

# Bovine Viral Diarrhea Virus

Bovine viral diarrhea virus (BVDV) is a production limiting pathogen of cattle in Canada. This virus exists in most cattle producing countries worldwide.



## What's the Impact?



BVDV is an important and prevalent pathogen in the Canadian dairy industry.



Infection with BVDV leads to substantial negative impacts including<sup>1,2,3</sup>:

- Reduced milk yield
- Respiratory disorders
- Congenital defects
- Early embryonic death
- Decreased growth
- Extended calving intervals
- Reduced first service conception
- Increased mortality and morbidity due to suppression of the immune system

The impact of BVDV, however, depends on the time and duration of the infection, which strain of BVDV the animals are infected with, how prevalent the disease is, and other infections that are occurring in the herd.

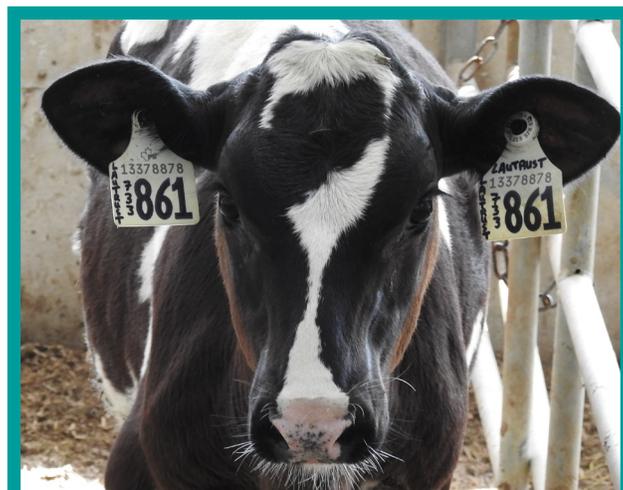
## What Does it Cost You?

The effects of BVDV result in significant economic losses to the dairy industry. Canadian researchers have estimated losses of \$47 per infected cow, per year<sup>6,7</sup>.

**BVDV could cost approximately \$4,842<sup>6</sup> per year for the average Canadian dairy farm (assuming 100 milking cows).** All costs listed in Canadian dollars.

## Biosecurity Between Farms

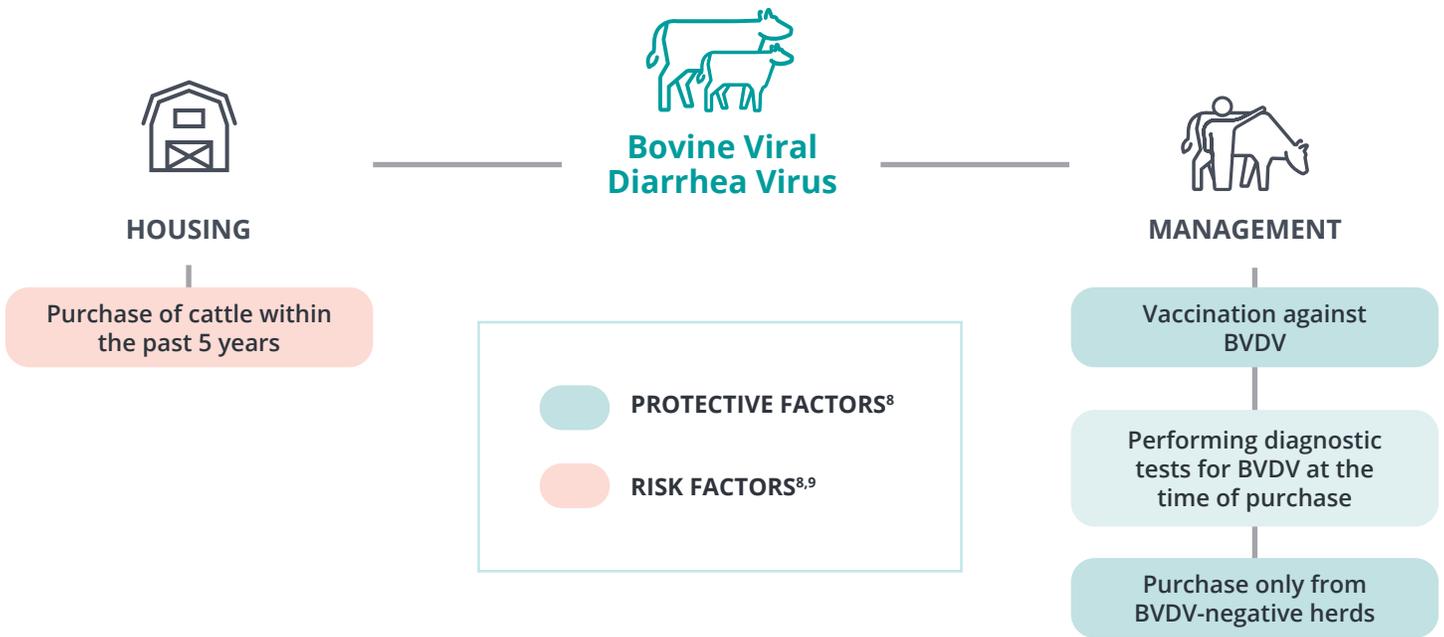
The way BVDV is introduced onto your farm is through the entry of a persistently infected animal. A persistently infected (PI) animal will be continuously infected with BVDV and will shed large amounts of the virus throughout its entire lifetime. Therefore, to prevent BVDV from coming onto your farm, ensure that PI animals do not come onto your farm through testing all incoming cattle onto your farm. In addition, pregnant animals, which are not PI animals, could also be carrying a PI fetus. Hence, purchasing non-pregnant animals, or not purchasing any cattle into your herd will reduce the risk to your farm, as the purchase of heifers or cows is a significant risk factor for disease entry<sup>8</sup>.



