

Wild Dogs and Foxes

Neospora caninum

Impacts on Cattle Producers

What is it?

Neospora caninum is a protozoan parasite that causes abortions and neonatal abnormalities in cattle.



The definitive host of *N. caninum* is the domestic dog. Wild dogs and dingoes are also known to be definitive hosts and research strongly suggests the European Fox is as well.

“ **Data collected in New England from 2006-2012 found *Neospora* antibodies present on 22.5% of properties experiencing reproductive problems.** ”

Cattle are the intermediate host of the parasite and one way they can be infected is by ingesting the infective stage, the oocyst, shed by the faeces of the definitive host (Figure 1). This is called horizontal transmission. Once cattle ingest the oocyst it changes form and becomes encapsulated in microscopic tissue cysts. These cysts are most commonly found in the nervous system and also muscle.



Another way cattle become infected is called vertical transmission; this is when a cow who is infected with the parasite passes the infection to her calf in utero.

Symptoms

There are three potential outcomes for calves infected in utero:

- ⇒ **ABORTION** (quite common) : usually between 4-7 months, but can occur any time from 3 months to term.
- ⇒ **ABNORMAL CALF BORN** (rare) :
 - Low body weight
 - Unable to stand
 - Flexed or overextended limbs
 - Poor coordination & reflexes
 - Asymmetrical eyes
- ⇒ **NORMAL CALF BORN** (most common) : Calf is healthy with no clinical signs, but carries infection.

Neosporosis causes no clinical signs in adult cattle who are infected, the syndrome is that of reproductive loss. Vertical transmission is the main route by which the parasite is passed on; an infected cow can potentially abort or infect **all** her calves. Calves born to infected mothers have over a 95% chance of being infected, continuing the cycle.

In herds not previously exposed to the disease infection can lead to abortion storms; this usually occurs when all cattle consume feed or water contaminated with oocysts.

What YOU can do!

Stop the Spread

- Control wild dogs & foxes on your property.
- Keep you dogs confined during calving season. Do not allow them to eat placental tissue or aborted foetuses.
- Limit opportunity for dogs to defecate where cattle eat & drink.

Know Your Herd

- Conduct pregnancy testing.
- Test cows for the presence of antibodies to *Neospora* & other causes of infectious infertility. *This assesses prevalence of infection in your herd.*
- Submit whole foetus & placenta to laboratory. *Presence of infection in the cow does not prove that the parasite caused the abortion; it must be identified in the foetus or placenta.*
- Develop protocols for abortions caused by *N. Caninum*. *Some producers cull all cows with Neospora abortions or that test positive for Neospora antibodies, others cull cows who abort twice & others accept losses.*

