

# Myotonic Goat Registry



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## Breed Description

### Myotonic Goats

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A breed description is different from most breed standards in that a description describes, while a standard prescribes. The Myotonic goat, a landrace breed, is more varied than standardized goat breeds – especially so if it is compared to imported breeds that were started with relatively few goats that all had very similar traits. A landrace type of population means that the Myotonic goat breed survived (and many still do) as an untracked and unmonitored population of locally used goats for local production purposes. Imported and standardized breeds in the US include nearly all the Dairy breeds along with the Angora and Boer goat. This breed description is lengthy, and tries to be very specific so that breeders can understand just exactly what a Myotonic goat is, and why the breed is more than the single trait of myotonia. The general organization of this document provides a short descriptive piece followed by a comment that explores the practical reasons for the importance of the description and its relation to Myotonic goats.

The Myotonic goat is a distinct breed yet it has many synonyms for names, including Nervous Goats, Wooden-Leg Goats, Scare Goats, Fainting Goats, and Tennessee Fainting Goats. The breed is a multi-purpose goat derived from a variety of strains of goats that were originally from Tennessee. As is typical of locally developed breeds, the overall type and conformation do vary somewhat more than is typical of imported, standardized breeds (dairy breeds, Angoras, Boers). However, the breed does have several distinctive features that set them apart from other goat breeds, and it is these features that help to define the Myotonic goat as a breed. Several old strains of Myotonic goats persisted in Tennessee, and goats of these lines can still be found. In addition, several lines developed in Texas since the 1950s, and some of these have a slightly different “look” by virtue of being selected in a different environment and for different goals. One must remember that the Texas goats ultimately originated in Tennessee and so both strains are indeed branches of the same breed. The relatively newer strain of the breed is the minis. The mini Myotonic goats retain the distinctive breed features, though in a more compact and shorter size. They too ultimately originated in Tennessee, just as the Texas strain, and so too are a branch of the same Myotonic breed.

Myotonic goats have a very distinctive breed type that is based mostly on head and body conformation. They also have a muscle condition called myotonia congenita. This inherited trait leads to an overall increase in muscle mass so that the goats are very muscular when compared to other breeds of similar size. This trait is so distinctive that it is easy to confuse the trait with the breed. However, the Myotonic goat is much more than just a myotonic condition; it has a host of other consistent traits that are very important and need to be conserved for future generations.

Several important characteristics are typical of the breed:

1. Docile temperament
2. Myotonia congenita leading to stiffness and muscularity
3. Abundance of high quality muscle
4. Good adaptation to low-input forage-based feeding systems
5. Genetic distance from other breeds such that crossbreeding yields great hybrid vigor.



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important to understand that the breed is more than the myotonia, because crossbred goats can indeed be myotonic. Understanding that the breed needs to be maintained as a pure breed resource is the reason for tracking crossbreeds that carry and/or show myotonia. In general this is a relatively slow-growing breed with great ability to be maintained and developed on a forage-based system. Crossbreeding of these goats will increase growth rates, though size increase or decrease is variable depending on the breed which was used in the crossbreeding; however, crossbreeding will eliminate their genetic distinctiveness and therefore their long-term utility. Their distinctiveness and usefulness lie in their being maintained as a pure breed resource. Current uses include both commercial meat production, as well as companion animals (pets).

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## GENERAL DESCRIPTION

Myotonic goats come in varying sizes. The medium to large animals of this breed are generally used for meat production while the smaller animals are generally sought after as pets. Myotonic goats of all sizes are stocky, with obvious width for height. The body is wide, full, and deep, with heavier than average muscling evident throughout. Muscle development increases with age, so that older goats are more heavily muscled than younger ones. Tennessee bloodlines tend to be lower and broader than Texas bloodlines, which tend to be taller and a little less blocky. They are alert, good-natured animals with a conformation that is smooth, functional, and rugged. They are also generally quiet, and are much quieter than many other breeds of goats. Parasite-resistance is another trait that the breed is renowned for.

The overall appearance of these goats is important, although extremes within the breed should be avoided. Myotonic goats are ideally blocky and stocky, and are distinct from most other breeds in this conformation. However, extreme blockiness can result in difficult kidding and poor mobility in range conditions. Thinly fleshed goats or those with a very delicate and refined conformation are atypical for the breed. Even the mini strain of the Myotonic breed generally holds true to carrying a more blocky and stocky appearance than breeds of similar size. Abnormally thick goats can have mobility problems and should therefore be avoided.

