The Systematic Management Of BVDV in Beef Herds

Enoch Bergman DVM
Swans Veterinary Services
Esperance WA
Endemic Disease Economic Impact

Cattle (northern and southern)

- National cost ($m)

- Cattle Tick
- BVVD
- Buffalo fly
- Dystocia
- Neonatal Calf Mortality
- Internal Parasites
- Bloat
- Bovine Ephemeral Fever
- Botulism
- Gross Tetany
- Calf Scours
- Vibriosis
- Theileria
- Pinkeve
- Clostridial Diseases
- Tick Fever
- Bovine Johne’s Disease

Legend:
- Blue: Treatment cost
- Red: Prevention cost
- Green: Production cost
Endemic Disease Economic Impact

Cattle (northern and southern)

National cost ($m)

- Cattle Tick
- BVDV
- Rinderpest
- Dysentery
- Neonatal Calf Mortality
- Internal Parasites
- Bluetongue
- Bovine Ephedra Fever
- Botulism
- Grass Tetany
- Calf Scours
- Vibriosis
- Theileria
- Pinkeye
- Clostridial Diseases
- Trichomoniasis
- Bovine Johne's Disease

Legend:
- Treatment cost
- Prevention cost
- Production cost

29th September 2016
Bovine Viral Diarrhea Virus

- BVDV/BVD
- Bovine Pestivirus
- Mucosal Disease
Two types of BVDV Infection

- **Acute/Transient Infection (TI)**
  - When an animal is exposed at a point wherein their immune system is functional

- **Persistent Infection (PI)**
  - When an animal is exposed prior to having a functional immune system
    - Under the first 4 months of gestation
    - Smaller than a cat
BVDV is all about timing…
Timing of Exposure to BVDV Changes Outcome
Get it wrong…
”Virulence of Acute/Transient Exposure”

Shed 1,000 to 10,000 virus per ml of secretion for 7 to 10 days
"Virulence of Acute/Transient Exposure"

$R_0 = <1$

Shed 1,000 to 10,000 virus per ml of secretion for 7 to 10 days
"Virulence of Acute/Transient Exposure"

$R_0 = <1$

Acute Infection Followed By Long Lasting Immunity
Animal Now ANTIBODY Positive
”Virulence of PI Exposure”

Shed 1,000,000 to 1,000,000,000 virus per ml of secretion for their ENTIRE life
"Virulence of PI Exposure"

$$R_0 = \text{Infectivity} \times \text{Time Infectious}$$

Shed 1,000,000 to 1,000,000,000 virus per ml of secretion for their ENTIRE life
"Virulence of PI Exposure"

$R_0 = \text{To Infinity and Beyond}$

Shed 1,000,000 to 1,000,000,000 virus per ml of secretion for their ENTIRE life
PRODUCTION OF PI ANIMALS

Normal COW
Acute Infection
40-120 GESTATION

PI COW

PI CALF
ALL OFFSPRING ARE PI
PRODUCTION OF PI ANIMALS

Normal COW

40-120 GESTATION

Normal CALF

PI COW

ALL OFFSPRING ARE PI
2012 Perth Royal Show

• 700 PI Screenings
  • 13 PI Animals Diagnosed
  • 1.9%
Restocking Considerations

- Immune Status of Existing Population
- Immune Status of Introduced Population
- Stage of Pregnancies
- Internal Biosecurity
- Access to Animals
Restocking Considerations

- Immune Status of Existing Population
- Immune Status of Introduced Population
- Stage of Pregnancies
- Internal Biosecurity
- Access to Animals
- PI Presence
A Classic BVDV “Wreck”

When groups of animals without immunity meet PI animals at inopportune times…
Case Study

• “Y”
  • September 2003
    • Heifer Y born Persistently Infected
  • December 2004
    • PI heifer Y and 350 other heifers joined
      • AI program followed by natural cover
Y Heifer Mob
Y Heifer Mob
Case Study

