BVD CONSULT
Herd-Specific BVD Control

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Kansas State University
BVD Control Plan

• Includes management practices that:
  ▪ Reduce the likelihood of introducing BVD virus from external sources.
  ▪ Reduce the spread of BVD virus already on the ranch.
  ▪ Reduce the severity and economic impact of existing or new BVD virus exposure on the ranch.
More Specifically:
Keys to BVDV Control

• Prevent creation of PI calves
  • Improve herd immunity
  • Improve immunity of dam
  • Keep pregnant herd away from at-risk cattle

• Identify and remove PI cattle
Transmission of BVDV

- Persistently infected (PI) cattle have a very high and persistent viremia
- Virus is shed from all body secretions: nasal discharge, saliva, semen, urine, tears, milk, and feces
- One hour contact with PI will transmit virus to susceptible cattle
- Air transport over short distances is likely
- Transiently (temporarily) infected cattle are far less efficient at transmitting BVDV
Susceptible pregnant female (non-PI) infected with BVDV at about 1½ - 4 months of gestation.
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BVDV persistently infected (PI) calf is produced.

Most common route (Over 90%)

BVD virus from any source
Susceptible pregnant female (non-PI) infected with BVDV at about 1½ - 4 months of gestation.

BVDV persistently infected (PI) female becomes pregnant.

BVDV persistently infected (PI) calf is produced.

Most common route (Over 90%)

Less common route (Less than 10%)
BVD Cow-Calf Herd Distribution

• PIs distributed in clustered pattern
• Many herds have 0% PIs
• Affected herds may up to 10% PIs
• Montana Herd survey 2006-09:
  38/585 (6.5% herds w/ PI)
BVD Prevention and Control Plan

1. Find and remove PI animals
2. Segregate and Isolate: Institute biosecurity measures to prevent herd exposure to PI animals and to limit opportunity for exposure to TI animals
   • Segregate current herd from other cattle
   • Test and quarantine all herd additions
3. Apply vaccination protocol to reduce risk of fetal infection in event of BVDV exposure
BVD Prevention and Control Plan

• Not “One Size Fits All”

• Must be customized to type of cattle, management and operational constraints
  ▪ Positive vs. negative herd status
  ▪ High-risk vs. low-risk activities / management
  ▪ Risk-averse vs. risk-taking client
  ▪ Appropriate surveillance and control varies
  ▪ Ability to make management adjustments varies
  ▪ Is best determined with the assistance of a veterinarian involved with the management of the ranch
Traditional Approach: www.bvdinfo.org

NCBA BVD Working Group & AVC BVD Committee

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BVD Virus Control and Eradication - Academy of Veterinary Consultants Technical Briefs

- Cow-Calf Production: Version 1.0
- Stocker / Feedlot Production: Version 1.0

5th U.S. BVDV Symposium

5th U.S. BVDV Symposium:
Date: November 17-18, 2011
Location: San Diego, California
Preventing, detecting, and controlling the spectrum of diseases caused by BVDV
For more information visit the conference website at:
CONSULT: Consistent Online Novel Science-based User-friendly Learning Tool

• Objective:
  - Create an interactive, web-based BVD risk assessment tool for producers and DVMs
  - Incorporate recommendations into interactive format
  - Mimic phone conversation with an expert
Is BVDV circulating within this herd?

Herd Surveillance
- e.g. Sentinel calves
- Pooled PCR
- Serology
- Skin biopsy

BVDV+

Biocontainment
Vaccinate to minimize BVDV TI and further transmission
Prevent BVDV effective contact between pregnant cattle and natural or purchased herd additions
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BVDV-

Biosecurity
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fenceline contact etc.
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Yes

Yes

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Vaccinate to reduce BVDV disease with risk of continued circulation or introduction of BVDV
Do nothing with risk of continued circulation or introduction of BVDV

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BVD CONSULT Team

• Brad White, Kansas State University
• Bob Larson, Kansas State University
• Dale Groteleschen, University of Nebraska (Zoeitis Animal Health)
• David Smith, Mississippi State University
• Dan Givens, Auburn University
• Richard Randle, University of Nebraska
• Sherri Merrill, KSU / Allen, KS
Welcome to BVD CONSULT

BVD CONSULT was designed to aid cattle producers and veterinarians in creating BVD control, prevention and eradication strategies that are specific to individual herds. From this site you can access peer-reviewed research articles that pertain to the information found in BVD CONSULT. You can also access other peer-reviewed BVD articles. If you are looking for more information about the disease, look here.

Frequently Asked Questions

Click here for the answers.

