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Selection, Management and Judging of Meat- Type Spanish Goats

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The term "Spanish goat" is unique to the U.S. and more especially to Texas. In this context, the term is used as a breed, but Spanish goats do not qualify as a breed in any technical sense. Other terms sometimes used to refer to the Spanish goat are "brush goat," "meat goat" or simply "common goat" to distinguish them from Angora and dairy goats.

The lack of well-defined, distinct, and perhaps superior meat goat breeds in the U.S. has adversely affected meat goat production. However, genetic improvement through selection and breeding programs can produce a more desirable animal with a quality carcass that would improve the demand for the product. This bulletin discusses several points for the selection, care and judging of meat goats. It is designed for use by producers and youth interested in producing, raising and showing meat-type Spanish goats.

Selecting Spanish Goats

Selecting Spanish goats for growth rate and meat qualities has not been widespread in the industry, primarily because meat goats are not usually the major livestock enterprise on the ranch. In selecting goats for meat goat production, the following traits should be considered: (1) adaptability to environmental and production conditions; (2) reproductive rate; (3) growth rate; and (4) carcass value.

The best way to increase adaptability is to select for the desired traits under actual production conditions. Breeding stock should be selected from animals maintained under the same natural conditions in which their progeny will be raised.

Reproductive efficiency is a major factor contributing to efficient meat production, but it is difficult to select for under range conditions. In order to increase reproductive efficiency, improved management of the breeding herd including selection for twinning rate and culling non-producing nannies is necessary and will yield good results.

Selecting for growth rate should be among the easiest selection goals to achieve due to the fairly high

heritability of growth rate. Once selection for growth rate is emphasized, one of the Spanish goats' major weaknesses, slow growth rate, can be corrected. Selection based on higher post-weaning gains or yearling weights is recommended to increase growth rate.

Selecting for carcass merit offers the best opportunity for improvement. Compared to lamb, pork or Angora goats, the Spanish goat carcass has a lower dressing percentage, a lighter carcass weight and lower percentages of kidney and pelvic fat, with little or no subcutaneous fat. Spanish goat meat does have a high lean content (Tables 1 and 2).

Table 1. Percent Wholesale Cut Composition of Goat and Lamb Carcasses

	Goat	Lamb
Hindsaddle		
Leg	32	32
Loin	8	12
Shank	7	4
K&P Fat	1	3
Total	48	51
Foresaddle		
Rack	8	14
Shoulder	35	24
Breast	9	8
Total	52	46

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Table 2. Comparison of Carcass Yields From Spanish Goats and Rambouillet Sheep

	Young Males		Aged Females	
	Goats	Sheep	Goats	Sheep
Live Weight, lb.	70.8	90.2	72.5	95.0
Carcass Weight, lb.	36.6	45.9	35.9	47.5
Dressing Percent, %	51.7	50.8	49.5	49.9
Pelt, %	11.8	12.2	9.8	9.7
Lean, %	64.4	57.7	57.7	52.7
Fat, %	13.5	21.4	19.5	29.2
Bone, %	22.1	21.3	22.8	18.1

Managing Spanish Goats

Feeding The Does

Goats do well on good pasture or browse. However, the mature goat will require 3 to 4 pounds of hay daily unless she is getting plenty of good pasture or browse. In addition, a grain-based supplement may be required during periods of high production such as flushing, late gestation and early lactation. The amount of supplement needed will vary with pasture and/or hay quality and the quantity fed. The crude protein (CP) content of the supplement will also vary with the forage quality.

Two simple grain supplements are as follows:

1. 50 lbs. corn or milo
20 lbs. oats or barley
20 lbs. wheat bran
10 lbs. cottonseed meal
2. 40 lbs. corn or milo
20 lbs. oats or barley
25 lbs. wheat bran
15 lbs. cottonseed meal

The first ration provides approximately 14 percent CP and the second approximately 16 percent CP. Goats dislike finely ground, dusty feeds so grains should be either coarsely ground, rolled, crimped or pelleted.

It is recommended that a trace mineralized salt and a balanced, 12 percent calcium: 12 percent

phosphorus supplement be added to any ration. Also, salt should always be available to the goat. Molasses may be added to the supplement (5 to 7 percent usually is recommended) to reduce dust and enhance palatability.

