



An Introduction to Bovine Viral Diarrhea

Bovine Viral Diarrhea Virus (BVDV) is a viral infection of cattle. Today it is believed to primarily cause reproductive problems. However, it can also be devastating to overall cattle health if introduced to a herd that has little immune protection. BVD is currently one of the most costly diseases of cattle. Cost estimates in herds with BVD range from \$24 to \$200 per cow per year. Clinical signs and cost estimates vary depending on the level of herd immunity, the virulence of the infecting virus strain, and the pregnancy status of cows at the time of initial infection.

Clinical scenarios that occur when a herd is infected with BVD depend on the level of immune protection in the herd and the strain of the infecting virus. Reproductive problems caused by BVD include early embryonic death, abortions, fetal mummification and the birth of deformed calves. Early embryonic deaths may result in animals returning to estrus as expected or at delayed times.

Infection of the fetus during the first trimester can result in the birth of an animal that is persistently infected (PI) with BVD. This animal will carry the virus for life and shed loads of BVD virus from all body orifices. Often PI animals are sickly since the infection can impair their normal immune function. Unfortunately, some survive and become lactating cows, causing additional problems by producing more PI animals, and providing a reservoir of infection in the herd.

The three main measures to control BVD are testing, vaccinating, and isolating. PI animals can be identified by a variety of testing techniques. To avoid "false positives," animals should not have received a vaccination with a modified live BVD vaccine within the previous two weeks. Many producers test all heifers when they are handled for other management procedures, for instance, Brucellosis vaccination. All animals entering the herd (purchased or leased heifers, cows, and bulls) should be tested to evaluate their PI status. In addition, the offspring of test-negative animals

pregnant at the time of purchase should be tested. These animals, and others returning from shows, fairs, or contract growing facilities, should also be isolated for 2 weeks, until it is clear that they do not have a contagious disease. The New York State Diagnostic Laboratory currently charges \$5.00 per sample to test for PI animals in NY herds.

Proper vaccination can help to protect against disease outbreaks and the development of PI carriers. Success of a vaccination program, however, can be limited by the presence of PI animals. Cows and heifers need to be particularly well protected during their first trimester of pregnancy. Many veterinarians recommend the vaccination of cows and heifers with a vaccine containing modified-live BVD a few weeks before breeding for adequate protection during early pregnancy. Alternatively, killed vaccines can be administered to all animals, semi-annually. Killed vaccines must be administered twice (two to four weeks apart) if the animal is being vaccinated for the first time (i.e. heifers). Without the booster vaccination, animals are not protected against BVD, even if they receive annual revaccinations with the killed product. Review your herd's written vaccination protocol with your veterinarian and the individual(s) administering the vaccines to prevent miscommunications.

The NYSCHAP BVD module will help you manage BVD on your dairy. The protocols are designed to achieve your farm goals and to reduce the risk of BVD on your dairy.

To enroll in NYSCHAP, contact your herd veterinarian. They will then make arrangements with the regional field veterinarian from the Department of Agriculture and Markets. For additional information, contact one of the sources below:

Enrolling or contacting a state field veterinarian, call NYS Division of Animal Industry at 518-457-3502

Diagnostic testing services or information, call the Diagnostic Lab at Cornell University, 607-253-3900

Mastitis testing or information, call Quality Milk Promotion Services at 607-255-8202

Additional NYSCHAP information, contact the NYSCHAP coordinator at 607-253-3910

Visit the NYSCHAP website at: <http://nyschap.vet.cornell.edu> or email us at nyschap@cornell.edu