

# Pack #106, Item 8

# Type: Backgrounder

Date: May 2017

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**Backgrounder: Raising goats**

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***Why is this subject important to listeners?***

Because farmers who want to raise goats should know:

* The right age and weight for young goats to begin mating, and the best season to mate.
* The best breeding methods.
* Symptoms of common goat diseases and infections.
* How to care for a pregnant goat, and for kids and mothers after birth.
* The amount of feed and water needed per day by nursing goats and other goats.
* How to economically feed goats to maximize income and profit from marketing.

***What are some key facts?***

* Goats are natural browsers.\* The number one feeding strategy is to ensure access to sufficient browse. Goats do not perform well if fed indoors.
* Goats should be fed three times daily at fixed times, with water always available.
* Kid mortality is generally very high. Goat keepers need to exercise care with newborns.
* Unhealthy goats should be separated from healthy ones.
* Goats should mate when there is plenty of protein-rich feed.
* After birth, kids should suckle the colostrum (after-birth milk) for 20 to 30 minutes.
* Milk smells bad when goats are fed on scented feed like silage\* or pineapple before milking, or if females are housed in the same pen as a he-goat.

***What are the big challenges of raising goats?***

* Detecting diseases with symptoms that are not easily visible.
* Knowing when a goat is mature enough to mate.
* Not knowing the correct composition and quantities of a healthy diet.
* Lack of knowledge of proper breeding.

***Gender aspects of raising goats***

* Women in sub-Saharan Africa (SSA) play a larger role in rearing goats than men, and know more about rearing goats.
* Men in most African cultures own goats, but women herd and care for them.
* Among women, goats can be used to earn income and reduce poverty.
* In some parts of Africa, women use goats to control weeds and wild bushes by feeding on them.

*For further information, see documents 4, 5, and 6.*

***Key information about raising goats***

1. **Breeding**

Healthy goats enter heat more often, and can have at least three kids every two years.

*Before owners mate their goats, they should consider the following:*

* Weight, not age, determines when young goats are ready to mate but, generally, male goats are sexually mature at about four months.
* Goats mate when they attain 3/4 of the mature weight of their particular breed.
* A male goat can mate with 10 to 20 females, but if offered too many females, the mating quality declines.
* For breeding, male goats need to be healthy but not fat, as that decreases sexual desire and sperm quality.
* Female goats that are healthy, sexually mature, and not pregnant enter heat every 17 to 21 days, and should be mated within 24 to 36 hours of entering heat.

*Identifying a female goat in heat*

* The goat is restless, keeps bleating, wags its tail incessantly when its loins are touched, mounts other goats, and stands near a male goat and urinates.
* The goat’s vulva opening becomes slightly red and swollen.

*For further information, see documents 1, 2, and 6.*

1. **Raising**

*After birth*

* Kids should often suckle the nutrient-rich colostrum in the 24-hour period after birth. The colostrum has antibodies which protect kids against infection.
* Goats that reject their kids should be restrained until they suckle. However, rejection could be a sign of poor health.
* Rubbing rejected kids with the placenta may help the mother to accept them.
* Kids rejected by their mothers and orphans can be bottle-fed with colostrum from other goats that have given birth within the flock or in nearby areas.
* Rubbing rejected kids with another mother’s placenta can help the mother to adopt it.
* Excess colostrum can be frozen at 4°C for up to three months and used to feed orphaned or rejected kids.
* Goat milk replacers or even diluted cow’s milk or powdered milk can be used when goat’s colostrum is unavailable.

*Weaning goat kids*

* At two to three months old, separate kids from mothers and wean on grass or grains.
* Feed kids with clean plant parts to lower risks of worm infection.
* Kids should graze or browse in the best pastures with their mothers.
* Kids need clean drinking water when weaning.
* Wean kids at least two months before the mother’s next gestation period starts.

*For further information, see documents 1, 2, 6, and 7.*

1. **Feeding and nutrition**

Well-fed goats produce more meat and milk, and reproduce regularly. Goats in the last month of pregnancy need twice as much protein and energy feed as regular goats.

*Water*

* Dairy goats require at least 3-8 litres of cool clean water daily at a fixed time.
* Goats that consume dry feed require more water.

*Energy*

* Energy foods like roots, tubers, bananas, molasses, fruit, and oil cake ensure that goats stay active.
* Soya, cotton, sunflower, groundnut, and coconut provide up to 2-3 times as much energy as carbohydrates from leafy and plant stalk feed.

*Protein*

* Goats require more protein than they get from browsing.
* Collard green leaves, pigeon pea and acacia pods, soya, cottonseed, groundnuts, and leaves from *Leucaena, Sesbania,* and *Gliciridia* are good sources of protein.
* Poultry litter is another protein source.

