

GOATKEEPERS' MANUAL



2003

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GOATKEEPERS' MANUAL, 2003

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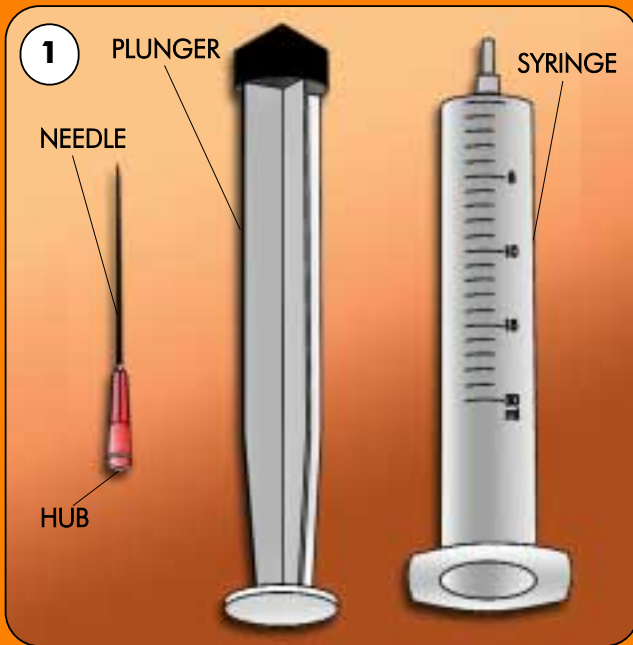
Marina Lubbe



BASIC PROCEDURES

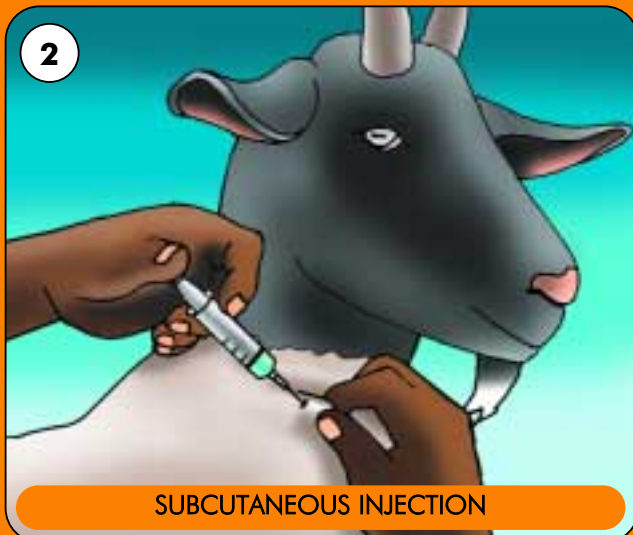
INJECTIONS

The parts of a needle and syringe are shown in the drawing below.



Under the skin

- Make sure that the goat is properly restrained.
- A convenient place to inject under the skin is on the side of the neck.

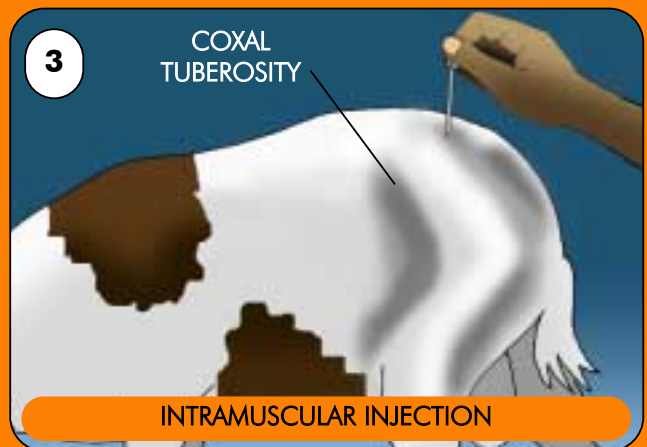


- Lift the skin between two of your fingers and insert the needle.
- Pull back on the plunger and make sure that no blood rushes into the syringe.
- If blood is present, remove the needle and re-insert it at a different place.
- If there is no blood in the hub, depress the plunger.
- Make sure that you do not push the needle right through and inject through two layers of skin by mistake.



Into a muscle

- Holding the needle without the syringe between the thumb and forefinger, insert the needle in one quick movement into the muscle of the rump.
- The needle should be inserted not more than 3 cm behind the coxal tuberosity (see the drawing).
- Check that there is no blood in the hub of the needle.
- If there is blood, withdraw the needle and try again.
- If there is no blood, depress the plunger to inject the substance into the muscle.
- Withdraw the needle and rub the area if the injection was painful.



