

TOP FARMERS KNOW-HOW

WHAT IS BVD?



BVD is an expensive viral disease of cattle. In New Zealand, active BVD infection costs:

**\$70,000 / 400 dairy cows/year &
\$3,500/100 beef cattle/year**

BVD stands for “bovine viral diarrhoea.”

HOW THE DISEASE WORKS:

Naïve animal:

- Has never been exposed to BVD
- If you test a naïve animal or group of animals, you will find **no BVD antibodies or BVD virus** in their blood, milk or body tissues

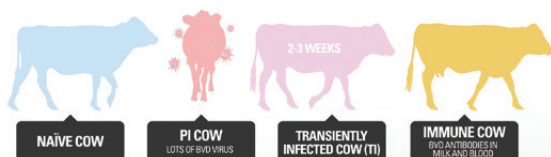
Transiently infected animal (TI):

- Has just been exposed to BVD for the first time—gets sick for 2-3 weeks
- Signs of transient infection include: pneumonia, diarrhoea, milk drop, high somatic cell count, **pregnancy loss, abnormal calves, immune suppression**
- If you test a TI, you will find **low levels of BVD virus in blood & milk**
- Transient infections are where the **main costs associated with BVD** are incurred; each transient infection occurring during mating costs approx. \$90
- TI cattle don't excrete much virus, so **ARE NOT the major source of BVD spreading** through a herd

Immune cow:

- Has been transiently infected at some time in the past
- If you test an immune cow or group of immune cows, you will find **no BVD virus, but will find BVD antibodies** in their blood and milk

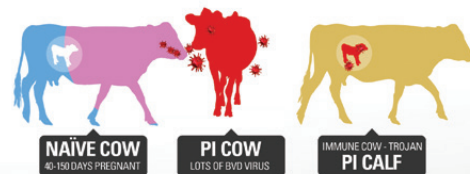
HOW BVD WORKS



Persistently infected animal (PI):

- **The main source of BVD—contact with PIs are the main way naïve animals become transiently infected**
- **PI cattle shed high levels of the virus in their body fluids for their entire lives**
- PIs form when naïve cows are exposed to BVD when they are 40-150 days pregnant: the cow becomes immune to BVD but the fetus can become a PI—so PIs are born PIs and die PIs
- If you test a PI, you will find **lots of BVD virus in their blood, milk and skin, but no BVD antibodies**

WHERE PI CATTLE COME FROM



WHY IT'S IMPORTANT TO ACTIVELY CONTROL BVD:

- BVD spread from PI animals to naïve animals is **not predictable**
- If left alone, a herd containing a PI nearly always continues to have naïve animals in it, which continue to be at risk of getting sick (and continue to cost you money!)
- It is most cost effective to put **active BVD control** measures in place:
 - **Find and eliminate PIs**
 - **Prevent new PIs from being created**
 - > Biosecurity
 - > Vaccination (protects the fetus)

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REFERENCES

1. Heuer C, Healy A, Zerbin C. (2007). Economic effect of exposure to bovine viral diarrhoea virus on dairy herds in New Zealand. *Journal of Dairy Science*. 90:5428-38.
2. Heuer, C et al. (2008). Effect of reproductive pathogens on pregnancy rates in beef herds. *Proc. 38th Seminar of the society of sheep and beef cattle vets of the NZVA*: 141-147.
3. Hansen et al. (2015). Innate and adaptive immune responses to in utero infection with bovine viral diarrhoea virus. *Anim Health Res Rev*. 16(1):15-26.
4. Lindberg, A. & Houe, E. (2005). Characteristics in the epidemiology of bovine viral diarrhoea virus of relevance to control. *Preventive Veterinary Medicine*. 72:55-73.
5. Weir, A. (2016). Epidemiology of BVD in New Zealand dairy herds. Massey University PhD thesis dissertation.
6. Reichel et al. (2008). Does control of bovine viral diarrhoea infection make economic sense? *N Z Vet J*. 56(2):60-6.
7. Reichel et al. (2018). Perspectives on Current Challenges and Opportunities for Bovine Viral Diarrhoea Virus Eradication in Australia and New Zealand. *MDPI Pathogens Review*.

BOVILIS
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MSD Animal Health
33 Whakatiki St, Upper Hutt, Wellington, New Zealand
Private Bag 908, Upper Hutt 5140

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