

GOAT HUSBANDRY

Learning Objectives

The learner will:

- Understand the scope of general concerns involved in raising animals on the farm by learning some of the specific concerns related to goat husbandry.
- Be able to describe the basics of ruminant digestion.
- Review the process of gestation and birthing in goats.
- Learn and discuss the processes of raising kids and milking goats.

Housing and Bedding Needs

There are two basic types of housing; stalls in which the goats have individual pens and housing where all the goats have a communal living and bedding area. When selecting a style of housing, one must consider the welfare of the goats as well as preserving efficiency for the goat farmer.

- Shelter from wind
- Good ventilation
- Clean dry bedding
- Accessibility to clean water
- Contamination free feeders
- Shelter from precipitation

Feeding and Nutrients

- Overview of ruminants
 - Goats have four stomachs
 - Large numbers of protozoa and digestive bacterium live in the rumen. Their job is to breakdown protein, starch, fats and cellulose through a process of fermentation.
 - Rumens occupy eighty percent of stomach space in a mature doe.
 - Goats are browsers, and need to eat with head drawn in so food enters the slit in the esophagus and moves towards the rumen. Goats then regurgitate masticated food and chew their cud during times of rest.
- Proper feed rations
 - Goats must have quality roughage such as alfalfa or grass hay.
 - Concentrated grain rations are required for milking does due to heavy protein output.
 - Proper mineral intake is extremely important for pregnant and lactating does.
 - The proper feed ration for milking does ration should be sixteen to seventeen percent protein. Twelve percent protein is sufficient for a dry doe or a buck.

- Feed goats a minimum of one pound of grain ration for health maintenance, and one pound ration for each 2.5 pounds of milk. Make sure goats have free choice minerals at all times.
- Basic Needs and Feeding Systems
 - Goats should never feed off the ground due to the risk of feed contamination with fecal worm load and unhealthy coccidiosis load.
 - Water should be clean and free of phytoplankton (algae caused by sunlight and organic matter) and zooplankton (algae caused by fecal contamination)
 - Water kept slightly warmed will encourage increased consumption and therefor benefit overall health.
 - Feed and feeders should be free of mold and mildew. Very important.

The Pregnant Doe

- Average gestation for a goat is 146 to 155 days.
- Goats can be bred when they are 60 to 75 percent of their adult body weight.
- Twins are the most common at around 65% of the time, but triplets and singles also occur regularly. Quads and quints are rare but do occur.
- Signs of approaching birth,
 - Goats should be checked regularly for signs of kidding 140 days from breeding. Signs include, hollow flanks, discomfort, nervousness, widening of the space between the pin bones, and rapid filling of udder.
- Kidding
 - 90-95 percent of goat births go unassisted
 - Many different kid presentations are possible. The normal being front legs first with the nose resting on the hoofs.
- Stages of kidding
 - Colorless discharge changing to thick and white when delivery is immanent.
 - The goat may paw her bedding, lie down and get up restlessly.
 - She will lie stretched out flat pushing with her hind legs against the floor or wall.
 - Water bag will appear and in most cases burst revealing legs and or nose.
 - Doe will generally rest at this point for a moment and then birth kid with several strong pushes.
 - Following kids will be born at varying intervals with no exact time passing between each birth.
 - The afterbirth will be passed for each kid and a double afterbirth for identical twins.
- Post kidding
 - First time fresheners often need assistance in helping their kids to stand and begin nursing. Kids may also need help cleaning the mucus out of their nose and mouth.
 - Kids should begin nursing within the first ten minutes.

- Kids born during cold spells should be dried and encouraged to drink as soon as possible.
- Dip umbilical cord in weak solution of Betadyne to prevent bacteria from traveling up cord.
- Complications and remedies
 - If kid is stuck at the shoulders during birth and the goat is exhausted and not making progress pull down on hoofs away from birth canal.
 - If kid is born listless and unresponsive a mixture of colostrum and strong black coffee may be given as well as a vitamin sucrose mixture. This may stimulate body heat and encourage nursing. It is important that the mixture be delivered to the stomach via tube so young kid does not aspirate and asphyxiate.
 - Kids born during extreme cold should be warmed up by the assistance of goat keeper.
 - It is very important that all kids born are drinking colostrum within a few minutes of being born.