Breeding The Does

Most goats are seasonal breeders, and their season is initiated by decreasing daylight hours. The breeding season will vary and some will breed during any season of the year, but reproductive activity is highest from August through January. Does come in heat, called estrus, at intervals of 20 to 21 days and usually remain in heat from 1 to 2 days. Signs of estrus are easily detected and include uneasiness, an unusual amount of tail wagging, frequent urination, an abnormal amount of bleating, reddish and swollen vulva, and mucus under the tail. Riding other animals or standing for riding is not seen as often in goats near estrus as in cows. Conception is highest from the middle to the latter part of the heat period 24 to 36 hours after onset of estrus. If signs of heat are first noticed in the morning, goats should be bred late in the afternoon; if heat is detected in the afternoon, goats should be bred late the following morning.

Young does tend to reach puberty or sexual maturity at 5 to 9 months of age provided they have been well grown out and are in good

condition. Bucks should be kept separate from does except during the breeding season in order to breed during the desired time. Bucks should also be prepared for the breeding season by feeding them 1-2 pounds of grain plus 3-4 pounds of hay or forage daily.

If does are thin at breeding time, kidding percent can be increased by "flushing." Flushing is the practice of increasing nutrition during breeding which puts the animal in a weight-gaining condition and causes an increase in ovulation rate. Flushing can be done by turning goats on a fresh, lush pasture if it is available or by feeding grain. Corn is most often fed for flushing at the rate of 1/2 to 3/4 of a pound per head per day. Feeding should be initiated 2 to 3 weeks before the bucks are turned in with the does and continued for 2 to 3 weeks after the introduction of the bucks, for a total period of 4 to 6 weeks. Flushing will generally result in a 10 to 20 percent increase in kid crop. Does that are in good condition will generally not benefit from flushing.

The gestation period in goats is 148 to 150 days. The expected kidding date may be calculated by counting forward 5 months from the date of breeding. Maintaining good records of all heat periods and breeding dates is important to maximize reproductive efficiency.

Raising The Kids

It is important that the kid goat receive colostrum, the first milk, as soon as possible after birth for a period of at least 2 days. Colostrum provides antibodies for resistance to disease and is high in nutrients, including energy, vitamin A, the B-vitamins, protein and minerals. Overfeeding colostrum or other milk can cause scours. Extra colostrum may be saved, refrigerated and even frozen and fed at body temperature at some later

date. Orphan kids may be left on goat's milk or changed to cow's milk or a commercial milk replacer after the first few days on colostrum.

Kids must have a warm, dry place to sleep when they are taken from their mother. A deep wooden box with a slanted floor that is raised off the ground to provide drainage makes a good bed for new kids. The box should be well bedded and draft-free.

For the first 3 to 4 days after birth a kid should receive 2 to 3 pints of milk in 3 to 4 feedings per day. Kids can be fed twice per day thereafter. A creep feed containing approximately 20 percent CP and a high quality hay should be made available to kids at about 2 weeks of age. Clean, fresh water and salt should be available at all times, especially when the kids are weaned from milk at 8 to 12 weeks of age.

As soon as the kid begins eating a little grain and hay, the rumen will begin to develop which allows the kid to utilize roughage materials. The kid will begin chewing its cud at this time. When the kid is eating hay and grain well, usually at about 4 to 6 weeks of age, milk feeding can be discontinued. The rumen will be fully developed at approximately 8 weeks of age.

The kid should have plenty of exercise and as much sunshine as possible. Older kids should have something on which to climb and jump. Boxes or barrels can be provided for this purpose. Buck kids should be separated from the does at about 2-4 months of age to avoid premature breeding.

Dehorning. Horn development is a recessive trait of goats and is found in most breeds. Horns should be removed for safety purposes while the animals are very young, between 3-14 days. There are several ways to dehorn goats

such as dehorning pastes or similar caustic compounds, burning irons, or physically removing the horns. Veterinarians can perform this procedure.

Castration. Bucks develop musk glands when they reach puberty. These emit a telltale odor which often taints the taste and odor of the meat. Once an animal reaches puberty, they are more active and are harder to feed to an acceptable level of eating quality. Male goats not to be used for breeding must be castrated as soon as possible (2-4 weeks). Like dehorning, this can be done in several ways. Consult your veterinarian for best results.

