



Animal Health

NEOSPOROSIS - Abortion in Cattle

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General Information

Neospora caninum is a very common protozoal organism and a common cause of abortion in cattle. Minor reductions in milk yield in dairy cows or reduced growth in feedlot steers has also been attributed to this organism, but these effects, if true, are small. A reasonable goal of herd management is to reduce the risk of transmission of *Neospora*. Total elimination is unrealistic. A depiction of the neosporosis life cycle follows.

Observations

- ◆ Dogs, and other canines, e.g., coyotes, become infected by eating tissues of infected animals. Infected dogs shed oocysts in their feces for about 1 week.
- ◆ Oocysts can survive in the environment for a long time.
- ◆ Once a cow is infected, she probably remains infected for life.
- ◆ Many, probably most, infected cows never abort and can be excellent producers.
- ◆ *Neospora* is transmitted to cattle in different ways:
 - ◆ A chronically infected cow can transmit the organism during pregnancy to her fetus. (vertical transmission)
 - ◆ Cattle can become infected by ingesting *Neospora* oocysts that have contaminated pastures or feedstuffs from the feces of infected dogs, or other canines. (horizontal transmission)
- ◆ Heifers born with *Neospora* infections (congenital, from dam during gestation) are more likely to have an abortion during the first pregnancy than are heifers that were born uninfected (and that remain uninfected).
 - ◆ This method of disease transmission is believed to be associated with the larger herd outbreaks of abortion.
- ◆ 40-50% of Illinois white-tailed deer have a positive blood test. Though dogs and other canines can become infected by eating the infected tissues, deer cannot directly transmit *Neospora* to cattle.

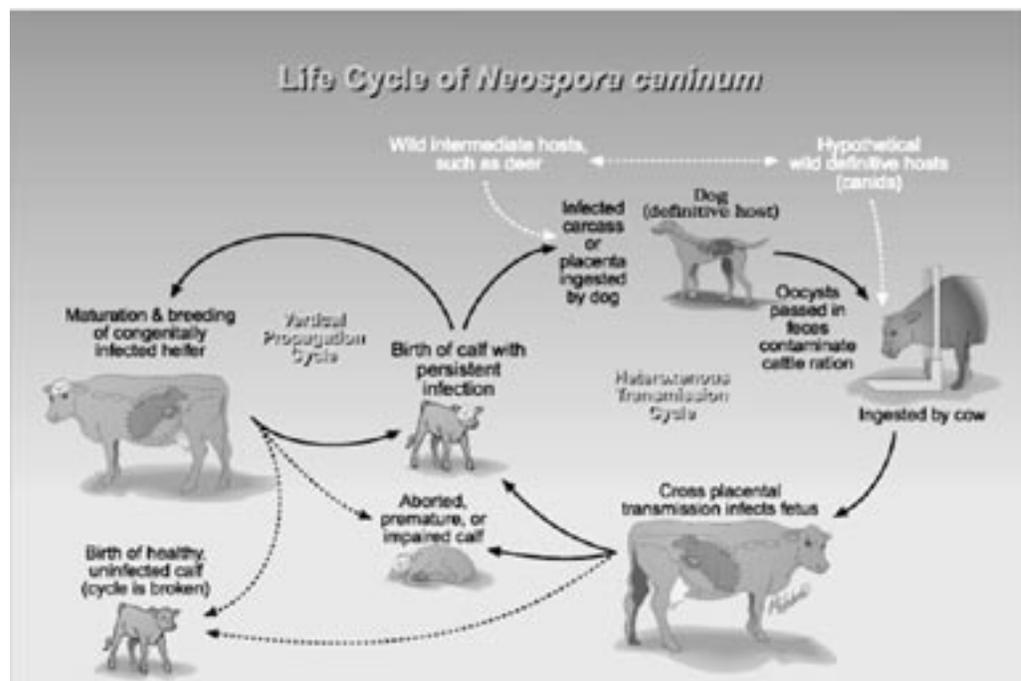
Prevention Control

- ◆ Prevent dogs (coyotes, etc.) from defecating in stored feeds intended for breeding cattle.
 - ◆ Some examples include: use containment facilities (silos, bins, etc.); close feed storage doors; cover bunker silos; dog and coyote-proof fence feed storage areas.
 - ◆ Cattle are more likely to consume dog feces if feed is mixed (i.e., TMR).
- ◆ Restrict canine access to dead stock (including placentas).
- ◆ Limit the number of dogs. (The prevalence of infected cattle is statistically associated with both the presence and number of dogs.)

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Prevention Control (continued)

- ◆ Generally, culling cows based on serologic (blood) testing for *Neospora* antibody titers is not recommended.
 - ◆ Chronically infected cows have a measure of immunity. Previously infected cows have a decreased risk of abortion compared to acutely infected cattle during neosporosis abortion outbreaks.
 - ◆ The titer cut-off between serum-negative and serum-positive cows is not perfect and the *Neospora* antibody titer in any particular cow can fluctuate above and below cut-off level.
 - ◆ In herds with a chronic neosporosis abortion problem, selection of serum negative replacement heifers can speed the rate of reduction of *Neospora*-infected cattle.
 - ◆ Blood-test replacement heifers anytime after six months of age and keep only negative animals, or, keep only heifers born to serum negative cows. (This strategy must be accompanied by practices to reduce the risk of transmission from dogs.
- ◆ Vaccination
 - ◆ To date, no independent reports of the product's efficacy have been found. Thus, a recommendation at this time is questionable.
 - ◆ Two doses are required the first year it is used.
 - ◆ Serum tests for the *Neospora* antibody do not distinguish the difference of vaccination from natural infection.
- ◆ Pasture treatments will not affect the likelihood of exposure to the organism. This is an unlikely source of infection for large numbers of animals.
- ◆ Testing the farm dog is of little value. Not all dogs will be serum positive after infection and the period of shedding of oocysts subsides within a few weeks.



Drawing by Kerry Helms

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