• “Y”
  • September 2003
    • Heifer Y born Persistently Infected
  • December 2004
    • PI heifer Y joined
      • AI Program followed by natural cover
  • September 2005
    • PI heifer Y gives birth to a PI heifer calf A
    • All other heifers calve normally
Case Study

• “Z Heifers”
  • November 2005
    • AI Program followed by natural cover
Z Heifer Mob
Case Study

• “Z Heifers”
  • November 2005
    • AI Program followed by natural cover
  • February 2006
    • Preg Tested and then boxed with the first calvers and their calves
      • Including PI’s Y and A
Boxed with 2 PI’s
Case Study

- Z Heifer Calving
  - 48 of 335 PTIC’s failed to calve
  - 47 calves died
  - 120 of the remaining 240 calves were diagnosed as persistently infected with BVDV
    - PI’s sold direct to slaughter or destroyed
Case Study

- Z Heifer Calving
  - 48 of 335 PTIC’s failed to calve
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  - 120 of the remaining 240 calves were diagnosed as persistently infected with BVDV
    - PI’s sold direct to slaughter or destroyed

- 215 Affected Calves
- Half a Million Dollars in Losses
Diagnosing BVDV Infection

• Antigen Testing – The Bad Guys
  • The virus itself or pieces thereof
  • Used to diagnose PI Animals
    • Direct Indicator of PI Presence

• Antibody Testing – The Good Guys
  • Produced by the immune system
    • Protective against the effect of antigen
  • Classify herd risk and herd level infection
    • Immune Status
    • Indirect Indicator of PI Presence
  • PI Animals are Antibody Negative!
Diagnosing BVDV Infection

• Antigen Testing – The Bad Guys
  • The virus itself or pieces thereof
  • Used to diagnose PI Animals
    • Direct Indicator of PI Presence

Are you a PI?
Diagnosing BVDV Infection

- Antigen Testing – The Bad Guys
  - The virus itself or pieces thereof
  - Used to diagnose PI Animals
    - Direct Indicator of PI Presence

Lifetime Status!
Diagnosing BVDV Infection

- Antigen Testing – The Bad Guys
  - The virus itself or pieces thereof
  - Used to diagnose PI Animals
    - Direct Indicator of PI Presence

Ear Notch
HerdChek® BVDV
Ear Notch Test

- Extremely accurate
- Test animals at any age
- Simple crush side ear notch collection
- Quick turnaround to results
Zee Tagger/Gene Mark System

The GeneMark Punch Kit
- Adaptor
- Pouch
- Sleeve

Zee Tags Applicator

Final I.D’d Sample
Allflex Tissue Sampling Unit
Monthly Ear Notch Testing

Monthly BVDV Lab Ear Notch Testing

No. of Samples

Month and Year Graph

29th September 2016
Where’s Wally?
Hey mate! Have you ever met a PI?

- Antibody Testing – The Good Guys
  - Produced by the immune system
    - Protective against the effect of antigen
  - Classify herd risk and herd level infection
    - Immune Status
    - Indirect Indicator of PI Presence
  - PI Animals are Antibody Negative!
Diagnosing BVDV Infection

Blood Test

- Antibody Testing – The Good Guys
  - Produced by the immune system
    - Protective against the effect of antigen
  - Classify herd risk and herd level infection
    - Immune Status
    - Indirect Indicator of PI Presence
  - PI Animals are Antibody Negative!
BVDV Blood Testing Options

• **AGID (Agar Gel Immuno-Diffusion)**
  • Very useful to measure and age recent infection.
    • Scoring system from 0 to 3+
    • Higher score indicates more recent exposure
  • Immune animals eventually produce negative antibody results.
    • Underestimates level of herd immunity
  • Doesn’t usually identify or measure immunity from vaccination.
BVDV Blood Testing Options

- Antibody ELISA
  - More sensitive
  - Objective rather than subjective measurement
  - Typically less expensive
  - Less sample required
  - Blood samples very stable
    - Can tolerate poor handling
TEGO Device
TEGO Device
Information Equals Flexibility
FLEXIBILITY

= PROFIT
Blood Testing Pays Dividends

If 5% of a management group were blood tested for antibodies to BVDV at a cost of $20 per sample, the cost of serology would be equivalent to $1 per head.

