

BVDV

An Australian Perspective

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An American's Perspective of BVDV within Australia

- **Enoch Bergman, DVM**
- **2001 Colorado State University Graduate**
- **2003 CSU Food Animal Medicine Intern**
- **2003 Moved to Esperance, WA**
 - **Swans Veterinary Services**

Esperance, Western Australia

- **Rural Coastal Town**
- **800 kms southeast of Perth**
- **14,000 People within the Shire**
- **60,000 Breeding Cows**
- **1.5 Million Sheep**
- **Cropping, Mining, Fishing, Tourism**



Esperance and BVDV

- **Typical Cow/Calf Scenario**
 - **Fixed joining**
 - **Most calves sold at weaning**
 - **Some backgrounding**
 - **Usually on farm**
 - **Few yearling operations**
 - **Several small feeders**
 - **Approximately 200 properties ranging from 40 to 5000 breeders**

Esperance and BVDV

- **Chance encounter with BVDV at aboriginal school.**
- **Most area producers ignorant of BVDV.**
- **BVDV low priority to veterinary industry.**
- **First commercially produced vaccine recently released.**
 - **Pfizer/CSL's Pestigard**

Elucidating Prevalence of BVDV

- **Began detecting BVDV in investigations of poor reproductive performance.**
- **Presumed incidence of BVDV would be similar to US data.**
- **Wished to perform a survey both to elucidate prevalence and to educate clients.**

BVDV Serosurvey

- **Producers reluctant to test for “unheard of” disease.**
- **Western Australian Department of Agriculture agreed to perform testing for free.**
- **Pfizer/CSL agreed to pay \$100.00 per survey for first 50 surveys to defray collection costs.**

BVDV Serosurvey

- **Method**

- **75 properties surveyed.**
- **Whole blood collected from six cows per property.**
- **Agar gel immunodiffusion performed for evidence of recent exposure.**
- **Antigen Capture ELISA's performed on negative animals.**

BVDV Serosurvey

- **Results**
 - **55/75 had detectable antibodies (73.3%)**
 - **On antibody positive farms**
 - **268/352 animals seropositive (74.0%)**
 - **On antibody free farms**
 - **Closed herds**
 - **Smaller herds**

BVDV Serosurvey

- **Interpretations**
 - **Proof of infection in Esperance region**
 - **Similar prevalence to previous Australian survey work**
 - **Kirkland est. 70% actively infected**
 - **St. George et al (1967) 90% herds seropositive**
 - **Heightened producer awareness**
 - **Demonstrated need for a management plan**
 - **Testing**
 - **Biosecurity**
 - **Vaccination**

Australian BVDV Vaccination Options

- **Autogenous Vaccines**
 - **Modified Live**
 - **Administered by Veterinarian**
 - **Expensive**
- **Pfizer/CSL's Pestigard**
 - **Inactivated Vaccine**
 - **Released 2003**

Pestigard

- **Vaccine demonstrated 80% fetal protection**
- **Label indicated vaccination at six and two weeks pre-joining, followed by an annual booster.**
- **Suggested retail price \$3.50 per dose.**
- **Pfizer provided free vaccine to perform a field trial.**

Pestigard Heifer Trial

- **Method**

- **1656 heifers from 8 properties with evidence of BVDV included in trial**
- **Proportion of heifers from each property vaccinated**
 - **Vaccinates randomly selected**
 - **1089 of the 1656 heifers vaccinated (65.76%)**
- **Two doses of vaccine administered with three week interval immediately prior to joining.**
- **Pregnancy rates compared**
 - **Vaccinates vs Nonvaccinates**

Pestigard Heifer Trial

- **Results**
 - **Pregnancy rates of vaccinates were higher on 6 of the 8 properties.**
 - **Pregnancy rates of all vaccinates were 15.59% higher than all nonvaccinates.**
 - **Largest individual variation found was 20.5%**
 - **928 heifers in property trial**

Pestigard Heifer Trial

Effect of Vaccination of Heifers with Pestigard upon Pregnancy Rates



Number of Vaccinates/Number of Nonvaccinates

Pestigard Heifer Trial

- **Interpretations**
 - **Pestigard improved pregnancy rates**
 - **Vaccine is apparently efficacious in preventing fetal loss associated with BVDV**
 - **Presume that some properties had persistently infected replacement heifers in trial**

Rural Practice Scholarship

- **Sponsored by Schering-Plough and the Australian Cattle Vets**
- **Annual scholarship to a recent graduate to further their career in bovine veterinary medicine**
- **My project**
 - **To develop a voluntary BVDV eradication scheme within the Esperance District**