Internal and External Parasites. The roundworm, stomach worm and coccidiosis are the most significant internal parasites affecting goats. Animals become infested by grazing on pastures contaminated with droppings from other infested goats. Several pastures should be used in rotation because parasite carry-over can be markedly reduced by resting pastures for 30-60 days between grazing. Newly purchased animals should be treated for internal parasites. Isolating animals because of internal parasites is of no value. Coccidiosis can cause severe problems in goats, especially those managed in confined or dry-lot conditions. Goats managed under these conditions should receive a coccidostat regularly in their feed. Treatment of coccidiosis with anthelmintics is not effective. If coccidiosis is suspected, consult your veterinarian.

Symptoms of parasite infestation are general unthriftiness, a run-down condition, rough hair coat, loss of weight, poor appetite, diarrhea and anemia. If animals are suspected of being infested with internal parasites, a fecal sample should be collected and taken to the local veterinarian. Examina-

tion will determine the type and degree of infestation and recommended treatment.

External parasites, including lice, ticks, mites, horn flies, stable flies, horse flies, deer flies and mosquitoes may present serious problems. These pests are most prevalent during the spring, summer and fall months, but may be a problem throughout the year.

Common Diseases

A number of diseases occur in goats. When a problem occurs in your herd, consult your veterinarian. Information is readily available concerning these diseases, their diagnosis and treatment. The most significant diseases are soremouth, tetanus, overeating disease, foot rot and bloat.

Soremouth. Soremouth is a contagious disease that causes the formation of scabs on the lips and around the mouth of goats. This virus can affect humans so care should be exercised when working with goats with soremouth. A live virus soremouth vaccine, available as a preventative measure, is applied to a small scratched area in the fore or rear flank or in the ear. Few medicines help in the actual treatment of soremouth. Iodine can be rubbed into lesions after the scabs are removed to help dry up the area and reduce the infection. If you don't have soremouth, don't vaccinate for it or you will introduce it in your herd.

Tetanus (Lock Jaw). Tetanus is a disease usually resulting from a wound infection. The disease is caused by a powerful toxin produced by a bacterium that grows in the absence of oxygen. The first sign of tetanus is a stiffness about the goat's head; the animal often chews slowly and weakly and swallows awkwardly. Also the goat's third or inner eyelids protrude over the forward surface of the eyeballs. The animal shows

violent spasm reactions with the slightest movement or noise, and usually remains standing until close to death. All ages are susceptible, but kids weakened due to castration or dehorning are more susceptible to tetanus. Tetanus is hard to treat and death occurs in over 50 percent of the cases. The animal should be placed under the care of a veterinarian immediately and kept as quiet as possible. Tetanus antitoxin may be helpful if administered early. Prevention is the best policy by reducing the incidence of wounds, applying sanitary and proper wound treatment, and vaccinating with tetanus toxoid immediately after dehorning or castration surgery.

Overeating Disease (Enterotoxemia). Overeating disease generally results in death and seldom exhibits symptoms. This disease is caused by a clostridial organism which is normally present in the intestine of most goats. Goats which have their feeding schedule abruptly changed or consume large amounts of grain are the most susceptible to overeating disease. These changes cause the clostridial organism to grow rapidly and produce a powerful toxin which causes death within a few hours. There are two types of enterotoxemia, C and D. All goats should be vaccinated with the combination C and D vaccine and multiple vaccinations are recommended. Two or 3 vaccinations are preferred, with the booster doses coming at 3 to 4 week intervals following the first vaccination. A good vaccination program should eliminate losses from overeating.

Foot Rot. Foot rot is not often seen in goats, but it may occur if animals spend considerable time in wet, unsanitary yards or barns. The first symptom will be lameness, followed by a swelling of the foot which becomes hot to the touch. The rotten area should be

carefully trimmed away and the foot treated with 10 - 30 percent copper sulfate solution or other medication prescribed by a veterinarian.

