Controlling Bovine Viral Diarrhea Virus

Diagnostic Tests and Strategies
What is BVDV

• Viral infection of cattle
  – Sheep, pigs, camelids, cervidae

• RNA virus
  – Can rapidly mutate and change
    (Think “Flue virus”)

• Diverse clinical presentation

• Diverse antigenic make-up
  – Vaccine failure
BVDV Overview

Mucosal Disease

Acute/Transient/Primary Infection

Thrombocytopenia

Acute Death

Immunosuppression

Acute Diarrhea

Subclinical Infection

Normal

Abortions

CI’s

Fetal Infection

Normal

Congenital Defects

“Weak Calf” Syndrome

Poor Performance

Immunosuppression

Persistent Infection
Hmmm
Tongue ulcers...
Could be BVD
Time line of BVDV effects on Bovine Reproduction

- Abortion
- Congenital Defects
- Immunotolerance
- EED
- Congenital Infections Normal? - Seropositive
Immunotolerance ➔➔➔ Persistent Infection with BVDV

- Occurs following fetal infection prior to day 125 of gestation
  - Acute or transient infection of dam or;
  - Persistently infected dam
- Virus recognized as “self” antigen
- Results in calf being born that is immunotolerant to BVDV which leads to persistent infection with BVDV
- May be normal looking, but more typically are poor performers and survivability is low
Just call me typhoid Bubba!
BVDV Control

• Biosecurity
  – Most BVDV problems are purchased

• Vaccination
  – Vaccines are not 100%

• Seek and destroy PI’s
MOST WANTED

Known carrier of a virulent virus...Persistently infected with BVDV

CONSIDERED ARMED AND EXTREMELY DANGEROUS

IF YOU HAVE ANY INFORMATION CONCERNING THIS CRITTER, PLEASE CONTACT YOUR VETERINARIAN

REWARD
Be a Winner at the Trinity Farms Royal Flush Sale

March 4, 2006 • 1:00 PM

224 Sale Lots.
53 Purebred Simmental Bulls
35 Purebred Angus Bulls
71 Hybrid Meatmaker SimAngus Bulls
53 Open Heifers
15 Bred Cows

TFS Gold Star 1407 5055R
Sire: Bon View New Design 1407
MGS: GW Lucky One 686K

33 1407 bulls in sale

TFS Dreamaker L186 5017R
Sire: CNS Dream On L186
MGS: GW Lucky One 686K

33 Dream On bulls in sale

TFS Black Star 1407 5055R
Sire: Bon View New Design 1407
MGS: GW Lucky One 686K

TFS Red Dream L186 5066R
Sire: CNS Dream On L186
MGS: CGS Black Chicago

Sires represented:
- Dream On
- Preferred Beef
- GW Lucky Dice
- Overbad
- Bulldozer
- BR Midland
- 1407
- El 81
- Riley 1/2
- Cherokee Canyon

1023 Thorp Hwy S.
Ellensburg, WA 98926
Mike’s Cell: (509) 929-0312
Robb’s Cell: (509) 929-6126
www.trinityfarms.info

Increase Your Odds!

All BVD tested negative. Sire, tested, ultrasounded, gain tested, sight unseen guarantee.

Joint Producer:
Bar CK Simments
MCA/MSU Bull Test

A cooperative effort between the Michigan Cattlemen’s Association, Michigan State University Department of Animal Science and Plank Farm

2006 Bull Test Catalog

Click here to download the BVD Ear Notch Test

Location:
Plank Farms
325 Mount Hope Rd.
Crystal, MI 48818
989-235-6253
email: psf@cmsinter.net

Health requirements and procedures:
The health requirements and procedures exceed regulatory requirements of the State of Michigan. These requirements have been established by the Bull Test Committee and are mandatory for all bulls prior to arrival at the bull test station.

1. Bulls must be dehorned and weaned for at least 21 days.
2. Each bull must have an initial vaccination; in addition, a booster (3 to 4 weeks later) for the diseases listed under section 6. The last shots must be given no less than 7 days nor more than 50 days before delivery to the station.
3. All bulls must be free of ringworm and warts.
4. **All bulls must test negative for Bovine Virus Diarrhea Virus (BVDV)**
5. All bulls are required to have a negative TB test within 30 days of delivery, except for bulls originating in TB accredited free herds.
6. Bulls originating from Michigan herds are not required to have a Brucellosis test.
Lon & Sheri Wadekamper’s
LGW RANCH
POWERFUL PERFORMANCE SALE
140 Yearling Black Angus Bulls
6 Elite Horned Hereford Bulls
Thursday, March 2, 2006 – 1 p.m. at LGW Ranch
2989 Country Lane • Hermiston, Oregon

Sale Information:
LGW Ranch, Day/Night Telephone: (541) 567-3876
Cell Phones, Sale Day: (541) 561-7482 or 7484

Auctioneer:
C.D. "Butch" Booker ……………..Home (509) 397-6102
………………………………………..Cell (509) 989-2853

Sales Representatives:
Rod Wesselman, American Angus Ass’n……..,(509) 765-9219
Jerry York, Western Livestock Journal….(208) 863-1172
Willard Wolfe, Special Assignment ……..,(509) 994-8051
Gary Kendall, Western Livestock Reporter….(208) 858-2163

Buyers who wish to purchase cattle who cannot attend may send their bids to LGW Ranch, the auctioneer or sale representatives.