DRENCHING OR DOSING

- Drenching is normally used to treat animals against worm infections.
- Place the syringe in the side of the goat's mouth and over the base of the tongue.
- Squirt the contents of the syringe into the mouth in a gentle manner.
- The syringe should be directed towards the left-hand side of the mouth.
- Do not lift the head too high, which will prevent the animal from swallowing.
- If the goat jumps forward, move with the animal to prevent damaging the roof of the mouth.



ABORTIONS

WHAT ARE ABORTIONS?

Abortion is the natural or induced birth of a foetus before it is able to survive outside the womb.



ABORTED FETUSES

WHAT CAUSES ABORTIONS?

- Stress (resulting from starvation).
- Habitual abortions (which occur year after year and result from inbreeding in angora goats).
- Numerous infectious and parasitic organisms can cause abortions.

WHAT SIGNS DO YOU SEE?

- In abortions resulting from starvation you see a normal, well developed kid after the 90th day of pregnancy.
- The foetus may or may not show signs of abnormality.
- In abortions caused by infections, you may see signs such as those shown in the photograph.



ABNORMAL LIVER OF AN ABORTED FOETUS

TREATMENT AND PREVENTION

- Vaccination may be of use in cases where abortions are caused by germs.
- For abortions that result from starvation, provide sufficient feed of good quality.

The following points provide a guideline. For your specific conditions, you will need to contact a nutritionist.

- The doe needs feed most critically in the last month of pregnancy and the first two months after birth.
- A doe that weighs 30 kg and has access to grazing will need about 800 g of supplement in late pregnancy and early lactation.
- Approximately half the supplement should consist of energy sources and approximately half of protein sources. The supplements should contain a small amount of salt and a small amount of mineral mix (about 8 g of each for a 30 kg doe)
- Examples of energy sources are: molasses, maize, barley, brewers' grains, wheat bran, cotton seed oilcake meal.
- Examples of protein sources are: fishmeal, peanut oil cake meal, cotton oil cake meal, brewers grain.



ABSCESSSES

WHAT ARE ABSCESSSES?

An accumulation of pus inside a thick-walled capsule.



WHAT CAUSES ABSCESSSES?

Abscessses are caused by germs called bacteria, which are found in dust, in dung and on the ground. Abscessses often develop following an injury, which may be caused by ticks, grass seeds and thorns, amongst other things.

WHAT SIGNS DO YOU SEE?

A round swelling which may be red and painful. Often abscessses are found in front of the shoulder, on the head and neck and below the ear, in the flank and on the hindleg.

TREATMENT AND PREVENTION

When the abscess is about to burst, it should be lanced with a clean, sharp knife or blade, drained and disinfected.



Wear gloves. Make a cross-shaped cut over the abscess.



Use your finger to squeeze out the pus and collect it on paper.



Clean the wound with salty water.



Use a suitable wound spray to keep away flies.

Collect the paper, pus and gloves together and bury or burn them.

Severely infected animals and animals that repeatedly develop abscessses should be culled.



FOOTROT

WHAT IS FOOTROT?

This is a painful condition in which the hooves and soft tissues of the foot are badly infected and appear to be rotting away.



WHAT CAUSES FOOTROT?

Contagious foot rot is caused by a bacterium, a type of germ. The problem is seen when conditions in the kraal or on the pasture are wet and muddy.

WHAT SIGNS DO YOU SEE?

The skin between the hooves becomes red, moist and painful and there is a bad-smelling, yellow-grey discharge that may look like pus. The hooves separate from the soft tissues and become soft and crumbly.



In an animal that has been suffering from footrot for a long time (in chronic footrot), you may see misshapen hooves such as those in the photograph.

TREATMENT AND PREVENTION

- Goats that show symptoms of footrot should be separated from the rest of the herd in a dry area of the kraal to stop the problem spreading to the other goats.
- Trim the hooves (see below) and remove all the infected material.
- Treat the exposed parts with an antibiotic spray and give antibiotic injections if necessary.
- To prevent footrot from occurring, trim the hooves before the start of the rainy season.
- Use a footbath that contains 5% formalin or 10% zinc sulphate to prevent footrot.
- Attend to muddy areas of the kraal—use agricultural lime or gravel in these areas.
- Cull badly affected animals or animals that repeatedly develop footrot.



FOOT CARE

Trim hooves which have become overgrown so that they again have their normal shape.

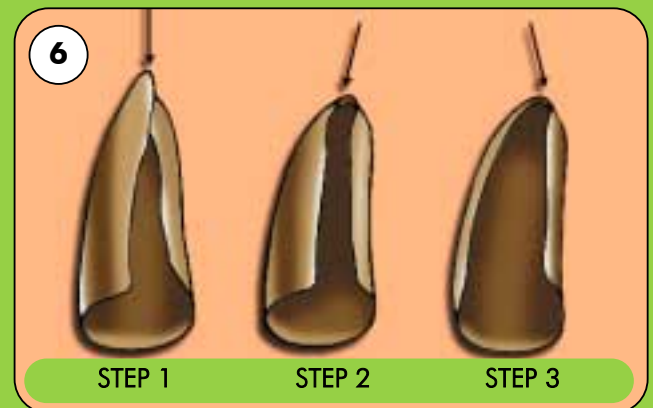


HOOF SHEARS

The following set of diagrams demonstrates how the hooves should be pared. A pair of hoof shears is normally used. It is also a good idea to chase the goats or sheep through a footbath to clean and soften the hooves before they are trimmed.



