General Overview
(Do you want to be a goat producer?)

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Unit Objective

After completion of this module of instruction the producer should be able to state reasons for making the decision to raise meat goats. The producer should be able to provide examples of different meat goat production systems. The producer should be able to name the common breeds used in a meat goat production program. The producer should be able to score a minimum of 85% percent on the module test.

Specific Objectives

After completion of this instructional module the producer should be able to:

1. Match common goat terms with their definitions.
2. Name the three categories of goat production within the United States.
3. Identify the optimum pasture for a meat goat production system.
4. State some problems that must be dealt with before beginning a meat goat operation.
5. Discuss the different production systems that should be considered prior to starting a meat goat production program.
6. Identify the different markets that are available for a meat goat production program.
7. Identify the different meat goat breeds which are available for a producer to select for a meat goat production program.
8. Evaluate each breed and breed characteristic for possible selection for a production program.
9. State some factors that a producer should consider prior to selecting a breed for the farm operation.
10. Explain some common diseases that affect a meat goat production operation.
11. Match some disease symptoms/observed characteristics to possible diseases that a goat might be carrying.

Module Contents

Introduction

For thousands of years, man has raised goats for a multitude of uses. Goats, as a species, are recognized as one of the first farm animals to be domesticated and used for human consumption. Versatile and hardy, goats can thrive in many different environments and provide food, fiber, and hides for their keepers. In parts of the world, goats are still kept by nomads who use the goats to convert sparse vegetation into milk (which can then be made into cheese or yogurt) and meat. Goat skins make a fine leather (think of kid gloves), and the luxury fibers produced by cashmere and angora goats are made into sumptuous clothes. In fact, it is ironic that goats, animals with an "image problem" in the United States, are the source of many prestigious and expensive products, including goat cheese, cashmere, mohair, and kid leather. And goat meat, while enjoyed by millions in poor countries, is more expensive than many other meats in the U.S.

For this course, we will focus on goats that are raised primarily for meat. Goat meat is a traditional food in many cultures, including Hispanic, Middle Eastern, African, Jewish, and Caribbean peoples. In recent years, the United States has seen an increase in immigration, and many of these new residents have not only a taste for, but a preference for, goat meat. This is the reason that demand for goat meat continues to grow, and strong prices mean a favorable economic outlook for producing meat goats. According to the USDA, goat meat production increased dramatically between 1970 and 2001. In 1970, 1.29 metric tons of goat meat was imported into the United States as compared to 9,500 metric tons in 2004.

Besides producing a highly-sought-after meat, meat goats serve another important function. They can put land to better use by grazing and browsing plants that would otherwise go to waste. In doing so, goats make meat out of previously unused plants and also prevent those plants from taking over the area. For example, if left alone, multiflora rose can soon dominate a field, choking out grasses, legumes, and other forage plants. Goats grazing that area will eventually convert the field back to grasses and clovers, because they will graze the thorny roses and allow the grasses to compete. All over the country, people are using sheep and goats to control invasive, noxious weeds in a cost-effective and environmentally-friendly manner with ample opportunity and need for more. Therefore, producers of meat goats should consider the grazing abilities of their goats as another economic benefit.

As you start studying this instructional module you will come across some terms that need definition. Learning such terminology will be helpful to you. Below you will find some terms that are used in this instructional module:

1. Buck - A male goat of any age, also called a billy
2. Doe - A female goat of any age, also called a nanny
3. Kid - A goat less than one year old. Males between six months and one year may be called "bucklings" while females are "doelings"
4. Fiber - Fleece taken from goats

5. Mohair - Fiber produced by the Angora goat
6. Cashmere - Fiber taken from almost any goat with exception of the Angora
7. Grazing - A term that applies to how animals eat grasses and legumes
8. Browsing - A term that applies to how wildlife, sheep and goats eat vegetation from trees and shrubs
9. Multispecies grazing, also known as mixed grazing - Grazing by two or more species of grazing animals such as cattle and goats on the same land unit, either at the same time or sequentially
10. Gestation - A period of time for fetus development from conception to birth (5 months)
11. Fetus - Unborn young
12. Parasite - An organism that lives on or within another animal (host), benefiting at the host's expense

Why Raise Goats? (not Cattle or Emus?) What are the Advantages?

