumers in Bourbon County, Kentucky.

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Turkey Variety	Young Tom Weight ²	Young Hen Weight ²	Plumage	Status
Beltsville Small White	17 pounds	10 pounds	White	Critical
Black	23 pounds	14 pounds	Black	Threatened
Bourbon Red	23 pounds	14 pounds	White and red	Watch
Standard Bronze	25 pounds	16 pounds	Copper bronze, brown/black	Watch
Jersey Buff¹	21 pounds	12 pounds	Reddish-buff and white	Critical
Midget White¹	13.8 pounds ³	8.2 pounds ³	White	Critical
Narragansett	23 Pounds	14 pounds	Black, gray, tan, white	Threatened
Royal Palm	16 pounds	10 pounds	White with black edging	Threatened
Slate	23 pounds	14 pounds	Ashy blue	Critical
White Holland	25 pounds	16 pounds	White	Critical

1- not a standard variety

2- weight of a bird under one year of age, as defined by the APA Standard of Perfection

3- weight at 20 weeks

Above are brief descriptions of each of the turkey varieties listed on the American Livestock Breeds Conservancy's Conservation Priority List.

Beltsville Small White Turkey

The Beltsville Small White was developed to fill a clearly identified consumer need. In the early 1930s most turkeys raised in the United States had dark colored plumage, were medium to large in size and had a relatively narrow breast without substantial meat. A 1936 survey found that 87% of home consumers wanted a New York-dressed bird (blood and feathers removed but viscera in) weighing between 8 and 15 pounds. They also wanted a bird that was meaty, well-finished, and free of dark pinfeathers. The U.S. Department of Agriculture research center at Beltsville, Maryland undertook a breeding program to create a turkey that would answer the consumer desire for a bird that would fit apartment-sized refrigerators, small ovens, and feed small families. Between 1934 and 1941 researchers developed the new Beltsville Small White variety from a genetic foundation that included the White Holland, White Austrian, Narragansett, Bronze, and the Eastern Wild turkey.

The Beltsville variety came into use in the 1940s and was recognized by the American Poultry Association in 1951. The height of its popularity came in the mid-1950s and, in addition to its use as a purebred, the Beltsville Small White also contributed to the development of other strains of medium and small white turkeys, though these other populations were never very well defined as varieties.

The Beltsville Small White turkey's success was short lived and by the 1970s it was nearly extinct. Although considered a fine bird for family use, it was less well received by the hotel and restaurant trade or by processors who desired a larger bird from which they could obtain more "slices." The Broad Breasted White (or Large White) turkey overshadowed the Beltsville because, when slaughtered at a young age, the Broad Breasted White fit the processor's niche for a smaller turkey but had the ability to grow to substantially heavier weights for the commercial food trade. By 1965 the new Broad Breasted White had nearly taken over the turkey market. Despite this, the Beltsville Small White still had advantages. Its good reproductive qualities, including the ability to mate naturally, meant that it could be selected, bred, and maintained by small-scale producers. In contrast, Broad Breasted White turkeys generally required



Beltsville Small White toms and hen. Photo by Phil Sponenberg.

artificial insemination for reproduction.

Young Beltsville turkey hens weigh 10 pounds and young toms weigh 17 pounds, according to the standard. (Many, however, may be smaller from lack of recent selection for production.) The plumage is white, with the head red to bluish white. The beard is black, the beak is horn colored, and the eyes are dark brown. Shanks and toes are pinkish white.

Today the Beltsville Small White is quite rare and primarily kept by a few exhibition breeders. Research flocks exist at the Iowa State University and the University of Guelph in Ontario, however, there is little to no public access to these flocks. In recent years there has been a revival of interest in this variety. Efforts are underway to locate and conserve remnant flocks found in the United States and Canada.