OVERGROWN HOOVES



STEP 1

STEP 2

STEP 3



HOOVES AFTER TRIMMING

HEARTWATER

WHAT IS HEARTWATER?

Heartwater is a disease of sheep, goats and cattle which is caused by a blood parasite.

WHAT CAUSES HEARTWATER?

The blood parasite is transmitted by the bont tick.

1



BONT TICK

WHAT SIGNS DO YOU SEE?

In sick animals, you may have a fever of 40°C or higher.

2



GOAT TURNING ITS HEAD

You may see unusual behaviour, for example, the goat may turn its head towards its body in a strange manner.

3



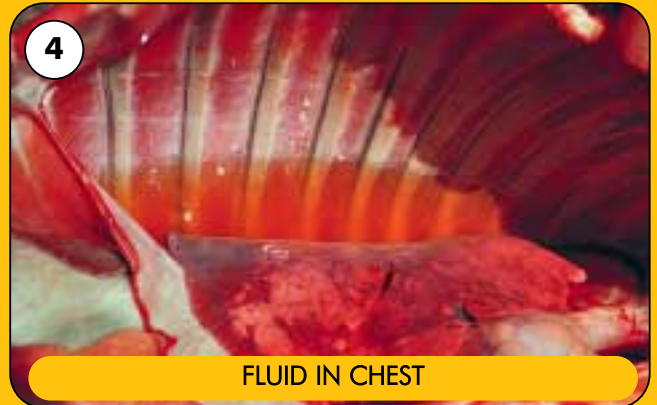
SHEEP KICKING UNCONTROLLABLY

You may see nervous signs such as a high-stepping walk, convulsions or kicking uncontrollably.

Goats may die and in these animals you may see froth and fluid from the nose.



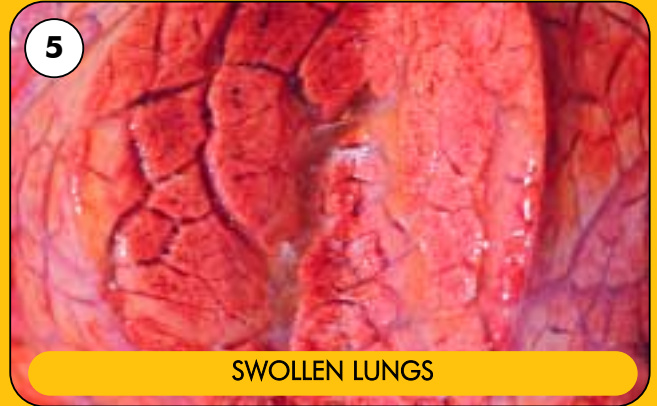
4



FLUID IN CHEST

If you open the carcass up, you may find fluid in the belly, chest and sac surrounding the heart, swelling of the lungs with froth, and fluid in the windpipe.

5



SWOLLEN LUNGS

TREATMENT AND PREVENTION

When you notice signs of the disease, treat without delay with oxytetracycline. To prevent the disease, control the ticks on the animals. Vaccination may be considered but requires veterinary assistance.

6



TICK CONTROL

A pour-on dip may be applied to the armpits of the goats, in the groin area and between the claws of the foot. Alternatively, a foot bath which contains a dip may be used.

MASTITIS

WHAT IS MASTITIS?

- Mastitis is an inflammation of the udder in goats, sheep and cattle and other animals. In severe cases, mastitis may cause a general poisoning of the animal's system, causing fever, depression and loss of appetite. It can be the main cause of loss of milk production.



WHAT CAUSES MASTITIS?

- Mastitis is caused by an infection of the udder.
- This disease can develop when kids introduce the bacteria into the teat canal during suckling.
- Mastitis develops under wet and warm conditions.
- Does producing a lot of milk are prone to the disease.
- Does that have kids with orf lesions ("sore mouth" caused by a virus) are more likely to develop mastitis.

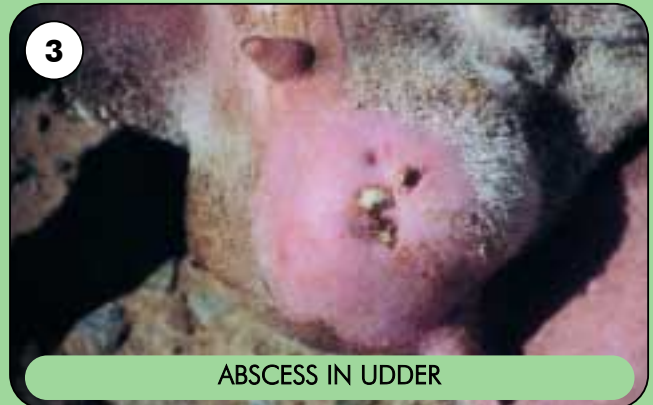
WHAT SIGNS DO YOU SEE?