We've mentioned the two major uses of meat goats: meat and land management. Of course, there are other animals that make meat and can use otherwise wasted plants. So, what is special about goats, in comparison to cattle, for example?

Strong market/ethnic demand = strong prices

As previously stated, there is a strong demand for goat meat. This is in contrast to emus, which did not have a good meat market. Many immigrants would rather eat goat meat than any other kind. This presents an opportunity for American farmers and ranchers, as there is a lot of room for expansion in this industry: we are currently importing goat meat equivalent to over 700,000 goats per year with the majority of the goats coming from Australia.

Goats are an attractive enterprise for many who may be intimidated by larger animals. Goats are small and safer to work around than cattle, and because of their size and ease of handling, there is no need for expensive working facilities or head gates, squeeze chutes, and other equipment essential in cattle ranching.

Low cost (to buy and raise)

Goats are one of the cheapest livestock enterprises to start-up, because they do not require much capital to purchase or feed. Also, as stated above, facilities are cheaper than for cattle.

Different grazing preferences = better use of diverse forages

Because goats prefer to browse (eat brush or vines) rather than graze grasses, they are complementary grazing in combination with cattle or horses. Using more than one species to graze an area is called "multispecies grazing," and in nature it maintains species balance and ecological stability in an area. Modern farming practices have tended to limit the kinds of animals on a specific piece of land, and this encourages less useful plants to dominate an area. For example, on a pasture used by cattle alone, shrubs and vines may increase, because cattle do

not graze those plants consistently. Adding goats to the pasture will result in more meat being produced on that land, because the goats and cattle will be turning different forages into meat.

Different grazing habits = sustainable control of weeds and brush

Another benefit of goats grazing plants that cattle won't is that they prevent weeds and brush from taking over an area. The brush that a goat eats is converted into money by way of meat. Because it won't be necessary to use chemicals or other means to control the brushy plants, the goats will also save you money. Besides the financial benefits, goats are a much safer tool to use on weeds. Many people develop sensitivity to chemicals after years of exposure; using goats to accomplish the goal is much better for the environment and those living in the area.

Prolific breeders = rapid building of herd size and/or salable kids

For some livestock enterprises (such as cattle), it takes years to build a herd because of the length of time to reach puberty and low reproductive rate. However, goat herds build much faster because goats can give birth to their first kid at one year of age. Also, while the first-time kidders are likely to have single births, most does will have twins thereafter. Therefore, herd numbers grow rapidly — a producer can increase his herd by five-fold in 5 years.

Shorter production cycles = quick return on investment

Not only do they reproduce well, goats also reach market size very quickly. Gestation is five months (compared to nine months for cattle), and the kids may be sold at weaning, about four months after birth, or held a bit longer on pasture. In any case, the kid crop should be ready to market less than a year after the breeding date. This means that the initial investment can be quickly recouped, and cash flow is more favorable than for cattle enterprises.

Goats combine well with cattle enterprises = increased income AND control of brush

Adding goats to a cattle farm at the rate of one or two does per cow can result in a 25% greater return per acre, due to more pounds of meat produced. In addition, the goats will control brush so that cattle pastures are dominated by grasses and clover, with no need for spraying expensive chemicals to stop invasive weeds and brush.

What Problems Must Be Dealt With?

Every enterprise has its challenges, and goats are no exception. The big problems in raising goats are fencing, internal parasites, predation, and lack of knowledge.

Fences

Goats are clever, athletic, and small. These traits make them much harder to keep in a pasture than cattle. Wires must be spaced closer, and gates can have no wide gaps. Farmers adding goats to their farm will need to adapt and improve the fences, in most cases. This costs money and time, and it is probably the major stumbling block for many who would otherwise like to try raising goats.

Fencing for goats is more expensive than for other livestock

More strands of electric wire will be needed to control goats (two to three strands for division fences and at least five strands for perimeter, if that is acceptable according to the state fence laws). If barbed wire or woven wire fencing is already in place, it might be necessary to add a strand or two of electric wire offset from the existing fence. Goats are notorious for escaping through barbed wire, and horned goats often are caught in woven wire.

