Take Control

Prevent BVDV Associated Production Losses

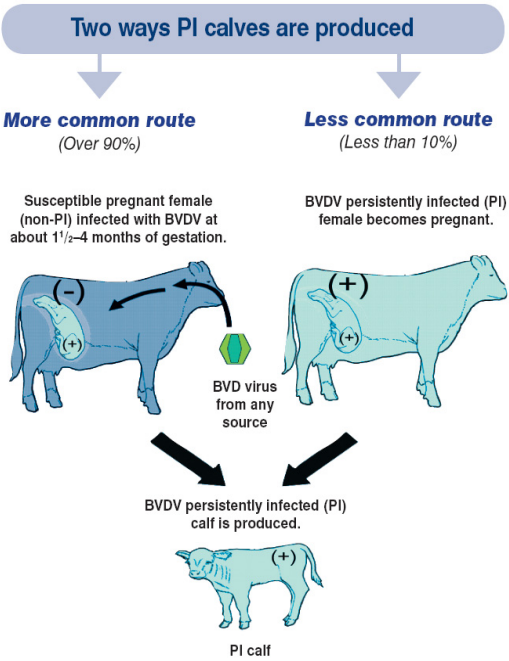
SWANS Veterinary Services

IDEXX

BVDV and PI's

Australian producers are beginning to appreciate that the Bovine Viral Diarrhoea Virus (BVDV) is indeed one of the most economically significant diseases present in our beef and dairy industries. Swans Veterinary Services provides consultancy and specialized testing to assist veterinarians to help their producers to manage BVDV profitably.

BVDV is unique in the way it assures its own survival on properties. BVDV is almost exclusively transmitted by carrier animals. These carrier animals are persistently infected with the virus after having survived foetal infection following exposure via their mother during the 1st to 4th month of gestation. These PI animals are responsible for future BVDV infections, should they come in contact with a previously non-immune cow whilst she is pregnant from one to four months, another PI may be born. Less commonly, should a female PI produce a live calf, the calf will invariably be another PI.



Tools for Managing **BVDV**

There are 3 classes of tools for managing BVDV.

Antigen Testing (or PI Testing)

Tests designed to diagnose animals persistently infected with BVDV or their presence in a group of animals.

Antibody Testing

Tests designed to document evidence of immunity to BVDV, either from past exposure to the virus (usually via exposure to a PI animal), from vaccination, or consumption of colostrum.

Vaccination

Currently, there is only one commercially available vaccine for BVDV in Australia. While quite efficacious, being a killed vaccine it requires 2 preliminary doses from 4 weeks to 6 months apart, followed by annual boosters. Some vaccinated animals may still produce PI animals should they be exposed during pregnancy and vaccinating PI animals is ineffective.

The Evolution of BVDV Tools

Diagnosing PI animals and screening mobs of animals for immune status has historically been laborious for veterinarians and a costly exercise for producers. Swans Veterinary Services has been committed to innovating and providing new tools and techniques to assist veterinarians and cattle producers to cost effectively manage and control BVDV since 2006. Our focus has been to enable veterinarians to set up their producers to collect their own samples, to accurately test for either PI animals or for the presence of BVDV antibodies.

Diagnosing
Persistently Infected Animals

Swans Veterinary Services has been providing specialized BVDV testing and consultancy to veterinarians and producers throughout Australia since 2006. Globally, ear notch tissue is the most widely used sample for PI testing due to its simplicity, robustness, and accuracy. The IDEXX BVDV Ag serum plus assay has been shown to be 100% sensitive and >99.6% specific[1] in diagnosing PI animals from ear tissue. This is why at Swans we have chosen to use the IDEXX kit to test over 200,000 animals from across Australia.

Swans Veterinary Services offers the following range of options for PI testing:

Ear Notch Testing Kit

Everything a producer needs to start ear notching, including pliers, submission sheet, return con note and 144 pre labelled sequentially numbered vials.

Zee Tags Ear Tissue Samplers

An easy to use one step collection device, to collect a small ear punch directly into a pre labelled pouch. Samples can simply be mailed back to the lab.

