

# Clostridial diseases

## What you will see

Diagnosis	Behaviour	Skin/Muscle	Convulsion	Death
Pulpy kidney	Depressed		Yes	Rapid
Black disease	Depressed			Rapid
Blackleg & malignant oedema	Depressed	Swollen, rancid black		Rapid
Tetanus	Over-reactive	Spasms, stiff walk	Yes	Slow

## Impact

All sheep can be affected, survival is rare and treatment following diagnosis mostly fails.

## Likelihood

Bacteria live everywhere, in all regions, but to multiply and cause an impact, a trigger is needed. Likely triggers for clostridial diseases:

- a diet change, liver fluke, skin or muscle wounds or bruising (fighting, lambing, shearing, marking, yarding).
- a pasture flush.

## Strategic prevention

- Vaccinate for increased immunity.
- Control liver fluke.
- Avoid wounds.
- Practice good hygiene during invasive procedures.
- Treat wounds with penicillin.

## Tactical response

Quickly get a professional diagnosis to prevent further cases:

- treat sick sheep immediately.
- vaccinate all at-risk sheep. Before choosing a vaccine, seek professional advice on your risk of black disease, blackleg and malignant oedema.
- black disease: vaccinate the unvaccinated and bury carcasses.
- blackleg and malignant oedema: vaccinate the unvaccinated and administer penicillin if it is early in the outbreak.
- pulpy kidney: vaccinate the unvaccinated, restrict feed and give roughage.
- tetanus: give antitoxin if found early.

## Types of clostridial vaccines

- 3 in 1 vaccine prevents pulpy kidney, tetanus and cheesy gland
- 5 in 1 vaccine prevents pulpy kidney, tetanus, black disease, blackleg and malignant oedema
- 6 in 1 vaccine includes 5 in 1 plus cheesy gland

### For comprehensive immunity

- Assume introduced sheep are unvaccinated.
- Always read and follow the vaccine product label. The key principles are:
  - unvaccinated sheep and lambs need a priming shot and a follow-up booster in four weeks
  - administer lifelong annual boosters for cheesy gland
  - administer one annual booster for tetanus
  - administer extra boosters as needed for pulpy kidney. In high challenge periods, sheep who have not been given a pulpy kidney vaccine within the last three months should be given a booster, ideally 10 days before the challenge occurs.
- Vaccination cannot guarantee 100% immunity in all sheep but is strongly recommended as when done properly, remains highly effective.



#### TIPS AND INFORMATION

- Before choosing a vaccine, seek professional advice on your risk of black disease, blackleg and malignant oedema.
- Generally, the cost of a vaccination program is very small compared to the cost of the disease it prevents. One way to look at it is as a form of insurance.

### Resource links

MLA A producers' guide to sheep husbandry procedures

MMFS Tool 11.12 Prevention of clostridial diseases and cheesy gland

### New South Wales

How vaccination works

### Queensland

Livestock vaccination

### South Australia

Lamb vaccination

Sheep diseases – the farmers' guide

### Tasmania

Cheesy gland or CLA

### Western Australia

Pulpy kidney (enterotoxaemia) of sheep