BVD CONSULT Supporting Articles

- BVD Decision/Management Guidelines for Beef Veterinarians
- Integrated BVD Control Plans for Beef Operations
- BVD: Review for Beef Cattle Veterinarians
- Persistent Infection of Calves with Bovine Viral Diarrhea Virus on U.S. Beef Cow-calf Operations
- Considerations for Bovine Viral Diarrhea (BVD) Testing

www.bvdinfo.org
Welcome to BVD (Bovine Viral Diarrhea) CONSULT (Collaborative, Online, Novel, Science-based, User-friendly, Learning, Tool). BVD CONSULT was created for the benefit of the beef cattle industry to enhance the control of BVD in beef cow-calf herds. This project was funded in part by an educational grant from Zoetis and was produced by Brad White, DVM, MS (Kansas State University), Bob Larson, DVM, PhD (Kansas State University), David Smith, DVM, PhD (Mississippi State University), Daniel Givens, DVM, PhD (Auburn University), Dale Grotelueschen, DVM, MS (Zoetis), Richard Randle, DVM, MS (University of Nebraska-Lincoln), and Sherri Merrill, DVM (Allen, Kansas).

Develop a BVD Control Strategy for Your Herd.

(updated 4/1/13)

BVD CONSULT is designed to help beef cow-calf producers minimize the impact of BVD on their herd, or keep BVD out of their herd if it is not currently infected. Please work closely with your veterinarian to develop the best BVD control strategy for your operation.

You will be asked several questions regarding management practices on your ranch. Below each question, you will see this icon: . Click on this icon to see more information about the management practice and why it is important for control and eradication of BVD.

If you are not currently performing each practice, but you are willing and able to start, then you should answer "Yes" to that question by clicking on the appropriate link. If you change your mind after answering a question, click on the "Go Back" link and you will be taken back to the previous question. You will have the option to save/print a report after you have answered all of the questions. This report will include how you answered each question and the response that you were given.
To start with, do you have active BVD in your herd?

For a definition of active BVD and more information, click on the icon below.

Yes, I have active BVD in my herd.

I am unsure about the BVD status of my herd. OR I do not have active BVD in my herd.
Yes, I have active BVD in my herd.

You have indicated that you have active BVD in your herd; if this is not correct, click on the "Go Back" link.

BVD may impact the health of your herd through decreased fertility, abortions, weak and deformed calves, diarrhea and decreased immunity to other diseases.

Let's work on a plan to reduce the impact and possibly eliminate BVD from your herd.
To start with, do you have **active** BVD in your herd?

*For a definition of active BVD and more information, click on the icon below.*

Yes, I have active BVD in my herd.

I am unsure of the BVD status of my herd. OR I do not have active BVD in my herd.
I am unsure of the BVD status of my herd. OR I do not have active BVD in my herd.

You have indicated that you have not had a confirmed diagnosis of BVD in your herd in the last year. Let's create a plan that will minimize the risk of introducing BVD into your herd and allow problems to be detected early so that the impact of diseases or improper management can be minimized.
Will you institute a testing strategy that identifies all BVD persistently infected (PI) cattle and remove them from your herd?

For more information regarding testing for PI cattle, click on the icon below.

Yes, I will institute a testing strategy that identifies all BVD PI cattle and remove them from my herd.

No, I will not institute a testing strategy that identifies all BVD PI cattle and remove them from my herd.

Go Back
Yes, I will institute a testing strategy that identifies all BVD PI cattle and remove them from my herd.

You have made a wise decision. By testing and removing PI cattle you will greatly reduce the impact of BVD on your herd. Be sure to test and cull PI cattle prior to bringing any new cattle into your herd so they are not exposed to the BVD virus circulating in your herd.

If you are not sure which cattle to test and when to collect the samples, please select "Go Back" and then click on the more information icon. Contact your veterinarian to get specific information about sample collection and shipment of the samples to a laboratory.
Will you institute a testing strategy that identifies all BVD persistently infected (PI) cattle and remove them from your herd?

For more information regarding testing for PI cattle, click on the icon below.

Yes. I will institute a testing strategy that identifies all BVD PI cattle and remove them from my herd.

No. I will not institute a testing strategy that identifies all BVD PI cattle and remove them from my herd.

Go Back
No, I will not institute a testing strategy that identifies all BVD PI cattle and remove them from my herd.

This is not a wise choice. Testing is the best control strategy. It will be difficult to eliminate BVD from your herd without testing for BVD PI status and removing the positive animals.
BVD CONSULT

- 6 to 10 questions based on choices made
- Designed to mimic a conversation between a veterinarian and a producer concerned about BVD
- Asks if the producer is willing and able to perform specific management practices that will aid in prevention or control and eradication of BVD
- More information is available in the tool to help with the decision making process
Will you use an appropriate BVD vaccination strategy on heifers?