Eradicating BVDV in Esperance

- **Three fold approach**

- **Biosecurity**

- **Heighten producer awareness of the risks associated with unrestricted movement of animals into and out of herds.**

- **Testing**

- **Serosurveys to assess herd level infection.**
 - **Cost effective, sensitive, simple and quick methods of detecting PI animals.**

- **Vaccination**

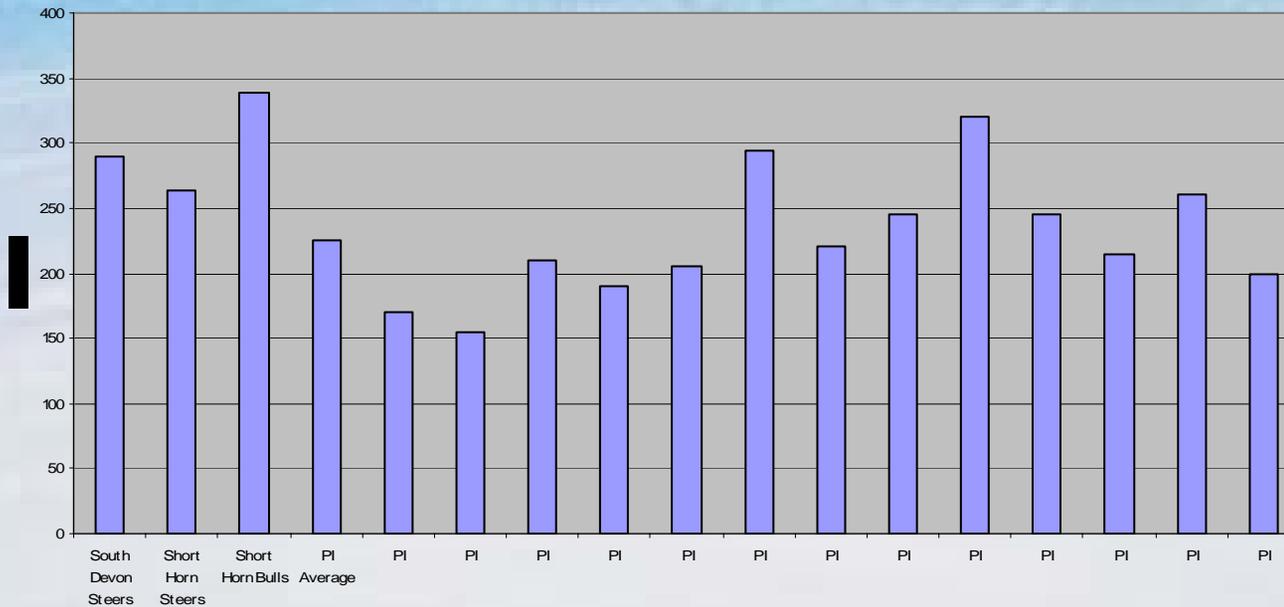
- **Decrease level of maternal viremia**
 - **Prevent propagation of virus via acute infection**
 - **Decrease risk of introduction to immunonaive herds.**
 - **Increase seroprevalence in young stock.**

Ear Notch Testing

- **Results from First Farm in Australia**
 - **84 steer calves tested**
 - **Fresh eat tissue collected for IDEXX**
 - **Formalinized tissue collected for WA Department of Ag**
 - **IDEXX Antigen Capture ELISA**
 - **Very Sensitive**
 - **Excellent correlation in OD values of suspected true positives**
 - **Results**
 - 21 positive
 - 4 suspect
 - **IHC**
 - **Excellent consistency between samples**
 - **Appears to be extremely specific**
 - **Results**
 - 14 positive
 - **Repeat Testing to be performed**

Ear Notch Testing

- **Weaning Weights**
 - **Average overall steer weight**
 - 277 kilos
 - Heavier Bulls removed and PI's included
 - **Average PI steer weight**
 - 225 kilos
 - 52 kilos lighter on average



Challenges in Eradicating BVDV

- **Develop a veterinary consensus**
- **Educating producers**
- **Development of testing procedures**
- **District wide compliance**
- **Demonstrating cost effectiveness of control strategies**

Thank you

- **Australian Cattle Vets**
- **Schering-Plough Animal Health**
- **Agricultural Department of Western Australia**
- **Pfizer Animal Health**
- **IDEXX Laboratories**
- **Swans Veterinary Services**
- **Producers of Esperance, WA**