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# Biosecurity Within Farms

As highlighted below there are many risk factors (factors associated with a higher level of BVDV) and protective factors (factors associated with lower levels of BVDV) that have been identified:



## Control Strategies

It has been well documented that BVDV can be eliminated from herds; what's more, some countries around the world have been able to completely eradicate the virus through:



### 1. The use of vaccination programs



### 2. Elimination of PI animals from the herd

## Vaccination

Vaccination is an effective and relatively inexpensive option to control BVDV. Vaccination can help to prevent new infections from occurring, reduce the presence of the virus in the environment, and increase herd immunity where there are fewer susceptible animals in the herd that could be infected with PI cattle. A systematic vaccine schedule that is implemented regularly and follows a defined protocol will create an environment with a high number of immune animals meaning a single infected animal with BVDV will not be able to meet and infect enough remaining susceptible or non-immune animals to maintain or even spread the infection<sup>10</sup> (this is effective herd immunity). Work with your veterinarian to develop a vaccination program tailored to your farm to control BVDV.

## Test & Cull

As PI animals are the largest source for transmission of BVDV, it is important to find and eliminate these animals from the herd. In most herds, the number of PIs is low so it is an economical strategy to cull positive animals<sup>11</sup>. Once the PI animals are removed, it is still important to continue to monitor for new PIs, specifically, newborn calves should be tested for a period to ensure that the production of a PI did not occur during pregnancy. In addition, it is important to ensure that no new PI animals are brought into the herd. Hence, not purchasing new animals or when animals are required, purchasing animals that are negative for BVDV and testing calves from purchased pregnant animals will help to prevent the recurrence of BVDV on your herd.

**For more specific information on testing strategies, work with your veterinarian and other advisors.**



**Vaccination is an effective option to control BVDV. Work with your veterinarian to develop a vaccination program tailored to your farm to control BVDV.**

# Take Home Messages

BVDV is a common viral pathogen affecting the Canadian dairy industry. Infected herds experience significant consequences including reduced milk production and reproductive performance. To control this pathogen, it is important to prevent persistently infected animals from infected susceptible animals in your herd. Having a proper vaccination strategy, purchasing animals are negative for BVDV, and if PIs are present in your herd, identifying and eliminating them can help to reduce the impact of BVDV.



**Work with your veterinarian to develop an effective protocol to keep BVDV off your farm!**

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