



# PESTIVIRUS (BVDV) IN CATTLE FACT SHEET

**Pestivirus [also known as Bovine Viral Diarrhoea Virus (BVDV) and Mucosal Disease] , is a viral infection of cattle well recognized in both beef and dairy cattle in Australia. Approximately 80% of beef herds in NSW and Victoria show evidence of Pestiviral infection. Pestivirus spreads rapidly between unexposed cattle via mucous membrane transmission.**

- Pestivirus infection in beef herds causes three main categories of economic loss;
- Fertility losses -Reproductive losses at all stages of pregnancy and bull infertility
- Persistently infected (PI) calves - 50 % of PI calves die by the age of 2 years
- Bovine Respiratory Disease -Pneumonia and weight loss in feedlot cattle

## Fertility Losses

Initial exposure to the virus around the time of joining will dramatically reduce conception rates in females. Some properties have seen conception rates as poor as 30% due to initial exposure to Pestivirus at the time of joining. Many of the clinical effects and reproductive losses due to Pestivirus occur when heifers or cows are first exposed to the virus when they are pregnant.- particularly in the first 100 days of pregnancy. When the unexposed heifer or cow is infected during pregnancy, the virus crosses the placenta and infects the developing foetus. Depending on the stage of pregnancy this foetal infection may result in early foetal loss (presenting as poor pregnancy testing results) or abortion, or stillbirth [later stage infections]. If the developing foetus survives to the end of pregnancy, the calf may be born with severe birth defects, or may die soon after birth , or may be 'persistently infected' with the virus [PI calf]. On average 50% of PI calves die by two years of age.

## Bulls

Another large cause of infertility involves bulls becoming transiently infected with Pestivirus at the time of joining. The resultant immuno-suppression causes decreased semen quality which can have disastrous effects on conception patterns. It is extremely important to ensure bulls are not PI cattle and that bulls have immunity to Pestivirus prior to joining. Many seedstock producers are now testing bulls prior to sale to ensure no PI cattle are sold.

## Persistently infected (PI) calves

The principal way Pestivirus is transmitted within cattle herds is by direct contact with persistently infected (PI) animals. PI cattle are the main source of exposure to non exposed cattle and on average occur at a rate of 0.5-1% in the general cattle herd. PI calves are created by foetal infection at a stage of pregnancy [usually <100days] when the calf's developing immune system does not recognize the virus as foreign. These calves develop no antibodies to Pestivirus . The PI calves basically have the virus in-built in their bodies and shed the virus profusely through their mucous membranes for as long as they live. A large percentage of PI animals can be recognized as 'poor doers', or sick animals that die before 2 years of age. These cattle are often 'immunological cripples', developing severe, non-responsive forms of common diseases such as ringworm and dermatophilus infection.



However, some PI animals appear 'normal', survive longer than 2 years, and act as long term carriers of Pestivirus. Essentially these are 'hidden transmitters' continuing to infect animals in the herd. They show no obvious signs of illness and are difficult to recognise and diagnose.

**A cost-effective ear notch test/hair sample test for PI cattle has recently been introduced as a diagnostic tool. Many seedstock producers are now using this test to ensure bulls and females sold to clients are not PI cattle.**

### **Bovine Respiratory Disease (BRD)**

In stressful environments such as high-stocking rates, transportation, feedlots and yarding, Pestivirus transmission can take as little as one hour. Direct contact of previously unexposed cattle with a PI animal can have substantial effects on animal health and productivity. Once cattle become infected with the immunosuppressive Pestivirus they become susceptible to a wide range of secondary infections from other viruses and bacteria.

Examples include:

- Bovine Respiratory Disease (BRD)
- Pneumonia
- Footrot and lameness
- Diarrhoea and intestinal infections
- Bovine papular stomatitis or wart infections
- Pinkeye infection

Feedlot performance is diminished greatly by Pestivirus infection through reduced feed consumption, low average daily weight gains, sickness and in some cases death of stock.

### **Control programs – Holbrook Veterinary Centre recommendations:**

Control strategies aim to limit the economic losses due to Pestivirus. This is achieved by making sure cattle are not first exposed to this virus when they are pregnant. The key aim is to have maximum immunity in females and bulls prior to joining. This will minimize reproductive losses. There are only two ways immunity can be achieved:

- Natural exposure (Controlled exposure vrs Uncontrolled Exposure)
- Vaccination with Pestiguard.

Holbrook Veterinary Centre recommends conducting serology tests on a sample of heifers pre-joining to assess the level of immunity in the herd. If the heifers have already been naturally exposed they will show positive antibody results and the immunity will be long lasting. If the heifers are unexposed they will show negative antibody results and these heifers are at risk of future reproductive losses due to initial exposure during pregnancy.

The Pestiguard vaccine is recommended to protect unexposed cattle contracting the virus during pregnancy. The cost per dose of the killed vaccine is approximately \$4.50 and cattle need two initial injections followed by annual booster vaccinations.

**For more information about Pestivirus and how best you can manage the risk of infection on your property feel free to contact one of the vets at HVC on (02) 60362374.**