1. Kuhnn et al

Diagnosing
Persistently Infected Animals

IDEXX SNAP® BVDV

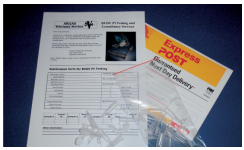
A rapid test that can be run either crush-side or in clinic, to identify BVDV-infected cattle in as little as 20 minutes from sample collection.

Traditional Blood Tubes

Blood samples collected from animals over 6 months of age can be analysed to detect PI animals.

Conical Vials

Small pre numbered vials ideal for mailing ear notch samples back to the lab.



Bulk Tank Milk (BTM) PCR

Milk samples taken from the bulk tank milk can be analysed for the detection of a lactating PI animal within the milking herd.

TEGO™ Devices

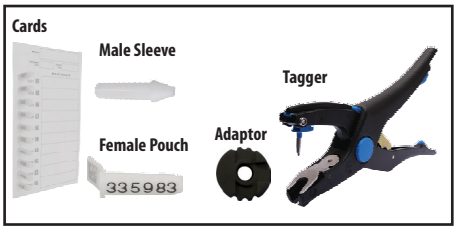
An excellent tool allowing producers to collect their own blood samples typically for antibody testing, but can also be used to detect PI animals.

How to take a sample using the Zee Tags Ear Tissue Sampler Kit

Zee Tags New Zealand and Swans Veterinary Services have been working in conjunction to develop a robust and sterile ear notch tissue sampling device that doesn't leave a mark but harvests enough tissue to ensure accuracy is not compromised:

The Zee Tags Ear Tissue Sampler Kit

The Sampler Kit is capable of collecting tissue directly into a pre-labelled collection device, from which the sample could then be tested directly, reducing the likelihood of cross contamination or misidentification of samples for BVDV PI Testing.



IMPORTANT

- The male sleeve is always applied from the front of the ear.
- Always check front female pouch and card have the same numbers.
- Label animal ID on tag card next to the corresponding pouch number.

1 

Remove one pouch from card, and record the identity of the animal being tested.

2 

Insert the pouch into the adaptor - click firmly down. Ensure the plastic tab is facing forward. Then position the sleeve over the applicator's retractable pin.

3 

IMPORTANT: take samples from the front of the ear.

Position the tagger about 2cms from the tip of the animal's ear avoiding veins or ridges in the ear. Squeeze the tagger handles together in one quick motion to take the sample. When the sleeve and pouch have locked together, the tagger's arm will flick back releasing the pouch automatically.

4 

The completed tissue sampler can now be popped back through the locator.

5 

Place the samples in a plastic bag with their corresponding identity card and post them to the lab at **Swans Veterinary Services.**

IMPORTANT: freeze the samples if you intend to keep them for some time.

SWANS Veterinary Services

Post your samples to:

BVDV Laboratory
Swans Veterinary Services
Box 1514
Esperance, WA 6450

For more information contact

Swans Veterinary Services 08 9071 5777 • www.swansvet.com
Dr Enoch Bergman DVM 0427 716 907 • lab@swansvet.com

Management strategy: A SNAP® BVD Test is the first step towards a BVDV-free herd.

Ask your veterinarian for a BVDV management strategy for your farm.

Stay Informed

Talk with your veterinarian about the impact of BVDV on herd health and profitability

Test

New introductions, or to rule in or out PI animals

Isolate PI's

Quarantine positive cattle

High-value cattle: Reconfirm at three weeks

Other animals: Implement culling or euthanising recommendations

Protect

Work with your veterinarian to coordinate a management program

NOTE: IDEXX recommends using the SNAP® BVD Test in conjunction with your local laboratory for high-volume herd screening.

Testing
for BVDV Antibodies

In unvaccinated animals over six months of age, the presence of antibodies to BVDV usually indicates past exposure to a PI animal. Screening representatives from stable management groups for antibodies to BVDV provides important information, guiding veterinarians to tailor a cost effective strategy for each management group on a property. Management groups with low levels of immunity are PI free, but are at risk of infection should they encounter a PI in the future. Highly immune management groups ***will not*** benefit from vaccination and may contain a PI animal. Vaccinating highly immune management groups is a waste of both time and money.

Swans Veterinary Services were the first laboratory in Australia to use the IDEXX BVDV Antibody ELISA commercially, both for bulk tank milk antibody testing and blood testing.

