

Controlling BVDV: Part II

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The previous Animal Health column discussed some of the basic principals of bovine viral diarrhea virus (BVDV) that are important to understand when developing herd BVDV control strategies. Effective BVDV control currently involves a combination of diagnostic surveillance, biosecurity, and vaccination, with all three components tailored to meet the individual needs of an operation.

Diagnostic Surveillance

BVDV does not usually survive in the environment very long (less than 3 weeks), so direct transmission between animals is the most common route of transmission. Animals that are born persistently infected (PI) with the virus shed millions of viral particles every day, and serve as a constant source of BVDV exposure in a herd because they continuously shed virus in saliva, mucous, tears, milk, feces, urine, and any other bodily secretion. **It is imperative for producers to identify PI animals and remove them from the herd, and uninfected herds must prevent introducing PI animals into the herd.** Some PI animals will be poor-doers, but about 50% will look and perform like non-PI animals. Since PI animals cannot be consistently identified visually, they must be identified with appropriate diagnostic tests.

Testing

A number of tests are available to diagnose PI animals such as virus isolation, antigen capture ELISA, PCR, immunohistochemistry (IHC), and serology. The type of test your veterinarian recommends is somewhat dependent on the age, vaccination status, and previous test results of the animal. The best initial screening test currently available in terms of accuracy, cost, and convenience is the antigen capture ELISA performed on a skin biopsy (i.e. ear notch sample), which can be performed on new-born animals as well as adults. This test is currently available at the Tennessee Department of Agriculture KORD Diagnostic Laboratory. Currently, samples collected by producers are being accepted at KORD for testing. Instructions for collecting samples can be found on page 6 of the KORD lab submission guide. The web site address is: <http://www.tn.gov/agriculture/publications/labguide/laboratoryguide.pdf>. These samples are tested on a regular basis, so producers can expect results back in a timely manner. If you have an animal test positive as a PI, contact your veterinarian to discuss potential follow-up diagnostics to confirm the positive result before accepting a diagnosis of BVDV in your herd.

Disposal of PI Animals

Identification of a positive animal creates a moral dilemma for the producer. It is not recommended to carry a PI animal to the livestock market as this would expose multiple animals to BVDV and ultimately spread the virus to farms that the exposed animal are dispersed to. One option for disposition of these animals is to segregate them in a manner that they will not have nose to nose contact with other animals and feed them out for beef. There is no negative impact to the meat of the animal, so it is safe for consumption and cannot be differentiated from other beef. An additional option is to sell PI animals to a research institution. BVDV research is conducted at several Veterinary teaching institutions in the Southeastern US. The only other viable option is to euthanize and properly bury according to local regulations.

Biosecurity

Biosecurity is an innovative approach to managing the risk of disease introduction to your livestock operation. A biosecurity plan is designed to help identify and manage disease risks through practical measures for common, everyday infectious agents such as BVDV. An effective biosecurity plan involves multiple components, but results in practical measures for implementation.

The following are examples of biosecurity practices that will greatly minimize the risk of BVDV introduction:

- 1) Do not intentionally commingle animals from different herds.
- 2) Provide a buffer between adjoining herds so no fence-line contact is available.
- 3) Isolate new herd additions and test for appropriate diseases such as BVDV before allowing new animals to commingle with your herd. Identify isolation areas prior to purchase.
- 4) Isolate animals for a designated period of time that are returning to the herd from livestock shows and other events.
- 5) Post signs indicating that a biosecurity plan is in effect on your operation.
- 6) Educate all visitors about the biosecurity plan in effect on your operation.
- 7) Ensure that all visitors are dressed appropriately. Provide coveralls and boots, or make sure visitors are wearing clothing free from contact with other cattle.
- 8) Recognize the fact that you are also a source of contamination for your herd. If you are around other cattle, shower and change clothes before working with your livestock.
- 9) Clean and disinfect your truck and trailer after hauling cattle. Anyone hauling cattle for you should do the same.
- 10) Apply appropriate insect control.

Vaccination

Vaccination is an important component of BVDV control. Many effective vaccines exist that contain BVDV in addition to other common infectious agents. However, because so many strains of BVDV exist, no vaccine is 100% effective against all strains. Therefore, do not rely entirely on vaccination to protect your herd from BVDV, but be sure to include appropriate diagnostic surveillance and biosecurity tailored to meet the individual needs of your operation.

Ultimately, specific BVDV control strategies will differ from one operation to the next depending on herd goals, herd health history, BVDV exposure risk factors, etc. Consult with your veterinarian, fellow producers, and Extension specialists to determine the best BVDV control strategy for your herd. If you have any further questions please feel free to contact me.

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