Internal parasites

The most common health problem for goats is internal parasite infection. Goats are meant to range over a large area and to eat brushy plants that other species don't like. If goats are raised that way, they will not be exposed to many parasite larvae. Therefore, under natural conditions, goats do not need to be resistant to parasites. Perhaps this is why some goats show so little ability to withstand parasite infections when we force goats to stay in the same area for long periods and graze close to the ground, where internal parasite larvae are found.

While goats that are forced to graze a small area for an extended time are more vulnerable to parasites than cattle are, the good news is that the internal parasites are species-specific; goat parasites have a bad effect on goats, but they do not harm cattle, and vice versa. This means that by grazing cattle after goats the cattle will remove (by ingesting) goat parasite larvae from the pasture, thus "cleaning" it for the next rotation of goats back to that pasture. One caution: sheep and goats are similar enough that they do share parasites, so grazing them together has no beneficial effect on parasite loads.

Predators

Because of their small size and good taste, goats are vulnerable to predators, primarily coyotes and dogs, but also bears, wolves, bobcats, and other predators. In heavily populated areas, dogs will likely be the biggest problem. Producers have several options to protect the livestock, including a good fence, guardian animals such as donkeys,

llamas, or guardian dogs, penning the animals close to home at night, or some combination of these. Detailed information about predation and how to prevent it is included in another module.

Lack of knowledge

In addition to the demands of fencing, managing internal parasites, and protecting from predators, some goat producers are challenged by a lack of knowledge about goats. The interest in meat goats has been relatively recent, and many people are new to the business. The learning curve is steep, and help can be difficult to find: many educators have no prior experience or training in the field; veterinarians may not have much experience with goats; and neighboring farmers may not know anything about goats, even if they are very experienced with other kinds of livestock. Even so, there are many ways to add to your knowledge. One of those is this course. Completing all the modules will teach you a lot about raising meat goats.

The knowledge you gain by reading should be complemented by talking to and visiting with farmers and educators with goat experience. Ask questions and find out what you need to know. Try to visit other farms so you can see how they handle various aspects of the business. Try to figure out whether what they are doing would work for you. Is it practical? Is it cost effective?

A good place to meet other producers is at field days and seminars. Meeting and talking to other farmers is, in many cases, at least as important as the material on the program, and the program information can add to your knowledge tremendously. Ask your Cooperative Extension agent about any programs planned for your area, and if there are none, you might want to encourage the agent to offer one.

Joining producer groups, such as a state or local meat goat producer group or a breed association, is another way to meet other farmers and learn from them. Some groups offer cooperative marketing services to their members, and many groups host workshops and field days. It is worth your time to be involved in a good association.

Written materials are available to help with any problems you may encounter. The rest of the modules in this training course contain valuable information. Additionally, a partial list of some pertinent information sources is offered in the ATTRA publication, Small Ruminant Resource List. This is not a complete list but does offer a place to start your search.

Finally, the best teacher of all is experience-your "on-the-job training." The first two or three years will be especially good at showing you what you don't know; that happens to everybody, so expect it. It's best to begin your education by buying a small, healthy herd (more about that later), so that you can learn without incurring much financial loss. Goats multiply very quickly, and you will soon have a larger herd, if things go well. Starting small allows you to learn about normal behavior and health, grazing management, kidding, marketing, and all the other aspects of raising meat goats. When you are comfortable with your small herd and know that your fences work for goats, then you can easily expand into a larger business. Your chances of success are much greater if you learn your lessons before acquiring a large herd.

Production Systems

There are various options for raising meat goats. How you will manage the goats will impact the profitability of the goat enterprise, the demands placed on your family, and the resources needed. The converse is also true; your goals for the goat enterprise and for your whole farm (which includes your family) and the resources available may determine the method of raising goats.

Extensive - range or pasture/woods, not handled much

Keeping goats on a large tract of pasture or rangeland and leaving them to fend for themselves is one time-honored way to raise goats. Under this system, the producer expects the goats to forage for their food and care for their young with no assistance. Goats are very good foragers, and if given access to enough land, they will be able to survive and raise progeny with very little labor or feed cost. On the other hand, this does require a large tract of land, and some form of predator protection must be in place to prevent excessive losses. Because of predation and lack of intervention at kidding time, fewer kids may survive to weaning. This reduces the income from the enterprise, but lower expenses may offset that. Goats raised with little human contact (as in this extensive system) will likely be wild.