- Changes in the udder and abnormalities in the milk are most evident.



- Mastitis can cause the udder to become swollen, hot to the touch, red and painful, and later purplish.

- There will not be any milk or the milk will be abnormal (thin and watery, thick with clots, containing pus or blood).



- Abscesses may occur in the udder.
- Does may drag the leg closest to the affected part of the udder, and limp when they walk.
- Because of pain, does may not allow kids to suckle. Kids could starve and die.

TREATMENT AND PREVENTION

- Where possible, the udder should be milked out and the milk discarded.
- An intramuscular antibiotic may be given. Consult a veterinarian on the use of treatment via the teat canal.
- If mastitis is a problem on a farm, kidding should not be confined to small areas that could be infected.
- Vaccination is the best and most practical way to prevent animal losses.
- Good hygiene and management can keep mastitis under control. Prompt attention to teat injuries is critical. Flies can spread infection, so fly control is also important.



ORF

WHAT IS ORF?

- Orf is a viral infection of the skin and mucous membranes of sheep and goats. Orf can affect humans if they handle infected animals. Another name for orf is "sore mouth".



WHAT CAUSES ORF?

- The orf virus enters the body via a break in the skin such as a scratch or a cut.
- The virus is tough and can survive for years in the environment.
- The stress of lambing or kidding can cause infections to flare up in ewes and the infection can spread to lambs and kids.
- Lambs and kids can spread the virus to their dams when they suckle.

WHAT SIGNS DO YOU SEE?

- Small round raised lesions are seen usually at the corner of the mouth. Lesions spread to the muzzle, nostrils, adjacent skin and around the eyes. Ewes and does develop encrusted lesions on their teats. Lesions are painful for them when their young suckle.



TREATMENT AND PREVENTION

- Separate affected animals if possible as the scabs they shed are highly infectious and infect camps and soil for many months.
- Good management, hygiene and avoidance of stress are advised.



COCCIDIOSIS

WHAT IS COCCIDIOSIS?

- Coccidiosis is a disease of lambs and kids and is associated with lush, irrigated, cultivated grazing and feeding pens (kraals). Goats are particularly susceptible.



GOAT WITH DIARRHOEA

WHAT CAUSES COCCIDIOSIS?

- Coccidiosis is caused by a protozoal parasite. Many factors contribute to the occurrence of this disease. These are adverse weather conditions, lowered immunity, close contact, stressful situations, unhygienic conditions, mingling of different age groups or batches of animals.

WHAT SIGNS DO YOU SEE?

- Watery and often bloody diarrhoea.
- Poor appetite.
- Loss of condition.



SPOTS ON INTESTINES



INTESTINES WITH COCCIOSIS

TREATMENT AND PREVENTION

- Infected animals should be treated with one of several remedies that specifically treat coccidiosis.
- Several rules apply to the prevention of this disease:
 - Reduce stress to the animals.
 - Do not crowd animals into small areas.
 - Isolate all affected animals.
 - Clean and disinfect feed and water troughs every week.
 - Do not mix animals of different ages together.

PNEUMONIA

WHAT IS PNEUMONIA?

Pneumonia is a disease of the airways and lungs, affecting sheep, goats, cattle and other animals.

WHAT CAUSES PNEUMONIA?

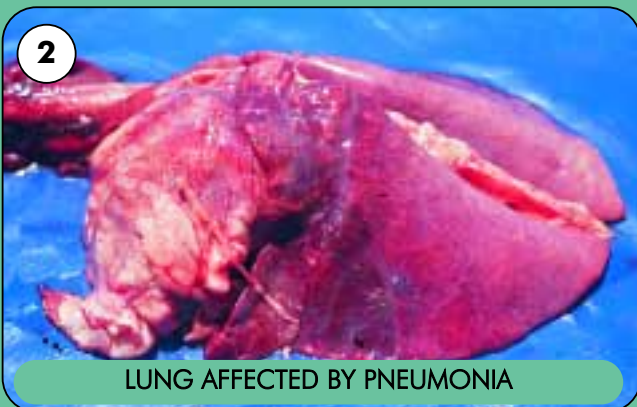
- Pneumonia is caused by a germ, a type of bacterium.
- The disease usually occurs when the animals are under stress.
- Animals may be stressed when they are exposed to bad weather such as strong winds, heavy rain, sudden changes in temperature or extreme cold.
- Animals may also develop the disease after being transported long distances.



1
BAD WEATHER

WHAT SIGNS DO YOU SEE?