Sample collection methods offered:

Traditional Blood Tubes

Blood samples collected from unvaccinated animals over 6 months of age can be analysed for the detection of BVDV Antibodies from natural exposure

Bulk Tank Milk Antibody Testing

An excellent tool used to monitor the level of BVDV exposure in a lactating herd.

TEGO™ Devices

Enables producers to collect their own blood samples without requiring special training. Samples do not require special storage and can be mailed directly to the lab.

TEGO™ bovine

Blood Sampling Simplified

TEGO™ Bovine enables the producer to collect high quality blood samples for BVDV and genetic testing

Easy to use – Apply with Allflex® ear taggers, no special training required

Room temperature storage and transport – Samples can be mailed directly to the appropriate laboratory

Mail samples for BVDV testing directly to:

BVDV Lab
Swans Veterinary Services
Box 1514
Esperance WA 6450

ITL Animal Healthcare
Phone: +61 417 473 602
www.itlanimalhealthcare.com

ITL Animal Healthcare

Herd Level **Eradication**

Many overseas BVDV herd level eradication programs to date have focused on ear notching entire properties, and removing all PI animals between calving and joining. By testing all calves, the mothers of any positive calves, and all other animals on farm without calves, including bulls and replacement heifers, the PI production cycle is interrupted. Subsequent implementation of simple biosecurity and a structured vaccination program helps to maintain each property's BVDV free status.

Many Australian beef producers are loathe to handle young calves at foot, and as PI animals tend to die or are culled early, it is often unrewarding to pursue PI animals in older management groups. Lastly, vaccinating immune animals is a waste of both time and money. Therefore, by screening individual adult mobs for immune status, vaccinating those mobs without sufficient immunity and ensuring that replacement heifers are both immune and PI free prior to mating, BVDV can be eradicated progressively and cost effectively. By continuing to annually screen replacement heifer's the success of the program can be monitored, and any breaches in biosecurity can be identified and swiftly managed.

Herd Level **Eradication**

Swans Systematic BVDV Herd Level Eradication Program

Establishing Herd Risk Profile

Collect samples for antibody testing from 5% or a minimum of 6 animals from each stable adult management group. If < 80% of the screened animals from an individual mob are immune, enrol that mob in a vaccination program.

Annual Heifer Screening Program

Every year, allow each new mob of replacement heifers (once > 6 months old) to commingle for at least 2 months without any new additions. Collect blood samples for antibody testing from 5% or a minimum of 6 animals.

If >90% are immune, ear notch the entire mob.

If <50% are immune, vaccinate the entire mob.

If 50-90% of the heifers are immune, do the following:

Screen Ab negative animals for PI infection. If PI is found ear notch the entire mob.

If no PI is found rescreen these animal in 1 month plus an additional 5% or 6 animals from the management group.

- If Ab negative animals remain negative <80% are immune, vaccinate entire mob.
- If Ab negative animals have developed immunity, ear notch the entire mob.

Herd Level **Eradication**

Additional BVDV Management Tools

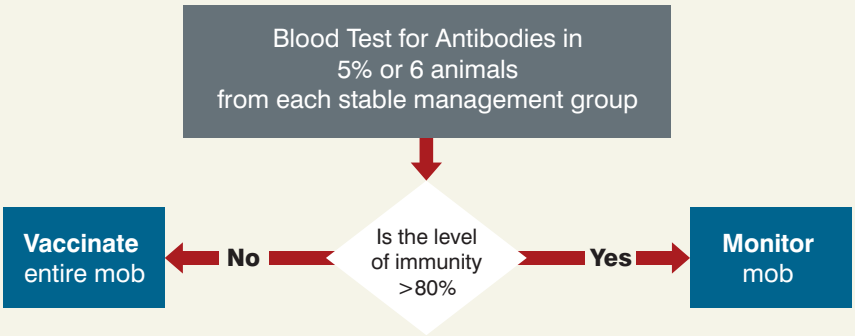
Mark with spray rattle and collect ear notch samples from woody or poor doing calves. Identify and test the mothers of any positive calves.

Quarantine new introductions or animals that leave the property and return for 30 days and screen* before comingling.

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.