Pastured and rotated-managed intensive grazing

For more control of stock and better management of pasture resources, producers may choose to raise goats under management intensive grazing. In this system, pastures are cross-fenced into "paddocks" so that goats can be restricted in an area and moved to fresh pasture every few days (or even more frequently). This rotation allows the producer to allocate feed to the goats depending on their needs, prevent over-grazing of a given area, monitor the intake of the goats, and make frequent observations of the goats' health, growth, and behavior. Goats raised in this way will be tamer, their health problems can be more easily noticed and solved, and feed cost is still minimized, as in the extensive grazing method. Grazing goats in a restricted area helps reduce predator problems, as guardian animals can more effectively patrol a small area, and electric fence can also be used to advantage. However, this method demands more time and attention from the producer, fencing costs are much higher, and the producer must learn how to manage pastures.

Pastured but not rotated

Of course, it is possible to pasture goats without using a management intensive grazing system. Some producers choose to take a short cut by keeping the goats on pasture but not rotating them. This saves initial fence costs, time, and labor, and it is easier. However, goats that graze and re-graze the same small area will eventually develop problems with internal parasites. Furthermore, pastures abused by over-grazing will not be as productive. As pastures and animals both decline

in health, feed costs go up. Therefore, while this method may seem cheap and easy, over time it will create its own problems and be less profitable or sustainable.

Dry lot, fed purchased hay and grain

Some producers forego pasture altogether and keep the goats in a dry lot (where there is no growing forage), feeding them all purchased feeds. This system has many drawbacks.

First of all, goats do not convert feed efficiently, and they naturally waste a lot of hay. Feed costs under this system will exceed returns of the kid crop, unless the kids are sold as high-priced breeding stock. But those animals do not know how to graze to maintain themselves economically, and a buyer is likely to be dissatisfied with such expensive-to-feed animals. This system also demands more labor and time to provide feed and manage manure.

Goats that don't get enough exercise are likely to be overfat, which leads to kidding problems. And goats kept confined are going to have more fights (as bored children do) and become aggressive toward less-dominant animals. At feeding time, this may be particularly noticeable, as the dominant goats drive off the timid ones, resulting in over-fed bullies and smaller, under-fed animals.

In short, from the standpoint of goat behavior and of economics, this system is not a viable choice.

Markets and Marketing

Within each of the four production systems introduced above, there may be any of the following six types of meat goat businesses. These businesses are categorized according to the goat markets they address. The production system is how goats are raised, while these business models reflect why goats are raised.

Meat for ethnic holiday markets

When raising meat goats for ethnic markets, producers time breeding so that kids are the desired size at the proper time to meet holiday demands. This requires knowledge and planning on the part of the producer. What size kids are needed for a certain holiday? How fast will the kids grow? When are the holidays? Producers who go to the trouble to find the answers and produce kids to fill holiday demand will get top dollar for their product. Help in answering questions about ethnic markets may be found at www.sheepgoatmarketing.info.

Meat for the open market

Meat goats can be sold at any time, and some producers do not have the interest or time to manage their herd for the holiday markets. They allow breeding to happen when the does are naturally cycling (generally in the fall, as days get shorter). Kidding occurs five months after breeding, and the first kids can be sold at weaning, about 14 to 20 weeks later. The producer sells when it is convenient and takes the market price, ignoring opportunities for higher prices.

However, in areas with strong ethnic markets, prices can still be strong, and if costs are kept low, the enterprise should be profitable.

Meat for on-farm sale

Producers in areas with large enough ethnic populations may choose to set their own prices and sell animals from their farm premises. This has several advantages, including reduced risk of low prices (since the farmer sets the price) and lower marketing cost (no hauling charges, sale barn commission or shrink loss). However, it may be inconvenient and disruptive to have buyers come to the farm. It may be difficult to provide a consistent supply of kids for sale. And it can be very time-consuming to sell kids one or two at a time rather than by the truckload.

Some producers who are successful in on-farm sales eventually become brokers, purchasing kids from other farms to re-sell on the premises. This does pose the risk of spreading disease, however. Another consideration is that some buyers will want to slaughter the kids on the spot. Is this allowed in your state? What requirements must be met to properly dispose of offal? Do you need extra farm insurance to cover any possible accidents?

