Goat Agribusiness And Community Animal Health Worker Project

Training Module No 4

Theory

1. Five steps towards productive herds
2. What is a healthy goat?
3. Goat breeds
4. Nutrition, Management and Protection

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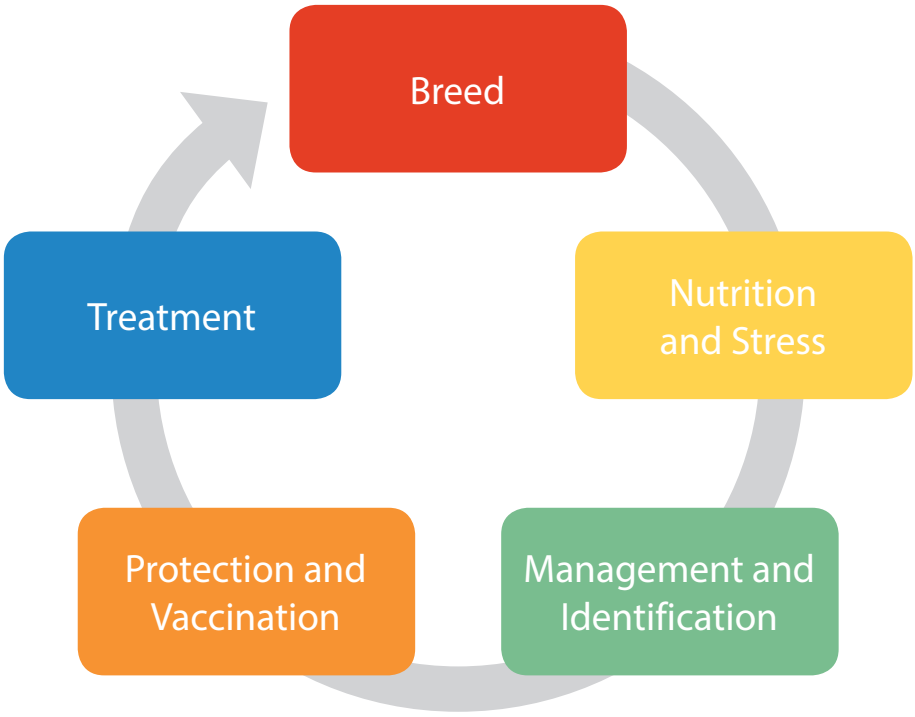
Five steps towards productive herds

Management is the most efficient way of preventing animals getting sick. Different management interventions are highlighted below:

1. **Breed** – breed is the most important component of having a healthy herd.
2. **Nutrition and stress** – nutrition problems often link with stress to make a goat vulnerable to diseases and parasites.
3. **Management and Identification** – managing herd health, nutrition and stress will give a farmer a cost effective and efficient prevention of disease and parasites in their herd. Identification is important to prevent stock theft.
4. **Protection and vaccination** – giving an animal shelter can prevent disease and stress. Vaccination is only possible for certain diseases.
5. **Treatment** – once an animal is sick treating the disease timeously is important. Giving the right dose and the correct type of medicine or antibiotic is important.



What is a healthy goat?

- It eats food in normal quantities and chews its cud
- It moves with the herd or herd of animals
- It breathes easily and doesn't pant
- It does not limp or bend its back while it's standing or walking
- It doesn't have missing hair
- It has nose that is slightly dry for goats
- It has eyes and nostrils that are not runny or have excessive mucous
- Its eyeballs are shiny and clear
- It has mucous membranes that are pink and not white
- It has dung and urine that are a normal colour and it is urinating/defecating normally
- Its stomach is not bloated
- Tail up, not having diarrhoea at the back
- Hair is smooth and shiny.

A healthy goat

A sick goat

A healthy animal is more able to resist diseases and can recover more easily when it does get sick. A sick animal costs a farmer money and time. A farmer with a sick animal has to buy medicines, syringes and needles. It is therefore better for a farmer if animals stay healthy and do not get sick.

So before we consider how to treat diseases, it is best to think about how to recognize healthy animals and how to keep them healthy.

Treatment is also more successful if it is given early, before the animal is so sick that the medicine cannot help it. This means that a farmer must be able to tell very quickly if he or she has a sick animal, what sickness it has and what he or she can do about it.