Bloat. Bloat is the accumulation of an excessive amount of gas in the rumen. This may result from overeating tender, young, high-moisture legumes or other green forages still wet with dew. Bloat animals may lie down and get up at frequent intervals, kick at the abdomen, make loud grunting noises or otherwise show distress. Prevention consists of making sure the animals have a good fill of

Judging Spanish Goats

Several criteria should be considered when selecting and judging meat goats. These include conformation (structural correctness), general appearance (size and scale, capacity, and depth and width of body), muscling (growth and weight per day of age) and condition or finish (fatness). Spanish goats must be able to survive under unfavorable conditions, convert poor quality roughages to lean meat and maintain a meaty, conditioned body. The parts of a wether meat goat are shown in Figure 1.

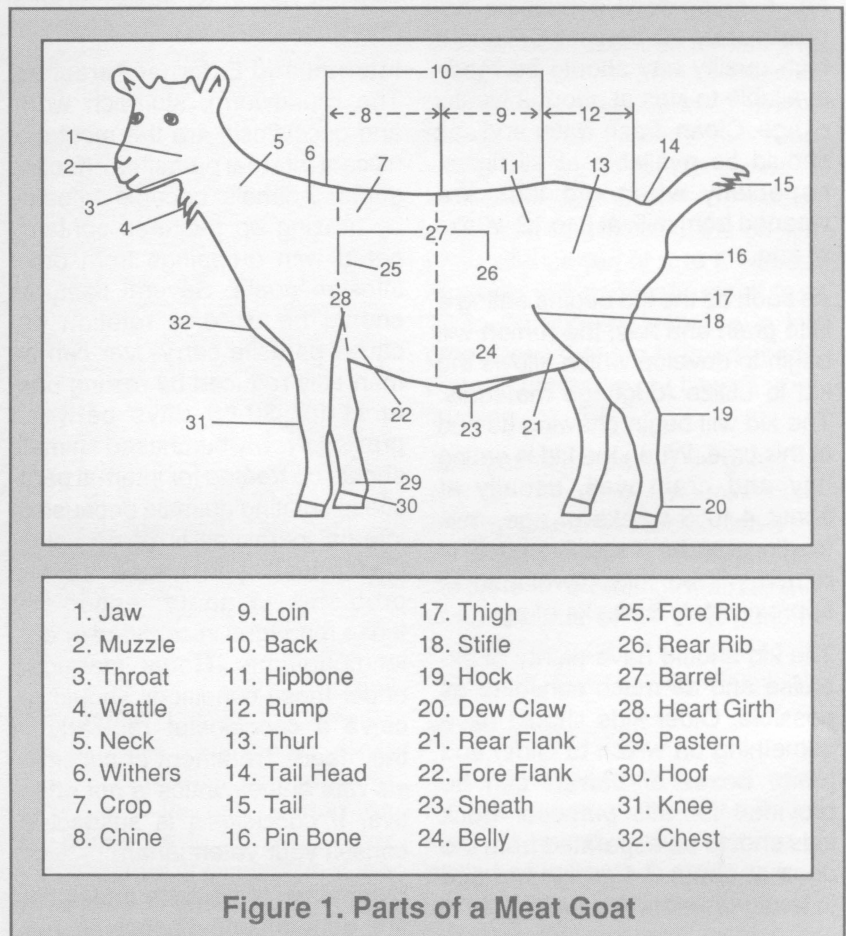


Figure 1. Parts of a Meat Goat

dry hay before turning them onto moist pasture. Animals may die very suddenly with bloat; therefore, don't wait too long before calling the veterinarian for assistance.

Conformation

Meat goats should be evaluated on "type" and "market desirability." These terms refer to frame size, skeletal correctness and how these blend in the market animal.

"Market desirability" relates how much finish the goat has in relation to its weight, size and age and is sometimes referred to in terms of USDA quality and yield grades used for lambs.

A good market goat should be rectangular in appearance from the side with straight, level top and bottom lines. Length of rump, length of body and length of leg are important to market desirability. The rump should be level and the overall body should be trim. The legs should be straight and placed square under the body, not post-legged or cow-hocked. The fore

and hind legs should show evidence of muscling (Figure 2).

From the front, a market goat should show width between the forelegs, muscling in the forearm and shoulders, trimness in the brisket or breast area and soundness and correctness in the front feet and legs. The head should be in proportion to the neck and body.

