



DEPARTMENT: AGRICULTURE  
REPUBLIC OF SOUTH AFRICA

# Clostridial diseases



**A.J. Olivier**

2005 Second print  
2001 First print

Compiled by  
Directorate Agricultural Information Services  
Department of Agriculture  
in cooperation with  
ARC—Onderstepoort Veterinary Institute

Printed and published by  
Department of Agriculture

Obtainable from  
Resource Centre, Directorate Agricultural Information Services  
Private Bag X144, Pretoria 0001, South Africa

This publication is available on the web: [www.nda.agric.za/publications](http://www.nda.agric.za/publications)



Information provided by  
*Animal Health for Developing Farmers*  
ARC Onderstepoort Veterinary Institute  
Private Bag X05, Onderstepoort 0110  
Tel. (012) 529 9158

# Clostridial diseases

Clostridial diseases are caused by bacteria that occur widely in nature in soil, sewage, water and in the gut of animals. They cause a wide range of signs and effects. Whenever animals die after being sick for a short time or are suddenly found dead these diseases should be suspected.

## *Factors that can lead to disease*

- Changes from poor to good food: animals that are placed on lush green pastures after the winter or are suddenly fed rich feeds, such as maize, are at risk
- Lack of care with procedures such as castration, tail docking, wound cleaning and treatment as well as helping animals to lamb or calve can lead to disease
- Stress: any abnormal situation, such as sheep lambing in small camps, is dangerous
- Animals nibbling on carcasses or old bones, or drinking water, or eating feed contaminated by dead animals

## **SUDDEN DEATH WITH OR WITHOUT GUT SIGNS**

Common names of diseases in this category are pulpy kidney (*bloednier*), enterotoxaemia (*rooiderm*) and lamb dysentery (*bloedpens*).

### *Animals affected*

Sheep, goats and cattle

### *Signs in live animals*

- Animals that suffer from these diseases are usually found dead without any visible signs
- Some animals may show signs of stomach pain, depression, watery grey or bloody diarrhoea, weakness and even nervous signs such as convulsion (fits) or paralysis
- Mostly young animals are affected, but older animals may also become sick and die

### *Signs in dead animals*

- Gas-filled red intestines (note that animals that have been dead for a while may show similar signs)
- Soft, pale kidneys (pulpy kidney)

### *Contributing factors*

Changes in nutrition, stressful times or procedures, deworming

### *Prevention*

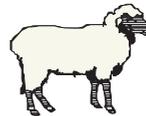
Care with change in feed, good management, vaccination

## **SWOLLEN LEGS, HEADS AND SUDDEN DEATH**

Common names of diseases in this category are blackquarter (*sponssiekte*), swollen head (*dikkop*) and malignant oedema.

### *Animals affected*

Cattle, sheep and goats



### *Signs in live animals*

- Animals are usually found dead without signs
- The part of the body affected may be very swollen. When the area is touched it feels spongy and is filled with gas bubbles
- Other signs are lameness, depression and swellings as a result of fluid under the skin (oedema)

### *Signs in dead animals*

- Parts of the body are swollen
- Affected muscle has a streaky dark red, greyish-red to yellow and black colour and is filled with gas bubbles
- Wounds from fighting

### *Contributing factors*

Lack of care with procedures such as castration, difficulty in lambing or calving, wounds from fighting

### *Prevention*

Good wound management, vaccination

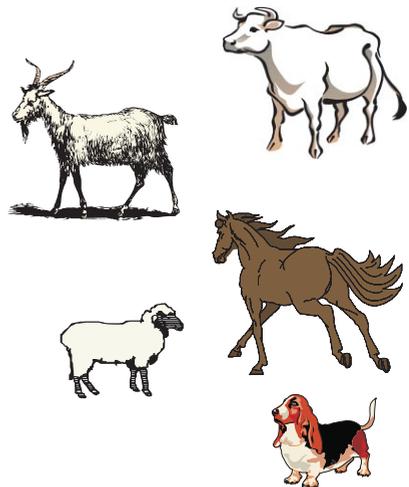
## **NERVOUS SIGNS**

The toxins produced by clostridial bacteria cause the disease signs. Diseases included are tetanus and botulism.

### **Tetanus**

#### *Animals affected*

Horses, sheep, goats, cattle and dogs



#### *Signs in live animals*

- The disease develops within 1 to 3 weeks after a wound or a procedure not performed correctly
- The third eyelid moves across the eye
- The animal becomes increasingly stiff and walks with difficulty. This leads to paralysis, with spasms of the legs, head and neck
- Death occurs within 1 to 3 days

## *Signs in dead animals*

- Infected or neglected wounds

## *Contributing factors*

A wound or a procedure not performed correctly (e.g. castration)

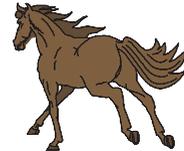
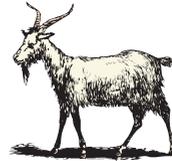
## *Prevention*

Good wound management, vaccination

## *Botulism (lamsiekte)*

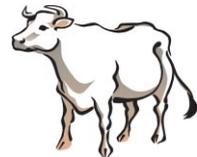
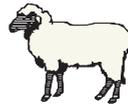
### *Animals affected*

Cattle, sheep, goats, chickens, horses and donkeys



### *Signs in live animals*

- Animals do not have a temperature and may be partially or totally paralysed
- The tongue may hang out of the mouth but the animals will still try to eat. Because they cannot swallow, water given carelessly in the mouth may get into the lungs
- Cattle may die suddenly. Animals die of pneumonia or they stop breathing because of the paralysis
- Sheep may have an arched back, with a drooping head and neck



## *Contributing factors*

Contaminated feed and water (dead rats and birds in the feed or water), pica (animals chewing or licking bones or rocks, especially during the dry season and in areas where there is a phosphorus deficiency of the soil), and feeding chicken litter.

## *Prevention*

Phosphorus supplementation in licks, clean feed and water, vaccination, removing carcasses from the veld.

## **DISEASES WITH SIMILAR SIGNS**

Clostridial diseases can be confused with one another, as well as with anthrax, toxic plant poisoning, snakebites, poisoning with chemicals, rabies, three-day stiffness, redwater, heartwater, infection of the brain, tick paralysis, twin lamb disease (*domsiekte*) and tapeworm cysts in the brain.

## **DIAGNOSIS**

To determine the disease a postmortem should be done, and this may involve laboratory testing to identify the bacteria and toxin. Samples must be collected as soon as possible after death. Ask your animal health technician or state veterinarian to collect the samples and send them to the laboratory.

## **TREATMENT**

Because these diseases start suddenly with few signs, treatment is nearly always too late to cure the animal. Supportive treatment and antibiotics, such as penicillin, may help in early cases. Treatment of tetanus and botulism is difficult, with poor results. In the early stages, treatment with a substance called antitoxin against the disease may save the animal, but it has to be given as soon as signs are noticed and is not always at hand at times when it may be needed.

## PREVENTION

- Vaccination against the diseases is the best and most practical way to prevent animal losses. Consult your animal health technician or state veterinarian regarding a vaccination programme
- Good management will prevent many of these diseases



For further information contact your animal health technician, state  
or private veterinarian

or

*Animal Health for Developing Farmers*  
ARC-Onderstepoort Veterinary Institute  
Private Bag X05, Onderstepoort 0110  
Tel. (012) 529 9158

or

Resource Centre of the Department of Agriculture  
Tel. 319 7141/7085