The cost of vaccination, at $5 per dose is $10 for the first year and $5 per year for the life of the animal.

The cost of ear notching an animal is $10.

Serology is a wise investment…
Questions?
Non-Systematic Management

- Partial programs result in partial control
- Partial control results in reductions in losses
  - i.e. fewer PI’s
- Fewer PI’s result in less “natural exposure”
- Less “natural exposure” results in a higher proportion of at risk females
- Higher proportions of at risk females can mean a “wreck” if unmanaged
Random PI Hunting
Auto Vaccination: Can we do better?
Auto Vaccination Considerations

• Auto vaccinators must be confirmed as Persistently Infected

• Ensure sufficient time for “Auto Vaccinated” animals to recover prior to mating
  • Transient infection is highly immune suppressive and interferes with ovarian function

• PI animals are susceptible to illness and can act as reservoirs and/or multipliers of disease
Auto Vaccination Considerations

- Mismated heifers or adjacent pregnancies represent considerable risk
- Potential liability regarding neighbors
- “Auto Vaccinated” animals should be screened for evidence of seroconversion
- If effective, maintaining a safe supply of PI animals is difficult
- PI animals usually die prematurely, painfully, and without salvage value
Auto Vaccination

Strategic Infection
Blanket Vaccination
Pestigard

- Vaccination
  - Two doses of Pestigard initially
    - At least four weeks apart
    - No further than six months apart
    - Second dose preferably a month prior to joining
  - Boosters annually thereafter
    - At least a month prior to joining
    - Prior to calving is appropriate
      - No calves at foot
      - Inclusion of antibody in colostrum
Level of Challenge

Acute Infection

Shed 1,000 to 10,000 virus per ml of secretion for only 7 to 10 days
Level of Challenge

Persistent infection

Shed $1,000,000$ to $1,000,000,000$ virus per ml of secretion for their ENTIRE life
Do Nothing
What We Know...
We know it is all about timing…
What We Know…

- Persistently Infected (PI) animals are responsible for almost all transmission of the BVDV virus.
- PI animals typically live shortened lives.
- Animals of reproductive age without immunity to BVDV are likely to suffer significant production losses should they meet a PI.
- Animals in contact with PI animals typically become infected with BVDV and mount relatively long lasting immunity.
Therefore...

• If we ensure that every new group of replacement heifers is **both** immune and PI free
  • The replacement heifers will not represent a risk to other management groups
  • The replacement heifers will be less likely to produce PI calves
  • Over time, the entire adult population will become:
    • PI Free
    • Immune
Systematic BVDV Control

• Initially Screen All Management Groups for Evidence of Immunity (Herd Profiling)
  • Don’t Vaccinate Immune Groups
  • Vaccinate Naive Groups
• Annually Screen Heifers for Evidence of Immunity and Presence of PI Heifers Prior to Joining
  • Vaccinate Seronegative Management Groups
  • Ear Notch Seropositive Management Groups
Proportion Seropositive

- 0-1: 46
- 1-2: 15
- 2-3: 3
- 3-4: 4
- 4-5: 2
- 5-6: 1
- 6-7: 4
- 7-8: 7
- 8-9: 5
- 9-10: 31

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ESTABLISHING ADULT MANAGEMENT GROUP INDIVIDUAL RISK AND IMMUNE STATUS

Animals from each management group need to have been in stable contact for at least two months without new additions.

1. **Test** blood samples from 5% or at least 6 animals from each adult management group for BVDV antibody (Ab).

2. **Vaccinate** entire group. If not, wait one year and **test** blood samples from 5% or at least 6 animals from each vaccinated management group for BVDV Ab.