For the right family this is a profitable and interesting way to market meat kids. However, it will not be feasible in all areas or for families who are reluctant to give up their privacy. More information about marketing methods is available from www.sheepgoatmarketing.info. (See the Education section).

Goats for brush control

In this business, meat kids are a by-product of the main enterprise, using goats for land management, such as pasture improvement, noxious weed removal, or to create fire breaks. The goat owner may contract with land owners to provide these services. Goats need to be healthy and good foragers, but the manager needs to pay most attention to the condition of the land (not the goats). Goats may lose body condition if they are forced to overgraze to meet the goals of the landowner, and kids may not grow to their full potential. Many people have been successful in this enterprise, but it is certainly not simple. Goats must be monitored and controlled, water and predator protection must be provided, and the contracts have to benefit both parties.

Breeding stock for commercial herds

Because breeding stock is in demand, some producers find it profitable to focus on producing kids for commercial goat herds (purebred or crossbred, registered or not). To be successful at this, production costs must be kept low, animals must be healthy, and the stock must not only meet the needs of the commercial producer, but also be offered at a fair price. For the long-term success of the business, all the lower-quality kids (male and female) should be sold to the meat

market, while better-quality kids stay in the herd or are sold to other producers. This enterprise requires some advertising and marketing.

Breeding stock for show herds

The most rarefied goat business is the production of breeding stock for show herds. In this case, stock will be purebred and registered, and success in the show ring will be essential to its reputation. Stock must be "what the judges are looking for," in addition to being healthy; extensive marketing and advertising are necessary. Kids in this herd should be sorted in four ways; for show and sale, for show and for building the herd, for sale to a commercial herd, and for sale to the meat market. This business offers the chance for high income, because top end kids get top dollar, but this business demands a lot of time, expertise, marketing, and show ring ability. It also has the highest costs of production. It is a risky business because the market is both fickle and political. Therefore, it is not for the beginner or the faint-hearted.

Each of these businesses has its challenges and opportunities. Each also requires that the producer begin by selecting healthy stock that will work in the business. Learning how to choose stock is the subject of our next section.

Breeds and Breed Characteristics

One of the first decisions about raising goats is which breed or breeds to raise. As a beginning goat producer you need to identify specific breeds by name, appearance, and general characteristics. Note that the characteristics listed are what the breed is known for, but within each breed there is a great deal of individual variation. For instance, some individuals within a fast-growing breed will actually grow more slowly than some individuals of a slow-growing breed. Therefore, it is very important to select stock by their individual merits and not simply by the breed.

Although any breed of goat is a meat goat because most end up as meat, there are four major meat goat breeds that are raised in large numbers specifically for the production of meat. These are the Spanish, Boer, Myotonic and Kiko. Angora and cashmere goats are raised for their luxury fibers, but also provide meat. While most dairy goats provide meat, the Nubian breed is used to improve milk production and frame size of meat goats. Pygmy goats are also used for meat. There are some newer breeds such as the Savannah and Scandinavian ridgeback, but currently they have limited animal numbers. Crosses of any of the above have value in meat production as well.

Spanish

The Spanish breed has developed through natural selection from goats first placed in Texas in the early 1540's by Spanish explorers. Survival of the fittest insured that the breed became hardy, good foragers, and good mothers. Living in the wild gave an advantage to smaller stock, because they needed less food. These goats have been

referred to as "brush" goats in some regions, because of their use in controlling brush. Some producers have improved the stock by selecting for better muscling, more milk, or other criteria. These improved Spanish goats are much larger and meatier than the average Spanish goat. In terms of productivity, there is a lot of variation in the growth rate of Spanish goats. Selection is key to improving that trait. Producers appreciate the Spanish goats for their toughness and their ability to thrive in a low-input situation. Spanish goats come in many colors and patterns.

