Simple Herd Level BVDV Eradication for Dairy

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IDEXX

So why is BVDV important to dairy producers?

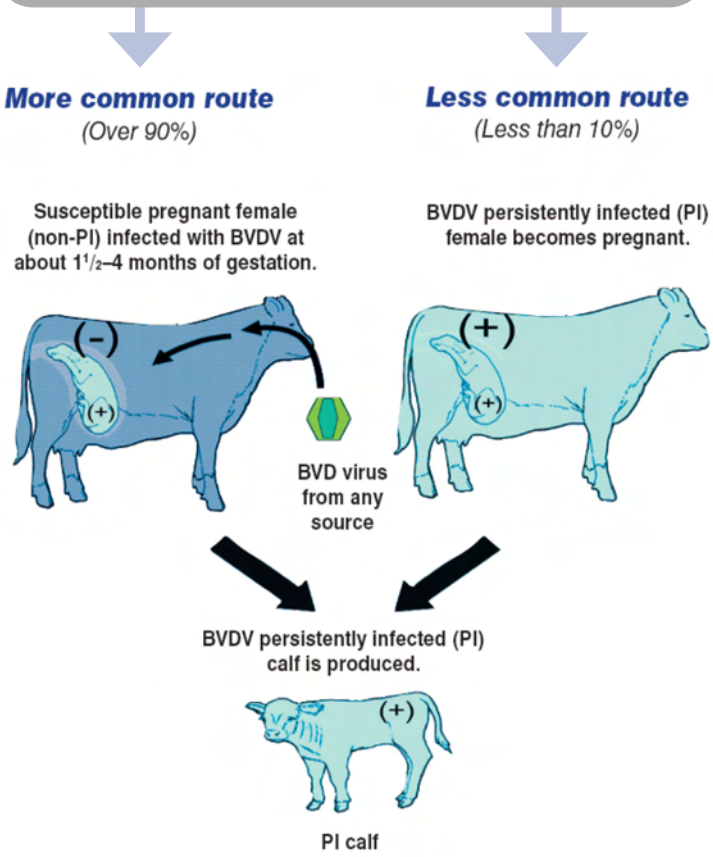
Global BVDV research, whilst examining differing management systems, consistently estimates BVDV losses in dairies at well over $50 per lactating cow per annum. BVDV has been shown to impact:

- 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!

Swans Veterinary Services provides consultancy and specialised testing to assist veterinarians to help their dairy clients to manage BVDV cost effectively.

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.

Two ways PI calves are produced



Often diagnosing BVDV starts with Identifying the first PI

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 /newborn calves, to rule in or out PI animals

Isolate PI's

Quarantine positive cattle
High-value cattle:
Reconfirm at three weeks
Other animals: cull to slaughter
or humanely 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.

Tools for Diagnosing BVDV Infection in a Dairy

Bulk Milk Tank (BMT) Testing

BMT Antibody ELISA

The BMT Antibody ELISA provides an estimate of the immune status of the entire milking herd. It is often the first test run as it acts as a guide for future testing. By routinely measuring the BMT Antibody level, producers can monitor their milking herd for sudden increases in BVDV exposure.

BMT PCR

The BMT PCR test will detect the presence of a PI within the group of animals contributing to the pooled milk sample.

Blood Based Antibody Testing

Cows produce antibodies as a defense against specific diseases. They produce antibodies to BVDV after having been exposed to the virus or vaccinated. Veterinarians screen unvaccinated animals to detect BVDV exposure, usually indicating direct exposure to a PI animal.

Blood samples can either be collected by your veterinarian from the tail or jugular vein, or producers can collect samples themselves using a TEGO® device.

Ear Notch Testing

The IDEXX BVDV Ag serum plus ELISA allows for accurate detection of PI animals at any age using ear notch tissue samples.

A range of testing options exist for collecting ear notch tissue, ranging from samples taken with traditional ear notching pliers to the purpose designed Zee Tag tissue collection system.