From the rear, the hindquarter should be muscular and long and the back, loin and rump should be uniform in width. The feet and legs should be straight and spaced square and wide under the goat.

General Appearance

Stature. The term stature refers to the overall skeletal size and length of the goat. Goats must have an adequate length of cannon bone from knee to pastern and should be above average in overall length of body and general size. Cannon bone length is a good indication of skeletal size. The goat's height measured at the withers should be slightly more than at the hips, and bones must be of good size.

Head. The head should combine the beauty of eyes, nose, ears, and overall form with strength and refinement. It should have a balance of length, width and substance that insures an ability to consume large amounts of forage with ease.

Front End. The front end is a combination of chest and shoulder features. The goat should have a wide chest floor and prominent brisket with a smooth blending of shoulder blades and sharp withers (Figure 2). This insures room for the heart and lungs to do their work with ease and also is evidence of proper muscle and ligament strength (Figure 3).

Front Legs. The goat's front legs should be straight, perpendicular to the ground, sound in the knees and full at the point of the elbow. The legs should move with the front feet pointing straight ahead (Figure 3).

Back. A back that is straight, strong, wide, long and level is desired in goats. This denotes a strong body build with good muscling and is indicative of strength to carry large quantities of feed (Figure 4).

Rump. The goat's rump should be long, wide and level from thurl to thurl, cleanly fleshed and have a slight slope from hips to pins. The shape of the rump is important as it affects leg set, kidding ease and