Boer

Boer goats were developed in South Africa and are easily recognized by a white body, red head, and large, muscular frame. The breed was first imported into the United States from Australia and New Zealand in 1993. Boer goats are in high demand because they grow fast and produce desirable carcasses. Breeding animals have been very expensive due to the limited numbers originally imported, but recently numbers have increased sufficiently that prices have become more reasonable. Due to their scarcity and high demand, some animals were kept for breeding purposes that should have been culled because they were not hardy. Also, some of the animals were pampered because of high prices at the time and as a consequence some Boer goat individuals in the U.S. are not as hardy as Boer goats raised in South Africa. Boer goats are the largest of the goat breeds with a mature doe weighing as much as 200 pounds. They have been selected for growth rate and may gain in excess of 0.4 pounds per day under feedlot conditions.

Kiko

provided by Dr. An Peischel

The Kiko breed was developed in New Zealand by crossing feral does with Nubian, Toggenberg, and Saanen bucks. Kiko goats are usually white and fairly hardy. Data from a study conducted at Tennessee State University in 2004 indicated that Kikos may be more parasite-resistant than other breeds and have less problems with foot-rot. In that study, Kikos weaned more pounds of kid per doe as compared with Boer goats. However, Boer goats are preferred by buyers at sale barns. For this reason, many breeders will use a Boer buck on Kiko does.

Myotonic

Myotonic goats are often referred to as Wooden Leg, "stiff-leg", or Tennessee fainting goats. These goats have a recessive gene that makes their muscles lock up when the animal is startled, causing them to fall over ("faint") briefly.

The breed is one of the few breeds indigenous to the United States. The Myotonic goat is heavily muscled in the rump and deep in the chest, but is smaller than the other three major meat breeds. They have good potential for crossbreeding. Since breed numbers are not great, breeding stock may be expensive. The myotonic characteristic makes them easier to keep in fences, but may also make them more susceptible to predators.

Other breeds

Savanna

The Savanna breed is relatively new to the United States, having been imported in the late 1990's. The breed is a large framed, extremely well muscled goat with white color containing a few black pigments found on the ears. The body characteristics resemble those of the Boer goat.

Pygmy

Pygmy goats are small goats of African origin. They are considered meat goats but are mainly used as pets. Pygmies are bred to be "cobby" and heavy boned. All body colors are acceptable but breed-specific markings are required.

Angora

Angora goats originated in Turkey and are raised primarily for their luxurious mohair fiber. They also provide considerable meat in the U.S. They work well in a cross-breeding program; however, the value of the mohair clip is lost. Angoras can be raised in cold or hot climates, but lack hardiness. They do not have much parasite resistance and do better in dry or open-range conditions. Angoras are more likely to have single than twin kids and have a tendency to abort under stress. Their first kidding is generally at two years of age rather than as yearlings, resulting in a low reproductive rate. If there is a good market for mohair and if production costs can be kept low, Angoras can be profitable. Be aware that Angoras must be sheared every six months. The breed has a small body, but produces a good quality carcass.

All goats, except Angoras, produce cashmere to some degree; however, some groups in several goat breeds have been selected for increased cashmere production. The difficulty in processing and selling the fiber has prompted some producers to focus on cashmere goats solely for their meat. "Cashmere" goats are not a distinct breed, thus there is considerable variation in body size, shape, color, and productivity.

Dairy goats are used for meat, but dairy kids tend to have more bone and less meat on their frames. Nubians and LaManchas cross well with meat breeds, and the result can be a very good carcass on the kid, one that grows fast due to the milk production of the mother. Other dairy breeds may also be used in a cross, because the improvement in milk production results in a heavier weaned kid. Dairy does are also readily available and affordable in many areas.

Crossbreeds allow commercial producers to choose desirable traits from two or more breeds and gain increased vigor in the resulting kids (known as "hybrid vigor"). But crossbreeding does not always yield desired outcomes, sometimes blending the less-desirable traits of the parents, rather than expressing the best. If many breeds are used, uniformity may suffer. Usually, however, crossbreeding results in a stronger and healthier herd that is easier to maintain.

Producers should evaluate individual goats on their own merits and not assume that all animals of a particular breed will fit the breed standard. Selection of superior individuals, whatever the breed, is much wiser than choosing a breed and taking whatever is for sale. In selecting breeding stock, there are several important considerations: the market for kids, your personal preferences, availability of stock raised with management similar to yours and in your climate, conformation, and most importantly, health. In the next section, we will explore each of these principles.

