



**Wisconsin Veterinary
Diagnostic Laboratory**
UNIVERSITY OF WISCONSIN-MADISON

Neosporosis Diagnostic Aid

Recognizing and Preventing *Neospora caninum* Infections

Neospora caninum is a major cause of abortions in cattle. First recognized in 1988, and linked to dogs in 1998, this parasite causes an infection called neosporosis. Studies have shown that at least half the dairy and beef herds in the United States have one or more animals that have been exposed. In an infected herd, up to 30 percent of the animals may test positive, and some cows may abort several times. With good herd management, though, you can reduce this drain on your profits.

The Disease

Neospora caninum is a protozoal parasite—a microscopic organism.

Cows congenitally infected with *Neospora* appear healthy, but about 20 percent will abort at least once in their lifetimes. Cows typically abort between the fourth and seventh months of gestation. If they do not abort, they are likely to pass the infection to their calves. Congenitally infected calves are usually born healthy and robust and develop normally, but pass the infection on to their offspring. In this way, *Neospora caninum* perpetuates itself in lines of cattle.

The second way that cattle become infected is through consuming feed or water contaminated with oocysts, or eggs, from the parasite, or grazing on contaminated pastures. These oocysts are shed in the feces of dogs, and probably of wild canines including coyotes, foxes and wolves. These animals become infected by eating infected animals, placentas or fetuses.

Abortions from dam-to-fetus infections tend to be sporadic. Therefore, if your herd has an outbreak, or "storm," of laboratory-confirmed *Neospora* abortions, you should suspect infection by contamination of feed and/or water.

Diagnosis

The only way to be sure *Neospora caninum* caused abortions is to get laboratory confirmation.

If fetuses are available, veterinary submission of a blood serum sample from the dam, placenta, and the entire first- or second-trimester fetus to the Wisconsin Veterinary Diagnostic Laboratory for necropsy and testing is recommended. For the large third-trimester fetuses, a veterinarian may perform a necropsy on the fetus and submit samples of tissues, stomach contents and blood serum.

If fetuses are not available, submission of blood serum from affected cows within three weeks of the abortion along with samples from other pregnant cows for statistical comparison is recommended. If many of the cows in the "abortion group" test positive for *Neospora* than the "pregnant group", *Neospora* is probably the cause.

The Canine Connection

Science has proven that dogs can spread *Neospora* through feces. The evidence is less conclusive that foxes, coyotes and wolves shed oocysts. However, some studies have shown that, as the density of wild canines increases in an area, so does the prevalence of *Neospora* infections in cattle. Other researchers suggest the protozoa cycles between wild canines and deer, spilling over to cattle.

It appears that dogs shed oocysts for less than three weeks after infection. Under certain conditions, oocysts can survive for months in the environment, leading to an abortion storm later.

Controlling and Preventing Neosporosis in Your Cattle

- Work with your herd veterinarian to develop a complete written biosecurity plan to minimize introducing and spreading any harmful bacteria, viruses or protozoa. This is especially important for your calves, close-up cows and transition cows.
- Keep maternity pens clean, dry, and spacious. Disinfect regularly.
- Prevent canines from coming in contact with cows and heifers at calving time.
- Properly dispose of placentas, aborted fetuses and stillborn calves so that dogs and wild canines cannot feed on them.
- Prevent dogs and wild canines from defecating in or near feed and water sources for cattle. This is especially important for stored feed, commodity piles, water supplies and pastures. You can get specific ideas from your veterinarian or local county extension.
- Contact your local Department of Natural Resources service center to discuss developing a plan to reduce the density of wild canines in the immediate area of your herd. This may reduce your herd's risk of exposure to *Neospora caninum*.