3. Are over 80% positive for BVDV Ab from natural exposure?
   - **YES** Monitor group.
   - **NO** Repeat the process.

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BVDV

29th September 2016
End of the Road?
My Goal:
To See Every Group of Australian Replacement Heifers Screened Annually for Immunity to BVDV Prior to Mating
ANNUAL HEIFER PRE MATING SCREENING

Heifers must be at least 8 months old and have been in stable contact for at least 2 months

Test blood samples from 5% or at least 6 unvaccinated heifers from each discrete management group for BVDV antibody (Ab)

Are over 50% positive for BVDV Ab?

Yes

Are over 80% positive for BVDV Ab?

Yes

Vaccinate entire group

Are over 80% positive for BVDV Ab?

No

PI screen the antibody negative animals

Was a PI identified?

Yes

PI screen entire group

No

Wait one month then re-test the previously Ab negative animals and another 5% of heifers for BVDV Ab

Are the previously antibody negative animals now antibody positive?

Yes

No

Overall, are 80% now positive for BVDV Ab?

Yes

GOAL: Highly immune and PI free

No

No
ANNUAL HEIFER PRE MATING SCREENING

Heifers must be at least 8 months old and have been in stable contact for at least 2 months

Test blood samples from 5% or at least 6 unvaccinated heifers from each discrete management group for BVDV antibody (Ab)

Are over 50% positive for BVDV Ab?

Vaccinate entire group

Are over 80% positive for BVDV Ab?

PI screen entire group
Y Heifer Mob  Naive  Immune
Mixed Antibody Results

- Four Basic Reasons
  - Heifers without immunity to BVDV are Persistently Infected (PI Present)
  - Historic Exposure
    - Some of the heifers were exposed to BVDV prior to commingling (No PI)
  - Ongoing Exposure
    - One or more of the untested heifers from the mob is a PI (PI Present)
    - The heifers are being exposed to BVDV from outside of the group (No PI)
Are over 80% positive for BVDV Ab?

**Vaccinate** entire group

PI screen the antibody negative animals

Was a PI identified?

Wait one month then **re-test** the previously Ab negative animals and another 5% of heifers for BVDV Ab

Are the previously antibody negative animals now antibody positive?

Overall, are 80% now positive for BVDV Ab?

**GOAL:** Highly immune and PI free
Submission Details:

Report date: 12.04.16  
Invoice No.: 170455

Vet details: Terang Vet Clinic  
6773 Princes Highway  
Terang VIC 3264

Client details: Milky Towers

Collection date: 06.04.16  
No. of Samples: 06

BVDV Antibody Results:

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<tr>
<td>Uno Farm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A1</td>
<td>15111</td>
<td>Negative</td>
<td>0.01</td>
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<tr>
<td>A2</td>
<td>15096</td>
<td>Negative</td>
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</tr>
<tr>
<td>A3</td>
<td>15061</td>
<td>POSITIVE</td>
<td>1.20</td>
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<tr>
<td>A4</td>
<td>15079</td>
<td>Negative</td>
<td>0.03</td>
</tr>
<tr>
<td>A5</td>
<td>1504</td>
<td>Negative</td>
<td>-0.12</td>
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<tr>
<td>Dos Farm</td>
<td></td>
<td></td>
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<td>15197</td>
<td>Negative</td>
<td>0.21</td>
</tr>
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<td>B5</td>
<td>15163</td>
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<td>0.03</td>
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<tr>
<td>B6</td>
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<td>1.18</td>
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<tr>
<td>C1</td>
<td>15305</td>
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<td>1.00</td>
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<td>15311</td>
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Sample interpretation:

<table>
<thead>
<tr>
<th>c0.3</th>
<th>0.03</th>
<th>≥ 0.65</th>
</tr>
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<tbody>
<tr>
<td>Negative</td>
<td>Weak Positive</td>
<td>Positive</td>
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Your Interpretation:

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Erich Bergman DVM
Swans Veterinary Services
Box 1514 Esperance WA 6450
Surgery: 08 9071 5777
Mobile: 0427 716 907
www.swansvet.com