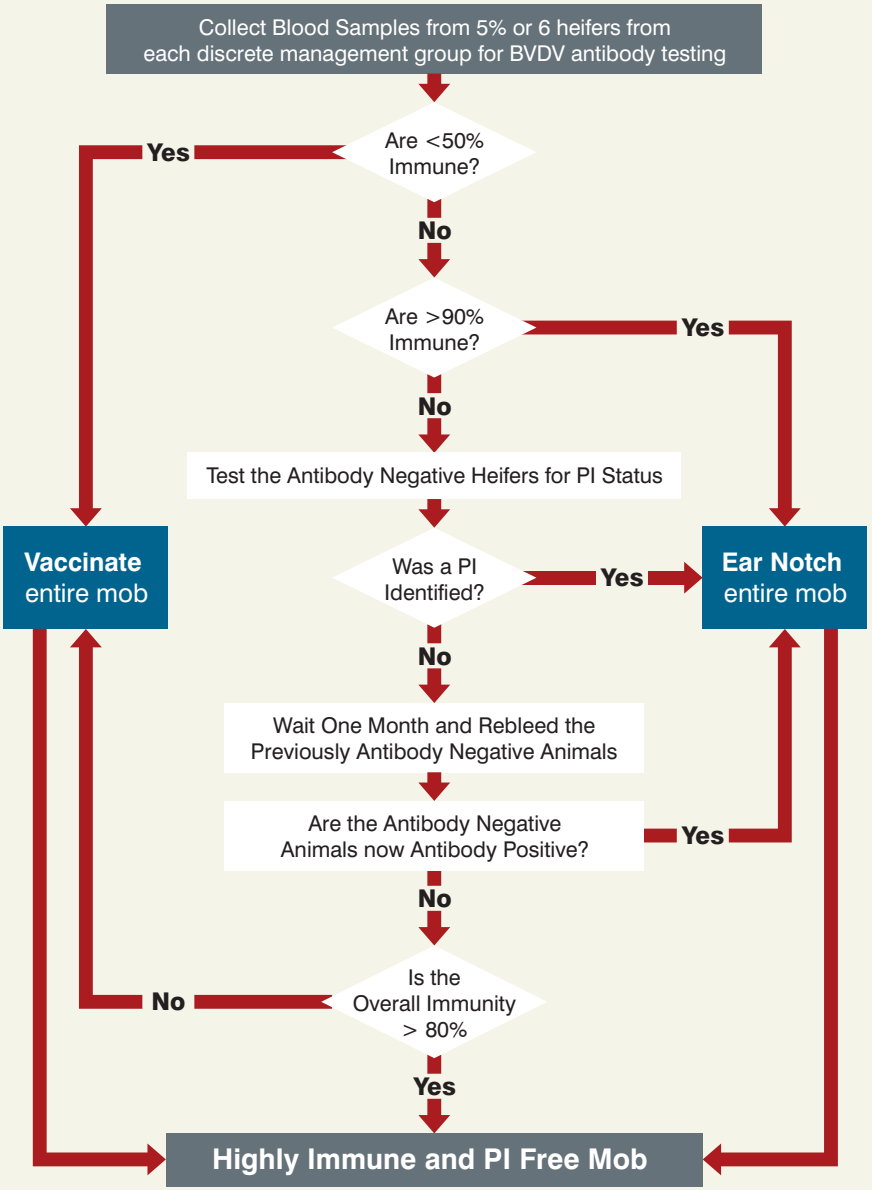
** Screen as appropriate . Test all new introductions or unborn calves of animals that leave the property once they have calved.*

Establishing a Herd Level Profile



Annual Heifer Pre Mating **Screening**

Heifers must be at least 8 months old and have been in stable contact for 2 months without new additions.



IDEXX **BVDV Ag serum plus**

Ear Notch Test

- ✓ Extremely accurate
- ✓ Test animals at any age
- ✓ Simple crush side ear notch collection
- ✓ Quick turn around for results

IDEXX

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 BVDV.

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!**

Feel free to contact Swans for further options or to design a specific BVDV herd control program.

Dr. Enoch Bergman, DVM
Mobile: **0427 716 907**

Sharon Slater BVDV Lab Manager
Lauren Norris Assistant BVDV Lab Manager

Clinic Number: **(08) 9071 5777**
Clinic Fax: **(08) 9071 5057**
Email: **lab@swansvet.com**

www.swansvet.com

SWANS Veterinary Services