Motel Accommodations:
Oxford Suites, Hermiston………………..,(541) 564-8600
and toll free ………………………………..(888) 545-7848
Best Western, Hermiston………………..,(541) 564-0202
Oak Tree Inn, Hermiston…………………..,(541) 567-2330

Food:
A complimentary lunch will be served, starting prior to noon, on sale day. Refreshments will be available sale morning and throughout the day.

Registration Certificates:
Supplied on eligible animals upon request.

Health:
All cattle will be accompanied by proper health certificates for immediate shipment off state. Bulls are fertility and BVD-PI tested. Scrotal measurements will be provided on a separate, sale day supplement sheet. The calves have been vaccinated with 8-way and for Lepto-Vibrio, Influenza, IBR, PI3, BRSV and given Deccox wormer pour-on. Veterinary services provided by Hermiston Veterinary Clinic.

Sale Location:
Take Exit 5 off I-84, turn south, then left on Country Lane. Travel east 1 mile to the sale barn on the right. Watch for parking area signs.

Terms & Conditions:
All cattle sell under the terms and conditions as suggested by the American Angus Association. Terms of sale are cash, unless prior arrangements have been made. All supplements to the sale book or announcements made from the block take precedence over what is written in this book.

Liability:
All persons attending the sale and related functions do so at their own risk. LGW Ranch Inc., its staff and representatives, assume no liability, legal or otherwise, for any accidents or injuries that may occur.

Inspection of Cattle:
Angus cattle may be inspected at the ranch anytime prior to the sale.

Livestock Mortality Insurance:
A representative from American Live Stock Insurance Company will be available to assist you with mortality insurance for your purchases.

CUSTOMER SATISFACTION PROGRAM
Feed Arrangements: Bills may be left at LGW Ranch feed pens, free of charge through the month of March, then arrangements can be made until mid-May.
Free Delivery: Within Oregon, Washington and Idaho to buyer’s farm or to a convenient location as close to buyer’s request as possible. Cattle may be loaded following the sale, but can remain at the sale site through April 1, 2006 until trucking arrangements can be made.
Only Single Bulls Sell: Complete Breeding Soundness Exam performed. Scrotal-Measured, Semen-Tested
Guarantee: LGW Bulls are guaranteed for semen quality and structural soundness for their first breeding season.
Characteristics of PI’s

• Virus usually present at high titers in:
  – Serum
  – White cells
  – Nasal swabs
  – Tissues including skin

• May not be easily detected in serum of calves
  – Neutralized by colostral antibodies
  – <6 months of age

• Typically have no antibody titers, BUT not always true
Detection of PI’s

Tests To Detect PI’s

- Virus Isolation
- IPMA
- Skin
- IHC/FA/ELISA
- PCR
- Individual/Pooled
- Blood ELISA

Control and Eradication: the future is now.
BVDV is Suspected = *High Risk Herd*

- Poor reproductive performance despite good nutrition and fertility
- High calf morbidity/mortality despite good sanitation and nutrition
  - Open herd
  - Positive screening test
  - Laboratory confirmation of BVDV infection

Is BVDV a Problem?

BVDV is not Suspected = *Low Risk Herd*

- Good reproductive performance
- Good calf health
  - Closed herd
- Screening tests have been negative
- No laboratory evidence of BVDV infection
BVDV Herd Screening
Herd Screening Tests

- Serology on Sentinels
  - Unvaccinated calves 6-12 m
  - Target cohorts
    - Both Type 1 and 2

- Pooled PCR
  - Targeted groups of 10-100
  - Cost effectiveness lost when prevalence of PI’s is >3%

   Negative → Continue Herd Screening
   Positive → Individual Testing

Necropsy
Strategies For Testing Individual Cattle For BVD PI
Strategy Selection Depends On:

- Goals
- Ability to handle animals at different management times
- Records
- Test/assay availability
- Costs
Test all Calves and Adults/Replacements w/o offspring

Assumption: Calves most likely to be PI’s
Calves serve as sentinels for dams

- Pooled PCR
- Skin IHC or ELISA
- VI/IPMA

Positive:
- Individual Test

Positive:
- Options: Isolate and Retest, Eliminate

Negative:
- Record Dam as Negative
  - If Calf

Negative:
- Test Dams
  - If Calf
  - Retain in Herd

In Low Risk Herds

• Biosecurity!!!!!!
  – Implement practices to keep PI’s out
    • Test incoming cattle
      – Don’t forget fetuses in pregnant cattle
    • Contact with outside cattle

• Vaccination
  – Broad protection…Type 1 and 2
  – Strategic timing

• Consider periodic screening
  – Necropsies…”True Knowledge Lies in Dead Pile”
  – Serology on sentinels
Take Home Points

1. Major source of BVDV transmission is cattle PI’s with BVDV…TYPHOID BUBBA

2. Identifying and eliminating PI’s is a key component to BVDV control…SEEK and DESTROY

3. Combine with strategic vaccination and biosecurity for complete BVDV control and prevention program…THREE LEG STOOL
Top 10 Reasons You Know You Have BVDV

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6 When you think BVD stands for “Bad Veterinary Disease”

Dr. Grooms DVM
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③ When you have cattle on your farm named “Runt”, “Pipsqueak”, “Shorty”, “Wobbles”, “Tiny”, “Clutzo” and “Nubby”.

Will I ever grow up!!
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1 You’ve lost everything but your