Ear notches are traditionally sent to a laboratory for analysis, however, calf side testing is now feasible utilizing the new IDEXX SNAP® BVDV test.

IDEXX BVDV Ag serum plus ELISA on ear notch tissue:

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

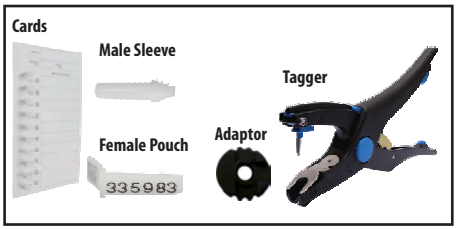
IDEXX

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.

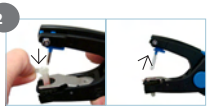


IMPORTANT

- 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

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

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

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 straight forward

- Establish the herd immune status
- Find PI's and eliminate them
- Make sure no more PI's enter the herd
- Vaccinate naive animals
- Implement appropriate biosecurity and surveillance program

Screen the Milking Herd for PI Animals and Immune Status

Collect a bulk milk tank antibody sample

If the S/P ratio is < 0.25 - Vaccinate the entire milking herd

If the S/P ratio is > 0.25 but < 1.0

- Collect blood samples from 5% or 6 of the unvaccinated animals from each milking age group
  - > Vaccinate any lactational group without immunity to BVDV

If the S/P ratio is > 1.0 - Collect a Bulk Milk Tank PCR Sample

- If the Bulk Milk Tank PCR Sample is Positive
  - > Ear notch the bottom 10% producers
  - > Ear notch the top 10% SCC cows
  - > Ear notch chronically sick cows
  - > If necessary, screen for PI animals amongst young stock and test the dams of any positive animals
    - If a PI is found, cull her and collect another bulk milk tank PCR sample
- If the Bulk Milk Tank PCR Sample is Negative
  - > Collect blood samples from 5% or 6 of the unvaccinated animals from each milking age group
    - Vaccinate any lactational group without immunity to BVDV.

Screen the Pregnant Heifers for PI Animals and Immune Status

Collect blood samples from 5% of the unvaccinated pregnant heifers

If >90% are immune, ear notch the entire group

If <50% are immune, vaccinate the entire group

If 50-90% are immune

- Perform an Antigen (PI) Test on Negative Samples
  - > If a PI is found, ear notch the entire group
  - > If no PI's are found, vaccinate the entire group

Ongoing Monitoring to Confirm and Maintain BVDV Free Herd Status

Continue to :

- Screen each new group of replacement heifers prior to mating
- Investigate any management group which have suffered reproductive losses
- Routinely test bulk tank milk to monitor antibody levels
- If any tests above reveal a biosecurity breach, then work with your veterinarian to investigate.

Annually Screen Replacement Heifers for PI Animals and Immune Status

(Once they are at least 8 months old with continuous contact for at least 2 months)

Collect blood samples from 5% or 6 of the unvaccinated replacement heifers

If >90% are immune, ear notch the entire group

If <50% are immune, vaccinate the entire group

If 50-90% are immune

- Perform an Antigen (PI) Test on Negative Samples
  - > If a PI is found, ear notch the entire group
  - > If no PI's are found

    Wait one month, then rebleed the antibody negative heifers and another 5% or 6 of the replacement heifers
    - If previously antibody negative heifers become antibody positive, ear notch the entire group
    - If previously antibody negative heifers remain antibody negative
      - > If overall immunity > 80% do nothing
      - > If overall immunity < 80% vaccinate the entire group

Implement a Sound Vaccination Program

Vaccinating naive animals will help to:

- prevent acute transmission of the virus
- Protect against biosecurity breaches
- Fend off virus brought in by contaminated equipment or visitors
- Reduce the impact if reintroduction of a PI does occur