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29th September 2016
BVDV Laboratory
BVDV Blood/Serum Testing Results

Address: Lot 83 Sheldon Road, Esperance, WA 6450
Phone: 08 90715777
Email: lab@swansvet.com

Submission Details:

Report date: 12.04.16
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17%

Sample interpretation:

- < 0.3: Negative
- 0.3 - 0.65: Weak Positive
- ≥ 0.65: Positive

Your Interpretation:

Enoch Bergman DVM
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Box 1514 Esperance WA 6450
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Your Interpretation:

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<tr>
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<td>A3</td>
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<td>1.20</td>
</tr>
<tr>
<td></td>
<td>A4</td>
<td>Negative</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>A5</td>
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<td>0.68</td>
</tr>
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<td>Dos Farm</td>
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<td>POSITIVE</td>
<td>0.96</td>
</tr>
<tr>
<td></td>
<td>B2</td>
<td>POSITIVE</td>
<td>1.34</td>
</tr>
<tr>
<td></td>
<td>B3</td>
<td>POSITIVE</td>
<td>1.11</td>
</tr>
<tr>
<td></td>
<td>B4</td>
<td>Negative</td>
<td>0.21</td>
</tr>
<tr>
<td></td>
<td>B5</td>
<td>Negative</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>B6</td>
<td>POSITIVE</td>
<td>1.18</td>
</tr>
<tr>
<td>Tree Farm</td>
<td>C1</td>
<td>POSITIVE</td>
<td>0.99</td>
</tr>
<tr>
<td></td>
<td>C2</td>
<td>POSITIVE</td>
<td>1.24</td>
</tr>
<tr>
<td></td>
<td>C3</td>
<td>POSITIVE</td>
<td>1.32</td>
</tr>
<tr>
<td></td>
<td>C4</td>
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<td>1.60</td>
</tr>
<tr>
<td></td>
<td>C5</td>
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**Sample interpretation:**

<table>
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<tr>
<th>c0.3</th>
<th>0.05</th>
<th>0.25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>Weak Positive</td>
<td>Positive</td>
</tr>
</tbody>
</table>

**Your Interpretation:**

---

Erich Bergman DVM
Swans Veterinary Services
Box 1514 Esperance WA 6450
Phone: 08 9071 5777
Mobile: 0427 716 807
Email: ieb@swansvet.com

29th September 2016

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67%
BVDV Laboratory
BVDV Blood/Serum Testing Results

Submission Details:
Report date: 17.05.16  Invoice No.: 180036
Vet details: Terang Vet Clinic
6773 Princes Highway
Terang VIC 3264
Client details: Milky Towers
Collection date: 12.05.16  No. of Samples: 09

BVDV Antibody Results:

<table>
<thead>
<tr>
<th>Sample ID</th>
<th>Animal ID</th>
<th>Result</th>
<th>S/P Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1</td>
<td>15176</td>
<td>Negative</td>
<td>0.03</td>
</tr>
<tr>
<td>E2</td>
<td>15160</td>
<td>Negative</td>
<td>0.09</td>
</tr>
<tr>
<td>E3</td>
<td>15199</td>
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<td>E4</td>
<td>15201</td>
<td>Negative</td>
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<td>E5</td>
<td>15232</td>
<td>Negative</td>
<td>0.00</td>
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<td>E6</td>
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<td>Negative</td>
<td>0.05</td>
</tr>
<tr>
<td>E7</td>
<td>15217</td>
<td>POSITIVE</td>
<td>1.23</td>
</tr>
<tr>
<td>E8</td>
<td>15266</td>
<td>POSITIVE</td>
<td>1.33</td>
</tr>
</tbody>
</table>

Sample interpretation:

<table>
<thead>
<tr>
<th>&lt;0.3</th>
<th>≥0.3</th>
<th>≥0.85</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>Weak Positive</td>
<td>Positive</td>
</tr>
</tbody>
</table>

