

BVD Shield™ 3

Bovine Virus Diarrhea Vaccine, Killed Virus

For use in healthy cattle as an aid in the prevention of disease caused by cytopathic and noncytopathic bovine virus diarrhea (BVD) Type 1 and noncytopathic bovine virus diarrhea (BVD) Type 2 viruses.

Product Numbers

BVD Shield™ 3

337 - 20 mL - 10 doses

338 - 100 mL - 50 doses

- **Contains multiple real-world BVD strains** — BVD Shield 3 contains noncytopathic (NCP) Type 1 and NCP Type 2, as well as cytopathic (CP) Type 1.
- **Expands protection against BVD** — Three BVD strains means broader protection against both major BVD genotypes.
- **Long-lasting protection** — BVD Shield 3 contains the superior Xtend® SP adjuvant technology for higher immunity over a longer period of time.
- **Proven safe for all cattle** — A ready-to-use, inactivated vaccine, BVD Shield 3 is safe for use in any cow, bull or calf, in any stage of production.
- **BQA-friendly** — BVD Shield 3 is labeled for subcutaneous administration, in keeping with Novartis' ongoing commitment to Beef Quality Assurance efforts.

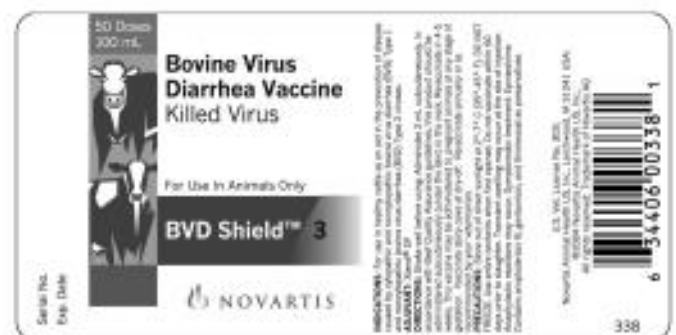


BVD Shield™ 3

ADJUVANT: Xtend® SP

DIRECTIONS: Shake well before using. Administer 2 mL subcutaneously. In accordance with Beef Quality Assurance guidelines, this product should be administered subcutaneously (under the skin) in the neck. Revaccinate in 4-5 weeks. This vaccine may be administered to pregnant animals at any stage of gestation. Vaccinate dairy cows at dry-off. Revaccinate annually or as recommended by your veterinarian.

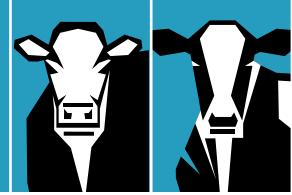
PRECAUTIONS: Store out of direct sunlight at 2°-7° C (35°-45° F). DO NOT FREEZE. Use entire contents when first opened. Do not vaccinate within 60 days prior to slaughter. Transient swelling may occur at the site of injection. Anaphylactic reactions may occur. Symptomatic treatment: Epinephrine. Contains amphotericin B, gentamicin and thimerosal as preservatives.



Customer Service
(800) 843-3386

www.livestock.novartis.com

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Technical disease information

Bovine Virus Diarrhea (BVD)

BVD virus is one of the most prevalent and challenging bovine viral pathogens in the world. There are literally hundreds of BVD viral strains, and the number continues to increase due to the mutating nature of the virus. The BVD virus suppresses the immune system, which leads to secondary infections from other pathogens (e.g., *Mannheimia (Pasteurella) haemolytica*). The virus manifests itself in numerous ways, including:

- Bovine respiratory disease
- Hemorrhagic (bleeding) syndrome
- Reproductive disorders, including infertility, abortion and neonatal defects
- Persistently infected (PI) calves that shed enormous amounts of infective virus throughout their lives

- Gastrointestinal disorders
- Mucosal Disease in persistently infected calves

BVD viral strains fall into two genotype categories – BVD Type 1 and BVD Type 2. BVD viral strains are further classified according to biotype. They can be cytopathic (CP) or noncytopathic (NCP).

BVD Shield 3 contains NCP Type 1 and NCP Type 2, as well as CP Type 1, for three-way BVD protection. In addition, a recent study shows that adding a third BVD strain improves immune response against all of these biotypes and genotypes.

Immune responses measured via titers 28 days post second-vaccination.

	CP Type 1	NCP Type 1	NCP Type 2
2-way BVD	1:394	1:38	1:72
BVD Shield 3 (with 3-way BVD)	1:508	1:77	1:236