Raising Kids

- There are many different ways to raise kids, your kid raising program is dependent on your end goal and style of management
 - Kids should be fed their mother's colostrum for at least seven days.
 - Separate the kids from their mothers after that first week. This will allow you to feed kids based on their individual needs therefor assuring consistent growth.
 - The first week kids should be bottle-fed every six hours receiving four to eight ounces per feeding. The second week, twelve ounces eight hours apart. By the third week each kid can receive one quart of milk twice a day. These amounts are all dependent on the size and appetite of the kid, when the kids stomach is tight, the kids is full.
 - The kids can have free choice of good hay and water once they are a month old.
 - Kids should be weaned when they are two and a half to three times their birth weight. This generally occurs at around two months.
- Standard procedure for kids in a dairy herd.
 - All males should be castrated as soon as possible or when testicles drop (usually around seven to ten days.) The easiest way is by use of the elastrator which applies a tight band around testicles and sack to cut off blood flow and causes sack and testis to fall off.
 - All kids in the dairy herd should be disbudded when appropriate. A dairy herd with horns will cause added expense and labor as adults due to accidental injury. Disbudding is done using a disbudding iron, when the nubs of horns become evident on the head. The disbudding iron is applied in a circular fashion around the nub until a distinct copper ring appears. Then the top of the nub is scraped off using a hot edge of the disbudding iron. It is important when disbudding for the first time that there is a experienced goat keeper at hand, due to the danger in applying the iron

incorrectly. Disbudding can be done with one person and a disbudding box or with several people working together to immobilize the kid.

- Many goat keepers give their kids injections of essential trace nutrients and or vaccines just following birth but this should be done only after consulting your veterinarian.

Milking

- Goat should be milked consistently at twelve hour intervals. Variation of routine will result in loss of milk production.
- Milking equipment used can be as simple or complex as the dairy farmer chooses.
 - The milking stand is a very important piece of equipment for farmer and doe. The milk stand must be comfortable for both human and goat and must provide feeding and confinement for doe.
 - The milk receiving equipment can be a stainless steel pail or an automatic milking machine. Most farmers will begin with hand milking and graduate to a machine milking as needed.
 - Proper stool height is essential to developing good milking posture for the farmer.
- Step by step milking procedure
 - Bring doe into the milking parlor from the loafing pen and secure in the milk stand. Provide food.
 - Wash the udder with a warm water bath and then spray down using a weak iodine solution. Use a fresh towel for each goat.
 - Dry udders and milk the first stream from each teat through teat cup. Strip cup identifies any abnormalities in milk that would be early signs of bad health such as mastitis.
 - Completely milk goat out on both halves of udders taking special care that the udder is completely stripped of milk. Massage or stimulate udders to ensure thorough milking.
 - Dip teats in dip cup to prevent bacteria from traveling up milk canal.
 - Release and return goat to the herd.

Milk Handling

- Good milk handling procedures are essential to producing a quality tasting, safe and healthy dairy product
 - Strain milk through specially designed inline milk filters.
 - Cool milk down to 35 degrees Fahrenheit within thirty to forty-five minutes of leaving the udder.
 - Rinse milking equipment with cold water followed by warm water and an anti-bacterial alkaline soap.
 - Air dry all equipment inverted on rack. Store all equipment upside down.

Diseases and common ailments of the goat

- Bloat
 - *Symptoms*- tightly inflated flanks, extreme discomfort, collapse and eventual death.
 - *Cause*- Over eating of lush wet grass or clover, breaking into food bin, over eating of anything unsuitable or foreign.
 - *Remedies*- Feed eight ounces of vegetable oil for adult or two ounces for kids. Massage flanks. Walk goats about continually until symptoms subside.

- CAE (caprine arthritis encephalitis)
 - *Symptoms*- Swollen knees and joints and uneven development of one of the sides of the udder and loss of appetite.
 - *Cause*- A viral infection caused by contagious contact by other CAE positive goats.
 - *Remedies*- Pasteurizing all milk and colostrum fed to kids, blood testing of goats in herd. There is no known cure for CAE.

- Hoof Rot
 - *Symptoms*- Lameness in foot or feet, pungent stinking odor in hoof, black soft deterioration of inner ridge of hoof.
 - *Cause*- Prolonged exposure to wet ground or pasture, hoof trimming negligence.
 - *Remedies*- Regular exercise on dry ground, proper and regular trimming of hoofs.

- Internal Parasites
 - Goat herd should be on regular worming schedule as advised by local veterinarian in your region.

- Mastitis
 - *Symptoms*- Hardening of udder, clotting and blood streaking in milk, fever, tenderness in udder.
 - *Cause*- Bacterial exposure, poor hygienic conditions.
 - *Remedies*- Correct management, overall health, treatable with injectable antibiotics and intra-udder injectable.

- Lice
 - *Symptoms*- Weakness, anemia, listlessness in kids, emaciation.
 - *Cause*- Exposure to domesticated fowl, poor living conditions.
 - *Remedies*- topical and injectable parasite controls designed specially for use in blood sucking ways.

(These are only a few examples of the more common diseases and afflictions encountered by goat farmers. Most goat husbandry books have a complete list of common goat disease symptoms, causes and cures.)

Assessment and Review

- Describe the basics of ruminant digestion.
- Describe the signs of impending birth and the stages of kidding.
- Discuss basic milking procedure.
- Name a common ailment of the goat, describe symptoms and suggest a remedy.