

# Meat Goats, Breeds and Genetic Conservation

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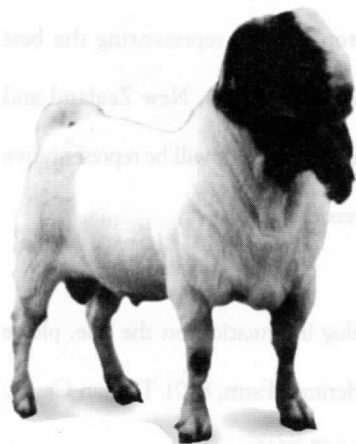
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The meat goat industry in the United States is currently expanding. With expansion comes a number of opportunities. Some of these opportunities have two sides.

## Current Breed Resources For Goat Meat Production

While a goat of any breed or crossbreed can be consumed, there are a few breeds which stand out as more specialized for meat production. These are the Boer, Spanish, and the Myotonic (Wooden Leg and Fainting) goats.

The Boer goat is new to this country, and is a well defined breed. It is an amazing animal, having been long selected for excellence in meat producing traits. The Boer goat is assured a long term spot in the production system for goat meat in this country. Due to its recent importation it is still rare, and part of the allure of this breed is the high prices brought about by rarity, although this situation will be temporary and prices will become moderate as numbers increase.



Spanish goats are less well defined than Boer goats. These have long been the staple breed resource for meat production, and have largely been ignored for breed improvement since they were numerous and readily available. Some breeders have dedicated decades to the selection and improvement of certain strains of these goats, and these goats are an important resource. Spanish goats have the advantage of being widely available, although within the general group of Spanish goats there are those that are crossbred in addition to those that are purely Spanish.

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The Myotonic goats include the Texas Wooden Leg and the Tennessee Fainting goats, although both ultimately go back to a Tennessee heritage. These goats stiffen when startled, and consequently are "sitting ducks" in areas where predators occur. The Myotonic goats have long been used for meat production, although more recently have attracted the attention of the exotic market which has favored extreme stiffness and small size. This has been to the detriment of meat producing characters, although many Myotonic goats still retain excellence in fertility, fecundity, size, and conformation; which are all traits that are important to meat production. Myotonic goats will never be a popular choice for large, extensive flocks, but do have important potential in crossbreeding systems or in smaller farm flocks.

Other goats, such as Cashmere, Angora, and the dairy breeds also can fit into meat producing systems. Each of these has disadvantages which make them a less logical choice than the above three.

## The Role Of Breeds In Production Systems

Having multiple breeds to fit into production systems has been very important in most other species. The single noteworthy exception is the dairy cattle industry, in which the Holstein swamps the competition. But even in the dairy cattle industry, the other breeds tenaciously retain a share of the action. In other systems, such as beef production, lamb and wool production, and even horse (and especially mule!) production, the strength of having different breeds (and lots of them) is widely accepted as healthy for the industry. The variety of different breeds allows the producers to select the ones that are best suited to specific situations.

There are two main reasons multiple breeds benefit the production of a single product. One reason is that breeds are adapted to specific environmental or production niches. Certain breeds excel in certain environments, and other breeds in other environments. Texas Longhorns and Scottish Highland cattle each tolerate poor nutrition in adverse climates, although obviously one is a more logical choice for the south, and the other for the far north. Breeds also tend to be specialists in different portions of the production system. Some breeds are better for maternal characters, others for the terminal sire characteristics needed in the final slaughter product. With multiple breeds available it is possible to tailor production systems by using different breeds at each step.

The second main benefit from dif-

ferent breeds is the boost from hybrid vigor. Breeds have to be different in order for hybrid vigor to result from the crossbreeds. This is an important fact, and is often overlooked. Hybrid vigor makes the gains from using different breeds at different points in the system, even greater. Familiar examples from beef production systems include the overall desirability of half Brahma or half Longhorn cows to be put to terminal beef type sires. In general, the biggest boost from hybrid vigor results from crossing breeds that are the least related, and this is a powerful argument in favor of the retention of distantly related breeds.

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Hybrid vigor is easily overlooked as the source of very high quality crossbred youngsters after the initial importation of a new breed resource. A good example comes from South America. Brahma bulls were crossed to the local Spanish cows, and the calves were excellent. This was totally attributed to the imported (expensive) Brahma bulls. The next step was to mate the crossbreeds back to the Brahma, and eventually end up with nearly pure Brahmas. At each step, though, the calf crop was less numerous and less qualitative. What had been overlooked was that the initial hybrid vigor accounted for the high quality calves, and was equally due to the Spanish cow as the Brahma bull. Sadly, the lesson was learned too late and the Spanish bulls had already been sent to the packer. A valuable genetic resource would have been totally lost except that a few stubborn old timers had kept the original Spanish cattle, which are now acknowledged as important to South American cattle breeding systems. Hopefully American goat producers can avoid a similar mistake, and wisely use the Boer, Spanish, and Myotonic goats for their own unique contributions to goat meat production.