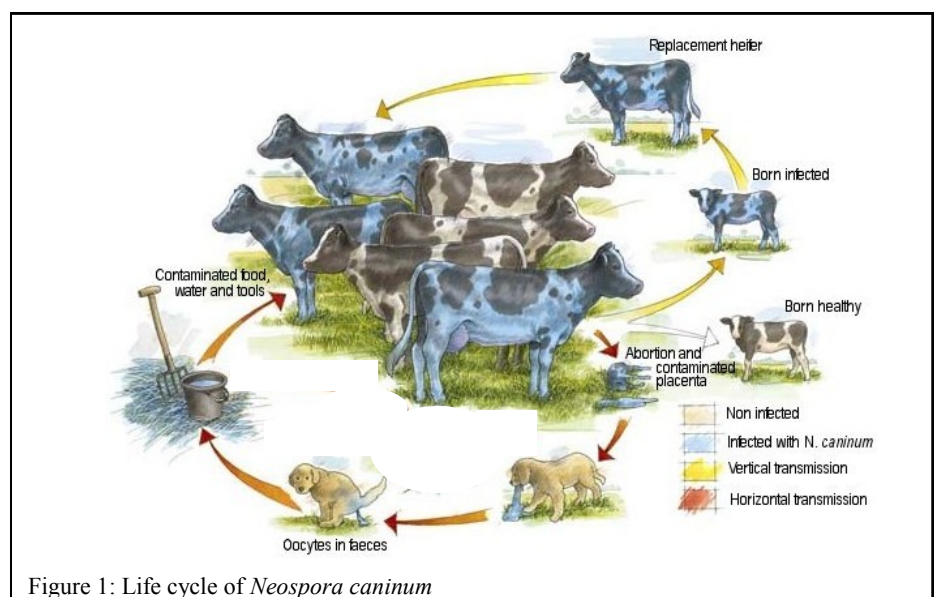


Figure 1: Life cycle of *Neospora caninum*

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Case Study

'Yulgilbar'

Location:

75km north-west of Grafton and 57km south of Tabulam, Clarence River Catchment

Property Size:

14,000 Ha (35,000 ac)

Average annual rainfall:

1,150 mm (46 inches)

Main Enterprise:

Stud and commercial cattle

Stock Numbers:

6,000 Santa Gertrudis cattle

Property Managers:

Rob & Lorraine Sinnamon



“ Superior genetics and award winning livestock 'Yulgilbar' is highly regarded in the industry. ”

Vaccination Program:

'Yulgilbar' have an extensive vaccination program, including 7-1, Peste-guard and 3 day sickness.

On Farm Pest Animal Control:

'Yulgilbar' conduct '1080' wild dog ground baiting annually. Station staff also utilize shooting as a control measure, 50-65 wild dogs are shot on the property per year.



Property manager Rob Sinnamon with stud heifers

Experiences with *N. caninum*:

On average 2,500 females are mated per year. These cattle are scanned pregnant in calf at 4-6months gestation.

Stock are mustered for branding and between 6-10% of scanned in-calf females have lost calves in utero.

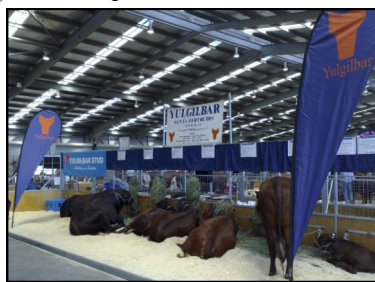
These females are tested for the presence of *Neospora* antibodies. All animals returning a positive reading are fattened and sold for slaughter.



Economic Loss:

A 10% loss equates to 250 calves not hitting the ground. At a \$500 per head market value this results in a financial loss of \$125,000 per year. Over a 10 year period equating to \$1.2 million in lost revenue.

'Yulgilbar' also produce superior stud animals. Stud bulls sell for an average of \$7,500. If 6 stud male calves are lost per year in utero this results in a minimum \$45,000 economic loss as well as an intangible genetic improvement loss.



Acknowledgements:

Many thanks go to Rob & Lorraine Sinnamon, Tony McMeniman, Anna Johnson, Andrew Biddle, Lisa Martin and Steve Eastwood for assisting in the development of this factsheet.

Produced by Rebecca Ballard for the 'Pest Animal Management & Landholder Engagement in New England Tablelands NSW' project, January 2013

More Information:

Contact the Livestock Health & Pest Authority or your local District Veterinarian.

Case Study

'Carrolls Creek'

Location:

30km north-east of Tenterfield, Clarence River Catchment

Property Size:

1,133 Ha (2,800 ac)

Average annual rainfall:

890 mm (35 inches)

Main Enterprise:

Beef cattle

Stock Numbers:

350 Angus, Hereford X cattle, 200 Breeders

Property Owner:

Tony McMeniman



Vaccination Program:

Vaccination includes 5-1 and Peste-guard

On Farm Pest Animal Control:

'Carrolls Creek' participate in a coordinated wild dog ground baiting program annually.

Experiences with *N. caninum*:

The occurrence of *Neospora* at 'Carrolls Creek' is sporadic however it is suspected that low levels of *Neospora caninum* occur throughout the landscape.

'Carrolls Creek' conduct pregnancy testing on all cows. Females that lose calves in utero are tested for the presence of *Neospora* antibodies.

All animals returning a positive reading are fattened and sold for slaughter.