- Animals may become depressed, listless and stop eating. They may lag behind the rest of the flock when they are herded.
- Sheep and goats with pneumonia show fast breathing. They breathe with difficulty and may gasp for air and cough.
- There may be a mucous discharge from the nose.



2
LUNG AFFECTED BY PNEUMONIA

- The normal colour of the lungs is light pink. Animals that die from pneumonia will show red patches in the lungs amongst the normal pink areas. This gives the lungs a patchy appearance (in Afrikaans, "bontlong"). A large part of the lungs may also be solid and red in colour.



3
YELLOWISH WHITE LAYER ON LUNGS

- The lungs may be covered with a yellowish white layer which sticks to the inside of the ribs.



4
THERE MAY BE FROTH IN THE WINDPIPE

TREATMENT AND PREVENTION

The disease may be controlled to a certain extent by vaccination, but management problems should be corrected, e.g. animals should be given shelter during bad weather and they should be allowed stops to rest, drink water and eat hay during a long journey.



GOOD SHELTER FOR BAD WEATHER

PULPY KIDNEY

WHAT IS PULPY KIDNEY?

- Pulpy kidney is a disease caused by a bacterium which affects and can kill sheep, goats and cattle.

WHAT CAUSES PULPY KIDNEY?

- Pulpy kidney often follows a change in nutrition, stressful times or procedures such as deworming.
- To confirm the disease, a post-mortem examination should be done, and this may involve laboratory testing to identify the bacteria and toxin.
- Collect samples as soon as possible after death. Ask your animal health technician or state veterinarian to assist with the collection of samples and the sending of them to the laboratory.

WHAT SIGNS DO YOU SEE?

- The disease is sudden in onset. The animals may show an unsteady gait, convulsions and rapid death may occur within a few hours.
- Animals with this disease are usually found dead without showing any signs.



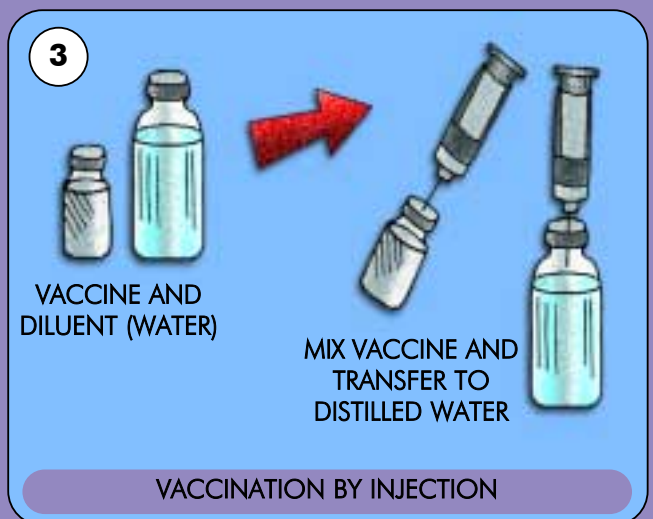
- Soft pale kidneys are seen in the dead animal; hence, the name "pulpy kidney".



- Sometimes gas-filled red intestines are seen in these animals (but do not confuse with animals that have been dead for a while and may therefore show similar signs).
- Some animals may show signs of stomach pains, depression, watery grey or bloody diarrhoea and weakness.
- Mostly young animals are affected, but older animals may also become sick and die.

TREATMENT AND PREVENTION

- Supportive treatment and antibiotics may help in cases identified early.
- Because signs are sudden, treatment is often too late.
- Do not change feed suddenly, practice good management and vaccinate.



- Vaccination is the best and most practical way to prevent animal losses.

GLOVES

Good hygiene is always recommended. With various procedures such as cleaning of abscesses, gloves should be worn. However, if gloves are not available an alternative such as a plastic shopping bag could be used. It must be disposed of after usage.



RECTAL PROLAPSE

WHAT IS RECTAL PROLAPSE?

- It is an external bulging of the last part of the large intestine at the rectum.



1

RECTAL PROLAPSE

WHAT CAUSES RECTAL PROLAPSE?

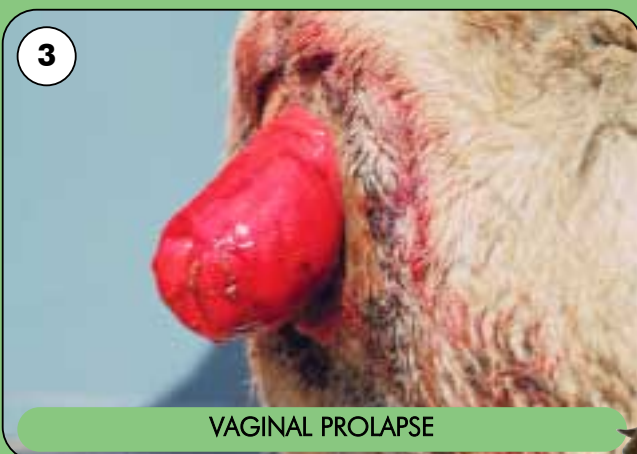
- Certain breeds of sheep are susceptible.



