

# Vet Call

## *Neosporosis and leptospirosis*

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Last month I wrote about two viruses that can cause abortions in cattle — infectious bovine rhinotracheitis (IBR) and bovine viral diarrhea (BVD). This month I want to write about two other causes of abortions — neosporosis and leptospirosis.

### **Neosporosis**

Some herds infected with the neospora organism have very high abortion losses, with 20% or more of pregnant cows aborting in a short time period. Other herds can have only occasional abortions due to the organism. This difference is mainly due to the somewhat unique life cycle of the organism.

In order to infect a large number of susceptible cows in a short period of time, a dog (coyote, fox, etc.) has to become infected with the organism, usually by eating a calf or placenta from a neospora abortion. The organism then matures and passes through the dog in the feces. If pregnant cattle are exposed to the infected feces in their feed, a large percentage of the herd can become infected and abort.

But being exposed through dog feces is not the only way a cow can become infected with neospora. A cow could also have been infected while she was a fetus if her dam became exposed to the organism during gestation. Most cows that become infected during pregnancy will pass the organism on to the fetus. If the fetus is not aborted, it will be born already infected and will remain infected for the rest of its life. If a few individual cows in a herd are infected in this method, occasional abortions within some cow families will occur, but the rest of the herd will not be affected.

It is also possible to have both types of abortion patterns (severe and occasional) in the same herd because a herd that has occasional abortions due to neospora in certain cow families are producing aborted fetuses and placenta that can be eaten by dogs or wild canines, which can then contaminate winter cow feed, causing a widespread abortion storm.

There is no treatment for neospora

infection; therefore, infected cows remain infected for life, and although a vaccine has been introduced, information concerning its value in control programs is just now being developed. Neospora can be diagnosed by finding the organism in brain tissue of the aborted calf and by comparing blood samples of aborting cows to non-aborting cows in the same herd.

Control is aimed at keeping dogs and wildlife away from feed storage areas to eliminate fecal contamination of feed. Use of lights, motion detectors, and removing anything that can provide cover/hiding places from around the feed storage areas will help deter wildlife. In addition, burning, burying or otherwise disposing of aborted fetuses and placentas when possible to prevent dogs and wildlife from eating them will also reduce the spread of the neospora organism.

### **Leptospirosis**

Another cause of abortion in cattle is leptospirosis (lepto), which is caused by an organism that causes disease in many species of animals and can be passed between species (including between animals and humans). Although abortions can occur as early as Day 90, late abortions, stillbirths or weak calves are more commonly seen.

Lepto organisms cause long-term infections in the kidneys and can be found in urine for a long time in some animals. Lepto organisms survive in wet environments for up to 30 days. And cattle usually become infected with this organism by being exposed to urine-contaminated water. The infectious urine can be from other cattle or from wildlife species such as wild pigs, skunks, raccoons and opossums.

There are many types of lepto organisms, and vaccination is more effective at preventing problems from some types than from other types. Because of the variable (and often low) protection from lepto vaccines, heifers should receive two or three vaccinations given at monthly intervals prebreeding, and another booster in mid-gestation of the first pregnancy. Adult cows

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should be vaccinated every year in mid-gestation, and in some herds, more frequent vaccination is recommended.

Methods other than vaccinations for reducing risk of exposure to lepto should also be implemented. These would include importing as few cattle as possible into the herd, and fencing cattle away from water sources that can be contaminated by other herds, swine or wild animals.

Developing control strategies to reduce the risk of abortions from neosporosis and leptospirosis is challenging because the diseases are complex, wildlife is involved in the spread of the diseases, and vaccination alone is not likely to provide most herds with adequate protection. A long-term strategy that involves improving and maintaining facilities (feed storage, water sources, etc.), enhancing sanitation, limiting new herd additions, and investigating abortions by using a diagnostic laboratory is necessary to reduce the risk of abortion, even if the risk cannot be completely eliminated.



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