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# AGRICULTURAL ALTERNATIVES

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## Meat Goat Production

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Goat is the most highly consumed meat in the world; and more goat's milk is consumed worldwide than cow's milk. In the United States, meat goat production is increasing because of goats' economic value as efficient converters of low-quality forages into quality meat, milk, and hide products for specialty markets.

There are several reasons for goats' growing popularity in this country. A big factor is the larger number of ethnic groups who have settled in this country and who have a preference for goat meat, milk, and cheese products. Another factor is the determination of many Americans to be self-sufficient. Where resources are limited, a small herd of goats may be the only livestock that a small, part-time farmer can raise to achieve self-sufficiency.

Meat goat production, like any other animal production enterprise, requires that good husbandry practices be followed in the areas of sanitation, health, feed, water, and shelter. These are all integral parts of managing a successful goat enterprise.

## General Characteristics and Information

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Goats have unique behaviors. They are intensely curious and will investigate anything that sparks their interest. Coupled with curiosity, their jumping and climbing ability can present some real management challenges. Goats can climb through a new "goat-tight" fence, pull the wash off



the line, nip the rosebuds, or bounce onto a parked vehicle.

Female goats are called does or sometimes doelings if they are less than a year old. Males are bucks or bucklings. Young goats are called kids.

Bucks usually do not make good family pets because of their aggressive behavior and strong urineline odors. Buck odors are most offensive during the breeding season, usually from September to early January. Does do not secrete strong odors from their scent glands.

Goats adapt well to hot environments because of their small size and higher ratio of body surface area to body weight. Also, their ability to conserve body water, their limited subcutaneous fat cover, and their hairy coats are good survival traits under desertlike conditions.

The foraging preferences of goats encompass a wider spectrum of plants than those of other small ruminants. Goats are inclined to forage or browse from the top of a plant downward, making them an effective biological herbicide for controlling many undesirable plants and shrubs. Goats are called "selective browsers" because of

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their desire to choose from a large variety of vegetative types. This grazing behavior enables them to survive harsher semiarid conditions than either sheep or cattle.

## Goat Breeds

Over sixty recognized or “official” breeds of goats exist in the world. These multipurpose breeds produce milk, meat, fiber, and skins. In the United States there are three primary types: the Angora or Mohair breed of approximately two million head, and the meat and dairy breeds estimated at one million head each. In the Southwest, meat goats are referred to as Spanish goats (though they are not necessarily of Mexican or Spanish ancestry). All three breed types can produce meat, but only the Spanish goat is kept exclusively for meat.

In many small-herd dairy goat enterprises, not all does must be milked, so meat is often the main product. Along with meat, the sale of breeding stock from small flocks of dairy goats may be an important income source. This versatility allows the producer to plan and operate a more stable economic production unit.

## Meat Goat Breeds

In some parts of the world, all breeds may be raised for fiber, meat, and milk and cheese production. Kids of all breeds can be used for meat. However, meat goat carcasses are generally leaner and more muscular than dairy goat carcasses, and have different proportions.

Spanish meat goats are larger than Angora, have less hair, and come in a variety of colors. Spanish goats are very hardy and take a minimum of management and labor. Their unique feature is their reproductive physiology. Unlike dairy goats, which breed only in the fall to winter months, Spanish goats are polyestrous (they can breed throughout the year). This allows for year-round kidding and yearling meat production.

Another meat breed, the Boer, was recently introduced from South Africa. Boer goats also are polyestrous. Under good management, many does are known to rebreed while still nursing. Boer goats are highly versatile in their ability to adapt to various climates and production systems.

Good reproductive performance can be an indicator of a breed’s compatibility with the environment. Meat goats have a reputation for high fertility, averaging 98 percent of does bred under good management and nutrition. Given proper care, the does are capable of maintaining a birth rate of 1.93 to 2.25 kids per doe.

Kids of meat goat does are early breeders, reaching puberty at six months of age. They are polyestrous, with peak sexual activity occurring during the autumn months. The apparent decline in male libido during late spring and summer can lower reproductive rates during these times.

In general, growth rates of meat goats are lower than those of sheep. Under favorable nutritional conditions, meat goats may gain at a rate of more than 200 grams (0.45

pounds) per day from birth to 100 days of age. The higher collagen content and lower solubility of goat meat, compared with lower levels of the same features in lamb, does reduce goat meat’s overall palatability and tenderness. Breeding and slaughtering techniques appear to be key in improving the tenderness factor of goat meat.

