



Vet Call

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BVD Control

Bovine viral diarrhea (BVD) was first recognized as a severe disease of cattle in 1946. Since that time veterinarians and cattle producers have learned a lot about the negative effects of this disease, as well as methods for its control.

Continuous battle

As more is learned about this important disease, and both old and new methods to battle against it are used, cattle producers may find that they are being bombarded with information that leaves them confused as to the best approaches for their herd.

There are a few unique characteristics about BVD that make it an unusual disease. One reason it is different than many other diseases is that it can affect cattle of any age. BVD is not simply a disease of young calves (like scours) or of adults (like anaplasmosis or Johne's disease). Instead, BVD can affect nursing calves, replacement heifers, yearling bulls and adult bulls, bred cows and feeder cattle.

Some strains of the virus that cause BVD are damaging enough to create obvious sickness and tissue damage to the digestive tract and respiratory tract by itself. Other times, the BVD virus is not likely to cause noticeable disease by itself, but it can suppress the immune system enough to allow other disease-causing germs to cause more damage than they would normally.

One of the most unique aspects of BVD is the creation of the persistently infected (PI) carrier during fetal development. Cows that are infected with the BVD virus during the first half of pregnancy will often abort the fetus, but sometimes the virus will infect the fetus without causing abortion. In some of these infected fetuses, the virus will remain throughout the life of the animal and will never be cleared from the body. If the PI calf survives past birth, it will shed large amounts of the BVD virus throughout its life. PI calves are the main source of BVD to other cattle and they must be prevented or eliminated in order to control the disease.

Because PI cattle are only created during pregnancy — a calf that is born as a non-PI animal can never become persistently

infected. Because of this fact, testing for the PI status is a "once-in-a-lifetime" test (once negative, always negative and once positive, always positive). BVD is the only disease where the persistent carrier animal is only created prior to birth — other diseases that have a persistent carrier state create those carriers as calves or adults (i.e., anaplasmosis, Johne's, bovine leukosis, infectious bovine rhinotracheitis, tuberculosis, etc.)

Entering the herd

There are a number of ways that BVD virus can first enter a herd. Two of the most common ways are by accidentally purchasing a PI animal and the other is by the fenceline exposure of pregnant cattle to neighboring PI cattle (usually yearling or younger cattle). Because PI cattle are more likely to die than non-PI cattle — the number of PIs decreases as age increases. PIs are more common among young calves (about 1 out of every 100-200 calves born) than among weaning age cattle (about 1 out of every 300-400 weaned calves). While PI yearlings are still present in high enough numbers to cause problems, PI adult cattle are very rare.

While some ranches are considered "closed," meaning that their herd never has exposure to other cattle — that classification is pretty rare. Most herds import cattle at least occasionally. Purchasing pregnant heifers provides the greatest risk for importing a PI animal because you are really importing two potential PIs with each heifer (the heifer itself and the fetus). In fact, fetuses are the highest risk animal that can be brought onto a farm, and there is no practical test to identify a PI until after it is born. Purchasing open females also provides a low but potential risk for importing a PI — particularly heifers that are more likely to be PI than adult cows.

While purchased yearling or older bulls are at low risk for being persistently infected with

BVD virus, each year a few herds have disease losses due to the importation of PI bulls. Fenceline contact between stocker-aged cattle and pregnant cows is also identified as a common history in herds experiencing losses due to BVD. Occasionally, cow herds with PI calves present can be a source of BVD virus to neighboring herds.

Testing and controls

Because ranches have varying management strategies, even neighboring ranches will have different risks of introducing BVD virus into the herd. Herds that import pregnant heifers in order to optimize their resources need to balance that decision with the realization that over time they are likely to be at high risk of importing a PI fetus or heifer that can cause significant disease to their herd.

Ranches that import open heifers or even cows also are taking some risk of importing a PI among their purchases. Because of the risk of introducing BVD virus through the accidental importation of a PI, all imported cattle (heifers, cows and bulls) should be PI-tested before they are allowed to have contact with the breeding herd. For imported pregnant cattle this means keeping the pregnant new arrivals away from the original herd until after the calves are born and can be tested. Only when the calf is confirmed to not be PI can the pair come into contact with the breeding herd.

Testing imports is a good method to greatly decrease the likelihood of bringing BVD virus into a herd. In addition, vaccination is a tool that helps to decrease how bad the disease losses will be if the virus does come into contact with the herd despite your best efforts to exclude it. A good BVD vaccination program usually includes aggressive vaccination of replacement heifers prior to their first breeding season and annual boosters for the adult cows.

Beef producers should work with their veterinarian to develop a sound BVD control plan that optimizes the use of PI testing, vaccination and fenceline control based on their particular risks and management. A BVD resource webpage has been developed and sponsored by the National Cattlemen's Beef Association (NCBA) BVD Working Group and the Academy of Veterinary Consultants (AVC) BVD Committee. This site (<http://bvinfo.org/>) has a number of short summaries, informative articles and research papers, as well as spreadsheet calculators to help provide cattle producers and veterinarians with the latest available information about BVD and its control.

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