Black Turkey

The Black turkey variety originated in Europe as a direct descendant of the Mexican turkeys carried home with explorers in the 1500s. Black colored turkeys became popular in Spain where they were known as “Black Spanish,” and in England, especially in the Norfolk region where they were known as “Norfolk Blacks.” After being selected for meat production for more than two centuries, the Black turkeys made the voyage back to the Americas with early European colonists. Once here, the variety was crossed with Eastern wild turkeys, which formed the basis for the Black turkey variety in America. This Black variety was commercially viable through the early part of the twentieth century though not as popular as Bronze, White Holland, Narragansett, and Bourbon Red varieties. A 1937 *Turkey World* article states that Blacks were bred in large numbers along the East Coast of the United States, especially in Maryland and Virginia, their popularity enhanced by selection for a calm disposition, rapid growth, and early maturation.

The Black was recognized by the American Poultry Association in 1874. The plumage of this variety is a lustrous, metallic black with a greenish sheen on top and a dull black undercolor. It is undesirable to have a brownish or bronze cast or any white. Poults will often have white or bronze in their feathers but molt into mature black plumage. The beak is black, the wattle is red, changeable to bluish-white and the shanks and toes are pink in adults. Eye color is dark brown. Skin of the Black turkey is usually white, as in all turkey varieties,



Black tom. Photo by Danny Williamson.

but some writers speak of a yellow tinge to the skin that is not seen in other varieties. This may be influenced by diet, as turkeys on range with access to green feed and corn tend to have a more yellow cast to the skin. The standard weight is 23 pounds for young toms and 14 pounds for young hens, making the Blacks slightly smaller than the Bronze. However, because the Black has not been selected for production attributes for years, many birds may be smaller than the breed standard. While generally known as the Black turkey, the terms “Norfolk Black” and “Black Spanish” are also used in the United States when referring to this variety, though in the end all these terms refer to the same Black variety.

Bourbon Red Turkey

The Bourbon Red turkey is named for Bourbon County in Kentucky’s Bluegrass region where it originated in the late 1800s. It was developed by J. F. Barbee from crosses between Buff, Bronze, and White Holland turkeys. The initial steps actually took place in Pennsylvania, where Buff turkeys of darker red hues – called Tuscarora or Tusawara – were bred, and then taken west with settlers bound for Ohio and Kentucky. These dark Buff turkeys would be the primary foundation for the new variety.

After some years of selection, Mr. Barbee was able to produce consistently good-sized, dark red turkeys with white wing and main tail feathers. He christened these “Bourbon Butternuts.” For some reason, perhaps because the name did not appeal to the public, the birds did not attract attention. Barbee rechristened them “Bourbon Reds,” Bourbon for his home county and red for the rich, chestnut color of the plumage. The name change seemed to work, and better sales were reported.



Bourbon Red tom. Photo by Mike Walters.

The Bourbon Red variety was recognized by the American Poultry Association in 1909. It was ambitiously selected and promoted for utility traits, including a production-type conformation with a heavy breast and richly flavored meat. Early breeders of the Bourbon Red also claimed that their birds would grow as large as any Mammoth Bronze, a precursor to the Broad Breasted Bronze. The Bourbon Red was an important commercial variety through the 1930s and 1940s. As time went on, however, it declined in popularity, as it was unable to compete with the broad breasted varieties. Since 2002, renewed interest in the biological fitness, survivability, and superior flavor of the Bourbon Red has captured consumer interest and created a growing market niche.

Bourbon Red turkeys are handsome. They have brownish to dark red plumage with white flight and tail feathers. The main tail feathers have a bar of soft red crossing them near the end. Body feathers on the toms may be edged in black. Neck and breast feathers are chestnut mahogany, and the undercolor feathers are light buff to almost white. The Bourbon Red's beak is light horn in color at the tip and dark at the base. The throat wattle is red, changeable to bluish white, the beard is black, and shanks and toes are pink. Standard weights for Bourbon Reds are 23 pounds for young toms and 14 pounds for young hens. However, many birds may be smaller than the standard because many flocks of the Bourbon Red have not been selected for production attributes, including weight gain, for years.