## Fiber Breed

Angora goats originated in Ankara, Turkey, a mountainous area with a dry climate and extreme temperatures. Both sexes are horned and open faced, with long locks of hair over the rest of the body. Mature bucks weigh from 125 to 175 pounds, mature does 80 to 90 pounds.

Angora goat hair is called mohair. The fiber quality of mohair from goats raised in high rainbelt areas (greater than 30 inches annually) usually does not match that of mohair produced in more arid regions.

## Breeding and Selection

Important considerations in a selective breeding program are multiple births, twice-a-year kidding, rapid growth, good conformation (sound feet, legs, and mouth), and attention to color standards for certain breeds. Since income is derived primarily from the sale of kids, multiple births should be a high priority in the selective breeding program. Give preference to early-born kids for replacements, and select doe kids from does that kid twice each year. Wean doe kids when they weigh 40 to 50 pounds and are four to five months old.

The weaning period is a good time to accustom future replacement stock to a supplement feed should the need arise to provide a limited amount of a concentrate feed. These replacement doe kids can return to the breeding flock when they reach desirable size (two-thirds the mature weight) or are one year old.

As mentioned, meat goats are polyestrous, and many does can be rebred while nursing a kid. Some producers choose to let bucks run with the does throughout the year. If this is done, available feed resources, management, labor, and marketing options need to be carefully evaluated. Also, a continuous breeding season is discouraged because it subjects underdeveloped replacement doe kids to the buck. These factors can have a negative influence on overall profitability. A well-planned breeding program is highly recommended for any producer interested in expanding to a sizable commercial operation of greater than fifty head of breeding-age does.

The gestation period for does can vary from 147 to 150 days, but five months is the average time. Provide three to four bucks per one hundred head of does. The best system for mating appears to be exposing the does during February and March, removing them, and putting them back with the bucks in September and October. This allows for good management of the doe kids.

# Pasture Management

Goats, in general, should be figured at the rate of five to six does to one animal unit equivalent. If stocked according to area recommendations, they can be grazed along with other livestock.

In marginal grazing lands, goats have been shown to complement both sheep and cattle. Goats consume a higher percentage of brush and other less desirable plants; thus, they help to maximize the use of marginal pastureland as well as improve forage production over time.

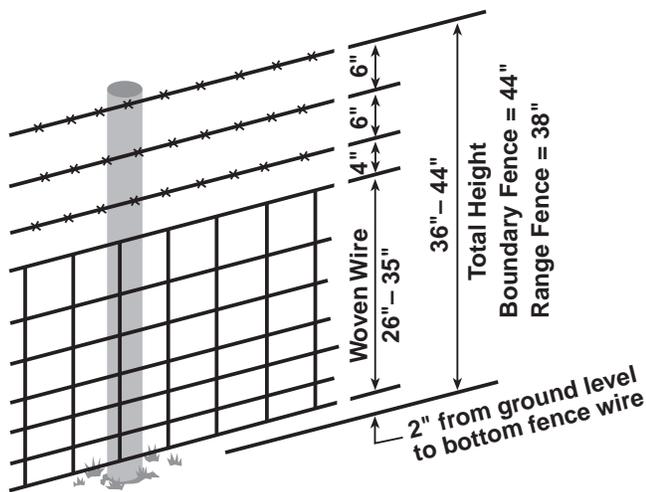
A carefully planned rotational grazing program can enhance pasture production and help control internal parasites. Deferred pastures and small grain pastures are good for kidding since they provide excellent feed for milk production. Supplemental grazing in stubble fields, corn fodder, winter rye or wheat pastures, and brassicas can be used either to extend the grazing season or to boost required nutrient levels for some critical phase of production.

# Fencing and Facilities

Goats require tight fencing. A wooden picket (snow) fence can provide a temporary enclosure, but goats will eat through such a fence if it is used as a confinement structure. The more traditional woven wire fencing with two to three barbed wires above makes a good, tight fence (Figure 1). Likewise, the more recent eight-strand high-tensile fence with electrified third, fifth, and top wires has proven an effective goat-tight fence (Figure 2).

Like other livestock, goats need some type of restraint facility and shelter when on pasture. Regular sheep-working pens are adequate for goats. Cattle pens can be easily

Figure 1. Woven wire plus barbed.



adapted by making the lower section goat tight. An open shed arrangement of 10 to 12 square feet per doe can provide shelter during extremely hot or cold weather.

# Health Considerations

A preventative health program should be carefully worked out with your veterinarian. Internal parasite control is probably the most important health issue for goats. Generally, what works for sheep within a certain region of the country will work for goats.