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

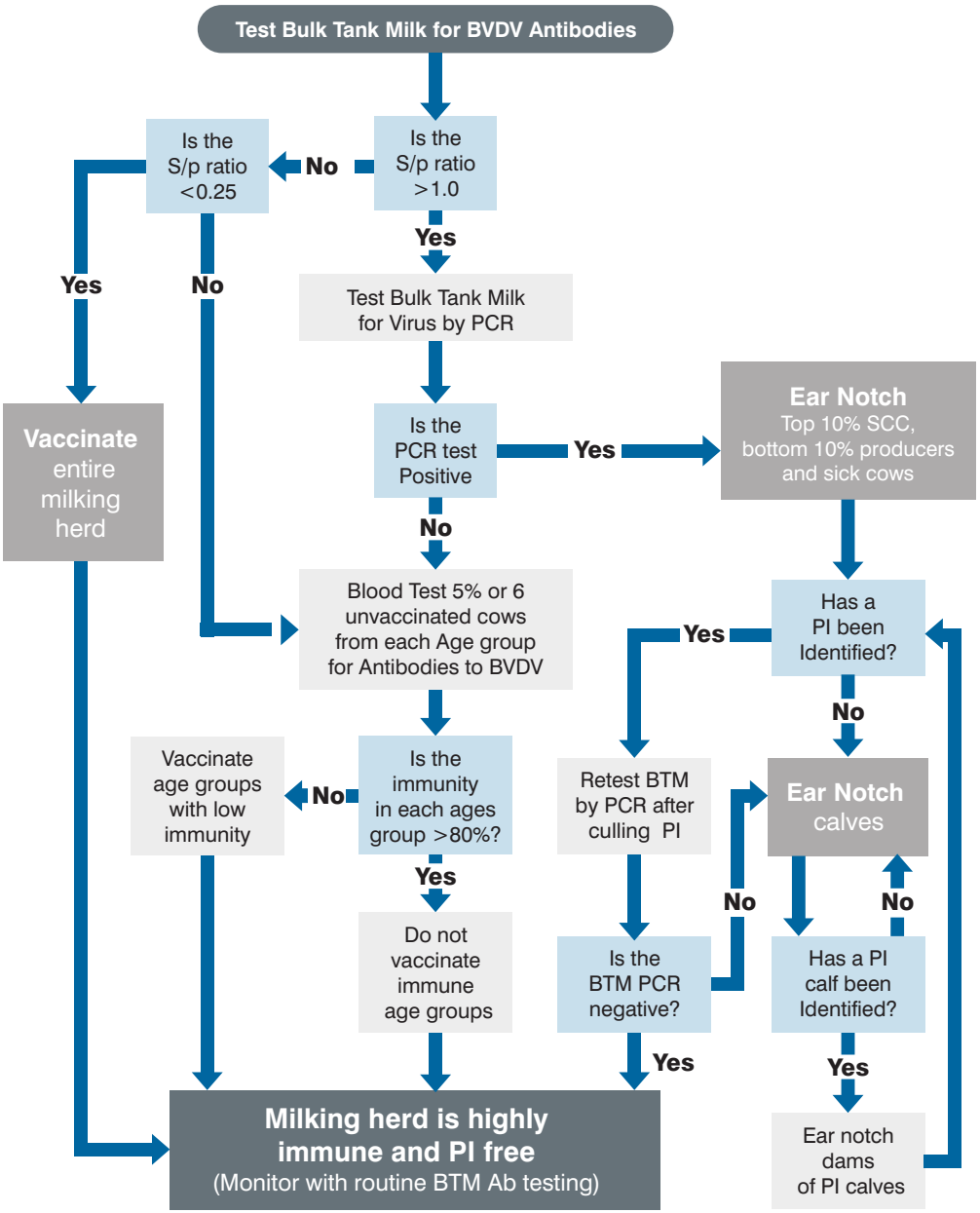
Vaccinate any management groups found to have low antibody levels. If required, initial vaccination is optimally given at 2.5 an 1 month prior to mating.

