



Simple Herd Level BVDV Eradication for Dairy

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So why is BVDV important to dairy producers?

Global BVDV research, whilst examining differing management systems, consistently estimates BVDV losses in dairies at well over \$50 per lactating cow per annum. BVDV has been shown to impact:

- Reproductive performance
 - Ovarian dysfunction
 - Early embryonic death
 - Abortion
- Mastitis
- Milk production
- Somatic Cell Counts
- Calf health
- Cow longevity
- Essentially every aspect of the dairy production equation!



Tools for diagnosing active BVDV infection within a dairy

Blood based antibody testing

- Cows produce antibodies as a defense against specific diseases. Animals create antibodies to BVDV after having been exposed to the virus. Veterinarians use this sort of testing to identify groups of animals which have been exposed to BVDV, usually indicating exposure to a PI animal.

Bulk Milk Tank (BMT) testing

BMT PCR:

- This assay will detect the presence of a PI within the milking herd. Limitations are that not all PI's contribute to the bulk tank, as animals in the sick pen or in the dry pen will be missed.

BMT antibody ELISA:

- Presence of high antibody levels in the BMT indicates current OR recent exposure to a PI.

Skin tissue testing (ear notch)

- The IDEXX HerdChek® BVDV Antigen Capture ELISA allows for accurate detection of PI animals at any age using easily collected ear notch tissue.

IDEXX HerdChek® BVDV on ear notch tissue:

- Easy to collect ear notch sample
- Simple shipping to lab
- Rapid and accurate results

IDEXX
LABORATORIES

BVDV control and surveillance at the dairy level is simpler than for other cattle production systems. A few things work to our advantage:

- The entire adult population is usually exposed to one another.
- The calves are removed from their dams straight away.
- Cows and calves can be accessed easily.
- Usually the dam of each calf is recorded.
- Bulk milk tank testing is now available.

Eradicating BVDV from a dairy population is straightforward.

- Find the PI's and get rid of them.
- Make sure no more PI's get into the milking string.
- Keep the herd vaccinated to prevent a wreck.
- Try not to reintroduce the problem, and keep your ear to the ground just in case!

The 5 steps to BVDV eradication:

- 1 Identify at risk management groups**
- 2 Find and eliminate any Persistently Infected (PI) animals**
- 3 Implement a sound vaccination program**
- 4 Adopt and maintain biosecurity protocols to prevent reintroduction of PI animals**
- 5 Ongoing monitoring to confirm and maintain BVDV free herd status**

Step 1.

Identify at risk management groups

Bleed a cohort (6 animals) from each of the following management groups.

- Multiple lactation cows
- 1st lactation cows
- Mated heifers
- Unmated heifers >6 months

Each management group needs to have been together for at least two months.

If individual animals within an unvaccinated management group have antibodies to BVDV, then those animals have been exposed to the virus.

Most BVDV exposure is from PI animals.

If a large proportion of the animals tested have antibodies to BVDV, then at least one PI is likely to exist or have existed within that management group.

If PI's exist or recently existed in one or more management groups, then PI's are also likely to exist in the calf barns.

Step 2.

Find any Persistently Infected (PI) animals and eliminate them.

Begin ear notching all animals that have not been ruled out for persistent infection by prior testing.

- All non-milking heifers
 - test mother of all positives
- All calves
 - test the mother of any positive calves
- Bulls
- Any other unaccounted for cattle which may have contact with the herd

Over the next year.

- Ear notch all calves born over the next year
 - test the mother of any positive calves

Step 3.

Implement a sound vaccination program.

Vaccination will help to:

- prevent acute transmission of the virus
- will protect against biosecurity breaches
- fend off virus brought in by contaminated equipment or visitors
- if reintroduction of a PI does occur, a sound vaccination program will reduce PI's impact

A primary course of two vaccinations no less than four weeks apart but no further than six months apart is required to initiate initial immunity. Thereafter an annual booster is required.

Vaccinate any management groups found to have low antibody levels.

Vaccinate maiden heifers 2.5 and 1 month prior to mating.

Give boosters to the milking herd annually, optimally a month before the bulk of the mating.

Step 4.

Adopt and maintain biosecurity protocols to prevent reintroduction of PI animals

- Biosecurity is paramount to control of BVDV. Preventing the introduction of PI's, cows carrying PI's and allowing acutely infected animals to overcome BVDV is the goal of biosecurity measures.



1. Identify at risk management groups

Blood test for antibodies
Cohort (6 animals) from
each management group

- Multiple lactation cows
- 1st lactation cows
- Mated Heifers
- Unmated Heifers >6mths

BMT PCR

+ve

Ear Notch or
confirm through
testing calves



+ve

Ear Notch

-ve

BVDV vaccinate at risk management groups

Identify and remove
all PI animals

2. PI Elimination Phase



Ear Notch
all calves

? Dam



-ve

-ve dam



+ve

Ear Notch dam
of +ve calves



Identify and
remove all
PI animals



BVDV Vaccinate
all heifers prior to
1st mating

3. Surveillance Phase

Simple Surveillance: BMT antibody test prior to annual BVDV booster vaccination



Cease ear notching calves. Blood test for antibodies a cohort of each group of replacement heifers prior to their primary BVDV vaccination

+ve



Ear Notch and remove PI animals

-ve



BVDV vaccinate

4. Biosecurity



Quarantine and Ear Notch test all introductions upon arrival and ear notch test their unborn calves at birth



Vaccinate at risk
introductions

- Any herd addition needs to be ear notch tested on arrival (if not already tested on the source property).
- If the herd addition was pregnant on arrival, its unborn calf needs to be treated as a separate introduction, and tested at birth.
- Optimally minimise exposure of the milking herd to any new purchases for 30 days after purchase.
- Herd additions should be vaccinated on arrival and boosted appropriately.
- Animals which were pregnant and exposed to other animals off farm, such as show animals, should be treated as introductions upon their return.