## SIZE

Size varies within the breed, and this description is geared more towards type than size. The weight of Tennessee line does usually centers around 80 to 110 pounds. The weight of Texas line does is generally

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These include both Texas and Tennessee lines. Small companion animals can be as light as 50 pounds at maturity, and as short as 17 inches at the withers.

The companion animals within the breed tend to be smaller than the meat production animals within the breed. The size variability is continuous, with all sizes between small and reasonably large present within the breed.

The companion animal type has does that are usually no smaller than 50 pounds mature weight and bucks rarely under 80 pounds mature weight. The production type for does generally ranges between 80 pounds and 130 pounds, and for bucks ranges from around 130 pounds to 175 pounds. Does larger than 150 pounds and bucks larger than 200 pounds are not typical of the breed but are occasionally encountered.

Size is important, but size alone cannot and should not direct the maintenance and direction of the breed. Goats smaller than the minimums above rarely grow sufficiently to be productive, healthy and carefree goats. Very small goats lack overall soundness, and can be frail so that they are hard to maintain. Goats larger than the maximums above are rarely well adapted and functional in low-input forage-based systems, even though they look impressive and meat breeders may be tempted to think that bigger is always better. Overall balance is more important than overall size. No specific minimum or maximum size is indicated, although goats outside the above range should be considered atypical, and should be registered and used for breeding only when needed to reach specific goals within a breeding program. Very small, dwarf-like goats are poor examples of the type of the breed, and are likely to have health problems. Overly large goats tend to lack breed character and are generally poorly adapted to the original low-input history of the breed.

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## BREED TYPE CHARACTERISTICS

**HEAD** – The head is medium length with a broad muzzle rather than a fine, snipe-like muzzle. Jaws are full and well formed, and have an even bite (neither overshot nor undershot). The head is broad, and the eye orbits are prominent, especially from above. The eye orbits protrude outward further than in other breeds, giving the head a distinctive appearance with the eyes prominent and obvious. This is more pronounced on most Tennessee goats than it is in many Texas goats, but is present in both. An obvious stop is present at the level of the eyes, separating the head from the facial region. The profile of the facial region is usually

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toward the face. The ears typically have a wave or ripple halfway down the length along the front edge of the ear. Horned and polled animals are both typical. Horns are usually well developed and large, and should have at least an inch or two of separation between them.



The head, while not usually considered of commercial interest, is of great importance in reflecting true breed type, and through that, pure breeding. The Myotonic goat head is distinctive and sets this breed apart from other breeds. The unique Myotonic goat head can usually be characterized by a combination of the prominent eye sockets (some refer to these as “bug eyed”), the stop (or break in contour) between the head and face, and the relatively straight facial profile. The horizontal, slightly forward ear carriage is also distinctive, as is the “ripple” in the ear. All of these head characteristics help define the breed type, and are also where crossbreeding first betrays itself. These “fine points” are important for breed character, although the head also is a utility organ – the bite is critical, the broad conformation provides for adequate mouth capacity. The horn set on horned animals is important if animals are not to injure others by catching legs between close-set horns. Close-set horns do occur in the breed, but should be avoided whenever possible. Atypical ears show up from crossbreeding. Swiss influence is likely to decrease ear size and make them more erect, as well as removing the distinctive ripple in the ear. Nubian or Boer influences are likely to change the size and carriage of the ears, tend to remove the ripple, as well as providing for a more convex facial profile. Spanish influence generally changes the ear carriage and that distinctive ripple, as well as diminishing overall stockiness. Short, LaMancha type ears are not typical. Crossbreeding also betrays itself in reduced prominence of eye-sockets, as well as in general shape and character of the head. Swiss breed influence tends to refine and narrow the head, Nubian or Boer tend to make them convex or Roman. Spanish influence changes the profile, and ear carriage, but is the influence least likely to betray itself. Nubian and Boer breeding also betray themselves in short, curled horns, which are somewhat rounder in shape near the base, along with being carried somewhat close to the head. Pygmy influence results in a broad, stocky goat but one with shorter, narrower ears than typical, and with a tighter attachment to the head. Pygmy influence also results in a shorter head. Nigerian Dwarf influence, in contrast, leads to leaner, more thinly built goats with finer heads and more erect, smaller ears. Poor bites need to be severely penalized or disqualified, since these relate profoundly to the function of the goat. Blindness, of course, should be severely penalized.