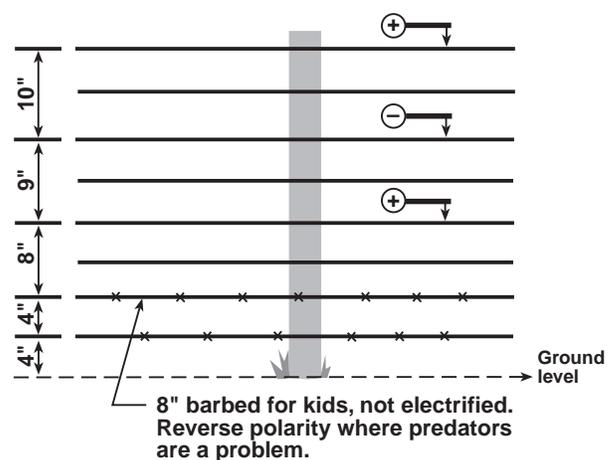
Problem diseases associated with reproduction or kidding can be managed and treated, in most instances, the same as for sheep. Consult a veterinarian when in doubt.

# Marketing Meat and Milk Products

Kids are usually marketed at four to five months of age or before weaning. Options include direct marketing off the farm, supplying goat meat for specialty markets such as holiday or ethnic group uses, and producing kids for commercial marketing firms. Success is often a reflection of how well a producer tends to all aspects of breeding, health, management, and marketing. All these factors have their respective roles in producing and marketing a quality product.

Along with direct marketing to ethnic groups, there are two other potential niche markets for goat meat: (1) target markets serving health-conscious consumers wanting low-fat diets, and (2) the restaurant trade serving ethnic or gourmet foods featuring goat meat. These markets are largely untapped and can provide real opportunities, especially for producers within the markets' immediate radius.

Figure 2. High-tensile electric fence wire.



## Goat Meat Characteristics

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Like goat's milk and cheese, the meat is unique in flavor and palatability. It is leaner than many other red meats and usually less tender. However, its leanness has a place in today's demand for meats with less fat.

Goat meat is termed either *cabrito* or *chevon*, depending on the goat's age at slaughter. Cabrito (Spanish for "little goat") is from kids slaughtered within the first week of birth. Its main use is for barbecue meat, and it is highly sought after by certain ethnic groups. Chevon, on the other hand, is from older kids slaughtered close to or after weaning. Of these two types, cabrito is the more tender. Older (mature) goat meat is used primarily in processed foods such as goat sausage, frankfurters, bologna, and chili con carne.

## Budgeting for Meat Goat Production

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Attached are three sample budgets and a table showing net returns at various kidding rates. The first budget (Table 1) includes one hundred does and three bucks with a normal weaning period. The second budget (Table 2) uses a production process of early weaning. The kids are weaned at 28 days of age and fed five pounds of concentrate per pound of gain. Table 3 is a sample budget for estimating costs and returns per meat-type doe for one year. Table 4 estimates the returns to land, labor, and management at various kidding rates.

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## For More Information

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### Associations and Web Sites

American Boer Goat Association  
232 W. Beauregard, Suite 104  
San Angelo, TX 76903  
Phone: (915) 486-2242  
Web site: [www.abga.org](http://www.abga.org)

American Meat Goat Association  
P.O. Box 676  
Sonora, TX 76950  
Phone: (915) 387-6100  
Web site: [www.beageek.net/ranchmag/AMGA.html](http://www.beageek.net/ranchmag/AMGA.html)

Alberta Goat Breeders Association  
J. Riley, Secretary-Manager  
Box 229  
Hay Lakes, Alberta  
Canada T0B 1W0  
Phone and fax: (780) 878-3814  
Web site: [www.freenet.edmonton.ab.ca/agba/](http://www.freenet.edmonton.ab.ca/agba/)

Additional information, including links to many other Web sites, can be found at the Virginia State University meat goat Web site: <http://www.vsu.edu/goat/goat.html>

### Publications

*The GoatKeeper's Veterinary Book*, Third ed., Farming Press, Ipswich, U.K. ISBN 0-309-03185-0.

*Meat Goats*, a booklet about the basics of goat production, is available from the Alberta Goat Breeders Association for \$15.00 (U.S.).

*Meat Goat Monthly News*, news magazine of the American Meat Goat Association, is available from: Ranch Publishing, P.O. Box 2678, San Angelo, TX 76902. Phone: (915) 655-4434

Table 1. Spring kidding program for one hundred meat-type does and three bucks.