2

TAILS DOCKED TO SHORT

- Tails which are docked too short can cause this problem to occur.
- Worms can lead to diarrhoea and straining and as a result rectal prolapse.
- Similar conditions can lead to vaginal and uterine prolapses.



3

VAGINAL PROLAPSE



4

PAINFUL ORGAN

WHAT SIGNS DO YOU SEE?

- Painful, swollen, infected, injured, bloody and even septic organs.
- Animal stands with an arched back and strains.
- Inability to pass faeces.
- Blowfly strike.
- Emaciation.

TREATMENT AND PREVENTION

- Surgical treatment, non-surgical treatment and amputation by elastic band are options. If a veterinarian or animal health technician is available, seek their advice and assistance with these procedures. Keep the animal quiet and keep the organs moist with linseed oil.
- Culling of animals that have rectal prolapse can lead to a dramatic reduction in the number of cases.
- Leave tails long enough to cover the vulva in ewes. This will also prevent sunburn in lighter breeds.



5

WORM REMEDIES

- Practice good worm management.



ROUNDWORMS

WHAT ARE ROUNDWORMS?

- Roundworms are parasites of grazing animals such as cattle, goats and sheep.

HOW DO ANIMALS GET ROUNDWORMS?

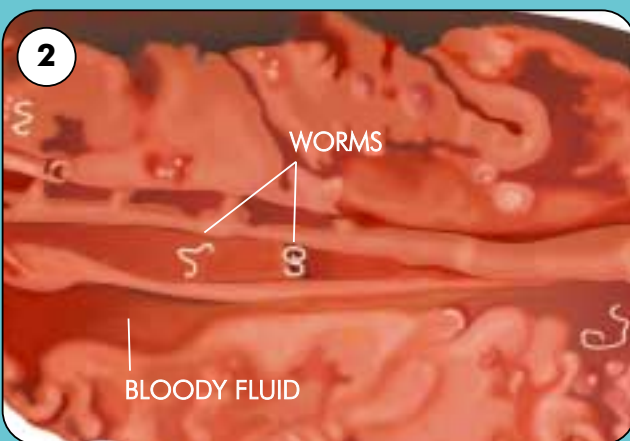
- Goats, sheep and cattle get roundworms when they ingest the immature worms on the grass. These immature worms grow into adult worms in the animal. Young animals are most badly affected.

WHAT SIGNS DO YOU SEE?



PHOTO COURTESY OF THOMAS TERRILL

- You may see bottle jaw which is a soft, cold swelling under the chin of the animal.
- The inside of the eyelids could be pale.
- Diarrhoea may occur. Diarrhoea may also have other causes (such as coccidian parasites or toxic plants).
- During winter or the dry season, animals may be in poor condition.



- If you open the carcass of an animal, there may be bleeding or worms on the stomach or intestinal lining.



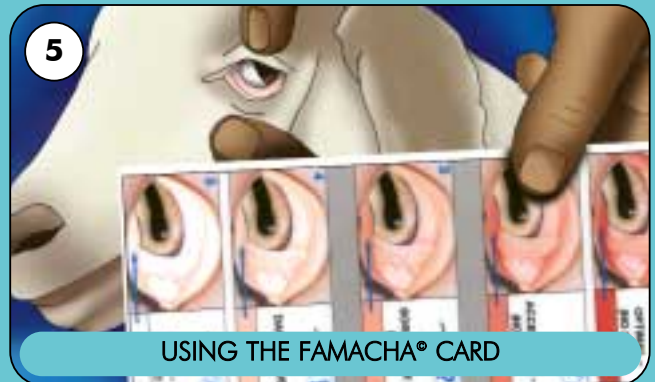
TREATMENT AND PREVENTION



- If you see these signs treat with a worm remedy.



- Keep your animals in good condition. Give them good quality hay and a lick - they will be less likely to become ill from worms.



The FAMACHA® system can be used to determine which animals require treatment - instead of treating the whole flock.

MILK TAPEWORM

- Another type of worm, the milk tapeworm, commonly occurs in sheep and goats and appears as white segments in the droppings of the animal. The milk tapeworm should not be mistaken for the more dangerous roundworms.



TETANUS

WHAT IS TETANUS?

- Tetanus is a disease caused by the toxin of a bacterium. It affects horses, pigs, sheep, cattle, goats and dogs and results in paralysis and death. Humans are also at risk.

WHAT CAUSES TETANUS?

- Tetanus always results from a wound, cut or surgical procedure (e.g. castration or tail-docking) not performed properly and that becomes infected. The bacterium multiplies in the wound and produces a toxin which affects the nervous system.



