

Bovine Viral Diarrhoea Virus (BVDV) in Cattle

BVDV (also known as Pestivirus) is a disease that is present in the Glen Innes area and has caused significant economic losses in some herds. BVDV can cause reduced conception (or pregnancy rates), reduced calf survival rates and reduced weaning rates. BVDV also suppresses the immune system resulting in secondary infections such as:

- Respiratory diseases
- Mastitis
- Footrot
- Diarrhoea

BVDV is readily transmitted via oral, respiratory and genital routes. The virus is shed in saliva, nasal secretions, faeces, urine, milk, semen, vaginal discharges, and even the placenta. Despite this large number of possible sources of the virus it may only survive in these discharges in the environment for a few hours to several days depending on the weather conditions.

Infection with BVDV can result in a number of different syndromes. In postnatal infections (the animal was infected after it was born) of non-breeding animals they can suffer from the disease for a short period (10-14 days) and then clear the virus. Usually these animals show no signs of disease from the virus itself but are at risk of getting one of the above secondary infections. Due to the type of BVDV in Australia the risk of transmission of the virus from these animals to other animals in the herd is low.

If a breeding female is infected there are a number of possible outcomes. These outcomes depend on the stage of the reproductive cycle and gestation period. The following table outlines what can happen when.

Conception	First Trimester	Second Trimester	Third Trimester
<ul style="list-style-type: none"> • Prevents fertilisation • Early embryonic death 	<ul style="list-style-type: none"> • Formation of Persistently infected (PI) calves • Abortion 	<ul style="list-style-type: none"> • Abortion • Later delivery of stillborns or abnormal calves at full term • Nervous system effects • Eye defects 	<ul style="list-style-type: none"> • Smaller calves at full term

Source: "Guidelines for the investigation and control of BVDV", BVDV Technical Advisory Group.

One of the most significant points from the above table is that infection in the first trimester can result in the formation of persistently infected (PI) calves. At this time in the pregnancy the foetus has not developed its immune system. If the foetus is infected at this time, the virus becomes part of it. Later when the immune system develops it recognises the virus as part of the normal makeup of the calf. This calf will then produce virus particles for the rest of its life, hence it is persistently infected. These PI animals often are poor doers and are prone to secondary infections. Approximately 50% of these PI calves die within 12 months, a further 25% between 12-24 months. The remaining 25% may survive for a number of years.

These PI animals are the main source of infection in a herd. In an extensive situation (eg on pasture) infection rates can range between 0.1 to 0.5% of susceptible animals per day. However if a PI animal is yarded with the mob infection rates can be as high as 60% per day.

Control of BVDV generally revolves around vaccination with a Pfizer vaccine called Pestigard. Before implementing any control program it is important to find out if your herd has any economic losses that can be associated to BVDV. It is also important to find out the BVDV status of your herd and this is done by blood tests. Your veterinarian will be able to suggest a control program that best suits your herd. A handout made by Pfizer called Understanding BVDV is also available from your veterinarian.