

This presentation is part of an educational modular program designed to provide new and beginning farmers and ranchers with relevant information to initiate, improve and run their agricultural operations



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National Institute of Food and Agriculture

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Goat production



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Goat production

- In general goats can be raised for meat, milk or fiber production



Boer is a meat breed



Saanens are among the highest milk producers



Angora goats produce mohair

Goat production

- In addition, of their initial production purpose, raising goats can be a valuable part of a sustainable farm
- Goats fit well into already established farms because they do not compete with cattle or other livestock for feed and usually can use resources that otherwise would go unused
 - However goats are not “little cattle” they need to be managed as a different type of livestock and not just be expected to behave and eat like cattle



Goat production

- Goats can also contribute to the farm by cleaning areas that would otherwise not be accessible to other livestock
 - Because of their browsing behavior they can eat and clear brambles from paddocks
 - Also because of their small size, agility and because they love to climb they can forage in hilly and rocky pastures
 - Goats' manure replaces the soil with important nutrients and reduces the need for fertilizers



<http://news.opb.org/article/goats-take-some-pain-out-yard-work/>

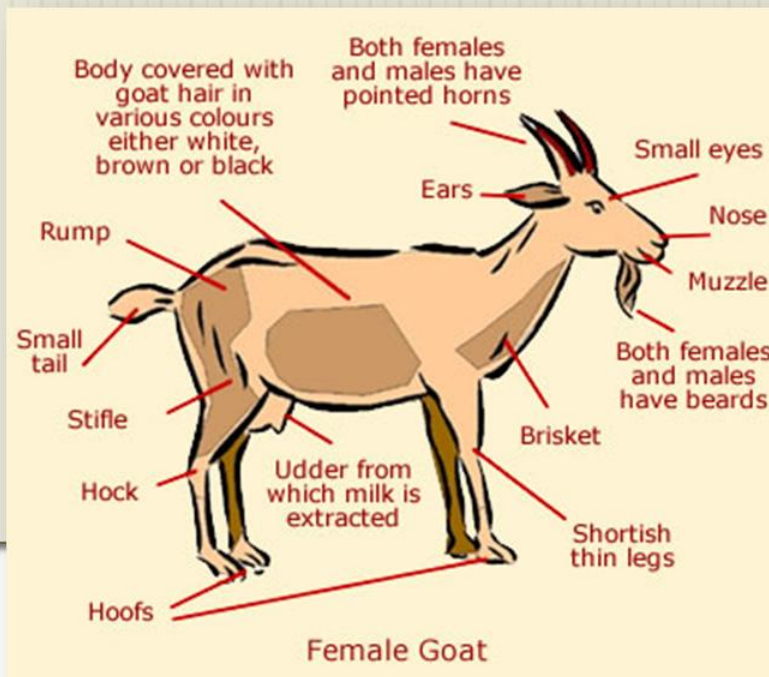
"Goats for hire"

- Because of their unique feeding habits, goats can be "hired" to clear out thick lots of invasive plant species from lots, gardens, pastures. They also help to reduce "fire fuel" in areas prone to wild fires
- People pay "per acre" of land cleared by the goats and in some cases the price can go up to \$1,500 dollars/acre



Fuel reduction of poison oak and pampa grass field (before and after)
<http://www.brushgoats4hire.com/photo.htm>

Understanding goats



Goat behavior



- Goats have unique behavior characteristics that are important to understand before you decide to raise goats
 - They are “matriarchal”, that means that there will be a “herd queen” or dominant female
 - She usually leads the way and decides when to go out to pasture. She gets the best sleeping spot and the first spot at the feeder, and if she is a dairy goat, she gets to be milked first
 - If another goat tries to change things, you can be sure that the queen will make it clear who is in charge

Goat behavior

- Goats sometimes communicate by biting
- Goats butt others to establish their place in the herd, it can be used in playing, fighting or during rut
 - Dehorning is commonly used to reduce damage from butting (to you and other goats) but that animal will be at a clear disadvantage. Either all your goats get dehorned or none should



Goat handling



- Caring for your goats is easier if your goats are used to being handled.
 - There is nothing worse than having to chase down and capture a sick goat!
 - They need regular handling so that you can do routine maintenance and care of the animals



Get the goats used to being on the milking stand, this way you can trim their hooves, give shots and other husbandry procedures without stressing them out

Goat handling



There are some important things to remember when you start handling a goat:

- Goats duck their heads to get away, so keep the goat's head up with one hand under the chin and one on the top of the neck or by holding the collar up
- To catch a fleeing goat, grab the back leg. The front legs are very delicate and can be hurt or broken very easily
- To handle a horned goat, firmly grasp the base of the horns to lead her
- Never push on a goat's head, pushing stimulates butting and teaches the goats that butting humans is all right
- Never let a goat kid jump on you or anyone else
- Don't let children chase or ride the goats. They will become afraid of people and they can get hurt or break their backs.