POOR CASTRATION PROCEDURE
CAUSED TETANUS IN THIS ANIMAL

- To confirm the diagnosis, a post-mortem examination should be done, and this may involve laboratory testing to identify the bacterium and toxin.
- Collect samples as soon as possible after death. Ask your animal health technician or state veterinarian to assist with the collection of samples and the sending of them to the laboratory.

WHAT SIGNS DO YOU SEE?

- This disease develops within 1-3 weeks of the animal being wounded.



THIRD EYELID MOVES ACROSS EYE

- The third eyelid moves across the eye.

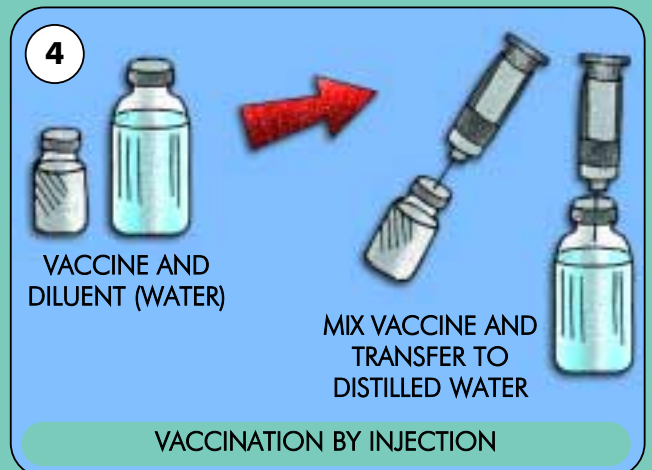


STIFFNESS CAUSE BY TETANUS

- The animal becomes increasingly stiff, walks with difficulty and has spasms of the legs, head and neck.
- Tetanus leads to paralysis.
- Death occurs within 1-3 days.
- In dead animals, infected or poorly managed wounds are evident.

TREATMENT AND PREVENTION

- Good wound management and vaccination will prevent tetanus.
- Because this disease is sudden with few signs, treatment is nearly always too late to cure the animal.
- Supportive treatment and antibiotics may help in early cases.



VACCINATION BY INJECTION

- Vaccination is the best and practical way to prevent animal losses.



ACKNOWLEDGEMENTS

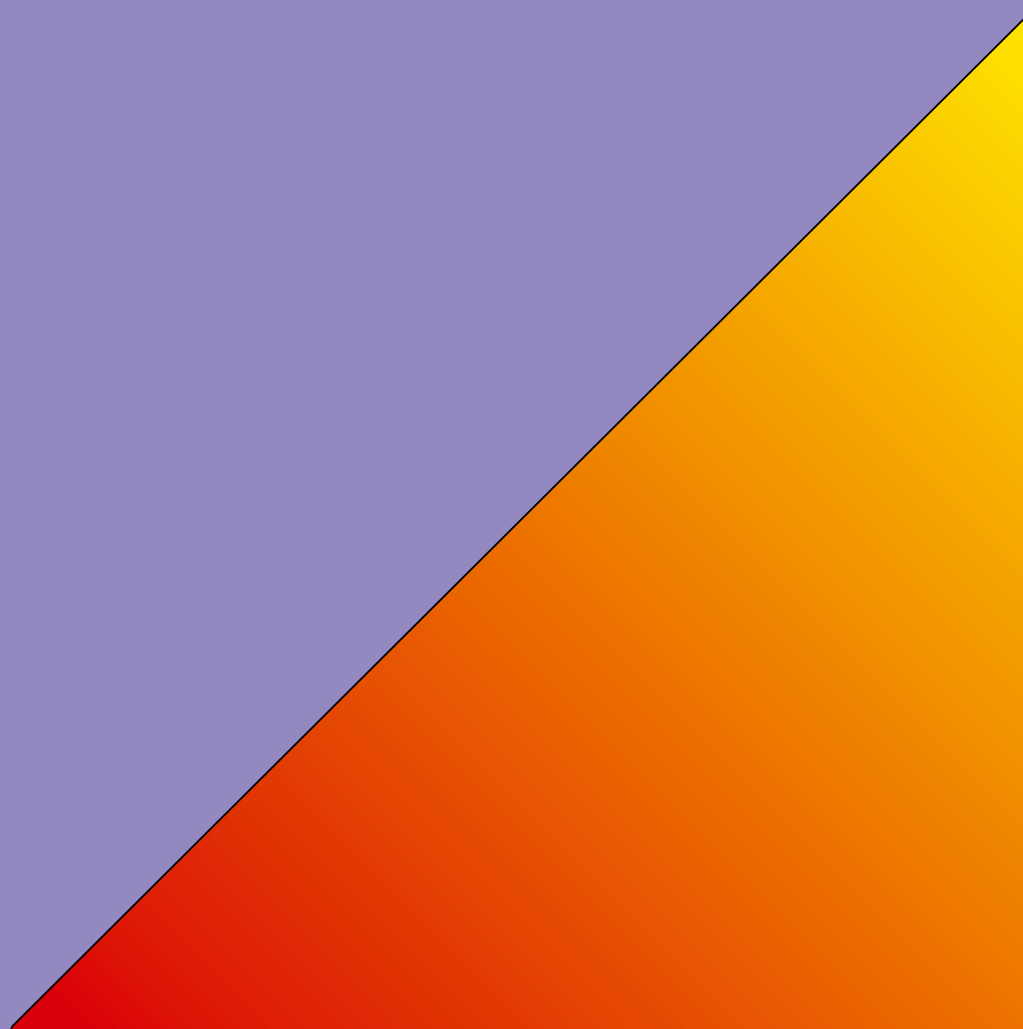
Professor Gareth Bath (for comments and slides)

