

BVD Control in Practice

Or, BVD Control on Your Ranch

Phillip L. Kesterson DVM

Trail Animal Clinic
Bridgeport, NE



Confession

- Expert
- Definition:
 - Ex-
 - (Ex- 1. “Past” 2. “Has Been”)
 - -spurt
 - “Drip under pressure !”
- Expertise . . .
- Real life experiences & observations

AVC Decision Guidelines

www.avc-beef.org

Cow-Calf Herd (BVDV-Suspect Herd)

BVD is Suspected (High Risk)

- Poor reproductive performance despite good nutrition and bull fertility
- High calf morbidity / mortality despite good sanitation and nutrition
- Laboratory confirmation of BVDV transient (acute) infection (TI) or BVDV PI animals

Appropriate diagnostic testing to determine if Persistently Infected (PI) with BVDV

Testing Must Occur Before Start of Breeding Season

- All calves (IHC test is appropriate for calves of all ages)
- All cows without calves (open or calf died) (IHC, Ag-capture ELISA, VI, PCR)
- All replacement bulls and heifers (purchased or raised) (IHC, Ag-Capture ELISA, VI, PCR)

Test Negative

Retain in herd

- High NPV* of tests

Test Positive

Calves

- Remove calf and dam from breeding herd
- Euthanize calf
- Test dam

Heifers, Bulls & Cows

- Sell PI animals to slaughter
Safe for human consumption

Test Dams

Test Negative

- Return dam to breeding herd

Test Positive

- Sell to slaughter
Safe for human consumption

- All cows still pregnant at time of testing must be removed from breeding herd because fetus is of unknown BVDV PI status
- Absence of confirmed PI calves does not guarantee absence of BVDV problem. If you are still suspicious, testing the next calf crop is recommended.
- Use IHC (immunohistochemistry), pooled PCR, ELISA of skin samples, or Virus isolation (VI)
- Implement complete vaccination program prior to breeding in replacement animals and appropriate boosters in adults
- Prevent direct contact with cattle of unknown BVDV control status

* NPV = negative predictive value, i.e. likelihood that a test negative animal is truly PI negative

Brief Overview

or . . . What I have done

- Sandhills Ranch
- Family-owned Farm / Ranch / Feedyard
- Ranch / Feedyard
- Other testing
- Conclusions



Sandhills Ranch

- Salebarn Heifers
- Calves
 - Small
 - Abnormal
 - Performance
- Calf Mortality
- BVD Questions