The Bourbon Reds are active foragers and do well in a pasture production system. They present an attractive

carcass when dressed, because the light pinfeathers leave no residue of dark pigment in the feather follicles as with the Bronze.

Bronze Turkey

Bronze turkeys include two very different varieties with similar color: Standard Bronze and Broad Breasted Bronze. The Bronze has been the most popular turkey variety for most of American history. It originated from crosses between the domestic turkeys brought by European colonists to the Americas and the Eastern wild turkeys they found upon their arrival. The hybrid vigor of this cross resulted in turkey stocks that were larger and more vigorous than the European birds, and they were also much tamer than wild turkeys. The coppery-bronze colored metallic sheen, which gives the variety its name, was part of the inheritance from its wild ancestors.

Bronze-type turkeys were known by the late 1700s, but the name "Bronze" did not formally appear until the 1830s. Throughout the 1800s, breeders fixed the breed type for the Bronze, making occasional crosses back to the wild turkey. The Bronze variety was recognized by the American Poultry Association in 1874.



Bronze tom. Photo by Frank Reese, Jr.

The status of this variety changed dramatically during the past century. In the early 1900s, a broader breasted Bronze turkey was introduced from England into Canada, and then into the northwestern United States. This turkey was crossed with larger, faster growing U.S. stocks and the resulting bird, the Broad Breasted Bronze, became the commercial variety of choice. Further selection improved meat production, especially that of breast meat, growth rate, and other performance qualities. At the same time, changes in conformation (especially the shortening of the legs and the keel) nearly eliminated their ability to mate naturally. For this reason, most Broad Breasted Bronze turkeys have been artificially inseminated since the 1960s. Beginning in the 1960s the Broad Breasted Bronze was replaced by the large Broad Breasted White turkey. Processors favored the white-feathered variety because it produced a cleaner-looking carcass. Today, the Broad Breasted Bronze is no longer used by the turkey industry, but is promoted for seasonal, small-scale production.

Naturally mating, long-lived, slow growing strains of Bronze turkeys, also known as the Standard Bronze, have been left even further behind by the turkey industry. A few tenacious breeders maintained small flocks, participating in poultry shows and raising a few for family and friends. The Bronze was not used for commercial production for decades until the early twenty-first century, when renewed interest in the biological fitness, survivability, and superior flavor captured consumer interest and created a growing market niche.

Both Bronze varieties are stately and imposing in appearance. The standard weight for young toms is 25 pounds and for young hens is 16 pounds. Most lines of the Standard Bronze have not been selected for production attributes for years and while they are often large framed they will not offer the same carcass qualities as the Broad Breasted Bronze. Some birds may be smaller than the standard weights called for by the APA. In contrast, the Broad Breasted Bronze is larger and more heavily muscled but is not considered a heritage variety due to its need for assisted reproduction.

Only a few hatcheries maintain breeding flocks of either the standard Bronze or the Broad Breasted Bronze. These two varieties should be maintained separately, so marketing strategies need to be developed for each type to assure that one does not undermine the other.

Jersey Buff Turkey

The Buff is a historic turkey variety of the mid-Atlantic region named for the beautiful color of its feathers. Though never widespread, it was accepted by the American Poultry Association in 1874 and used in the development of the Bourbon Red variety in the late 1800s. The Bourbon Red, selected more purposefully for performance and promoted more widely, gained prominence, causing Buff numbers to decline. Even though the breed's color was advantageous for processing because of the nearly white pinfeathers, the Buff was not extensively selected for other performance qualities and by the early 1900s this variety had become rare. An additional obstacle to the Buff's success was the difficulty of breeding birds to meet the Buff color standard, which called for even buff coloration throughout with light flight feathers. By 1915, the Buff was removed from the American Poultry Association's *Standard of Perfection* and ultimately became extinct.

