

Guidelines for Bovine Viral Diarrhea Virus (BVDV) Testing

The NDSU-VDL offers polymerase chain reaction (PCR) and immunohistochemical (IHC) based assays to identify animals infected with BVDV. The most cost-effective method depends on the prevalence of persistently infected (PI) animals in the herd and the number of animals being tested. In most instances, unless testing 6 or fewer animals or there is a high herd prevalence of PI animals, PCR testing is the most cost-effective method. Visit our [website](#) for fees and testing schedules.

Collection procedure for PCR testing: Care must be taken to avoid cross-contamination of samples.

Use an ear notching tool that yields a 1-2 cm² notch. Disinfect the notching tool with 10% bleach solution between each animal and rinse the notching tool in clean water. Residual disinfectant on the notching tool may give false negative results, therefore rinsing is required.

- Ear notches must be free of dirt, residual disinfectant, feces, tattoo ink, or BVDV vaccine. Do not vaccinate or tattoo at the same time the samples are taken.
- Place each ear notch in its own dry (**NO FORMALIN**), individually labeled red top blood tube or similar sterile container (**must not contain preservatives or gel**). **Do NOT submit samples in Whirl-paks or sandwich bags. Each tube label should include the animal ID AND sample number.** The laboratory will pool up to 15 ear notches per pool; individuals in positive pools will be automatically retested and charged accordingly.
- Place labeled samples on ice as soon as they are collected. Keep refrigerated or frozen until shipped. Samples may be kept in the freezer up to one month and shipped together on ice.

Collection procedure for IHC Testing: Cross contamination is less of a concern in IHC testing, therefore disinfecting the ear notch tool and rinsing in water is not required but is recommended to stop the transmission of other diseases. Place samples in individually labeled tubes containing sufficient formalin to cover the ear notch as soon as possible after collection. **Delay in fixation can yield unsatisfactory IHC results. DO NOT FREEZE.** Samples should be tested within a couple weeks of collection. Prolonged storage in formalin will yield false negative results. The laboratory will place up to 9 samples per slide/charge.

Sample Submission: Complete the [Herd Serology/PCR submission form](#). Enclose a copy with samples.

- Enter animal identification on the [Sample Identification Form](#). Age, sex and breed are not required.
- Enclose a copy of the Sample Identification Form with the sample. Email the electronic form (do not scan or fax) to ndsu.vetlab@ndsu.edu using the owner's last name as the subject.

Interpretation of Results:	
Negative	The animal is not persistently infected with BVDV.
Positive	The animal is either persistently infected or acutely infected with BVDV.
Suspect	Very low level of virus was detected. This can occur during convalescence from acute infection or represent carryover of virus from improperly disinfected and/or rinsed notching tool.

Retesting of positive animals: IHC testing typically only identifies persistently infected animals, but retesting positive animals is recommended at least 3 weeks later to document persistent infection. PCR testing requires retesting of positive animals as it readily identifies both persistently infected and acutely infected animals.