Vibriosis (bovine genital campylobacteriosis)

Vibriosis is one of the most important venereal diseases of cattle in Australia. It can spread rapidly through the herd via mating and seriously affect fertility, but go undetected due to a lack of obvious signs. A vaccination program can produce long-term immunity in cattle against vibriosis, avoiding significant production losses due to poor fertility.

Cause

Campylobacter fetus var venerealis, a venereal disease, which is spread by infected bulls when mating with susceptible cows. Vibriosis is not transmissible to humans.

Vibriosis presents a significant risk in the herd because the disease:

- spreads rapidly in clean herds
- is often undetected
- is spread by infected bulls
- in bulls, does not cause natural immunity to develop.

Signs of the disease

Infertility, irregular extended heat intervals, abortions, pyometra and foetal disintegration.

Potential economic losses

- Drop in conception rate to 40% in newly infected herds.
- Long-term conception rate of 70% in chronically infected herds.
- Sporadic abortions occurring at about six months gestation.
- Occasionally permanent infertility in cows.

Prevention and control

Using total artificial insemination in a herd is the best way to prevent vibriosis because without bulls, the disease cannot spread.

In a chronically infected herd:

- the disease can be eradicated by vaccinating all breeding animals
- antibiotic treatment of the bulls.

To maintain a vibriosis-free herd:

- vaccinate all bulls against vibriosis
- give two shots one month apart then an annual booster
- vaccination should be completed 4 to 6 weeks prior to mating
- ensure new bulls are properly vaccinated before introduction to the herd.

This is the most cost-effective method, provided the rest of the herd is not exposed to a risk of infection from another source e.g. the neighbour's bulls through the fence.

Vaccination costs

The cost to vaccinate a herd can vary significantly. Prices can be affected by:

- number of cattle to be vaccinated - larger herds generally cost less per head
- regional pricing
- prices set by the vaccine supplier
- sale price - buying on special can significantly reduce the overall cost.

It is important to compare the different brands and various retailers to ensure you get the most economical vaccination program.

These costs are based on 2003 prices for a 100-cow herd (100 cows, 3 bulls, 25 heifers and 40 replacement heifer calves) and do not include labour, materials or facility costs:

- 100 cows, 3 bulls, 25 heifers and 40 replacement heifer calves
- $3 - $5.75 per bull depending on pack size
- $1.20 - $1.70 per cow depending on pack size

Clean herds

Vaccinate the bulls only. Give two initial vaccines in the first year, then an annual booster i.e. 3 bulls (5 mL dose) @ $5.75 a dose costs $17.25 annually.

Infected herds

Year 1: vaccinate all cows, bulls and heifers with two initial vaccinations:

- 100 cows and 25 heifers (2 mL dose). 125 head x 2 doses @ $1.40 a dose costs $350
- plus 3 bulls (5 mL dose) x 2 doses. 6 doses @ $3.50 a dose costs $21
- first year costs $371

Year 2: vaccinate all bulls once and all heifers with two initial injections:

- 3 bulls (5 mL dose) @ 4.25 a dose costs $12.75
- 25 heifers (2 mL dose) x 2 doses. 50 doses @ $1.70 a dose costs $85
- second year costs $97.75

Year 3 and ongoing: vaccinate all bulls once annually:

- 3 bulls (5 mL dose) @ $5.75 a dose costs $17.25
- third year costs $17.25

Therefore the initial cost of controlling vibriosis depends on whether the herd is already infected. A herd free of vibriosis is very economic to maintain by vaccinating only the bulls. It is essential to ensure the herd is not exposed to unvaccinated cattle e.g. through unsound fences. If there is a risk of contact with other cattle, the cows and heifers should also be vaccinated annually.

Vaccination tips

- Follow the manufacturer's instructions.
- Store and handle vaccines correctly to ensure their effectiveness is not reduced.
- Adhere to safety precautions for workers handling vaccines and associated equipment.
- Ensure safe disposal of used equipment, avoiding environmental contamination.
- Make sure animals are in good health to optimise immunity.
- Vaccination does not provide instant protection - generally full protection doesn't occur until up to four weeks after the initial doses.

Source: Queensland Department of Agriculture, Fisheries and Forestry; 2010