Interest in creating a buff colored turkey returned once again in the 1940s. The New Jersey Agricultural Experiment Station at Millville initiated a program to develop a small to medium size market turkey. This program is one of the few examples where a new variety was developed in a methodical manner: the Beltsville Small White and the commercial Large White being other examples. The new buff colored birds, called "Jersey Buffs", were developed through pedigree breeding and selection from crosses of Black, Bourbon Red, and Broad Breasted Bronze varieties. It is interesting that the original Buff was used in developing the Bourbon Red and then in turn the Bourbon Red was



Jersey Buff toms and hens. Photo by Phil Sponenberg.

used in developing the newer Jersey Buff variety. A single gene for red plumage is the same in both varieties but produces different shades of feather color due to the background genotype.

The Jersey Buff has rich reddish-buff colored body feathers. Tail feathers are white with a light buff bar across them near the end. Primary and secondary wing feathers are white with buff shading. It is difficult to have the Jersey Buff males and females match in color because the females tend to lighten with age, especially after a molt. For both toms and hens, the shanks and toes are bluish-white or flesh colored, the beard is black and the eyes are hazel.

Young toms weigh about 21 pounds and mature hens about 12 pounds, according to the standard, though most birds are smaller following years with little or no selection for production. The Jersey Buff presents a clean carcass when dressed. The hens have been known to be good egg producers. Careful selection for good health, ability to mate naturally, and production attributes will help ensure the survival of Jersey Buff turkeys. The Jersey Buff is a calm bird and easy to work with and would be ideal for a small scale or hobby farm.

Midget White Turkey

Dr. J. Robert Smyth at the University of Massachusetts created the Midget White turkey in the early 1960s. It was developed to meet an anticipated demand for a small version of the broad breasted turkey. Since this market did not develop as predicted, the Midget White never became widely popular, nor has it been standardized by the American Poultry Association.

Soon after the development of the Midget White, the University of Massachusetts had to reduce its poultry holdings. The Midget White turkey flock was dispersed. Dr. Bernie Wentworth, a former graduate student of Dr. Smyth, never forgot this turkey. Much to his surprise, Dr. Wentworth, who had taken a position on the faculty of the University of Wisconsin, found some of these turkeys with University of Massachusetts wing bands in the flock of a backyard fancier. These birds were added to the University of Wisconsin's poultry program, which continued to refine and then fix the breed type for the Midget White variety we know today. Dr. Wentworth is largely credited in preventing the breed's extinction. As Dr. Wentworth prepared to retire in the late 1990s, the university decided to disperse

the flock. Some birds were passed to poultry hobbyists, but the majority of the flock was sent to the USDA poultry facility in Beltsville, Maryland. The flock kept in Beltsville was dispersed in April of 2005 and the remaining birds were distributed to poultry enthusiasts located in the eastern United States. The survival of this breed now lies completely in the hands of private individuals.

The Midget White, with its broad breast, has the appearance of a miniature of the commercial Broad Breasted White turkey but is still capable of mating naturally, unlike the Broad Breasted White. The broad breast provides the Midget White with good meat production and makes the variety a fine table fowl. The variety was developed from a cross of a commercial Broad Breasted White turkey and an exhibition Royal Palm. Midget White toms average 13 pounds, and hens average 8 pounds at 20 weeks of age. In Wisconsin, the birds were selected for high egg production, fertility, and hatchability. The hens laid an average of 60–80 large eggs per year, weighing only three to five grams less than those of the broad breasted white turkey. Hatchability was 75–80%.

When breeding Midget White turkeys, care should be taken in the selection of breeding stock to retain the small size of the breed. Like all of the heritage turkeys, once the young are well feathered they have the ability to fly, so care must be taken to prevent escape. Adult Midget Whites are less likely to take flight as they get heavier. These diminutive turkeys are unusually friend-



Midget White tom. Photo by Jeannette Beranger.

ly and will approach people and pets without much concern.