Your Interpretation:

Enoch Bergman DVM
Swans Veterinary Services
Box 1514 Esperance WA 6450
Surgery: 08 9671 5777
Mobile: 0427 716 907
www.swansvet.com

BVDV
### BVDV Antibody Results:

<table>
<thead>
<tr>
<th>Sample ID</th>
<th>Animal ID</th>
<th>Result</th>
<th>S/P Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>15234</td>
<td>Negative</td>
<td>0.01</td>
</tr>
<tr>
<td>A2</td>
<td>15545</td>
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<td>0.01</td>
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<tr>
<td>A3</td>
<td>11644</td>
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<td>1.20</td>
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<td>A4</td>
<td>15179</td>
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<td>B1</td>
<td>15231</td>
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</tr>
<tr>
<td>B2</td>
<td>15189</td>
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<td>B3</td>
<td>15280</td>
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<td>1.11</td>
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<td>Negative</td>
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</tr>
<tr>
<td>B5</td>
<td>15161</td>
<td>Negative</td>
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</tr>
<tr>
<td>C6</td>
<td>15311</td>
<td>Negative</td>
<td>0.00</td>
</tr>
</tbody>
</table>

#### Sample interpretation:

- **0.5**: Negative
- **0.6**: Weak Positive
- **>0.8**: Positive

#### Your Interpretation:

![Signature]

29th September 2016

### BDV Laboratory

**Terang Vet Clinic**
6773 Princess Highway
Terang VIC 3264

**Collection date:** 06.04.16
**No. of Samples:** 06

#### BDV Laboratory

**Terang Vet Clinic**
6773 Princess Highway
Terang VIC 3264

**Collection date:** 12.05.16
**No. of Samples:** 09

#### BDVV Antibody Results:

<table>
<thead>
<tr>
<th>Sample ID</th>
<th>Animal ID</th>
<th>Result</th>
<th>S/P Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1</td>
<td>15176</td>
<td>Negative</td>
<td>0.03</td>
</tr>
<tr>
<td>E2</td>
<td>15180</td>
<td>Negative</td>
<td>0.09</td>
</tr>
<tr>
<td>E3</td>
<td>15199</td>
<td>Negative</td>
<td>0.24</td>
</tr>
<tr>
<td>E4</td>
<td>15161</td>
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</tr>
<tr>
<td>E5</td>
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<tr>
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<td>15217</td>
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<td>1.33</td>
</tr>
<tr>
<td>E8</td>
<td>15266</td>
<td>Positive</td>
<td>1.33</td>
</tr>
</tbody>
</table>

#### Sample interpretation:

- **<0.5**: Negative
- **0.5-0.8**: Weak Positive
- **>0.8**: Positive

#### Your Interpretation:

![Signature]

= 6/12 = 50%
End of the Road?
My Goal:

To See Every Group of Australian Replacement Heifers Screened Annually for Immunity to BVDV Prior to Mating
NON-SYSTEMATIC STRATEGY TO IDENTIFY ADULT PI'S IN STABLE IMMUNE MANAGEMENT GROUPS

Identify and PI screen poor doing calves

Was a PI identified?

Continue to monitor management group

NO

Cull the PI dam and every identifiable calf she ever produced

YES

Identify and PI screen the dam of the PI calf

Is the dam a PI?

YES

Cull the PI calf

NO
NON-SYSTEMATIC STRATEGY TO IDENTIFY ADULT PI’S IN STABLE IMMUNE MANAGEMENT GROUPS

Identify and PI screen poor doing calves

Continue to monitor management group → NO

Was a PI identified?

Identify and PI screen the dam of the PI calf → YES

Is the dam a PI?

Cull the PI dam and every identifiable calf she ever produced

Cull the PI calf

Cull the PI calf → NO
SYSTEMATIC STRATEGY TO IDENTIFY ADULT PI'S IN STABLE IMMUNE MANAGEMENT GROUPS

Test blood samples from 5% or at least 6 calves at a minimum of 6 months of age for BVDV antibody (Ab) at weaning prior to commingling with calves from other management groups.