Goat handling

- Collars are a useful tool for handling, moving or milking goats
 - Remember that collars can get stuck in plants or fences, so make sure to check the area where your animals are housed to make sure they are safe
 - Only put the collars on when you will be working with them, or around to keep an eye on them



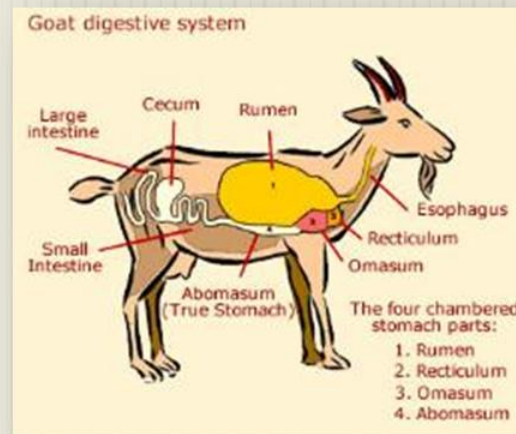
Goat Nutrition



<http://www.northrup.org/photos/goat/?page=7>

Goats are ruminants

- Ruminants are those animals that have several compartments in their stomach to digest large quantities of forages
 - The ruminants get their name from their rumen, which is the largest compartment of the stomach and serves as a fermentation vat



http://www.animalcorner.co.uk/farm/goats/goat_anatomy.html

- Ruminants eat quickly and swallow their food and thoroughly chew it and swallow
- This regurgitated food is called the cud, and healthy ruminants spend as much time chewing as they do grazing or eating hay

Raising goats

- Goats have the ability to select the more nutritious parts of a plant
- Therefore, they typically will consume a higher quality diet if they have the opportunity to be selective
- With the exception of dairy goats, goats grazing a high quality pasture can usually meet their protein requirements without supplemental feeding
- In some cases an energy supplement (grain) may be necessary



Goats are ruminants



- The health and productivity of the goat as with all ruminants depends on the rumen (as with all ruminants) depends on the rumen function; microorganisms in the rumen digest fiber and carbohydrates and protein to supply the animal with nutrients
 - Without those microorganisms, the goat will become very sick and may die
 - It is very important that the animal is appropriately fed so that the ruminal organisms stay healthy
- The rumen microorganisms are healthier when goats are eating good-quality forages, such as vegetative pasture
 - However it is difficult (if not impossible) to provide good-quality forages year round. Thus, supplementation with concentrates may be necessary



Diet



- Goats can be picky eaters and they may not immediately accept new feeds
 - However once they decide to eat something they will try everything to get it
 - Also if there is nothing around that they like they will start to look around for something to eat



Diet

Feeding is usually the highest expense of any livestock operation

- It is important to remember that goats are not little goats
 - Goats have shorter digestive tracts which limits their ability to digest the cell walls of plants, such as grass or hay, in comparison to cattle
 - Then again, their narrow muzzle and highly motile, prehensile lips allows them to choose the tender leaves and buds from trees and shrubs that cattle cannot fully use as a food source
 - Goats have a perfect feeding strategy as intermediate feeder, eating grass when it is at its peak and shrubs when those have the best nutrients available



<http://mcaaron.wordpress.com/tag/dylan-mckay/>

Diet

- Feeding good quality hay or pasture is usually sufficient to sustain your goats, but during production they will need supplements

The more productive goats should be fed high quality feed, especially kids being prepared for market, young replacement doelings and does in late gestation and early lactation. Also, does lactating twins or triplets have greater nutritional requirements than does lactating a single kid



Supplemental feeding

- Grain is the concentrate most often fed to goats; cereal grains such as oats, corn, barley and wheat are high in energy (carbohydrates/fat)
- Less commonplace are grains such as amaranth or buckwheat are also used sometimes
- Soybean meal and cottonseed meal are high protein supplements
- The choice of concentrate is determined by the composition of the forage available
- High-quality forages usually have adequate or even excess protein, animals eating these will need a higher-energy concentrate to utilize the protein present in the pasture
- Lower-quality forages or hays will require a higher protein supplement to meet the goats' protein requirement



Supplemental feeding

- While good quality forages are usually adequate, goats may sometimes need supplemental feeding, especially during the winter
- Goats need a proper balance of energy in the form of roughage or grain, as well as protein, vitamins, minerals and clean water
- There is a rule of thumb for all goats:
 - Browse and pasture in the summer
 - Hay and grain in the winter
 - Trace mineralized salts all the time
 - The mineral mixture should be fortified with selenium if you live in an area of the country with selenium-poor soils (Check with your Extension agent or veterinarian)



<http://www.bjmanufacturing.com/feeders.htm>

Minerals

- It is very important that you consistently offer this mix (preferably in a loose form), monitor its consumption and ensure that all goats are in fact eating adequate amounts of the mineral supplements



Diet

- Goats must consume a more concentrated diet than cattle
 - Goats grazing poor quality areas will also have higher nutritional requirements than goats on better pastures



<http://www.organic-gardening-and-homesteading.com/how-to-raise-goats.html>

Meat, dairy, hair?