Narragansett Turkey

The Narragansett turkey is named for Narragansett Bay in Rhode Island, where the variety was developed. It descends from a cross between native Eastern wild turkeys and the domestic turkeys (probably Norfolk Blacks) brought to America by English and European colonists beginning in the 1600s. Improved and standardized for production qualities, the Narragansett became the foundation of the turkey industry in New England. Though it was valued across the country, it was especially important in Rhode Island and Connecticut. The American Poultry Association recognized the Narragansett in 1874.

According to an 1872 account, it was not uncommon to find flocks of one to two hundred birds, the product of a breeder flock of a dozen hens. Little supplemental feed was given to these turkeys; instead they ranged for grasshoppers, crickets, and other insects. Farmers raising the turkeys were aware of the benefits of genetic selection and raised young toms that weighed between 22 and 28 pounds and hens that were 12 to 16 pounds.

While the Narragansett was never as popular as the Bronze variety, it was widely known in the Midwest and Mid-Atlantic states as well as in New England. Interest in the Narragansett began to decline in the early 1900s as popularity of the Standard Bronze grew. The Narragansett was not used again for commercial production for decades until the early twenty-first century, when renewed interest in the biological fitness, survivability, and superior flavor captured consumer interest and created a growing market niche.

The Narragansett color pattern contains black, gray, tan, and white. Its pattern is similar to that of the Bronze, with steel gray or dull black replacing the coppery bronze. White wing bars are the result of a genetic mutation which removes the bronze coloration. The Narragansett's beak is horn colored, its head is red to bluish white and its beard is black. The shanks and feet are salmon colored. The standard weight for young hens is 14 pounds and for toms is 23 pounds. However, because the Narragansett has not been selected for production attributes for years, many birds may be smaller than the standard. Careful selection for good health, ability to mate naturally, and production attributes will return this variety to its former stature.



Narragansett tom. Photo by Bob Hawes.

Narragansett turkeys have traditionally been known for their calm disposition, good maternal abilities, early maturation, egg production, and excellent meat quality. As recently as 50 years ago, they were well regarded for production qualities.

Royal Palm Turkey

The Royal Palm is a strikingly attractive and small-sized turkey variety. The first birds in America to have the Palm color pattern appeared in a mixed flock of Black, Bronze, Narragansett, and Wild turkeys on the farm of Enoch Carson of Lake Worth, Florida, in the 1920s. Further selection has been made since then to stabilize the consistency of color and other characteristics. As an anonymous breeder wrote to *Feathered World* magazine in 1931, "Turkeys of this type of coloration do crop up by chance where different color varieties are crossed . . . but it takes years to perfect their markings." The Royal Palm was recognized by the American Poultry Association in 1971. It is similar to a European variety called the Pied, Crollwitzer, or Black-laced White, which has been known since the 1700s.

Royal Palm turkeys are white with a sharply contrasting, metallic black edging on the feathers. The saddle is black which provides a sharp contrast against the white base color of body plumage. The tail is pure white, with each feather having a band of black and an edge of white. The coverts are white with a band of black, and



Royal Palm tom. Photo by Phil Sponenberg.

the wings are white with a narrow edge of black across each feather. The breast is white with the exposed portion of each feather ending in a band of black to form a contrast of black and white similar to the scales of a fish. The turkeys have red to bluish white heads, a light horn colored beak, light brown eyes, red to bluish white throat and wattles and deep pink shanks and toes. The beard is black.

Royal Palms are active, thrifty turkeys, excellent foragers, and good flyers. Standard weights are 16 pounds for young toms and 10 pounds for young hens.

The Royal Palm lacks the commercial potential of the other varieties due to its small size and narrow breast. It has a role to play on small farms, for home production of meat or where its ability to control insect pests is of great value.