How to Choose Breeds/Breeding Stock

The first consideration is what is the planned market for the kids? Which type of meat goat business are you in? What are the needs of that market?

For example, if you are selling meat goat kids to a particular ethnic group, you need to think about what size kid is needed, what time of year you need the kid ready to sell, and whether the buyer has a preference for color or type. What price can you reasonably expect to receive for the kids? What will it cost to maintain the does?

Having answered those questions, you may decide that you want to sell 60-pound kids at the auction barn, where you've heard that buyers prefer the Boer coloration and pay extra for that red head. You think you can plan to get $1.25/pound live weight for the kids, and that would gross about $70 per kid. In your area, a big Boer doe costs a lot to maintain, possibly as much as $60 a year, not leaving much profit after the kids are sold. But perhaps you could use a Boer buck on some smaller does—Spanish or Kiko or crossbreds—reduce maintenance costs for the doe herd, and still give the buyers red-headed, muscular kids. If your does average 50% twins (weaning a 150% kid crop), there should be some modest profit.

Of course, this is a hypothetical example, but looking at the economics of what you intend to do will help you realize that you cannot afford very high-priced stock for a meat goat enterprise,

where meat is the product. Having an idea of the returns will help you be prudent when you purchase stock.

Once you have in mind the breed or breeds that should work for your particular meat goat business, the next consideration is personal preference. You can't quantify the benefits, but there is satisfaction in raising a type of animal that you find appealing. If you enjoy the animals, you will feel a pride in producing them and take pleasure in observing and caring for them. This is intangible, but real nevertheless.

The next consideration is a very practical one: what kind of goats are available near you and kept under the same kind of management that you intend to use? This is important because animals that are already adapted to your climate and to your management system will be more productive and healthy than goats that suffer "transplant shock." Goats that have been raised in a dry lot will not be very good at grazing or browsing. If you intend to run an extensive operation and not interfere with the goats' mothering, you will be better served by goats that thrive by themselves. In addition to proximity and management, you have to be practical about price. Sustainable agriculture means that you make some profit, and paying too much for initial stock can mean that there is no profit for several years. It may be wiser to purchase healthy unregistered does and the best bucks you can afford and set about to continually improve the herd. Within a few years, you should have a good herd of does and money in the bank besides.

This brings up another question: How many goats do you need to buy? In general, you can add one or two does per cow to your cattle farm without any impact on the cattle's pasturage. The kids produced will boost your income, and the does will keep your pastures clear of weeds or brush. Another rule of thumb is that six to eight does are the equivalent of one cow (this depends on the size of the does, as well as the size of the cow). Therefore, if you know that it takes 3 acres to support a cow in your area, and you have 30 acres, you could theoretically have 60 to 80 does on your land. However, if you have never raised goats before, it would be safer to start with a smaller herd and let it multiply over a few years. This will keep your costs low and allow you time to learn about goats while you adapt your systems and avoid being overwhelmed or overstocking your land. If you are buying only a small number of goats, you can be more selective about the quality and traits of the animals, and also avoid going into debt.

Consider health and conformation (soundness)

Once you have found goats for sale of the type and price you are looking for, it's time to select the individual animals to take home to your farm. Now you have to consider conformation and health. Health is the critical component, but conformation is also an important factor.

To begin, look at the entire herd. Do they walk well? Do they appear lively and vigorous? Are they in proper flesh, not too fat or too thin? Are their coats shiny and their bodies smooth, not lumpy with abscesses? Are they grazing or kept in a pen with free-choice hay?

Your overall first impressions are valuable. If the herd appears to be healthy, your chances of getting healthy animals are much better.

Having gained a sense of the overall quality of the herd, now examine the individuals that are for sale. You are looking at their conformation and the physical appearances of health. For raising meat kids, you don't need show-quality does. You should select does that are sound and ready to be productive. Good conformation (soundness) means:

- Sound feet and legs
- Good body capacity (deep and wide, to handle forages and hold twin kids)
- Correctly aligned bite, with lower incisors meeting the upper dental pad, not over-shot or under-shot
- Good teat structure, with the correct number of functional teats (two)
- Good teeth

Goats that are sound in these areas should be able to range widely for forages, to bite and chew and digest those forages well, and to carry and feed kids. In addition to passing these tests, though, the goats you select must be healthy. Some visual indicators of good health are:

