

# Bovine Viral Diarrhea

**Alternate Names:** Bovine Viral Diarrhea, BVD.

**Species Affected:** Cattle primarily, other ruminants can also be affected.

**What causes BVD?** Bovine Viral Diarrhea Virus (BVDV) which is classified as either type 1 or type 2 and further divided into subgroups. BVDV targets the immune system.

**How is BVD transmitted?** BVDV can be transmitted

- 1) directly: contact with bodily fluids from infected cattle,
- 2) indirectly: contact with contaminated tools, equipment, or environment,
- 3) by biting insects and
- 4) vertically: across the placenta from dam to fetus.

**What are the clinical signs of BVD?** Clinical signs vary depending on severity of the virus, age, and organs affected. Disease may occur 6-12 days after infection and last for a few days. Most cattle are affected by a mild infection with few to no clinical signs. In acute BVD cases the disease develops rapidly and with severe signs of fever, rapid breathing, depression, suppressed appetite, decreased milk production, excessive nasal and eye secretions, and diarrhea.

If the BVDV crosses the placenta during the first 4 months of fetal development, the calf is born infected with BVDV and will remain infected for life ("Persistently Infected"). Transplacental infection later in pregnancy may lead to abortion, stillbirth, birth abnormalities or weak calves.

Some persistently infected animals develop an uncommon but fatal form of BVD called Mucosal Disease characterized by profuse diarrhea, mucosal lesions, and death.

**What are the consequences of BVD infection?** BVDV affects the immune system causing immunosuppression and increasing the risk of other diseases. The Mucosal Disease form of BVD is fatal.

**How is BVD detected?** Based on clinical signs, lesions, and laboratory testing including serology (blood test to detect antibodies), virology (to detect the BVDV in different tissues), and PCR (a molecular test to detect viral RNA)

**How can BVD be prevented?** Vaccines and sound biosecurity practices help prevent outbreaks in a herd. Persistently infected cattle should be eliminated, and replacement cattle quarantined and vaccinated before introducing them to the herd. Breeding bulls should be screened for BVD before use.

**How can BVD be treated?** Treatment involves supportive care of sick animals.

**Is BVD zoonotic (transmitted from animals to humans)?** No

#### References:

- Grünberg, W. (2022, October). *Bovine Viral Diarrhea and Mucosal Disease Complex*. Merck Veterinary Manual. <https://www.merckvetmanual.com/generalized-conditions/bovine-viral-diarrhea/bovine-viral-diarrhea-and-mucosal-disease-complex>