Step 5.

Ongoing monitoring to confirm and maintain BVDV free herd status

After a year of ear notch testing calves, the dairy should now be BVDV free. However, it is good risk management to continue antibody testing cohorts of each group of replacement heifers prior to their first mating. If our control measures are working, they should remain antibody free.

- Blood test any management group which has a poor reproductive outcome (either abortion or poor conception rate) as part of your routine investigation.
- Annual bulk milk tank antibody testing prior to annual milking herd BVDV vaccine booster.
- If any of the tests above reveal a biosecurity breach, then investigate the management group appropriately.

Defending your farm from reintroduction isn't difficult, but it does require attention.

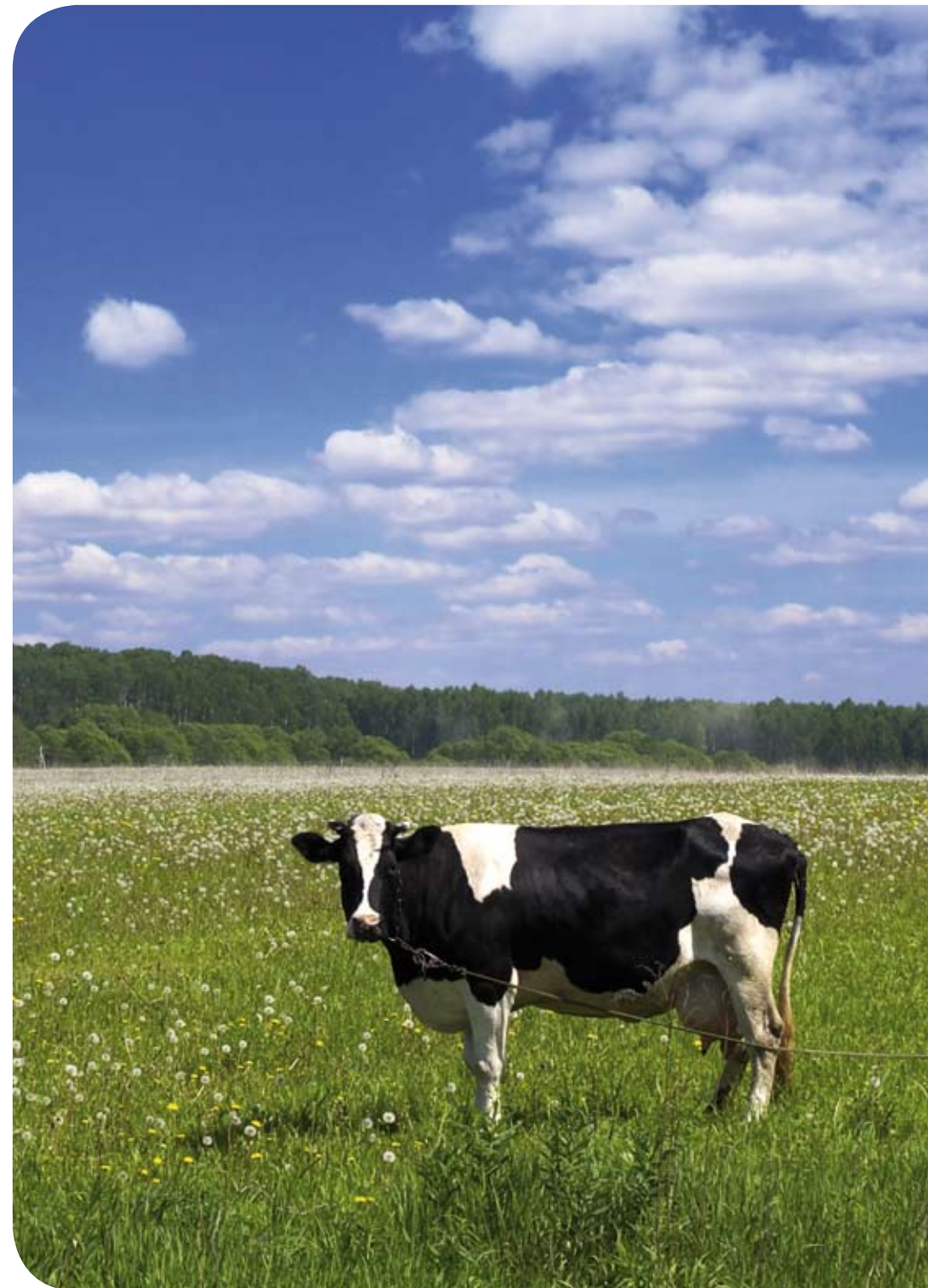


Swans Veterinary
Services, helping
other veterinarians
help their clients.

Please feel free to contact Swans Veterinary Services should you need any further information on PI testing or help in designing your own BVDV control program.

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