*Minerals*

* Goats need calcium, sodium, phosphorus, iron, copper, and iodine.
* The green leaves of leguminous trees and shrubs, and cereal seeds are good sources of phosphorus and calcium.
* Dark-coloured leaves are good sources of iron.
* Goats that lack iodine may give birth to weak, deformed, and stillborn kids.

*Vitamins*

* Goats lacking vitamin A may suffer from eye problems, skin infections, and breathing and digestive difficulties.
* Vitamin-deficient goats give birth to weak kids.
* As goats browse, they get different vitamins from the vegetation they eat.
* Orange-fleshed sweet potatoes provide sufficient vitamin A and sweet potato leaves provide vitamin C.

*Feeding goats for the meat market*

* Three months after weaning, kids should weigh 15 kilograms, depending upon the breed and feeding system.
* Bucks reared for the meat market can be castrated from two weeks to two months of age to gain more weight.
* Bucks fed twice a day with half a kilogram of a protein supplement increase their weight and earn more income at meat markets.
* From 6-12 months old, feed meat goats with plenty of green fodder, including green maize stalks and legume hay.

*For further information, see documents 1, 2, 6, 7, and 8.*

1. **Housing**

Housing goats makes it easier to monitor their growth and health.

*Guidelines for goat housing*:

* Plank wooden floors, raised 1.5 feet from the ground.
* Floor boards with half-inch spaces to allow dung to fall through.
* An overhanging roof to shield goats from rain and sun.
* Fodder and water troughs one foot above the floor.
* The ventilation system should avoid wind blowing directly on goats.
* Each goat needs at least two metres by two metres of space.
* You can house at least six kids in four square metres (two metres by two metres.)

*For further information, see documents 1 and 2.*

1. **Managing health, disease, and parasites**

Goats reared in wet, hot, or unhygienic conditions are at risk from lung and bacterial infections, foot rot, and parasites. Goats that browse often on the same pastures are at high risk of worm and tick-related infections.

*Healthy goats are/have:*

* Energetic, have a good appetite, chew cud, have a smooth coat, bright eyes, and clear yellow urine.
* Pink mucus membranes in the eye, mouth, and nose, and in the vulva for females.
* Round and firm droppings, indicating healthy eating habits and good digestion.
* A soft udder that hardens without being infected before it delivers.
* Milk without pungent odours.

*Diagnosing a sick goat*

The best way to detect sickness in goats is by comparing its health, milk production, weight, and behaviour with others in the flock.

*Infectious diseases*

**Peste des petits ruminants** (also called PPR or Ovine rinderpest)

* Spread by inhaling a virus present in mucus, tears, and other secretions.
* Symptoms: High fever six to eight days after infection, and mouth tissue decomposes. Inflamed mucous membranes produce excess mucus. Diarrhoea and lung infections result in death after a week.

*Prevention and treatment*

* Vaccinate as a preventive measure.
* Restrict movement during outbreaks.
* Treatment is possible at early stages, but expensive.

**Contagious Caprine Pleuropneumonia (CCPP)**

* Contagious disease of the respiratory tract and lung spread through nasal mucus. Can wipe out an entire flock.
* Symptoms: high fever, rapid breathing, cough, stiff neck, and stands with front feet apart. Groans when exhaling, secretes lots of nasal fluid, and can die within one to three days.

*Prevention*

* Vaccination.
* Quarantine infected goats to stop spread.

**Foot and Mouth**

* Viral disease transmitted through air, contaminated food, manure, secretions, and birds.
* Symptoms: Affects mouth and hooves. Three days after infection, goats produce excess saliva, froth at the mouth, and lose appetite. Tiny blisters on liver, teats, mouth, nose, and legs, and walking difficulties. Reduced milk production. Young kids may die, but adults survive.

*Prevention*

* Vaccination.
* Quarantine infected goats and install foot baths with disinfectants. Slaughter infected goats to stop spread.

**Mastitis**

* Bacterial disease that infects goats’ udders due to poor hygiene in sheds and milking area.
* Symptoms: Swollen udder, decreased milk production; lumpy and unpleased-smelling milk. Udder pain makes goat resist milking, and stops kids from suckling.

*Treatment*

* Milk udders infected with mastitis often, and massage them at least seven times a day. Inject antibiotics into the udder through the teat opening and canal after milking. To avoid spreading mastitis, disinfect hands after milking each goat.
* Quarantine infected goats.

**Anthrax**

* Bacterial disease transmitted through pastures, and through feed, dust particles, and water contaminated with infected blood or excrement.
* After seven days, muscle tremors, breathing difficulties, and high fever followed by sudden death.

*Prevention and treatment*

* Annual vaccination.
* Antibiotic treatment at early stages.
* Carcasses of infected goats should be burnt or buried two metres deep with quicklime to stop scavengers from digging them up. Wear protective clothing when handling infected carcasses.