Goat breeds

A local breed has the best chance of resistance and adaptability to the diseases and the diet of the area, selecting a local breed is always the best place to start a healthy goat herd. Goat breeds can be divided into three categories:

1. **Indigenous breeds** which have been naturally selected for adaptability to harsh environments and which are generally used for meat production, but are also important for cultural purposes.

Indigenous goats in Msinga

2. **Meat breeds** which have been specifically bred for meat producing characteristics. Such breeds available in South Africa include Boer Goats, Savanna Goats and Kalahari Red Goats. It is generally accepted that they are more susceptible to disease than non-improved goats.

Boer goat (left) and Kalahari Red goat breeds

3. **Dairy breeds** which are all imported breeds and include mainly Saanen goats and Toggenburg goats. These are breeds which have been selected for milk production and are used for the production of milk and processed milk products such as cheese and yoghurt. It is generally accepted that these breeds are very susceptible to diseases and parasites.

Basic information of indigenous goats

Production norms for different goats are fairly variable. This user guide will focus on indigenous goats and provide some information that can guide a goat farmer and allow him or her to assess the herd's performance.

- Length of gestation period (pregnancy): 150 days (approximately 5 months)
- Birth weight: 2.5 kg
- Weaning weight (weight when kid stops suckling): 12-15 kg
- Mature mass of female: 35-40 kg
- Mature mass of rams: 45-50 kg
- Breeding age for young ewes: 1 year
- Main kidding seasons: April–June or September–December
- Ram to ewe ratio: 1 ram to 25 ewes (4 rams for every 100 ewes)
- Lifespan: 10-12 years.

Nutrition and stress

Nutrition problems often link with stress to make a goat vulnerable to diseases and parasites. A well-fed animal is generally a healthy animal, especially in winter when there is no or little greenery. See Section 13 for more information.

Immunity

The immune system keeps the animal healthy. All animals and people have immune systems. The job of the immune system is to fight germs that invade the animal and could cause it to get sick. The immune system is like the animal's own army, ready at all times to fight invaders that put the animal's life at risk.

The immune system is found everywhere in the animal's body. It is made up of millions of little cells that are too small for people to see with their eyes. When germs enter the animal's body, these im-

mune cells come from all over to attack the germs. If the cells win the battle, the animal stays healthy. If they lose the battle, the animal may get sick and need treatment. The cells are produced in the bone marrow and then spread around the body in the blood.

The immune system can recognise diseases if it has fought these diseases before. With some diseases, like contagious abortion (CA), this recognition lasts the animal's whole life. With other diseases, however, the immune system can recognise the disease when it is present often but stops being able to recognise it when the animal hasn't had it for a long time. Common diseases of this kind are those that ticks cause. This is one reason why animals often get sick in early summer when there are a lot of ticks after there have been so few in winter. Once the animal's immune system is used to the ticks again, then the animal can often fight the tick diseases.

Livestock owners who come from areas where the disease heartwater occurs must be very careful about buying animals from other areas, because if they come from areas that do not have heartwater, the animals' immune systems will not recognise the disease and cannot protect them and they will get sick and may even die.

Vaccines give immunity to the animal when used in the correct way. Young animals exposed to viruses while they are suckling colostrum can also have degrees of immunity.

What causes stress in an animal?

Stress can lower immunity and thus allow diseases and parasites to infect or affect the goat's health. Stress can be caused by many factors:

- Hunger
- Thirst
- Tiredness (walking long distances)
- Cold (exposure to wind and rain or sleeping in a dirty pen)
- Pregnancy
- Change in diet
- Change in environment.

How to keep your herd healthy

One sick animal can sometimes contaminate other healthy animals and cause them to get sick too. This can also result in the sick animal getting re-infected after it has recovered.

Sometimes when a farmer has many sick animals, or a neighbour has sick animals, it means that the amount of disease in the area is very high. It is very difficult to keep individual animals healthy when there is a lot of disease around. Farmers who are aware of common diseases in their area need to think strategically about how to combat these diseases as a community rather than trying to just keep their own animals healthy.

This is also true of parasites that cause diseases, like ticks and worms. If some animals have a lot of ticks or worms, then it is difficult to stop the ticks and worms spreading to all the animals in a herd.

Management and identification

Managing the herd is the next best way to avoid losses. This can include keeping animals away from areas with parasites and keeping their enclosures clean. Managing parasite loads is also very important. Removing all parasites at some times of the year can make the animal more vulnerable to the parasites and death when they do infest. A sick goat in your herd needs to be separated and quarantined otherwise it will infect others.