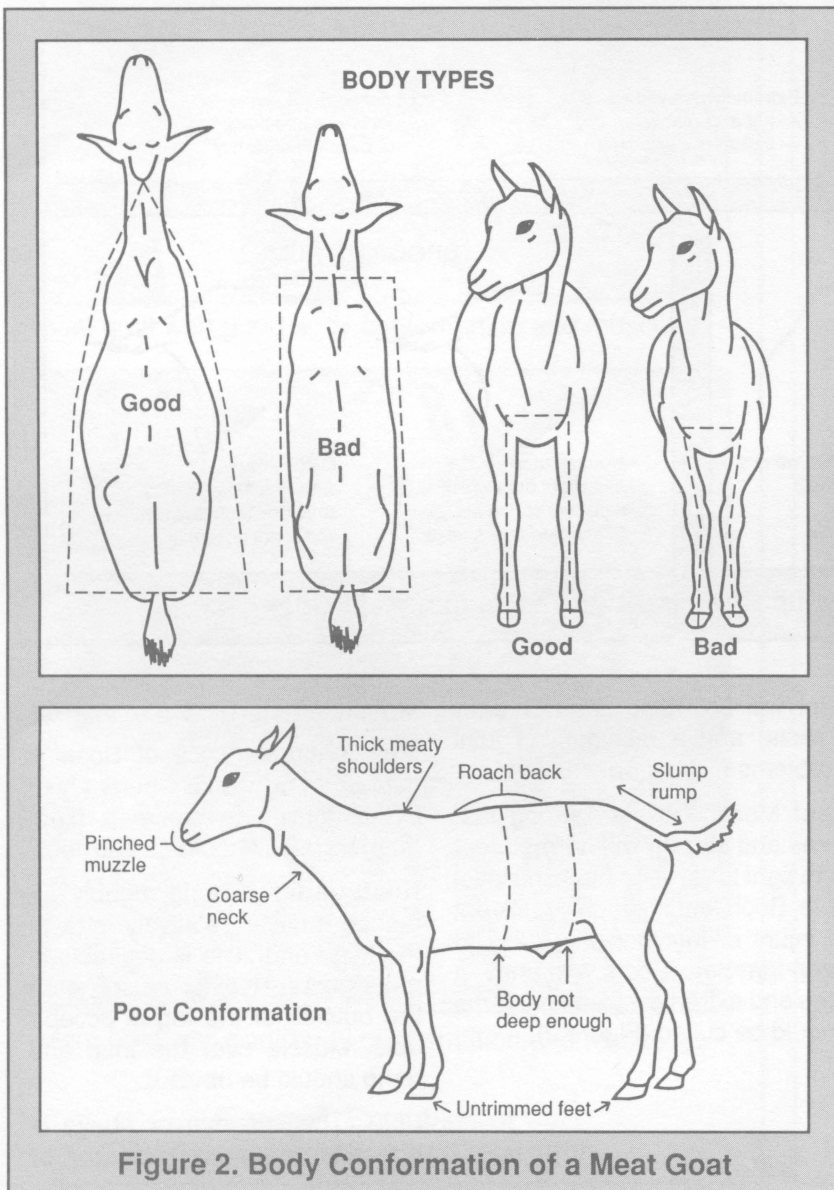


Figure 2. Body Conformation of a Meat Goat

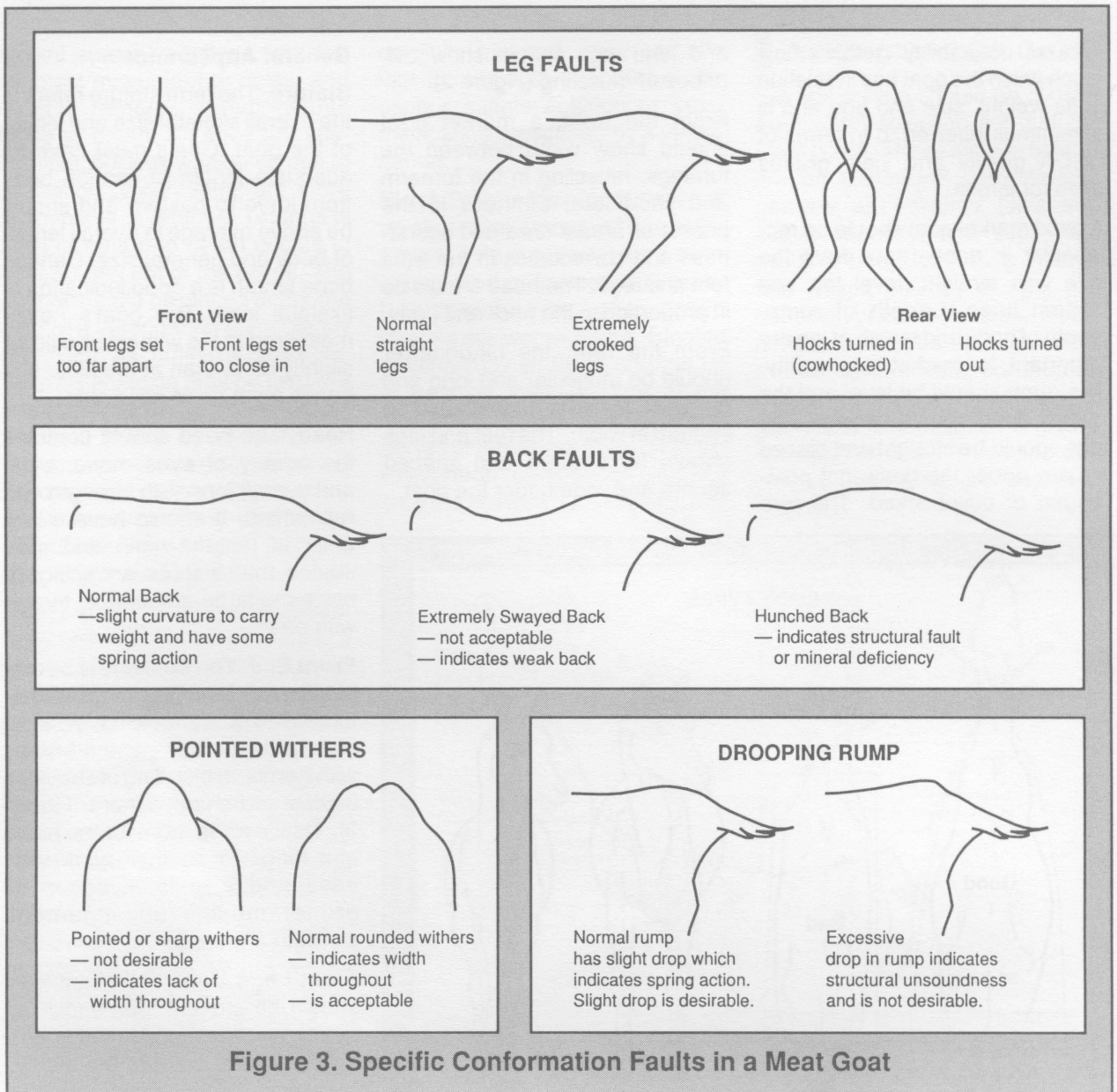


Figure 3. Specific Conformation Faults in a Meat Goat

potential udder attachment in does (Figure 3).

