

# Pre-delivery Requirement: **Testing Cattle for BVD Persistent Infection**

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## **Background**

Bovine viral diarrhea virus (**BVDV**) persists and spreads between herds in the U.S. cattle population primarily via persistently infected (**PI**) cattle that were exposed to virus before they were born. Many PI cattle are more susceptible to disease and unthrifty. If they survive, they are unlikely to be selected for replacement stock. Unfortunately, a few survive, appear healthy, and may be retained as breeding animals. PI's shed BVD virus continuously and provide constant exposure to any other cattle with which they come in contact.

The likelihood of finding a PI animal is low but the potential damage to herd productivity is very high. Newly purchased bulls have been incriminated as a source of new BVD infections in cattle herds. Some feedlots screen incoming cattle for BVD PI and many dairy farms screen replacement heifers to identify PI heifers. Finding persistently infected animals and eliminating them from breeding herds is an essential part of controlling this disease. PI cattle have BVD virus present throughout their body. The standard test requires a small skin sample, and using specific staining techniques to identify BVD virus in the tissue. The cost of the test is typically less than \$5 and results are often available in one week.

For the MCA-MSU Bull Evaluation, we want a "virus detection" or "antigen detection" test for BVDV. These tests will pick up the presence of virus or antigen from virus. We do not want an "antibody detection" test, as this only means that the animal has made antibodies toward the presence of the BVDV virus at some point. Whether the test is an ELISA or PCR is not as important to our objectives in this screening.

## **Sampling Procedure**

1. Ear notches are relatively easy to collect and test. With the animal properly restrained, use an ear notching tool (pig ear-notcher) that yields a V-shaped, 5/16" notch to obtain a skin sample from the edge of a clean portion of the ear. Bleeding is usually minimal and can be controlled, if necessary, by applying digital pressure for a few seconds. Make sure the sample includes skin and not only hair. Place each ear notch sample in its own separate sealed plastic bag. Collected ear notches must be free from contaminating dirt, feces, or tattoo ink. Dip the notching tool in disinfectant between each ear notch collection. A 10% bleach solution (i.e. made from 3 oz. household bleach in 27 oz. water) is an appropriate disinfectant. Always rinse disinfectant from the notching tool with lots of clean rinse water in a 3-to-5-gallon bucket before collecting the next sample. Change the water in the rinse bucket periodically. Make sure to thoroughly rinse the tool with clean water to avoid false negative test results.
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2. Label the individual plastic bag with the animal's identification using a permanent marker.
  3. Store the collected ear notches at refrigerator temperature and ship to the laboratory within 72 hours of collection. Send samples on cold packs by overnight mail. Avoid shipping samples on Thursdays or Fridays so that they do not arrive at the lab over the weekend. Make sure to include the appropriate paperwork!

4. If using MSU Veterinary Diagnostic Laboratory:

To submit samples, go to [cvm.msu.edu/vdl/submit-a-sample](http://cvm.msu.edu/vdl/submit-a-sample) and follow the instructions.

Click "submittal form" and then under the GENERAL SUBMITTAL FORMS heading, click "General Submissions". Fill out the form completely, and select BVD PCR (ear notch) (80991).

*Submittals via U.S. Postal Service:*

MSU VDL, PO Box 30076, Lansing, MI 48909-7576

*Submittals via all other carriers:*

MSU VDL, 4125 Beaumont Road, Lansing, MI 48910-8104