Click on the icon below to see appropriate vaccination strategies for heifers.

I will use an appropriate BVD vaccination strategy on heifers.

No, I will not use an appropriate BVD vaccination strategy on heifers.

Go Back
<table>
<thead>
<tr>
<th>Not Appropriate</th>
<th>Single dose of killed virus vaccine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriate</td>
<td>Two doses of killed virus vaccine with the second dose at least 30 days prior to breeding*</td>
</tr>
<tr>
<td>Appropriate</td>
<td>One dose of modified live virus vaccine at least 30 days prior to breeding*</td>
</tr>
<tr>
<td>Appropriate (Recommended)</td>
<td>Two or more doses of modified live virus vaccine with the last dose at least 30 days prior to breeding*</td>
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</tbody>
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*All vaccines given according to label instructions

There are several possible vaccination strategies for heifers. The protocol shown in green is the most likely to establish a high level of immunity to BVD in your heifers. The protocols shown in yellow should provide adequate immunity. The protocol in red, however, will not establish immunity to BVD.
BVD CONSULT

- 6 to 10 questions based on choices made
- Designed to mimic a conversation between a veterinarian and a producer concerned about BVD
- Asks if the producer is willing and able to perform specific management practices that will aid in prevention or control and eradication of BVD
- More information is available in the tool to help with the decision making process
- After clicking on “yes” or “no” to each question, an appropriate response is given based on the choices that have been made, followed by another question
- The questions that are asked, and the responses given, vary depending on the previous answers
Last Question

Will you apply appropriate surveillance methods?

Click on the icon below to see appropriate surveillance methods.

Yes, I will apply appropriate surveillance methods.

No, I will not apply appropriate surveillance methods.

Go Back
Surveillance for BVD is best accomplished by a combination of monitoring for signs of disease and testing for the virus. Choose the method that best fits your operation.

<table>
<thead>
<tr>
<th>Surveillance Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest Cost &amp; Least Reliable</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>Highest Cost &amp; Most Reliable</td>
</tr>
<tr>
<td>4</td>
</tr>
</tbody>
</table>

The surveillance method shown in red is not appropriate because of the active BVD status of your herd. Choose the level of surveillance, shown in green, that best fits your marketing scheme and aversion to risk.
Will you apply appropriate surveillance methods?

*Click on the icon below to see appropriate surveillance methods.*

Yes, I will apply appropriate surveillance methods.

No, I will not apply appropriate surveillance methods.

Go Back
Summary

The program that you have chosen to eliminate BVD from your herd has some limitations. Your herd is at risk for exposure to BVD through high risk contact. In this situation, you are relying on herd immunity to prevent the formation of new PI calves. Excellent herd immunity can be established with the vaccination strategy that you selected but it will not prevent the formation of PI calves 100% of the time. Please take a creative look at your operation to determine if any changes could be made to avoid this high risk contact. If high risk contact cannot be eliminated, you may want to reevaluate your decision to test and cull from a financial perspective. Testing for BVD is still the best control strategy if eliminating BVD from your herd is your goal. Surveillance will be extremely important so any PI calves can be removed from your herd before additional PI calves are created.

Work closely with your veterinarian to evaluate these recommendations and make the best choices for your herd. This herd health strategy, with the exception of whole herd testing, should be followed every year.

If you would like to revise some of your answers, please close out of the program and go through BVD CONSULT again from the beginning. Changing some of your answers may change the other recommendations, or the emphasis that is placed on a particular practice.
BVD CONSULT

This report has been generated specifically for this herd. Use of these recommendations for other herds may not create the desired results. The following report records your answers and the responses that were given.

Yes, I have active BVD in my herd.

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You have indicated that you have active BVD in your herd; if this is not correct, click on the 'Go Back' link. BVD may impact the health of your herd through decreased fertility, abortions, weak and deformed calves, diarrhea and decreased immunity to other diseases. Let's work on a plan to reduce the impact and possibly eliminate BVD from your herd.

Yes, I will institute a testing strategy that identifies all BVD PI cattle and remove them from my herd.

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You have made a wise decision. By testing and removing PI cattle you will greatly reduce the impact of BVD on your herd. Be sure to test and cull PI cattle prior to bringing any new cattle into your herd so they are not exposed to the BVD virus circulating in your herd. If you are not sure which cattle to test and when to collect the samples, please select 'Go Back' and then click on the more information icon.

Contact your veterinarian to get specific information about sample collection and shipment of the samples to a laboratory.

No, I will not quarantine and test all new cattle coming into my breeding herd.

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This is not a wise choice. If you do not quarantine and test newly purchased cattle, you risk bringing additional BVD into your herd. Why risk exposing your herd to BVD after you have invested in testing and