Slate Turkey

While most early texts state that the Slate turkey originated from a cross of the Black turkey on a white turkey, there is little genetic evidence to support such a conclusion. The slate gene is a legitimate mutation that arose spontaneously, just as the gene for blue in the Andalusian chicken is the result of an unrecorded mutation. One added element of confusion in defining the variety is that there are actually two different genetic mutations (one dominant and one recessive) that produce the blue slate color, and these produce slightly

different shades. White and rusty brown markings may be present but are considered a defect.

The Slate or Blue Slate variety is named for its color, which is solid to ashy blue over the entire body, with or without a few black flecks. It is also called the Blue or Lavender turkey. Hens are lighter in hue than the toms. The head, throat, and wattles are red to bluish white. The beak is horn in color, the eyes are brown, and the beard is black. The shanks and toes are pink. The standard weight for a young tom is 23 pounds and 14 pounds for a young hen. The Slate has not been selected for production attributes for years, so that many birds may be smaller than the standard. Careful selection for good health, ability to mate naturally, and production attributes will return this variety to its former stature. Keep in mind that black-flecked slate birds do not breed true to color but produce slate, black, and lavender (pale blue) offspring in a ratio of 50% slate, 25% black, and 25% lavender.

The Slate was accepted by the American Poultry Association in 1874. It has been popular in exhibition circles and is gaining popularity in pastured poultry production. Renewed interest in the biological fitness, survivability, and superior flavor of the Slate has captured consumer interest and created a growing market niche. The Slate is less well documented and more variable in type and color than any other variety. This variability makes it more challenging to breed consistently than the others.

White Holland Turkey

The White Holland was the most important white-



Slate toms and hens. Photo by Phil Sponenberg.

feathered variety throughout most of American history. Despite this illustrious past, the White Holland is one of the most rare and difficult varieties to authenticate. The White Holland was the only commercial white variety in the first half of the 1900s. The White Holland's advantage has been its lack of dark pinfeathers, and this trait often led to market advantage even though the birds were not as large as the Bronze.

The mutation to the white color (which is actually lack of color) is an ancient one. The Aztecs and others selectively bred white turkeys, and they were certainly among the stocks sent to Europe by Spanish explorers. In Austria and Holland, white turkeys were favored. It is quite possible, though not documented, that Dutch settlers or other European immigrants came to the New World with White turkeys. By the 1800s, a white variety – now called the White Holland in the show ring – was known in the United States. It was recognized by the American Poultry Association in 1874.

The name White Holland implied Dutch origins for the variety, but regardless of the nature of the original population, it was no doubt changed significantly once in the United States, through selection for production qualities and with the introduction of white “sports” from Bronze flocks. Writers of the era debated the distinctiveness of the White Holland, but the continued development of its vitality and size was seen as evidence of hybrid vigor for the cross. The White Holland became a popular variety, especially in New England, holding its own well into the twentieth century. Though less numerous than the Bronze and smaller in size, the White Holland matured earlier and offered a cleaner carcass than dark colored birds.

Producers, however, came to want the best of both worlds – a large, white-feathered variety. In the early 1950s, researchers at Cornell University and elsewhere in the United States began crossing the White Holland and Broad Breasted Bronze. By the 1960s, the resulting Broad Breasted White (or Large White) had surpassed the Bronze for commercial production. This variety dominates the turkey industry today.

The White Holland as a distinctive and historic population is close to extinction. White Holland turkeys are seen occasionally at poultry shows, but they often have the wide breasts and short legs reflecting genetic influence from the Large White. The American Poultry Association both recognized this fact and confused the



White Holland tom. Photo courtesy of Frank Reese, Jr.

issue in 1983 when a change in the White Holland standard added the following: “May be referred to in commercial terminology as Broad Breasted Whites or Large Whites.” Thus the two varieties have merged, with the White Holland absorbed into the Large White. The same thing has occurred in Britain, with the lumping of all white varieties into a population called the “British White” turkey.