Hind Legs. The goat's rear legs should be wide apart and straight when viewed from the rear, with clean hocks and a good combination of bone refinement and strength. Observed from the side, a plumb line originating at the pin bone would fall parallel to the leg bone from hock to pastern and touch the ground behind the heel of the foot. The resulting angles produced at the hock and stifle

joint will be most ideal for easy walking and a minimum of joint problems (Figure 5).

Feet. Meat goats need strong pasterns and strong, well-formed feet with tight toes, deep heel and level sole. Such feet are highly resistant to injury or infection and easy to keep trimmed. Goats with uneven toes and extremely weak pasterns should be culled (Figure 2).

Muscle

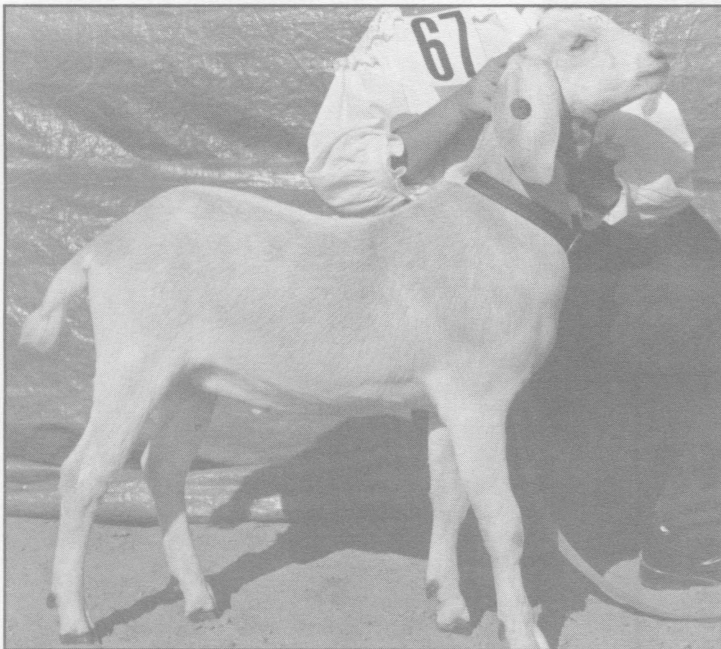
Meat characteristics of Spanish goats can be visually determined by examining the animals hindquarters, loin, shoulders and neck.

Hindquarter. A long, deeply attached muscle, relatively thick at the thigh and stifle is desirable in meat goats. Heavier muscling on the outside of the leg is acceptable. Muscle over the thurl and rump should be obvious.

Loin. The loin eye or ribeye is typically the best indicator of

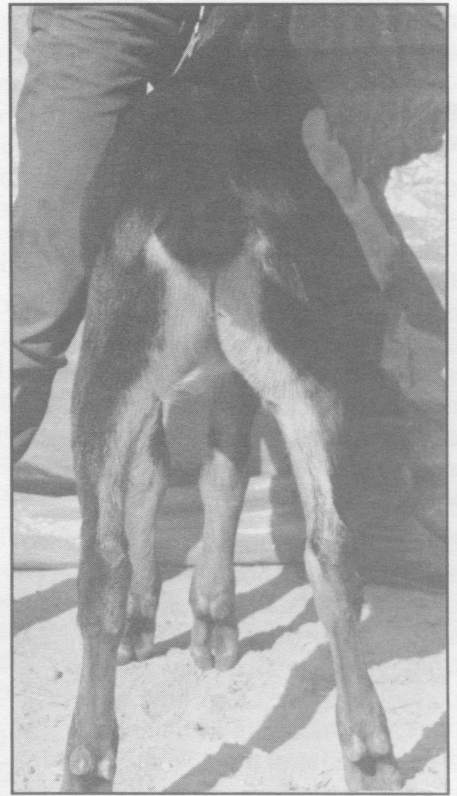


Meat goat with good body conformation and muscling.