**COAT** – Coat length varies from quite short and smooth to very long and shaggy. The long, shaggy coats can be long enough to drag the ground in older goats, but never have any tendency to ringlet or lock



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extremely shaggy goats, and all of the range between, are present in purebred Myotonic goats. Many goats grow abundant cashmere in the winter. Presence of beards is variable, with many females lacking them but nearly all males having them. No coat type is to be preferred over another, with the exception that long coats with ringlet or lock formation are unacceptable.

The coat characteristics are variable for this breed, and therefore are usually not important as betraying relative degrees of an individual's fit to the breed type. All types and extremes of coats are seen in old, long established herds. Any penalty for short versus long coat types within the breed is to be avoided – a wide range of types and styles is correct for the breed. Many meat production breeders prefer smooth coated goats, as they tend to look cleaner and meatier. However, some commercial meat-producing breeders have come to appreciate goats with somewhat more hair, as they do better at resisting bad weather. Angora influence tends to result in longer coats, but these almost always have ringlet or lock formation. In addition, Angora influence results in finer guard hairs, and more coarse cashmere. This is different from the usual very coarse guard hair and very fine cashmere of Myotonic goats.



**COLOR** – All colors are acceptable, all combinations, and all patterns or markings.

Some early breeders of these goats had predominantly black and white goats, and this has confused some discussion of the breed by associating black and white with purebred. Many early breeders did not use color, patterns, or markings to distinguish their goats from other breeds and consequently had many different colors and patterns. Still other breeders preferred some other single color as a characteristic for their goats: white, brown, brown and white, or frosted ears. As a result most (or all) colors or patterns can be found within purebred Myotonic goats. Several of the early herds that primarily had black and white goats had a few goats of other colors. Confusion can arise when these goats are marked similarly to other breeds for which color is uniform, because many people confuse color with breed. The confusion of color and breed emphasizes the importance of the other (non-color related) breed-specific type traits, because these are much more closely related to the breed type than is any color. Color is not specific for this breed, and no color should be penalized. Various breeders do indeed have favorite colors, markings, or combinations, and these are not to be discouraged. No color should be avoided and no color should be preferred. Some colors specific to other breeds do indeed occur in purebred Myotonic goats, and should not be penalized simply because they also occur in other breeds.

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**STIFFNESS** – The stiffness of these goats relates to their *myotonia congenita*, which is an essential portion of the breed type. The various levels of stiffness are arbitrary, but a general guide is useful for breeders.

1. Never observed to stiffen, but other type traits are consistent as is pedigree.
2. Very rarely stiffens, never falls.
3. Stiffens only occasionally, and rarely falls.
4. Walks normally with no swivel. The rear limbs lock up readily, the forelimbs less so, and goats with this degree of stiffness rarely fall to the ground.
5. Animal walks relatively normally, although somewhat stiff in rear and with a swivel at the hip. Readily stiffens when startled or stepping over a barrier.
6. Animal always moves stiffly to some degree, and readily becomes “locked up” when startled or stepping over a low barrier.

The stiffness is integral to the breed and its character, but this breed is much more than stiffness. Genetic consistency and type traits other than the stiffness are equally important to the stiffness when evaluating goats for breed type. Extreme level 6 stiffness can impede a goat from using the environment well, and extreme stiffness is not necessarily desirable (that is, stiffer is not necessarily better when evaluating goats). Level 6 is stiffer than is usual in most of the breed. Levels 4 and 5 are most typical of the breed. Levels 2 and 3 are useful in purebred herds, and when these levels are combined with heavy muscling they are entirely typical. Level 1 goats are referred to as “limber” or “limber leg”, and should be scrutinized. They only rarely have a role to play in breeding programs, and should be discriminated against. Any limber leg goat that is used in breeding programs should be excellent in all other traits typical of the breed and even then should see only minimal use. Level 1 sires should not be used since they are not typical for the breed. Breeders should avoid both overly stiff and non-stiff goats. However, each of these classes will be of occasional use to some breeding programs, and therefore, if they are used at all it needs to be done with much thought and care.

## BODY CONFORMATIONAL TRAITS

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breeds. Female necks are more slender and feminine, with males being more massive and masculine. The neck skin on many males is thick and wrinkled. Some Tennessee lines carry the neck horizontally and so the head is carried lower than on some Texas lines.

The neck is important as a revealer of femininity and masculinity, and also needs to be consistent with the overall blocky conformation of the breed. Overly thin or weak necks betray a lack of breed character.