The true White Holland turkey is showy in appearance, with snow white feathers and a red to bluish head. The beard is black, the beak is pink to horn colored, and the throat and wattles are pinkish-white. Shanks and toes are pinkish-white, and eyes are brown. The standard weight for a young tom is 25 pounds and 16 pounds for a young hen. The overall conformation is long and robust, in contrast to the shorter, thicker conformation of the Broad Breasted White.

Other Non-Standard Varieties

Turkeys, like other poultry, are very malleable, enticing experienced and novice geneticists to play with color patterns, and many variants have been created. None of these have had standards developed or been recognized by the American Poultry Association. They have names like Bourbon White, Chocolate, Crimson Dawn, Black Winged Bronze, Lilac, and Regal Red, to name a few. These may all be considered heritage turkeys if

they meet all of the criteria of the definition. Some of these are reasonably numerous and well-established, others have relatively few birds and are more recently developed. None are readily available to be purchased as poults. Breeders of the rare varieties generally sell excess young birds in the fall of the year when they are six to seven months of age.

Obtaining Poults

Once you have chosen a turkey variety, the single most important factor relating to the success of your flock is to secure poults from a reliable source with a good reputation for healthy stock. A prospective turkey producer should take the time to review the hatchery catalog or talk with the hatchery's staff to learn as much as possible about the birds they sell. For instance, is the hatchery National Poultry Improvement Program (NPIP) certified, thereby helping to ensure that the originating flock is healthy? Does the hatchery breed its own birds or are the poults bred and hatched by another hatchery? Many hatcheries source their poults from other hatcheries. Knowing this will help you identify the source of your poults. If it breeds its own, ask what criteria are used when selecting stock for breeding. (They may not wish to tell you or may not even have any criteria.)

Egg production, conformation, rate of gain, and feather color are all possible responses. Ask about the average weight of their young (under one year) adult turkeys. This will give you a good sense of the genetic potential of their stock. Inquire as to how the poults are shipped. Most will ship by next day air; others require pick up at the farm. Recent difficulties shipping day-old poultry by mail have created problems for hatcheries and farmers alike. (For more information about shipping issues contact Bird Shippers of America.) Ask what kind of feed the hatchery uses for its turkeys. A healthy diet for the breeder flock will translate into healthier offspring.

Poults need to be ordered well in advance of the growing season. Due to the rarity of some of the standard or heritage turkeys, coupled with increasing demand, it is wise to place orders as early as November or December in anticipation of receiving poults in April or May. Allow a minimum of 6 ½ months from receipt of poults to processing, although planning for 8 months of growth is not unreasonable.

It is always best to start small and slowly. Consider acquiring birds from more than one hatchery. This al-



Bronze turkey poults. Photo by Frank Reese, Jr.

lows you to compare birds and make choices based on firsthand experience. After the birds are shipped, track how long and from where shipping occurred from each of the hatcheries. Poor shipping can have catastrophic results for day-old poults. Get an approximate shipping date from the hatchery and request they call you the day your poults are to be shipped to confirm the order and shipment. Notify your post office the week you expect your poults to arrive. Ask them to call you as soon as the birds arrive. Pick up the poults from the post office immediately. Check the box for mortalities in the presence of the post office staff. File claim forms with the post office immediately. Take the poults straight to the prepared brooder. If there were mortalities in your shipment, notify the hatchery. Most hatcheries will ship additional stock.

Monitor new poults after they arrive and take note of those that display good vigor, growth rates, and overall health. This will help you choose which hatcheries to do business with in the future. With the slow and systematic approach, the chances for success will greatly improve.