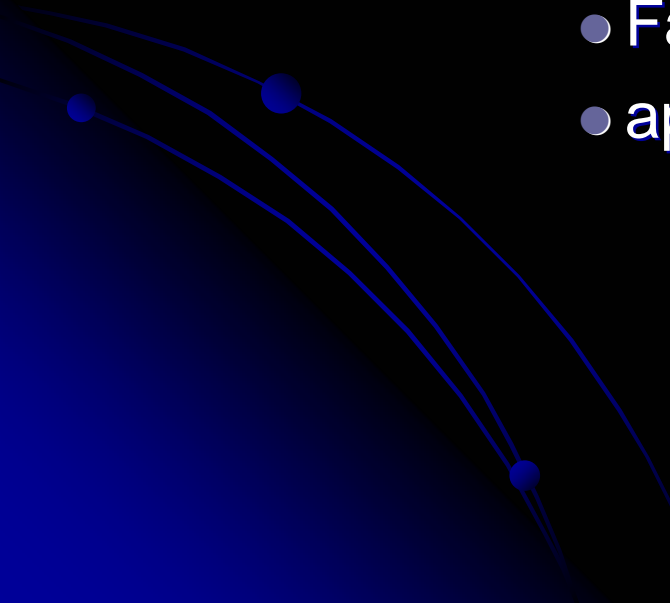


Sandhills Ranch



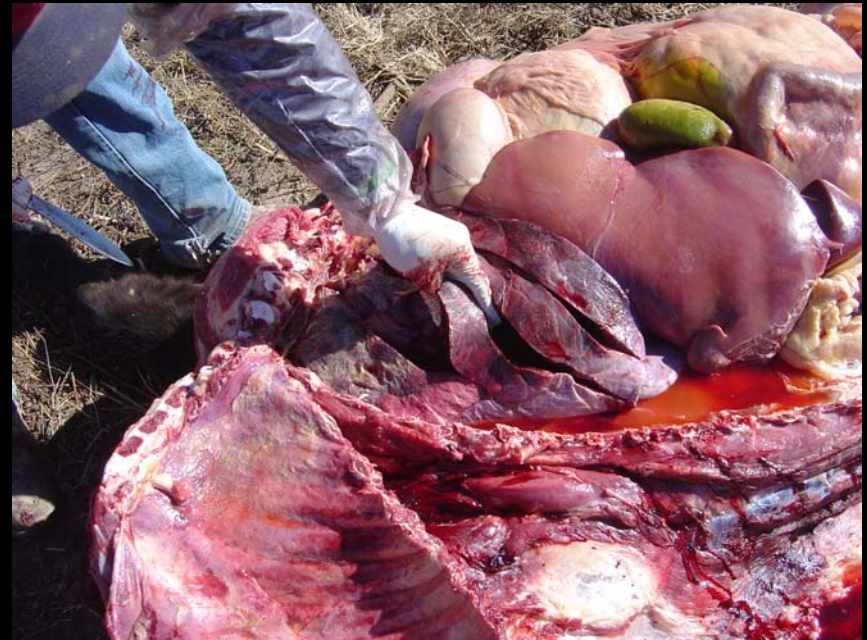
- 15 Bred Heifers
- Culling & Death Loss
- PI animals:
 - 2 calves, 1 dam

Farm / Ranch / Feedyard

- Beef cow herd (Farming)
 - Multiple ownership
 - approx. ~ 600 hd
 - Feedyard
 - Family run
 - approx. ~ 4000 hd.
- 

Farm / Ranch / Feedyard

- Pen performance
- Morbidity/Mortality
- Individual calves
- Diagnostic testing
- Results



Farm / Ranch / Feedyard

- 2002 Ranch born calves
- April 2003
- Single feedyard pen
- 3 animals

- Diagnostic sample submission
- BVD IHC testing

Lab Results:

- Mycoplasma
- E. coli
- Campylobacter
- Clostridium perfringens
- Coccidia
- Crypto
- Virology – negative
(everything)

Farm / Ranch / Feedyard

Laboratory Diagnosis:

- Severe necrotizing and hemorrhagic enterocolitis
- Severe chronic-active suppurative bronchopneumonia and pulmonary abscesses
- Severe suppurative mesenteric lymphadenitis
- Mild acute multifocal suppurative hepatitis
- Mild focal chronic interstitial nephritis

● BVD IHC test results

Ear notch sample

LAB #	ANIMAL ID	RESULT
1	321 Green	+Positive+
2	04 White	Negative
3	102 Red	+Positive+

Farm / Ranch / Feedyard



- 'Entire Herd Test'
 - High risk
 - Tested 575 calves
 - 4 PI's
 - 1 Inconclusive
- Testing process:
 - Calves - (action)
 - Bulls
 - Cows
 - Heifers
 - Herd additions

Ranch / Feedyard

- Testing Purpose
- Two Cow Herds
- Finishing yard



Ranch / Feedyard

- Spring 2003:
 - Early herd 194 tested ~ 2 PI calves
 - Late herd 143 tested ~ None
- Testing Process:
 - Calves
 - Cows
 - Bulls
 - Purchased heifers