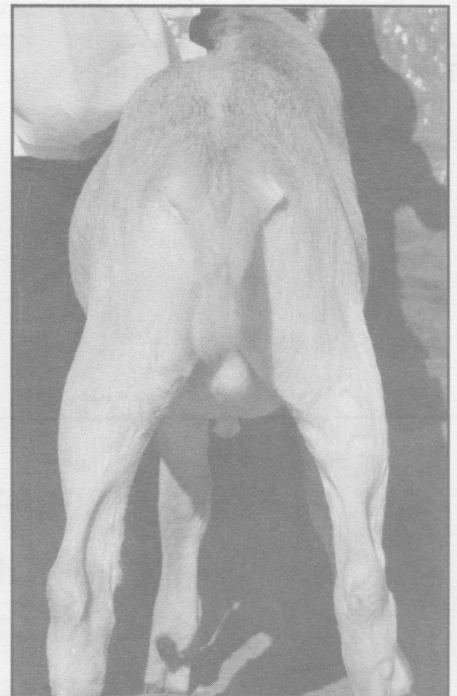


Meat goat with poor body conformation and muscling.

Figure 4. Examples of body conformation and muscling.



Meat goat with good leg conformation and muscling.



Meat goat with poor leg conformation and muscling.

Figure 5. Examples of leg conformation and muscling.

meatiness in Spanish goats. It should be wide with a symmetrically oval shape on each side of the backbone. This muscle should carry forward over the ribs or rack.

Shoulders. The goat's muscling should increase from the withers to the point of the shoulder with the thickest muscle occurring immediately above the chest floor. The circumference of the forearm is the second most important indicator of meatiness, so the forearm muscle should exhibit a prominent bulge and should tie in deep into the knee.

Neck. The juncture of the neck and shoulder should be free of excess tissue. It should gently slope to indicate muscling. Smoothness and quality are important in this area. A long clean neck with muscling in balance to the remainder of the animal is desired.

Condition

The term condition refers to the amount of finish or fat the animal is carrying. Goats deposit fat inter-

nally before they do externally. The ideal condition is a thin, but uniform, covering over the loin, rib and shoulder. The external fat thickness over the loin at the 13th rib should be between .08 to .12 inches or an average .1 inch.

Miscellaneous Conditions

Occasionally, some conditions are found in Spanish goats that need to be noted to properly describe an animal. These include winged shoulder, sickle legs, over-refined bone and weak or broken pasterns.

Winged Shoulder. This is looseness in the attachment of the goat's shoulder blades to the chest wall, especially at the point of the elbow. A winged shoulder makes movement more difficult.

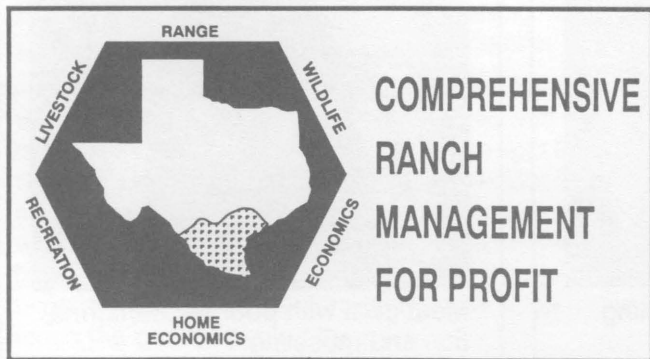
Sickle Leg. In this case the hind leg has too much "set," or angle, and puts more strain on the leg structure. It is the opposite of a "posty" or "post legged" condition where there is not enough "set" and the leg is too straight.

Over-Refined Bone. This is an indication of frailty; the goat's bones are too weak to carry the body weight. Usually, most goats have enough bone and this is not a problem.

Weak or broken pasterns. This condition occurs in goats when the cannon bone of the lower leg and the digits or phalanges of the foot do not meet in a 45° angle. The muscles and tendons of this joint are weakened and the angle is increased, reducing mobility of the animal. If the angle is less than 45°, the pastern becomes too straight and a post-legged condition occurs.

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