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

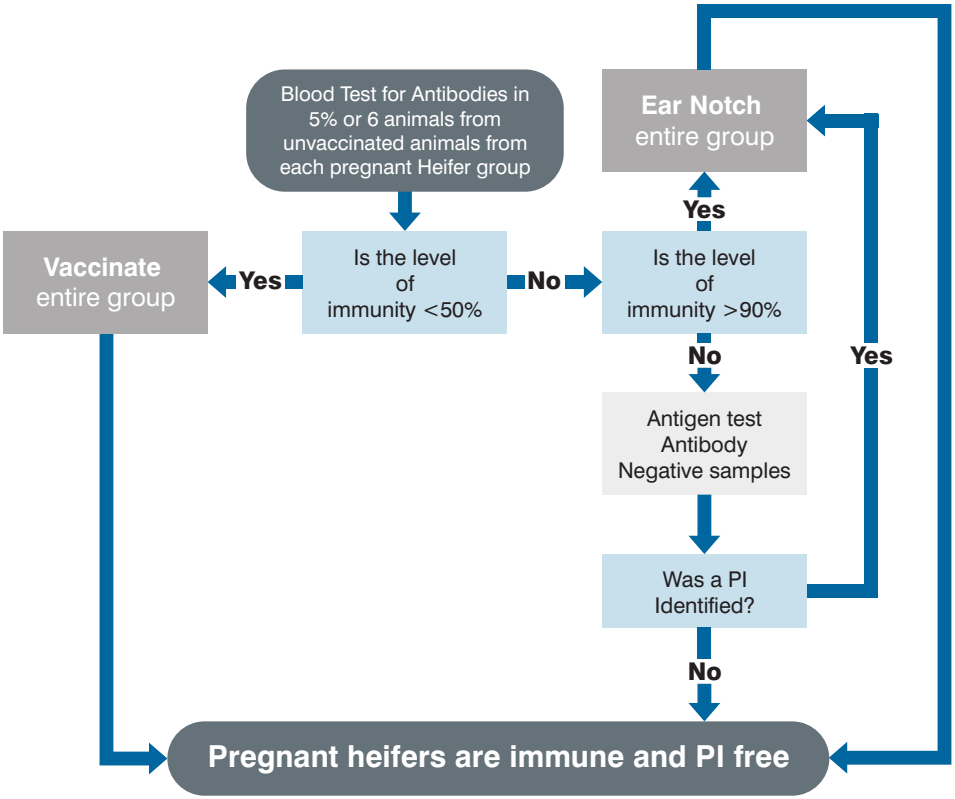
Adopt and Maintain Biosecurity Protocols to Prevent Reintroduction of PI Animals

- 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.
- 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.
- If possible all new introductions should be quarantined for 30 days before commingling and/or ear notched on arrival
- Animals which are pregnant and exposed to other animals off farm, should be treated as new introductions on return and their calves ear notch tested