**ASSUMPTIONS**

1. 170 percent kid crop raised; 20 doe kids saved as replacements.
2. Does purchased at \$45 each; bucks at \$100 each.
3. Limited supplemental feeding of hay to does during winter; limited grain feeding during late gestation and early lactation.  
Kids fed 1.0 pound per day for 100 days postweaning.

INCOME AMOUNT/DOE	GENERAL ESTIMATE (\$)	YOUR ESTIMATE
150 kids @ 70 lbs x \$0.70/lb	73.50	_____
16 cull does @ 70 lbs x \$0.30/lb	3.36	_____
<b>Gross income/doe</b>	<b>76.86</b>	_____
<b>EXPENSES</b>		
Hay (10 tons x \$80/ton)	8.00	_____
Grain (300 bushels corn x \$2.75/bushel)	8.25	_____
Salt and minerals, 11 lbs x \$0.12/lb	1.32	_____
Veterinary medications	1.75	_____
Buildings and fences	5.00	_____
Marketing and hauling	2.50	_____
Vehicle, fuel, utilities, other miscellaneous	5.00	_____
Operating capital interest @ 200 days x 13% interest	2.12	_____
<b>Operating cost/doe</b>	<b>33.94</b>	_____
<b>Net receipts/doe</b>	<b>42.92</b>	_____

Table 2. Growing program for fifty head of early-weaned kids.

**ASSUMPTIONS**

1. Kids started on creep feed at birth and weaned at 28 days old weighing approximately 20 pounds. Postweaning diet a 16-percent protein, high-concentrate feed on good pastures.
2. Postweaning growth rate of 0.4 pound per day, with 5-pound concentrate feed required per pound of grain. Postweaning death loss estimated at 4 percent.

INCOME AMOUNT/DOE	GENERAL ESTIMATE (\$)	YOUR ESTIMATE
48 kids @ 60 lbs x \$0.70/lb	2,016.00	_____
<b>EXPENSES</b>		
Milk @ 5 gal/kid x \$1.04/gal x 50 kids*	260.00	_____
Feed @ 200 lbs/kid x 48 kids x 0.75/lb	720.00	_____
Pasture costs @ \$2.00/kid	96.00	_____
Veterinary and medication @ \$1.00/kid	48.00	_____
Facilities and equipment @ \$2.00/kid	96.00	_____
Marketing and hauling @ \$1.50/kid	72.00	_____
Miscellaneous costs @ \$1.00/kid	48.00	_____
Operating capital interest @ 100 days x 13% interest	47.35	_____
<b>Total</b>	<b>1,387.35</b>	_____
<b>Net income for 48 kids†</b>	<b>628.65</b>	_____

\*The milk price used for this budget is a farm price of \$1.04 per gallon.

†These same kids could conceivably sell as 20-lb fat kids at weaning. Based on an estimated sale price of \$0.85 per lb, the income would be \$850 for 50 kids. The estimated expenses would be \$491.60, leaving an estimated return to land, labor, and capital of \$358.40.

Table 3. Estimated costs and returns per meat doe for a year.

RETURNS	GENERAL ESTIMATE (\$)	YOUR ESTIMATE
Kid: 150% kid crop x \$22.00/head	33.00	_____
Aged goats: 10% @ \$25.00	2.50	_____
<b>Total</b>	<b>35.50</b>	_____
<b>COSTS</b>		
Feed (0.25 lb/day x 90 days) (\$200/ton)	2.25	_____
Death loss (3% @ \$35.00)	1.05	_____
Veterinary and medicine	0.60	_____
Salt and minerals	0.60	_____
Equipment, fuel, and miscellaneous	3.00	_____
Bulk cost	0.40	_____
Marketing	1.50	_____
Taxes	0.10	_____
Interest on does (\$35.00 @ 13% interest)	4.55	_____
Replacement (13% annual rate for 7 years)	4.55	_____
<b>Net income/doe</b>	<b>17.30</b>	_____

Table 4. Estimated returns to land, labor, and management at various kidding rates per doe.

	PERCENTAGE OF KIDS MARKETED					
	75	100	125	150	175	200
Value of kids	\$16.50	\$22.00	\$27.50	\$33.00	\$38.50	\$44.00
Value of aged goats	2.50	2.50	2.50	2.50	2.50	2.50
	\$19.00	\$24.50	\$30.00	\$35.50	\$41.00	\$46.00
Minus estimated costs	18.20	18.20	18.20	18.20	18.20	18.20
Returns to land, labor, and management	\$0.80	\$6.30	\$11.80	\$17.30	\$22.80	\$28.30

NOTE: All cost and income estimates are based on data taken from *The Extension Goat Handbook*, Texas Agricultural Extension Service, College Station, Texas.

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