Are over 50% positive for BVDV Ab?

YES

PI screen the entire adult population of the management group

Was a PI identified?

NO

Continue to monitor management group

YES

Cull the PI dam and every identifiable calf she ever produced
SYSTEMATIC STRATEGY TO IDENTIFY ADULT PI'S IN STABLE IMMUNE MANAGEMENT GROUPS

Test blood samples from 5% or at least 6 calves at a minimum of 6 months of age for BVDV antibody (Ab) at weaning prior to commingling with calves from other management groups.

Are over 50% positive for BVDV Ab?

If NO, then continue to monitor the management group.

If YES, then:

PI screen the entire adult population of the management group.

Was a PI identified?

If NO, then continue to monitor the management group.

If YES, then:

Cull the PI dam and every identifiable calf she ever produced.
BIOSECURITY: MANAGING INTRODUCTIONS & REINTRODUCTIONS

Including pregnant animals returning from off farm

- Do you know the PI status of the animal to be introduced?
  - Yes
  - No
    - PI screen the animal

- Is the animal pregnant?
  - Yes
    - Introduce to herd, calve separately, PI screen the calf when born
  - No
    - No
      - Is the animal a PI?
        - Yes
          - Do not introduce to the herd. Cull immediately
        - No
          - Introduce animal to the herd
YOU LITTLE BASTARD.

YOU’VE KILLED US ALL.
BIOSECURITY: MANAGING INTRODUCTIONS & REINTRODUCTIONS

Including pregnant animals returning from off farm

- **Do you know the PI status of the animal to be introduced?**
  - **NO**
    - **PI screen the animal**
  - **YES**
    - **Is the animal pregnant?**
      - **NO**
        - Continue
      - **YES**
        - **Introduce** to herd, calve separately, **PI screen** the calf when born
          - **Is the calf a PI?**
            - **NO**
              - **Introduce** animal to the herd
            - **YES**
              - **Do not introduce to the herd. Cull** immediately

29th September 2016
What Now?
Stay on the Road!
Key Points

- PI Animals are the Enemy
  - Vector from generation to generation and between production systems.
- Disrupt the PI Link
  - Vaccinate at risk females to prevent intrauterine exposure to BVDV.
  - Identify and remove PI animals.
- Ongoing Simple Biosecurity
- Systematic Approach
Thank you for your attention

enoch@swansvet.com
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0427 716 907

-Know your BVDV Status – Call Your Vet
Thank you for your attention

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(08) 9071 5777
0427 716 907

-Know your BVDV Status – Call Your Vet
-Vaccinate if Appropriate – Pestigard
Thank you for your attention

enoch@swansvet.com
(08) 9071 5777
0427 716 907

-Know your BVDV Status – Call Your Vet
-Vaccinate if Appropriate - Pestigard
-Ear Notch Introductions if Appropriate
Thank you for your attention

enoch@swansvet.com
(08) 9071 5777
0427 716 907

-Know your BVDV Status – Call Your Vet
-Vaccinate if Appropriate - Pestigard
-Ear Notch Introductions if Appropriate
-Ear Notch Calves of Introductions if Appropriate
Thank you for your attention

enoch@swansvet.com
(08) 9071 5777
0427 716 907

- Know your BVDV Status – Call Your Vet
- Vaccinate if Appropriate – Pestigard
- Ear Notch Introductions if Appropriate
- Ear Notch Calves of Introductions if Appropriate
- Maintain Heifer Pre-mating Blood Testing
Don’t Turn Your Back on BVDV!
Keep Looking!
Questions?

enoch@swansvet.com
(08) 9071 5777
0427 716 907
Thank you IDEXX, ACV, BVDV TAG, Beef Central, Future Beef, Paul Cusack, Scott Parry, Michael Reichel, Khyle Stewart, and Craig Wood.

Thank you for your attention!