- No limping
- Alertness, lively appearance
- No lumps or abscesses, especially on the neck or shoulder area
- Moderate condition, not too fat or too thin
- Smooth, shiny coat
- Pink mucous membranes, including inside lower eyelid
- Normal feces; round pellets, no diarrhea

Diseases to be aware of

Of course, there are diseases (such as Caprine Arthritis-Encephalitis-CAE) that may not be apparent. But if the seller's herd matches the above description, your odds of purchasing a healthy animal from it are very good. The reverse is also true; if the seller's herd includes animals that are limping, emaciated, "dull", have abscesses, or appear "poor," chances are that the animal you buy will be carrying a disease, even if that disease is not obvious in that particular animal.

Because transmissible diseases (including internal parasites) may not be apparent in an individual, observing the condition of the herd of origin is important. This is one reason why it is better to purchase animals on the farm, rather than at an auction. Also, sale barns receive a lot of unhealthy and otherwise unsuitable animals. They are the dumping grounds for goats that do not thrive, have contagious diseases, are terrible mothers or incorrigible jumpers, non-breeders or poor milkers. If you shop for breeding stock at the sale barn, you may very well be bringing home diseases to infect the rest of your herd, or be bringing home animals that are unproductive and therefore unprofitable. If you are lucky enough to find some good stock at the sale barn, by the time those good animals have mingled with the unhealthy ones in the barn, suffered the stress of shipping and sale, and tracked through an environment where many unhealthy animals have

been, their immune systems may be overwhelmed. There really are no bargains at sale barns, even if they are cheap.

Take someone who knows about goats with you when you go shopping. This will help you be objective when looking for potential problems.

It is also helpful to educate yourself about diseases and their treatments (or lack of treatments) before you go. Understanding the consequences of a particular disease in your herd will help you understand the risks and the costs of buying a disease. This may mean that you offer to pay for some testing to screen for a disease that you are particularly anxious to avoid.

Another module will contain in-depth information about goat diseases. However, because learning to recognize health and disease is an important part of selecting stock, the following chart of symptoms and the diseases they can indicate will be useful.

Symptoms/observed characteristics (What you see:)	**Possible diseases indicated (What you may get:)**
Limping	foot rot, CAE, mastitis, injury
Dull, depressed appearance	pneumonia, internal parasites, bacterial infection
Lumps, abscesses	caseous lymphadenitis, injection-site abscesses, other causes
Very thin	internal parasites, CAE, Johne's, bad teeth (or may just have finished raising triplets, or had a hard winter with insufficient feed)
Very fat	may have breeding problems; failure to kid (or, grossly overfed)
"scruffy" appearance	parasites (internal or external), malnourished or other causes
diarrhea, pale membranes, bottle jaw, "poor"	internal parasites or coccidiosis
runny eyes, blindness	pinkeye
misshapen udder	mastitis (present or previous)

(Note: This is a very sketchy list. Thedford's Goat Health Handbook includes a diagnostic chart that is much more detailed. This is only a starting point as you learn about diseases.)

Summary: Deciding to Raise Goats

The meat goat business is growing, fueled by strong ethnic demand for the meat. Understanding the possibilities, advantages, and challenges of raising goats will help ensure you plan your enterprise to be profitable. Selection of healthy, sound breeding stock will add to the enjoyment and profitability of the enterprise. Visiting farmers, consulting veterinarians and educators, reading print and Web resources, and completing this course will enhance your chances for success.

*Information contained in this document is part of a web-based training and certification program for meat goat producers (*http://www2.luresext.edu/goats/training/qa.html*) that was developed with funding received by Langston University from USDA/FSIS/OPHS project #FSIS-C-10-2004 entitled "Development of a Web-based Training and Certification Program for Meat Goat Producers."*

Collaborating institutions/organizations include Alcorn State University, American Boer Goat Association, American Kiko Goat Association, American Meat Goat Association, Florida A&M University, Fort Valley State University, Kentucky State University, Langston University, Prairie View A&M University, Southern University, Tennessee Goat Producers Association, Tennessee State University, Tuskegee University, United States Boer Goat Association, University of Arkansas Pine Bluff, and Virginia State University.