

Neospora Best Management Practice

Minimise Horizontal transmission (between dog and cow):

- Dogs will only shed oocysts for 2-3 weeks from 3-9 days after infection. If a farm dog is positive for Neospora antibodies, it is likely to be no longer shedding. If it is negative, it is important to prevent them from contracting the infection in the first place.
- Keeping cattle food and water covered and away from dogs, foxes and other vermin.
- High hygiene standards at calving. Dispose of placental membranes and aborted or dead calves before dogs can eat them.
- No dogs should be allowed near cattle at or around calving time or in the calving area.
- Manage public rights of way appropriately with clear signs of the risks to cattle and dogs and that prudent removal of dog faeces is appropriate.
- Minimise cattle usage of fields with public right of ways. Pre and peri-parturient animals should not be placed in at risk pastures.
- Any abortion material should be promptly identified and removed and your vet informed. Prudent biosecurity should be observed at all times.
- Screen any bought-in animals that may be carriers.

Minimise Vertical transmission (between dam and calf):

- Identifying infected animals (using blood antibody tests). Once identified, screen related animals (i.e. dams, sisters, and other related progeny on farm) to halt any further transmission in family groups.
- All animals that are antibody positive are a considerable risk factor in spreading infection on farm and culling should be considered.
- If this is not possible finishing the animal for slaughter may be an appropriate option.
- Antibody positive animals should not be used for rebreeding and/or replacement production on farm.
- Some dairy farms will keep antibody positive animals and use beef semen on these animals. This should be done with caution as it carries considerable risk of allowing horizontal transmission and further infection to dogs, allowing the disease to establish on farm.

If you would like more information
contact our office or visit our website.



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NEOSPORA



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What is it?

Neosporosis is a disease in cattle caused by *Neospora caninum*, a protozoal parasite (a single celled organism similar to Toxoplasma)

Symptoms?

The most common sign of neosporosis in cattle is **abortion between 3-8 months gestation**. It is the most commonly diagnosed cause of abortion in dairy cattle in the UK and is potentially responsible for **25% of infectious abortions**. Cattle infected with the parasite are 3-7 times more likely to abort than uninfected cattle. Rare cases of neurological disease in congenitally infected (an infection that occurs during pregnancy) calves have also been described. Other effects of the disease are weak calves, poor birth and/or growth rates and poor overall milk yield or a persistently infected calf with no clinical signs at all.

Transmission

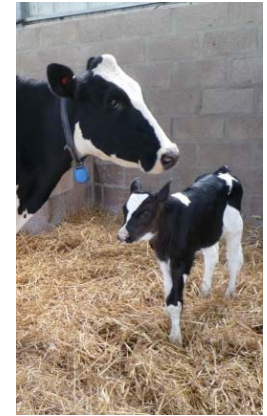
The organism causes infection of cattle by one of two routes:

- **Vertical infection:** the organism passes transplacentally (across the placenta) from an infected dam to its calf.
- **Horizontal infection:** the cow ingests oocysts (eggs) from an infected dog's faeces which have contaminated the environment, e.g. feed or pasture grass.

The vertical route is the most important with up to 90% of calves born to *Neospora*-positive mothers becoming infected in the womb. Once a cow is infected she remains infected for life.

Abortions can occur when a cow becomes infected during pregnancy or in a cow already infected when for some reason the infection becomes "reactivated" during pregnancy. There are different outcomes depending on the timing of initial infection or reactivation of the existing infection during pregnancy:

1. In **early pregnancy**: invariably fatal, if very early the foetus is reabsorbed and the cow returns to service.
2. In **mid pregnancy**: may cause death of the foetus or impair its survival when born.
3. In **late pregnancy**: probably not fatal, the foetus will be born healthy but infected.



Diagnosis

As the clinical signs vary and are of little help, diagnosis and confirmation is commonly done by:

- Post-mortem of a calf with characteristic heart and brain damage (the best way).
- Identification of the parasite in the calf or placental tissues.
- Serology and identification of antibodies in the mother's blood (harder to interpret).

Large numbers of healthy calves can be infected with *Neospora*, therefore it is important to eliminate other causes of abortion, particularly BVD or Leptospirosis before a diagnosis of Neosporosis is made.

Antibodies to *N. caninum* fluctuate throughout the life of an infected animal. This means false negative results may occur and repeat testing may be necessary. Confirmation that an animal is not infected requires sampling at specific times and can lead to whole herd screening difficulties.

The most appropriate time to bleed animals is:

- During an animal's pregnancy (10 to 4 weeks before the due calving date).
- At the time of abortion.

A bulk milk antibody test can be performed on dairy farms to indicate if *Neospora* is present in the herd, however it is not very sensitive and a negative result does not mean the herd is free of *Neospora*.

Treatment and Control

There is no treatment for *Neospora* infections in cattle. Current research is trying to identify the possibility of vaccine production in the UK.

Infection can enter a naïve herd either via **infective dog faeces** contaminating feed, pastures or water, **or by the purchase of infected animals**. It is perpetuated by vertical transmission between dam and calf and to a lesser extent by dogs who may be infected by the ingestion of dead calves or placentae. Therefore control of the disease is by a combination of biosecurity measures and the identification of infected animals and their removal from the breeding herd. All cattle with high antibody titres have the potential to be carrier animals and help to spread the disease, albeit at a potentially slow rate on most farms.

Neospora Life Cycle

Neospora has a wide host range and can infect many wild and domesticated species. The domestic dog is the only definitive host (the parasite sexually reproduces in them and produces oocysts (eggs)) and one study suggested over 40% of farm dogs have been exposed in the UK. Cattle are the major intermediate host (the parasite asexually reproduces in them, it is unable to produce oocysts) in the agricultural industry although infrequent infections of sheep goats and deer have been reported.