Screening for BVDV in a Milking Herd

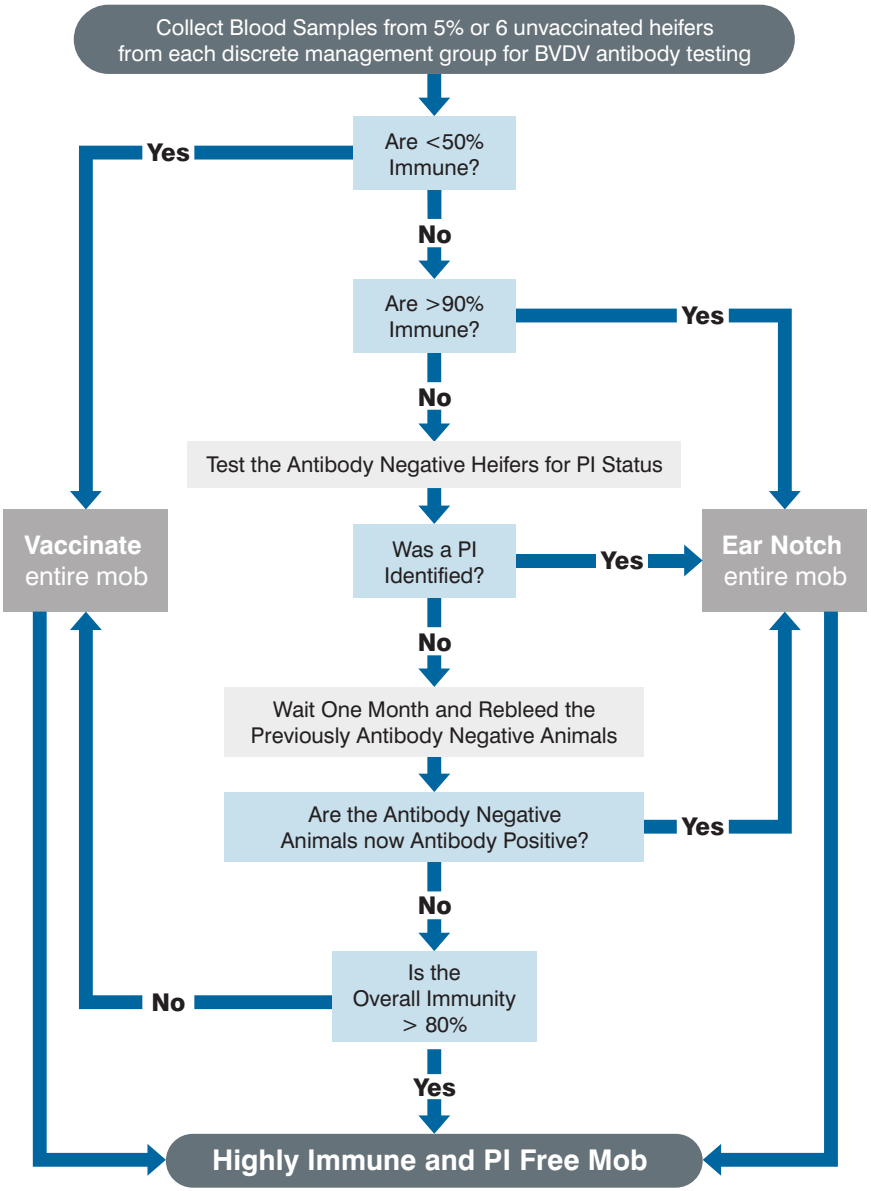


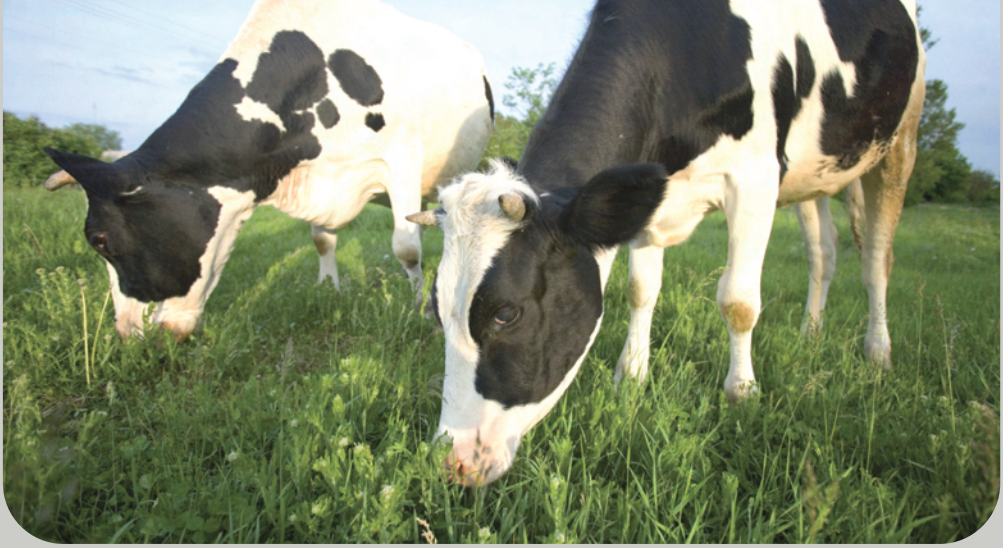
Screening Pregnant Dairy Heifers



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.





