



# Take Control

Prevent BVDV Associated  
Production Losses



# BVDV and PI's

The key to understanding the Bovine Viral Diarrhoea Virus (BVDV) and its control is to understand the epidemiology of the disease. BVDV is believed to be spread almost exclusively by Persistently Infected (PI) animals. PI's were infected with BVDV in utero between approximately months one and four of their pregnancy. They go on to be born persistently infected with BVDV, as their immune system fails to recognize the virus as a pathogen and never mounts a defence against it. Because the virus is allowed to replicate, unchecked, PI's go on to shed extreme amounts of virus for their entire lives. The only way to become a PI is to be born one. The IDEXX HerdChek<sup>®</sup> BVDV test is capable of detecting PI's at any age from easily acquired ear notch tissue.

BVDV is controlled by disrupting the PI cycle, by preventing them from being born or identifying and removing them before they have the opportunity to expose any susceptible pregnant cows. Globally no vaccine exists which will protect a dam's unborn calf 100% of the time from a PI. Though we only have one, Australia is fortunate to have a highly efficacious BVDV vaccine. Due to the tremendous amount of virus that they are capable of shedding, PI's can overwhelm vaccine associated immunity.

Optimally in a breeding herd, all PI animals would be removed prior to the joining of a vaccinated population. With the PI challenge removed, a solid vaccination program will effectively defend against most transient or low level challenges and will prevent a wreck if a PI is inadvertently introduced.

# Herd BVDV Screening

Usually the most cost effective way to measure a herd's exposure to BVDV is to look for antibodies to BVDV, indicating past exposure to the virus, from blood samples taken from appropriate herd representatives. Producers should work with their veterinarian to identify appropriate groups to sample. Taking blood samples from six to ten animals from each of the two youngest management groups and from the older cows is an effective strategy.

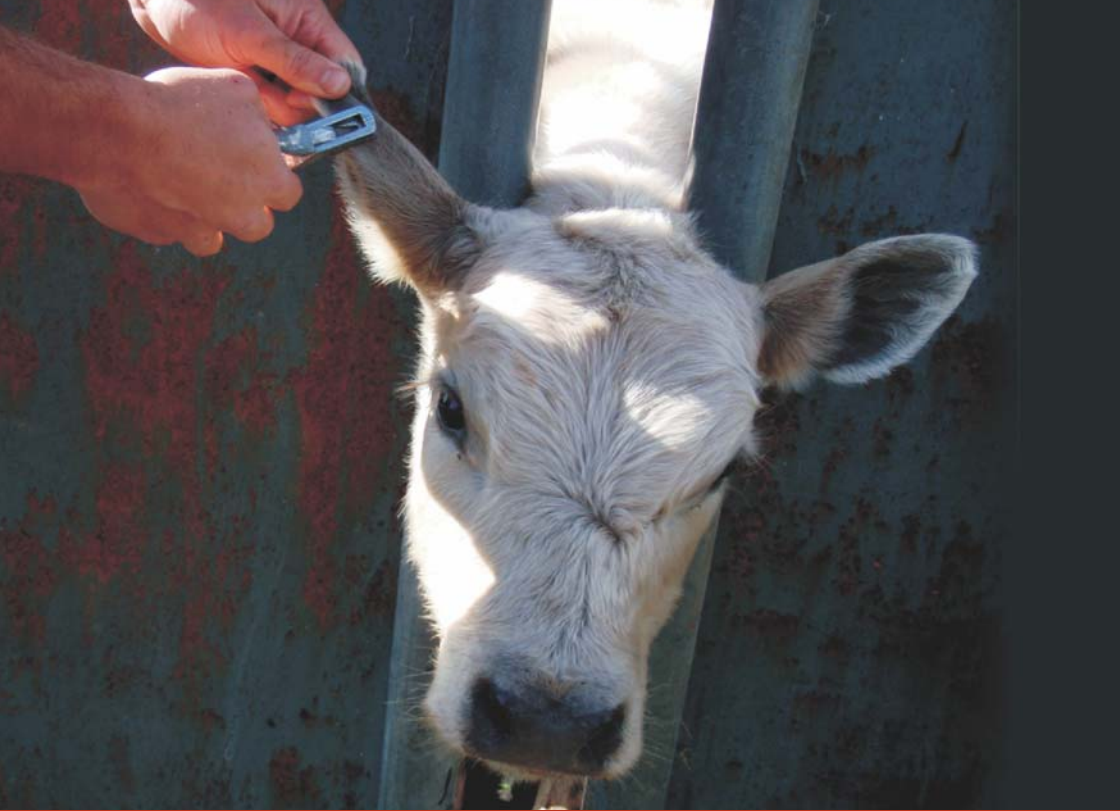
If the blood samples from a herd have antibodies to BVDV then that herd has been exposed to the virus. Most exposure to BVDV is due to exposure to PI animals. If a high percentage of animals tested from one or more management groups have antibodies to BVDV, then the PI exposure is likely from within that population.