Other Testing

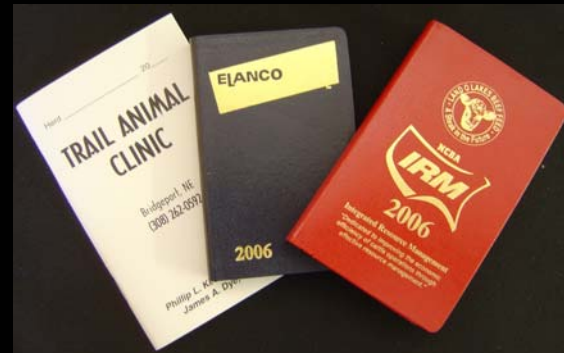
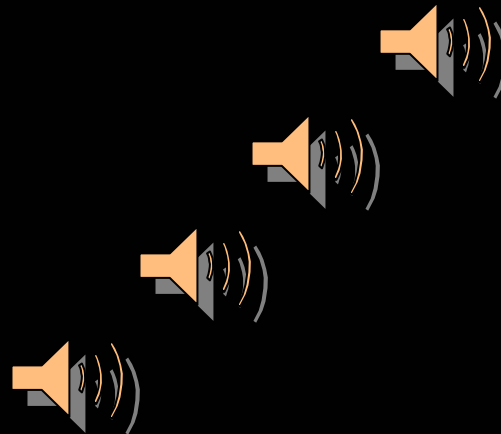
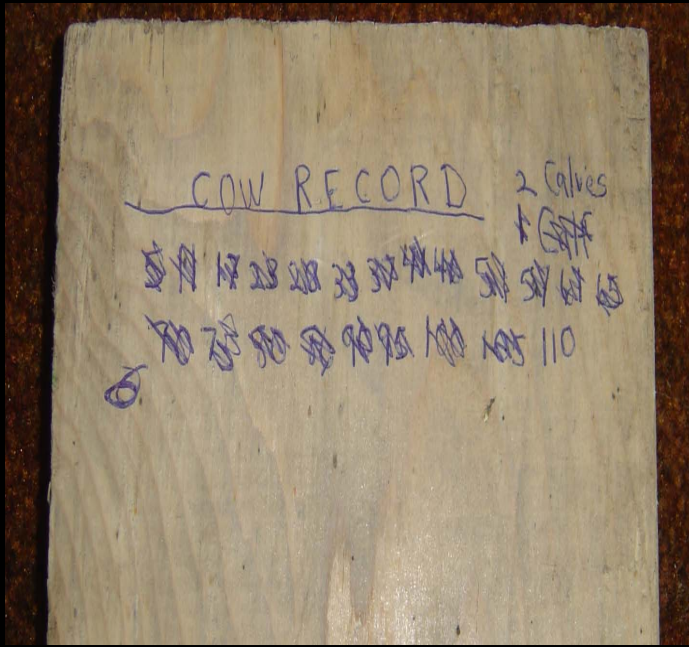
	<u>PI's</u>
● May 2003 ~ 6 Feedyard chronics	0/6
● Nov 2003 ~ 28 hd. Suspect calves (feedyard)	1/28
● Dec 2003 ~ "Grafted calf" (Salebarn purchase)	1/1
● Feb 2004 ~ 18 suspect calves (feedyard)	0/18
● 1 ½ year period ~ 7500 hd. Feedyard	1/ ?30
● 2 ½ year period ~ 5500 hd. Feedyard	2/ ?40
● High risk purchased cows ~ 31 hd. (1 bull)	0/32
● Oct 2005 ~ "Grass yearling" (In the feedyard)	1/1

Observations

- Victories
- Disappointments
- Knowledge / Uncertainty
- Wizardry / Science
- Learning Process
- Data Collection
 - “Record Keeping”



Record Keeping System



Summary:

1. Sandhills Ranch

- Testing ~ Spring 2002
- Consultation / Risk Assessment
- Current Plan / Results
 - Vaccination: Spring
 - Cowboy observations



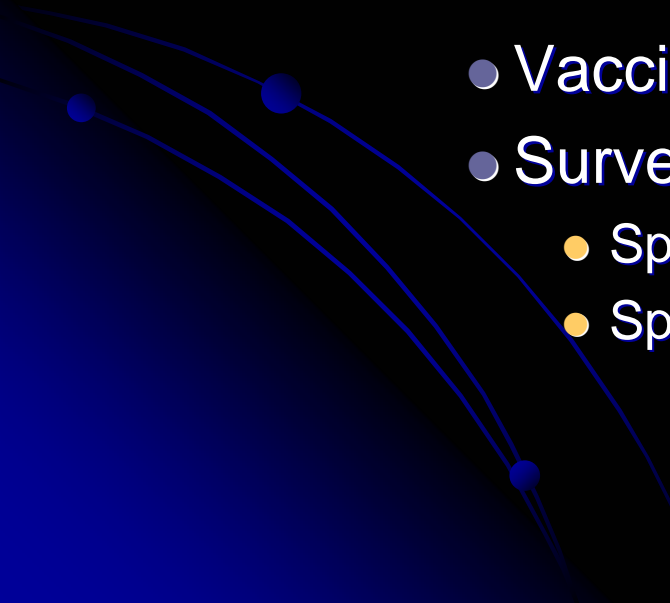
Summary:

2. Farm / Ranch / Feedyard

- Testing ~ Spring 2003
- Consultation / Risk Assessment
- Follow-up Testing
- Current Plan / Results
 - Vaccination: Fall
 - Herd Additions



3. Ranch / Feedyard

- Testing ~ Spring 2003
 - Consultation / Risk Assessment
 - Follow-up Testing
 - Current Plan / Results
 - Vaccination: Spring
 - Surveillance Plan
 - Spring 2004 ~ Sentinel animals
 - Spring 2005 ~ Tested calves
- 