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.

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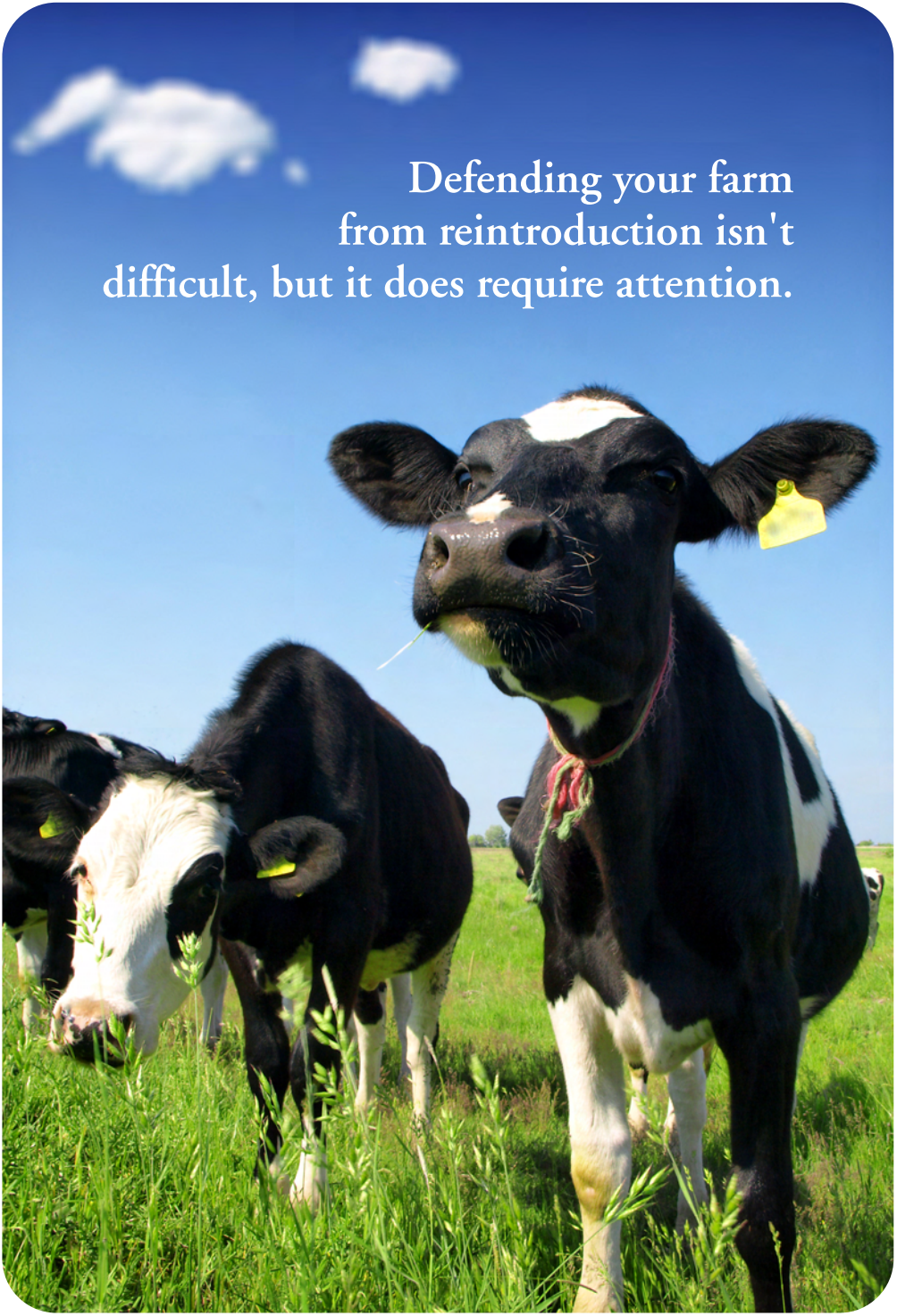
SWANS Veterinary Services


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