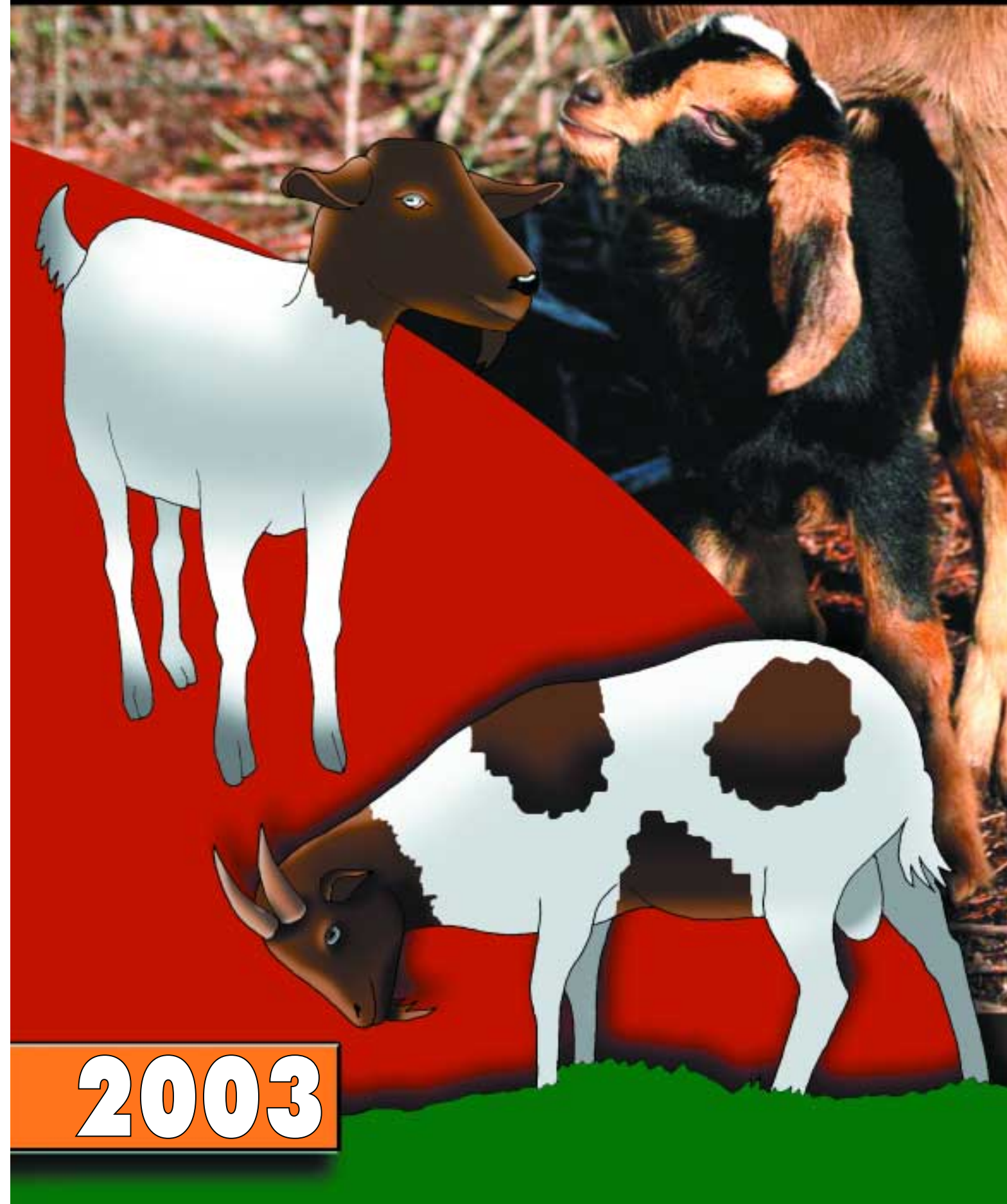
Dr Anne Pearson

Dr Leslie Harrison

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