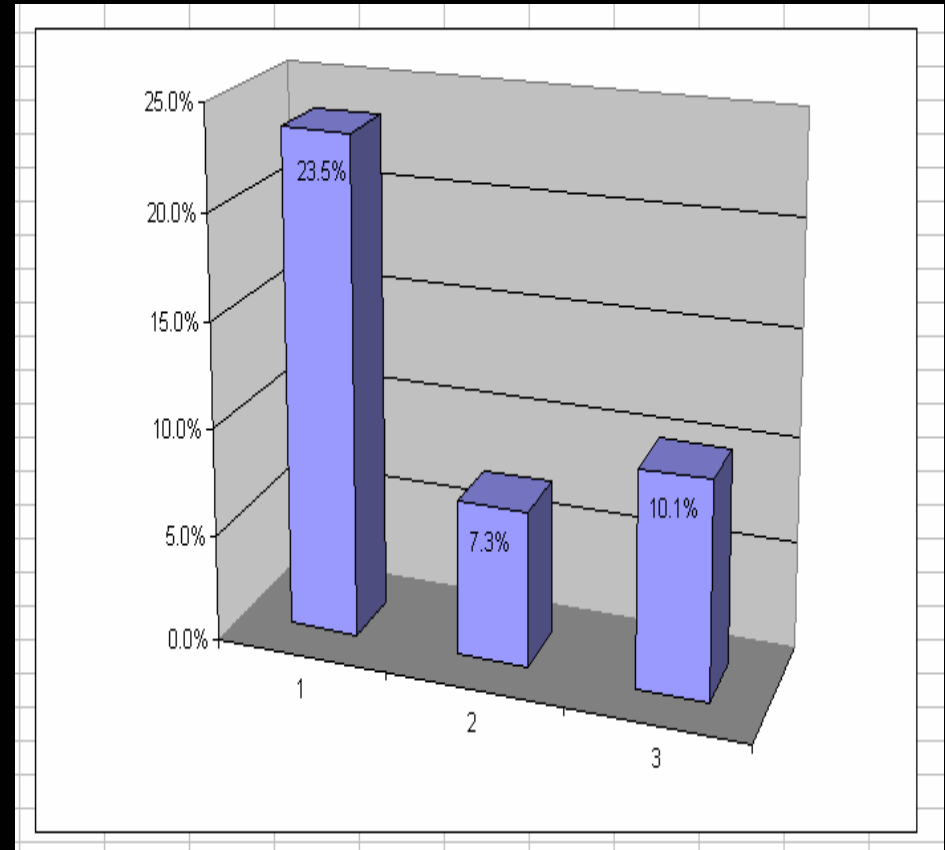
3. Ranch / Feedyard

BVD - Spring/Fall Titer Results								
Lab ID	Calf ID	BVD 1	BVD 2	Magnitude Change				
1a	96	512	1024					
1b		32	32	(4)	(5)			
2a	38	8192	4096					
2b		1024	512	(3)	(3)			
3a	159	2048	256					
3b		128	8	(4)	(5)			
4a	133	2048	2048					
4b		128	64	(4)	(5)			
5a	145	32	512					
5b		2	16	(4)	(5)			
6a	48	128	128					
6b		2	2	(6)	(6)			
7a	126	2048	128					
7b		128	8	(4)	(4)			
8a	45	2048	512					
8b		64	16	(5)	(5)			

3. Ranch / Feedyard

Feedyard Morbidity (Respiratory disease)

- Pre-Testing (2002-2003)
 - ~330 hd.
- Post-Testing (2003-2004)
 - ~390 hd.
- Post-Testing (2004-2005)
 - ~319 hd.
 - ½ Early weaned
(16 / 24 pulls – August)



Conclusions

or . . . Things I've Learned

- 'Entire Herd' test
 - Open Cows
 - Non-Biological Dams
 - Grafted calves
 - Aborted / Dead calves
 - Missing tags
 - Record keeping
 - Bulls, Replacement heifers, Steers
- Handling Herd Additions
 - Timing
 - Dam & Calf ??
 - New Bulls

Conclusions

or . . . More Things I've Learned

- Factors beyond control

- Fenceline exposure
- Wildlife
- Stray cows / bulls
- Lost surveillance numbers
- Other ?

- Uncertainties

- Test selection / application
- Meaning of one negative herd test
- Surveillance methods
- etc.

Final Conclusion

Usually . . .

If we have all the answers,
we probably haven't ask all
the questions!



Thank You !