- Adult meat goats should be fed a maximum of 1% of bodyweight in supplemental grain, with lactating does reaching a maximum of 1.5%
- Dairy goats need both high quality forage and supplemental grain to reach their full potential, especially during peak lactation or growth
- Fiber goats on the other hand may not do well with supplemental grain, because feeding too much protein to angora goats can make mohair fiber coarser and reduce its value and feeding beyond maintenance requirements will not improve the fiber production of cashmere goats



Cashmere goats

<http://tsandawesome.com/2010/11/>



Angora goat

<http://www.theanimalagency.com/animals/barnyard/barnyard.htm>

Most common breeds of goats in the USA



Dairy goats	Meat goats	Hair/Fiber
Alpine	Boer	Angora
La Mancha	Kiko	Cashmere
Nigerian Dwarf	Spanish Meat goat	Pygora
Nubian	Tennessee Fainting goat	
Oberhasli		
Saanen		
Toggenburg		

Pets
Nigerian Dwarf
Pygmy
Fainting goat

Fencing



- **Fencing is the most critical factor in raising goats on pasture**
- There is nothing more frustrating than having to constantly chase goats back into the pasture
- Fencing will also be the greatest expense, other than the initial cost of the animals

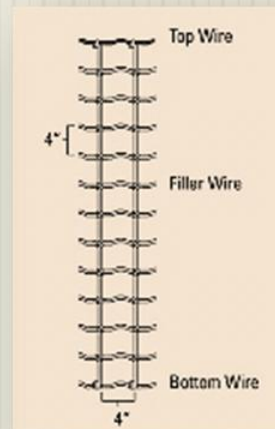


<http://www.louispage.com/blog/?Tag=woven%20wire%20mesh>

Fencing



- There are several different options for fencing
 - One of the best permanent fencing solutions is 4-foot woven wire with barbed wire along the top
 - Some producers use four or five strands of high-tensile electric wire
 - Electric netting (usually 4x4 inches) is also used as temporary or permanent fencing options, however some animals can get their horns tangled in the netting
 - Electric wires can be used in combination with standard fences, however goats need to be trained to this
 - It is very important to keep electric fences charged to 4,500 volts or more
 - Regular checking and testing are necessary and any problems must be fixed promptly, or goats will escape.



Fencing



- Goats are famous scape artists and will definitely try to get through fences if they can see something good on the other side
- Here is something that I have seen to teach "scape prone goats" to stay inside their pens
 - This is called the "naughty collar", they get it on everyday before they go out to pasture and it is taken off in the afternoon
 - It doesn't hurt them and they learn quickly that they through the fence



<http://farmlet.co.nz/?p=59>

Shelter

- Goats can tolerate cold weather, but will get chilled by wet cold conditions
- Buildings used for shelter may be minimal, but they should be well-ventilated and clean
- The necessary shelter or shelters depend on the producers' operation
 - A dairy operation will usually have extensive barn and pen set-ups while a large meat goat operation may use only trees in the pasture as shelter



There are portable shelters, moveable shades and even old hog huts that can be used as shelters for your animals

Shelter and climbing



Goats love climbing!

- Add some rocks, ramps, steps or any structure for them to climb and they will make full use of it
- If you don't give them something to climb, they will find something



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Want more information?



ATTRA
publications
<https://attra.ncat.org/>



Illustrated guide to sheep and goat production

Goats: sustainable production overview

Dairy goats: sustainable production overview

Meat goats: sustainable production overview

Managing internal parasites in sheep and
goats

Want more information?



National Goat Handbook

http://members.toast.net/dawog/Goats/national_goat_handbook.pdf

Breeds of Livestock (goats)

<http://www.ansi.okstate.edu/breeds/goats/>

American Dairy Goat Association

<http://www.adga.org/>

Dairy goat journal

<http://www.dairygoatjournal.com/>

Boer Goats Home

<http://www.boergoatshome.com/>

Meat Goat production (Susan Schoenian, University of Maryland)

<http://www.sheepandgoat.com/articles/meatgoat.htm>