**FORELIMB AND CHEST** – Forelimb should be reasonably muscular, well-angulated from the side, and tightly attached to the body with no tendency toward a loose top attachment (mutton withered). Point of shoulder should be somewhat behind the most anterior portion of the sternum. Legs, from the front view, should be straight from the shoulder down. From the side view the shoulder and elbow should be well-angulated (not too straight), and the forelimb from elbow to fetlock should be straight (neither back nor over at the knees). The pasterns should be short, strong, and have a moderate angle. Joints should be broad without coarseness. Legs should be sound and serviceable, showing good bone density, being neither coarse nor delicate. Relatively heavy bone is typical. The chest should be moderately broad.

Tight shoulder conformation relates to overall soundness and tightness of conformation. Loose shoulders usually correlate with an overall looseness throughout the animal, and such animals tend to break down at young ages. Angulation is important as it relates to overall mobility and soundness, and contributes to longevity through this. Broadness relates to muscling, and bone must be adequate to support this. Extreme broadness and coarse bone could lead to unsoundness through difficult births, so moderation is in order even though the breed should be broad and robust. Extreme coarseness and poor angulation should be avoided. Too little angle in the shoulder, elbow, and fetlock leads to early degenerative disease and arthritis. Too sloping a pastern leads to weak joints, breakdown and locomotion problems. Excessive breadth through the chest should be penalized as contributing to birthing difficulties. Enlarged and poorly mobile knees are typical of chronic arthritis, and should be avoided. In some, but not all cases, these can indicate Caprine Arthritis Encephalomyelitis (CAE), which needs to be substantiated in suspected cases.

**BACK AND BARREL** – Back should be strong and level, broad and well-muscled. Many goats rise slightly toward the pelvis. Ribs should be well sprung, providing for large capacity in chest and abdomen. The body should be deep and full.



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important for both chest and abdominal capacity, and these are important for respiratory, digestive, and reproductive function. Any body hernias (umbilical, others) should be penalized. Swaybacks or weak backs, flat barrels, bodies with inadequate depth ("weedy") are all serious faults and poorly functional.

**RUMP** – Rump should be moderately angled from the side view, from back to tail, moderately broad and long. Tail is symmetrical, and narrows to tip. The tail is usually carried up over back.



As breeders work with nearly every breed, selection for smooth, broad conformation becomes more advanced. With this comes a tendency to flatten out the rump topline, but this needs to be avoided. Moderately sloping rumps contribute to good mobility, which results in goats that can use the environment well. This is essential in low-input systems. Correct rump conformation also contributes to good fertility and ease of kidding. Rumps that are too steep, or too flat, can both contribute to locomotion problems in addition to contributing to difficult births.

**REAR LIMBS** – The rear limbs should have good angles from the side, with no tendency toward excessive straightness (postiness). They are moderately short, in keeping with the overall stockiness of the breed. A perpendicular line from the pin bones should fall right behind the cannon, which should be straight. From the rear the legs should be set moderately wide apart, and should be reasonably straight with little tendency to be cow hocked. Muscling should be heavy, and bone should be proportional.

Rear limbs are important for overall soundness, especially when mobility is considered. Excessively cow hocked individuals usually need foot trimming more than those with sounder, truer conformation. Some slight tendency towards cow hocks is present in many functional, adapted breeds and does not indicate unsoundness. Overall width and meatiness are important, although extremely wide, square, and boxy individuals are likely to be less sound than those with acceptable but more moderate conformation in the rear limbs. Angles (from the side) are very important, because post-legged individuals usually have a shorter productive life, from early arthritis, than those with more sound conformation and better angles. Avoid poor angles (too straight at the stifle, too angled or too straight at the hock), which relate to poor mobility. Thinly fleshed animals should also be avoided, as they are not typical of the breed. Post-legged animals are to be avoided more diligently than cow hocked or sickle hocked animals, although all three are defects. The overall impression should be one of thick, rugged, serviceable conformation. Too much

**FEET** – Feet should be proportional to the goat, and large enough to carry the goat effectively. Feet should be symmetrical and sound. The claws of the foot should be symmetrical and should be parallel to one another. The pasterns should be short and with moderate angle from the cannon.

Feet are essential for mobility, and therefore to successful foraging. Feet should be carefree for the most part. Untrimmed feet that are well conformed and serviceable should be given a bonus, and never penalized. Functional feet are important and any foot conformation that suggests weakness should be avoided.

**SKIN** – Skin should appear clean, resilient, with a clean, shiny coat.

Skin and hair coat reveal the general health and robustness of the animal. Avoid thin, weak, skin and hair coats that are dull and lifeless.