**Brucellosis**

* Bacterial disease spread through the milk, semen, placenta, and fetal and vaginal discharges of infected goats. Can be transmitted to humans through infected milk.
* Symptoms: Abortions, stillbirths, and birth of weak kids.

*Prevention*

* Vaccination, but do not vaccinate pregnant goats in case they abort.
* Farmer should test milk for the bacteria if there are repeated abortions. Boil milk before consumption for 10 minutes to kill bacteria. Ensure that goats give birth in easy-to-clean environment and disinfect area after the birth.

**Diseases related to poor feeding**

When feed is changed, or when goats eat stale, wet, or wilted green fodder, they may get diarrhea or bloating. This can be prevented by gradually introducing new feed in small portions.

Bloated goats lose appetite, breathe rapidly, and stagger. Farmers should push their left side to expel gas. Goats with diarrhea from poor feed should not be fed for a day, but given lots of fresh water to drink.

**Internal parasites**

Goats may be infested by worms such as liver flukes, tapeworms, round worms, and lung worms, transmitted through pasture dung or feed. Symptoms include lack of appetite and malnourishment. When treating for worms, medicate the entire flock.

**External parasites**

Goats may be bitten by flies, mosquitoes, lice, mites, and ticks, which transmit diseases and internal parasites when they bite. Prevent with basic hygiene around goat shed, remove manure and other waste, and spray environment with acaracides (mite killers).

*For further information, see documents 1, 2, 3, and 6.*

1. **Goat products**

Farmers can earn money selling kids, goats, milk, and hides for leather products, and processing milk to cheese and yogurt.

*Milking*

***Preparing for milking:***

* Use easy-to-clean stainless steel containers.
* The milking environment must be clean, secluded, and free of odours, disturbances, and male goats.
* Clean the udder with warm water and a soft cloth to stimulate milk production.
* Apply a milking gel on teats to make milking easier.
* Allow kids to touch the udder to stimulate milk production.
* Feed goats with tasty feeds before milking to stimulate release of milk.
* Finish milking within 5 to 10 minutes after stimulating the goat.

***Milking process***

* Grasp the teat between the thumb and forefinger.
* Close the thumb and forefinger and squeeze the teat downwards to release milk.
* Release the teat to allow milk to flow into the teat before milking it again.
* To get the last of the milk, stroke the udder and give the teats a final squeeze.
* Goats with small teats are milked with index, thumb, and middle fingers.

***After milking***

* Sieve the milk and boil to limit spoilage.
* Processing the milk into powder makes it lasts longer.

*Slaughtering*

Male goats reared for meat should be castrated to eliminate odours in meat, common in sexually active male goats. Preserve meat by salting, refrigeration, or drying.

*Slaughter*:

* Tie the fore and hind legs and lay the goat on clean ground or banana leaves.
* Place a bowl near its throat to drain the blood.
* Pull its head slightly backward to stretch the throat and cut it.
* Hang the carcass on a hook or tree by its fore limbs.
* Place a large container beneath the hung torso.
* Skinning the goat immediately after death is easier because the goat is still warm.
* Cut the skin from neck to scrotum on the underbelly, and separate the skin from the body by hand.
* Cut the skinned torso from the neck to the scrotum to release the internal organs into the container.
* Carefully remove the gall bladder (next to the liver) so that it doesn’t burst and make the meat bitter.
* Cut the hanging torso into large chunks for frying, boiling, or roasting.
* Goat’s blood spoils quickly so should be mixed with cooking dishes for consumption.
* To preserve blood, dry in the sun, and grind into powder.

*Goat by-products*

*Preserving hides*

Drying: Stretch the hide with strings on a frame, with the internal side facing the sun. If drying indoors, the shelter should be dry, have low humidity, and be well-ventilated. The risk with drying is that insects may attack the hide.

Salting: Salting dehydrates the hide, slows bacterial development, and prevents insect attack. To salt, wash the fleshy inside to remove stuck flesh, then wipe the water from the hide and smear salt on the fleshy side. Fold the sides of the stomach towards each other, roll the hide, and store in a dry environment.

*For further information, see documents 1, 2, and 6.*

***Where can I find other resources on this topic?***

*Documents*

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***Key definitions***

* Browse: The way that ruminants such as goats (also sheep and cattle) feed on twigs, leaves, or vegetation. *Browse* also refers to food which is available in this way.
* Buck: Male goat.
* Colostrum: Nutrient-rich milk produced by goats within a few hours of giving birth.
* Silage: grass or other green feed compacted and stored in airtight conditions, typically in a silo, without first being dried, and used as animal feed.

## Acknowledgements

Contributed by: James Karuga, Agricultural journalist, Kenya

Reviewed by: Azage Tegegne, Principal Scientist, LIVES Project Manager, Deputy to Director General’s Representative in Ethiopia, International Livestock Research Institute, Addis Ababa, Ethiopia

 Project undertaken with the financial support of the Government of Canada through Global Affairs Canada (GAC)