Determining how many poults to order will be based on your needs and the space available for birds. Begin by calculating how many birds the farm and associated facilities will accommodate. If all of the birds are for the holiday market, winter housing may not be needed. If breeding stock will be retained, then appropriate space will be needed for year-round housing of the birds. Poults 1 to 6 weeks of age will require a minimum of 1 square foot of floor space each. From 6 to 12 weeks of age they will need 2 square feet of floor space each until

HOW TO RAISE HERITAGE TURKEYS ON PASTURE

they are ready for pasture. Adult breeding birds, if kept indoors or in pens, will need 3–5 square feet per bird.

As young birds transition to pasture your stocking rate will depend on the soil type, quality of forage, age of birds and the amount of manure you want deposited. The amount of manure deposited is basically the same as the feed you put in.

Clean ground and pasture are essential to good flock health and it is best to be on a piece of ground only once a year. (Keep in mind that generally, it takes 21 days for viruses to die.) On sandy soils, you can have up to 1000 birds per acre whereas on clay soils an acre may only support up to 300 birds. Stocking rates will also vary based on pasture quality, which is significantly affected by climate. The poorer the forage and the larger the bird, the fewer birds per acre per year can be supported by the land. This works out to about 900 mature standard turkeys or 500 mature Broad-Breasted turkeys per acre if you move them weekly. Pastured birds will need a range shelter to protect them from the

elements. A simple 10' x 10' shelter can accommodate about 60 birds at 12 weeks of age or 30 mature birds.

Order extra poults to compensate for mortalities and for birds that do not meet quality standards at processing. Even under the best circumstances there may be mortalities encountered with new poults. Plan initially for a 15–25% mortality rate and adjust quantities accordingly. As you gain experience, you will be able to more closely estimate your numbers.

Prepare for the poults by setting up the brooder 3–5 days in advance of their arrival. This will assure a stable, warm environment. Purchase about two weeks worth of feed. Larger quantities can become rancid or bug-infested in warm summer weather.

The first several days will be crucial for the young poults. Good planning, preparation, and record keeping will reduce losses and give the young birds the best chances for survival.

Resources

American Livestock Breeds Conservancy, PO Box 477, Pittsboro, NC 27312, (919) 542-5704, albc@albc-usa.org, www.albc-usa.org.

American Poultry Association, *Vaccination Guide*, www.amerpoultryassn.com/vaccination_guide.htm, American Poultry Association, PO Box 306, Burgettstown, PA, 15021, apasecretary@aol.com, www.amerpoultryassn.com, APA Secretary-Treasurer (for all membership info), Pat Horstman, PO Box 306, Burgettstown, PA, 15021, (724) 729-3459, secretaryapa@yahoo.com.

Bird Shippers of America, PO Box 458, Webster City, IA 50595, www.birdshippers.org

Bland, David, *Turkeys: A Guide to Management*, Crowood Press Ltd., 2000.

Christman, Carolyn J. and Hawes, Robert O., *Birds of a Feather: Saving Rare Turkeys from Extinction*, American Livestock Breeds Conservancy, 1999.

Feathersite poultry website <http://www.feathersite.com/Poultry/BRKPoultryPage.html>.

Marjorie Bender, ed., *Raising Standard Turkeys for the Holiday Market*, American Livestock Breeds Conservancy, 2003, <http://www.ces.ncsu.edu/chatham/ag/SustAg/range%20turkey%20booklet.pdf>.

Marsden, Stanley J., and Martin, J. Holmes, *Turkey Management: Sixth Edition*, Interstate Printers and Publishers, Inc., 1955.

Mercia, Leonard S., *Storey's Guide to Raising Turkeys*, Storey Publishing, 2001.



Published by the
American Livestock Breeds Conservancy
PO Box 477
Pittsboro, NC 27312 USA
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© 2007 American Livestock Breeds Conservancy
ISBN # 978-1-887316-08-8

The complete book is available as a free download
or, for a small fee, in hardcopy.

Funded through a grant from the
Southern Sustainable Agriculture Research and Education
Professional Development Program
www.southernsare.uga.edu