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**SEX CHARACTERISTICS** – In addition to specific sex characteristics, outlined below, correct overall type for each sex should be present in all systems. Does should be feminine, and bucks masculine. In general does should be finer without being delicate, and bucks should be more robust without being coarse. Head and neck are useful for evaluating sex character. Does have less massive heads, and thinner, more delicate horns. They also have thinner necks than males, although in this context “thin” and “shallow” are different since “shallow” or ewe-necks are a fault. Bucks have more thickly made heads. This is especially true of the horns on horned animals, which are generally thick, long, and in most cases also have an outward flare. Bucks have thick, deep necks, and generally also have more thickness throughout the remaining body than do does. This is noted especially in the bone structure, which is heavier on bucks than does. Hair coat is also generally longer, coarser, and thicker on bucks than on does.

Sex characteristics are an indication of overall reproductive soundness. Does should look like does, bucks should look like bucks. Reproductive function on masculine does or feminine bucks is frequently below par.

**UDDER** – High and tightly attached, with no tendency to be pendulous. Halves evenly balanced, with no lumps or scar tissue. Udder should feel pliable but firm, and smooth. Teats should be uniform and not

leading to functional problems are faults rather than disqualifications.

The udder is critical to the successful rearing of kids without intervention. High, well-attached udders with small to medium teats are the most serviceable and sound for pasture-based kid production. Udder capacity is not always associated with production potential. Relatively small, but serviceable, udders are the best for low-input production systems where does are expected to raise their own kids. The best proof of udder capacity is the kids and their weaning weights. Teat conformation is important, and two are best. Alterations such as fused teats or double teats, or supernumerary teats can interfere with function and should be penalized. This is especially true in males. Any udder conformation that suggests problems should be penalized. These include evidence of past mastitis (asymmetry, lumps, scars) or poor attachment (pendulous udders) or poor, dilated teat conformation. These defects make successful rearing of kids more difficult, and should be avoided. Multiple teats in any degree are not desirable and should be penalized in either sex, and especially so in males.



**MALE REPRODUCTIVE ORGANS** – There should be two testes that are symmetrical, fully descended, and with good tone. There should be no lumps in testis or epididymis. Teats should be symmetrical, nonfunctional, and there should only be two. The scrotum should not have a midline split over an inch deep.

Male reproductive soundness is reflected through the scrotal contents more than anything else, and these must be normal for function to be normal. Avoid asymmetrical testes as these imply cryptorchidism or testicular hypoplasia. Splits in the scrotum should be avoided, because this is a genetic trait that varies in expression, and severe grades of the defect lead to abnormalities of the reproductive tract that interfere with function.

**FEMALE REPRODUCTIVE ORGANS** – The vulva should be normal, and a normal distance from the anus.

Vulvas that are smaller or larger than normal can indicate intersexuality and such goats generally fail to reproduce normally. Avoid any abnormality in female external genitalia.

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reproduce year-round. Does should produce multiple kids and raise them unassisted. First time kiddings are commonly of one kid, and not to be penalized.

Reproductive function is critical to overall success. The Myotonic goat has uneven seasonality, but both sexes should ideally mate and produce kids year-round, though individual traits and climate conditions have been known to affect year-round breeding. Does that grow sufficiently to produce kids as yearlings are unusual, but should not be penalized. Twins or triplets should be the rule for does older than two years, and does should raise these unassisted. Quadruplets and quintuplets should be rare, and supplemental feeding may be necessary with these. Does that raise litters that grow well and do well should be selected for, and this should be a major selection factor as it is more important than some of the finer points of conformation. Moderately penalize does two years and older that repeatedly produce singles. Does that do not raise their kids well should be avoided. Extreme creep feeding obscures the ability of dam and kids to perform in a low-input system, and so should be used with caution.

**GROWTH RATES** – These are historically slow to moderate growing goats, although selection within the production end of the breed is favoring more rapid growth rate. To some extent, growth rate is related to final mature size.

Post-weaning growth rates are more related to the individual's own genetic potential and not to the dam's milk production. Coupled with growth to weaning (dam's milk production), this provides a very good selection tool. More rapid is not always better, as very rapid growth could lead to mature size that goes beyond the useful upper limit for the breed. Selecting only on the basis of growth rate could eventually make the breed too large for effective forage use. Diets should be forage based, with concentrate feeding limited to winter maintenance so that diet does not obscure the differences in animals as to their ability to effectively use forage and browse. Avoid extremely small, stunted, slow growing animals, as well as animals that grow too rapidly to sizes too large. Also avoid animals that require abundant supplemental feeding (beyond mainly forage) to achieve gains.

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