If serology indicates that a farm could be BVDV free then those producers should lend serious consideration to vaccinating their entire herd. Further they should pay strict attention to biosecurity and appropriate management of introduced stock.

If BVDV exists on a property, a systematic approach utilising vaccination, PI removal, and ongoing biosecurity can remove and protect against reintroduction of BVDV.

Other means of demonstrating BVDV exposure include diagnosing PI animals by ear notch testing suspicious or dead animals or by testing a dairy's bulk milk tank for antibodies to BVDV.





# HerdChek<sup>®</sup> BVDV Ear Notch Test

- ✓ Extremely accurate
- ✓ Test animals at any age
- ✓ Simple crush side ear notch collection
- ✓ Quick turnaround to results

**IDEXX**  
LABORATORIES

# Control Strategies for Herd Level Eradication

**One Year Strategy** - If well implemented, this strategy will neutralise BVDV in one year.

## Prior to Joining

- Test all calves.
  - ▶ Test dams of all positive calves.
- Test cows without calves.
- Test all replacement heifers.
- Test all bulls.
- Vaccinate all animals soon to be joined, including bulls.

**Progressive Strategy** – This strategy should eventually result in a PI free population without the effort of testing calves at foot. Work with your veterinarian to survey for BVDV freedom.

## Prior to Joining

- Test all replacement heifers.
- Test all young bulls.
- Test “poor doing” calves at marking.
  - ▶ Test mothers of all positive calves.
- Vaccinate all replacement heifers and new bulls.
- Repeat each year, and provide boosters to all previously vaccinated animals.

Once a herd is BVDV free, it requires commitment and vigilance to maintain freedom. Producers should continue to vaccinate annually, test and quarantine herd additions, and work with their veterinarian to investigate any incidents of poor reproductive performance and to implement a surveillance program.

# Strategic PI Testing

**Sale Bulls:** A PI Bull introduced into an immuno-naïve population would have drastic consequences. Producers that ear notch test their sale animals protect their reputation, their clients, and can add value to their sale animals. We are happy to provide sale certificates for ear notch tested and vaccinated sale bulls.

**Sale Bred Heifers:** Pregnant heifers can easily be tested to confirm that they are not PI, however we currently do not have an effective means of testing their unborn foetus. Value addition through documentation of risk minimization would entail ear notch testing and vaccinating all heifers and the bulls they are joined to prior to joining. We are happy to provide sale certificates for ear notch tested and vaccinated sale heifers.

**Embryo Transfer:** We strongly advocate ear notch testing all recipients and any calves at foot prior to synchronization. Wrecks associated with ET programs due to the inadvertent inclusion of PI recipients or PI calves at foot have been well documented. Searching for and removing PI's and vaccinating all recipients is good risk management. ET calves are worth too much to gamble with.

**Artificial Insemination:** Animals selected for AI programs often come from different management groups. Commingling animals with potentially different levels of immunity with potential PI's could have a significant effect upon the success of an AI program. We advocate that all animals involved in AI programs be ear notch tested and vaccinated prior to the programs commencement. Any animals which may come in contact with the AI'd animals also need to be considered, especially back-up bulls. We have helped investigate some spectacular wrecks, wherein over half of the AI progeny have been born PI due to post program exposure to a PI.

# Ear Notch Testing Kits

Swans Veterinary Services provides specialized Bovine Viral Diarrhea Virus (BVDV) testing and consultancy to veterinarians and producers throughout Australia. In 2006 we established the first commercially available laboratory for the diagnosis of animals Persistently Infected (PI) with the BVDV virus utilizing easily harvested ear notch tissue. Over that time we have continued to refine our ear notch testing kits and now offer a range of options. Each option includes a secure vessel for transporting the sample back to our lab for analysis.

Our traditional kit is comprised of 144 pre-labeled sampling vials held in two purpose built polystyrene racks, packaged along with ear notching pliers, submission paper work, sampling and packing instructions, an ice pack and a return con note.

For low volume submissions we mail out small vials accompanied by submission sheets. Samples can then simply be mailed back via express post for testing. Ear notching pliers available upon request.

Now available is a new ear notch collection system for use with a Zee Tags applicator. This technology offers a true 1 step process of collecting ear tissue, leaves no visible mark on the animal and reduces transportation costs.





Our goal at Swans Veterinary Services is to provide as complete of a service as possible to assist other veterinarians to work with their clients to cost effectively manage BVDV. Over 70% of Australian farms are actively infected with BVDV. Until recently, Australia lacked the tools to successfully manage BVDV. **We now have the tools!**

**Dr. Enoch Bergman, DVM**

Mobile: **0427 716 907**

**Aidan Sinnott** B.Sc Hons

Lab Manager

Mobile: **0449 637 451**

Clinic Number: **(08) 9071 5777**

Clinic Fax: **(08) 9071 5057**

Email: **lab@swansvet.com**

**www.swansvet.com**



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