

Testing

There are numerous tests for BVDV but the most common are: ^{9,10}

- **BVDV Virus Isolation** - Virus isolation has been the "gold standard" for BVDV detection. This involves the incubation of specific cells in the presence of a sample and the subsequent analysis of the cells for BVD.
- **BVDV PCR Detection** - Samples are treated to extract RNA which is then converted to DNA. The DNA is replicated up to 50 times (thus 2^{50} is 10^{15} replications) and quantified.
- **BVDV Antibody Detection** - Antibody (Ig) ELISAs are used to detect historical BVDV infection; these tests have been validated in serum, milk and bulk milk samples. Ig ELISAs do not diagnose active infection but detect the presence of antibodies produced by the animal in response to viral infection.



Testing - BVDV Virus Isolation

- **Strengths**
 - Required by many regulatory agencies
 - Can be developed to be extremely sensitive through selection of BVDV sensitive cells and viral concentration. Such tests are often developed by independent testing labs
- **Weakness**
 - Can be adjusted to provide desired result. For example, use of cells less sensitive to BVDV will provide a false negative result.
 - BVDV Antibody can block the ability of cells to replicate BVDV
 - Requires weeks of incubation



Testing - BVDV PCR Detection

- **Strengths**

- Extremely sensitive, on the same level as very sensitive BVD Isolation tests
- Measures both active and inactive virus
- Relatively quick

- **Weaknesses**

- Measures both active and inactive virus



Testing - BVDV Antibody Detection

- **Strengths**
 - Easy and inexpensive
 - Does not detect presence of the Virus
- **Weaknesses**
 - Quantitative but not sensitive