**The Present Situation In The Goat Meat Industry: Where Do Breeds Fit?**

The expansion of the meat goat industry has brought a long overdue boost to the goats used to produce meat. With the expansion of breeders there has been an increased demand for seed stock. This has focused attention on selection for traits that are important in meat production systems. All of this is good. The recent introduction of the Boer goat has posed a peculiar sort of opportunity, though. The Boer goat could quickly and irrevocably cross the Spanish and Myotonic goats out of existence. Does the industry lose by doing this?

The Boer goat is without a doubt the premier example of an improved meat goat. It's excellence earns it a well deserved place in meat producing systems. Added to that excellence in producing the final product, meat, is the current scarcity of these goats. Scarcity translates into high prices, and the speculative side of things will always enter in when prices are high. This is appropriate, although how long the high prices last is open to debate and speculation.

Many breeders of Spanish and Myotonic goats will use these does for embryo recipients and crossbreeding to the Boers. The net result of this is that fewer purely Spanish or Myotonic goats will remain. This is already occurring, but is it good or bad?

It is important at this early stage to sit back and ask a few questions, mainly about the Spanish goat. First of all, what is the Spanish goat? They are barely acknowledged as being a breed, although they certainly meet the genetic criteria for being a breed. Some flocks have been long selected and tested for meat producing traits. These flocks are important to the industry. Since the Spanish goat has been numerous the average breeder may not see much of a threat to it's breed survival. It is important to remember, though, that a breed resource can be lost forever with only one generation of crossbreeding unless some purebred animals of both sexes are retained. The Spanish goat is in a peculiar situation, since

the original model in Spain is now gone except for one rather restricted breed (Murciana-Granadina), and one wild island population on Isla Salvaje near Madeira. The reason for this is that the Spaniards have beat us to the crossbreeding of their goats, so their Spanish goats are now all gone. Yes, it can happen!

The Spanish goats in the USA survive in many different types of flocks. Some are nearly neglected, others are highly selected. What tends to happen with the introduction of a new breed, such as the Boer, is that the most rapid adoption to it is by the breeders who have carefully improved and selected the previous local breed (Spanish Goat in this case). The result is that the genetic erosion of the local breed is at the top end, which is the very end most important for breed development and improvement. This pattern has been repeated numerous times throughout the world, to the detriment of many local breeds of cattle, goats, horses, and sheep. Similar arguments hold for the Myotonic goats.

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The various breeds of goats are the building blocks of goat industry, and it is important that each generation be able to select the blocks it wants. In the past, it was fairly certain that preceding generations of breeders would pass the entire range of breeds down to the next generation from which they could select what met current fashion or production needs. Over the last fifty years this situation has changed radically for all species, with the extinction of many breeds, and the decrease in numerical strength of many others. Does this matter? Yes it does, especially if the next generation decides it has different goals in animal products. Only breeders can assure that the full complement of breeds is available to pass down to the next generation of breeders.

### **Conservation of Breed Resources**

American and Canadian are fortunate to have an organization concerned with the conservation of rare breeds. This is the American Livestock Breeds Conservancy (PO Box 477, Pittsboro, NC 27312). It is a non-profit organization which works with breeders. It's members do not own animals. Breeders of Spanish type meat goats are encouraged to contact them so that a list of people still breeding Spanish goats can be assembled. Breeders of Myotonic goats are encouraged to do the same, although I suspect there are fewer of these.

A few relatively simple actions can assure that the Spanish goat (and especially the more highly selected flocks) are not lost for good. One suggestion is that the breeders who are crossing the Spanish goats to the Boer goats retain at least a few of the purely Spanish ones, and mate these together every few years to retain this breed resource. This need not be many animals, and as few as thirty Spanish does put to pure Spanish bucks every other year would assure at least some continuation of the various lines.

The ALBC is very interested in starting a semen bank of semen from pure Spanish bucks. The goal is to sample bucks from any different selection lines. As indicated, this is a nonprofit organization with limited funding, but the interest is there, and if breeders are willing to invest in the future of the breed, then there is much that can be done over the next few years to assure that the Spanish goat of the USA is conserved instead of extinct due to crossbreeding. The semen bank idea is especially critical now, before all of the highly selected strains of Spanish goats are lost to crossbreeding. Each strain is important, and by freezing them now we can assure that they are not lost.

An important project for Spanish and Myotonic goats has been started by Virginia State University (Dr. Stephan Wildeus and Dr. Terry Gipson, VSU Ag Research Station, Box 9383, Petersburg, VA 23806). They are trying to assemble flocks of Spanish and Myotonic goats from a wide variety of strains in order to document how these breeds can best fit into meat production systems. Breeders interested in this effort are encouraged to contact them. Breeders with Spanish bucks who are changing to Boers are especially encouraged to consider donations of Spanish bucks to the program so that their genetic worth is not totally lost. ■