The single biggest loss farmers report on is stock theft. Identifying the farmers' animals helps prevent stock theft and increases the chance of having an animal returned if it is stolen.

Handling your goats

The main thing to consider when handling goats is to keep them calm and prevent injuries, both of which will improve the productivity of the goats. Smallish pens and handling facilities allow for easier handling of the goats than trying to work within a camp.

When handling goats, you need to understand their natural behaviour. For example:

- They prefer to move towards light than dark
- They prefer to stay with the herd than be separated, which can distress them
- They like to follow the leader
- They tend to move in a circle in the pen around the handler
- They are easily distracted by noise
- They can become aggressive towards each other when confined and stressed
- They prefer to move in family groups
- They can jump over gates and find escape opportunities

Catching a goat correctly (above the hock) so as to not damage the leg (top picture) and holding it securely (below).

- Standing behind the animal's shoulder will generally encourage it to move forward. If you move quickly down next to the race in the same direction to the goats, they will generally move forwards up the race
- Keep the goat upright when trimming hooves
- Try to get the goats used to being handled so that they are less stressed
- When holding a goat by the horns, hold the base of the horns and not the tips
- Work calmly and quietly with your goats.

Protection and vaccination

Giving an animal shelter from cold, wet conditions prevents stress that can lead to disease. Dipping and deworming can help the animal fight off diseases if it is not carrying a large load of parasites. Vaccinating is the only non-natural way of making an animal resistant to disease. This has to be done before the animal is exposed to the disease.

Health interventions

If your animal is sick it could be caused by a number of things, most commonly one or a combination of the following: a viral infection, a bacterial infection, internal or external parasites or poisoning.

Observation (appearance, history, appetite, temperature, respiration and other clinical symptoms) cannot be used as the only way of identifying a disease. Overuse of antibiotics is a common and growing problem because they are used on conditions that cannot be treated effectively. Correct antibiotics are the only effective intervention that can be used against certain conditions if used at the right dosage.

Types of agents

1. A **virus** is a small infectious agent that replicates only inside the living cells of other organisms. Viral infections in animals provoke an immune response that usually eliminates the infecting virus. Immune responses can also be produced by vaccines, which confer an artificially acquired immunity to the specific viral infection. Antibiotics have no effect on viruses.
2. **Rickettsia** organisms are small parasites often classified with bacteria that are transmitted by ticks and live in the blood stream. Example: heartwater.
3. **Bacteria** also cause sickness in animals. Bacterial infections are illnesses that occur when harmful forms of bacteria multiply inside the body. They can be treated with various types of antibiotics. These are generally split between sulphur based and cyclidine based antibiotics. Example: pneumonia. Often bacteria and viruses work together in making an animal sick, so one injects antibiotics to combat secondary infections caused by bacteria to help the goat get healthy enough to fight off the virus.
4. **Parasites** are organisms that live on or in a host and get their food from or at the expense of their host. Parasites can cause disease in goats.
5. **Protozoa** are small single celled organisms which are common in soil and dirty water. They can occur as parasites in the gut of animals and cause, for example, coccidiosis.

The most common and problematic internal parasites are worms and flukes. The most common intervention is an oral dewormer. Different dewormers are used to treat different species of worms and flukes. In order to be most effective with these, a farmer needs to be clear what worm he/she is having problems with by taking dung samples. A common problem is worms becoming resistant to many of these actives because of drenching, where a whole herd is dosed regardless of its worm load. There are some injectable solutions that can also treat worms.

The most common and problematic external parasites in goats are ticks, fleas and mange. There are a number of insecticides for these external parasites. These are often called dips. The most common are mixed with water and sprayed on the animal. Others can be poured onto an animal's back and spread through an oil based carrier to cover the whole animal. Injectable remedies are also available.

These insecticides are also classed according to the active ingredients and can be found with different brand names with the same actives. These actives also build up immunity in the target population so where they do not seem effective, farmers should get their ticks tested and change to different actives. The actives work in different ways. Some sterilise ticks. Some paralyse the mouth parts. Some stop the exoskeleton forming. Farmers need to understand tick life cycles so as to understand when they would expect to see ticks on their animals again after dipping. There are some insecticides that control both ticks and mange which are common problems with goats.

The most important step in treating an animal is checking its state.