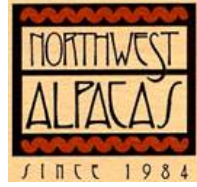




Recommendations for Testing for Bovine Viral Diarrhea Virus in Alpacas and Llamas

By Susy Carman, DVM, PhD



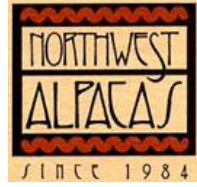
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RECOMMENDATIONS FOR TESTING FOR BOVINE VIRAL DIARRHEA VIRUS IN ALPACAS AND LLAMAS

With the recent discovery that bovine viral diarrhoea virus (BVDV) can cause abortions and persistent infection in alpacas, there has been a request for a testing protocol to identify BVDV infection in alpaca. The following general recommendations are from Dr. Susy Carman DVM PhD, a veterinary virologist at the Animal Health Lab, University of Guelph, Ontario.

BVDV and persistent infection is a newly recognized disease in alpaca. So far only one persistently infected alpaca cria has been studied. The following BVDV testing strategies for alpaca are based on comparative medicine and derived from those currently used for cattle. These recommendations may need to be refined as more is learned about BVDV in alpaca.

- **All aborted and stillborn fetuses, cria that die, and any unexplained deaths should be autopsied by your veterinarian so that samples of tissue can be sent to a veterinary diagnostic lab to be tested for disease agents, including BVDV.** Low birth weight cria, poor doing cria, very premature cria, and alpacas with unexplained illness should be tested for BVDV (blood test – see below).
- If BVDV is identified from any submission, then the herd should be strategically tested (BVDV herd screening) to see if there is a persistently infected (PI) animal still present in the herd as the source of the infection. **For BVDV herd screening every animal in the herd should be evaluated for the virus in some way.** If the entire herd cannot be tested due to economic reasons, it is more important to test all animals less than 2 years of age and reproductively active females.
- To test **live animals over 12 weeks of age** for BVDV send serum (blood test) for PCR or antigen ELISA or virus isolation.
- To test **live animals less than 12 weeks of age** for BVDV send serum (blood test) for PCR. Maternal antibody in these young animals will interfere with other tests.
- **Your veterinarian should contact the veterinary diagnostic laboratory in your area to find out which tests are offered for the detection of BVDV in cattle.** The same tests can be used to detect BVDV in alpaca. Some veterinarians and laboratories prefer to use skin tests for BVDV detection.
- If the first blood test in a live animal is positive for BVDV, this may only represent an acute infection. A second blood sample must be collected three weeks later and tested to confirm that the animal is indeed persistently infected. **This second test is**



essential, for the animal will be euthanized on the basis of this testing. Since testing methodologies are not perfect, inconclusive test results can occur. In these cases ask that a different test be used on the same sample to confirm the result or submit a new sample.

- **Any pregnant females who may have been exposed to BVDV during their pregnancy should have their cria tested for BVDV soon after birth using serum.** BVDV was isolated from the placenta of the one persistently infected cria studied.
- **To determine if your herd has been infected in the past** you may wish to test serum from adults for antibodies to BVDV type 1 and BVDV type 2.
- **To evaluate as to whether a pregnant female may have been exposed to BVDV at another farm in early pregnancy,** use serum to test for antibodies to both BVDV type 1 and BVDV type 2. If the tests for antibody are negative, it is unlikely the dam is carrying a PI fetus. In cattle, persistent infection has been reported to occur in bovine fetuses infected between 18 and 125 days of 2 gestations. If the alpaca dam has antibodies, she may not be carrying a PI fetus if she was infected pre-pregnancy or at the end of pregnancy. Since you do not know when the dam was infected you may want to quarantine the dam before delivery in case she does deliver a PI cria, and plan to test the cria soon after birth.
- **It is possible for PI cattle to live and reproduce. If a PI cow has a calf, the calf will always be PI.** If a calf is negative for the virus, its mother is never persistently infected. For herd testing, if you have many females with their cria, you might try to use this information and strategically bleed and test only cria. If the cria is negative, the dam will also be negative. Adults not represented by cria would need to be individually tested. However if you test only cria, and if a cria is positive, you would have to pay for another veterinary visit to draw blood from the dam. Depending on the herd size, it may be more cost effective to have blood taken from both dams and cria at the initial visit. The serum from dams could be held by your veterinarian and submitted to the laboratory for testing following the return of any positive results for cria.
- **If you receive a positive BVDV report, it is essential that you discuss this with your veterinarian to determine if any follow-up testing is needed** and contact any farms that may have had contact with your animals so that they can take action to limit the spread of BVDV.
- If your veterinarian recommends that you vaccinate for BVDV use only a killed vaccine until more is known about BVDV in alpacas and llamas.