

# Welcome to the Age of Ranch Biosecurity

By Lisa Duffey, Montana Beef Network Coordinator with Clint Peck, Senior editor, BEEF Magazine.



*“The beef and dairy industries suffer enormous loss due to effects of bovine viral diarrhea virus (BVDV) infection. The highly mutable nature of BVDV and the emergence of highly virulent strains of BVDV contribute to limited success of present control programs. Also, persistently infected (PI) cattle are the primary source of infection and effective testing procedures are available to identify those infected carriers.*

*Therefore, it is the resolve of the Academy of Veterinary Consultants that the beef and dairy industries adopt measures to control and target eventual eradication of BVDV from North America. - Position statement on Bovine Viral Diarrhea Virus, Academy of Veterinary Consultants, approved by majority vote of membership, November 2001”.*

The Montana BVD-PI Herd Screening Project is sponsored by Montana State University and the Montana Stockgrowers Association. The project’s goal is to investigate the role of BVD PI screening in improving the overall health of Montana’s cow herd and adding value to the state’s calf crop. The voluntary project is providing technical assistance and limited financial support to Montana ranchers who want to screen their herds for BVD PI status.

BVD PI screening should be part of a program involving vaccination, biosecurity and overall herd health management. The screening protocol assists the producer in finding all PI animals in the herd and also assures that new arrivals are BVD PI free.

## **BVD PI Herd Screening Project Recommendations**

- Test animals before bull turn out to avoid exposure of a PI during breeding.
- Sampling is based on a small ear notch placed in a dry tube kept cool or frozen.
- The same tissue sample used for initial pooled reverse transcriptase polymerase chain reaction (PCR) screening is the source sample for re-testing to identify individual “reactors” in the pool.
- Cows do not need to be sampled and tested unless they have a positive PI calf.
- Individual animal identification is critical to match all samples with the animal tested and match the calf with its dam.
- A plan should be developed to eliminate PI animals from the herd.
- If an animal tests negative for BVD PI status, there’s no need to retest that animal.
- PI surveillance should include the necropsy examination of as many aborted fetuses, still-borns and pre-weaning deaths as possible.
- PIs that live to be breeding females can horizontally transfer of the virus to other animals in the herd – and they will always produce a PI calf.

### **Test new entries into the herd:**

- 1. Home-raised yearling heifers**—heifers should be tested prior to breeding for BVD PI status. If the heifer was tested as a calf and found to be negative there is no need to retest.

2. **Purchased open heifers**—All heifers should be tested before purchasing or before commingling with herd and the start of breeding season.
3. **Purchased bred heifers or cows**—All heifers or cows with an unknown BVD PI status should be kept separate from the home herd. Calves from these animals must be tested prior to commingling.
4. **Bulls**—Should be purchased as BVD PI tested free. If not, bulls should be tested prior to breeding season. A good time to take an ear notch is when doing breeding soundness exams.

#### **Calves**

1. All calves born alive should have an ear notch sample taken prior to bull turn-out. Ear notches can be frozen for up to 30 days, facilitating sampling over an extended period of time.
2. All calves aborted, stillborn or that died before normal sampling time should have an ear notch sample taken.
3. All grafted calves purchased should have an ear notch sample taken.

#### **Cows**

1. All open cows should be sampled if not sold before breeding.
2. Cows that have not calved at the time of sampling calves should be separated. Samples should be taken from their calves.
3. All cows that lose a calf and a sample was not obtained from the calf should be tested.

### **Montana Agroterrorism Briefing**

A study by RAND Corporation researcher Peter Chalk focuses attention on the issue of agroterrorism – the deliberate introduction of a disease agent, either against livestock or into the food chain, to undermine socioeconomic stability and/or generate fear.

Chalk says the capabilities of foreign or domestic threat elements to exploit vulnerabilities in agriculture are not considerable. Despite the ease and implications of a successful attack, agroterrorism is unlikely to constitute a primary form of terrorist aggression because it lacks a single, highly visible point of focus for the media (a primary consideration in any terrorist attack).

However, disrupting the food sector could well emerge as a viable secondary modus operandi to further destabilize an already disoriented society after a conventional terrorist campaign. Being able to use cheap and unsophisticated means to undermine a state's economic base gives this form of aggression a high cost/benefit payoff that would be very useful to groups faced with overcoming significant power asymmetries.

But, he says, terrorists can choose from a large menu of bio-agents, most of which are environmentally hardy, are not the focus of concerted livestock vaccination programs, and can be easily smuggled into the country. The food chain offers a low-tech mechanism for achieving human deaths. Many animal pathogens cannot be transmitted to humans, which makes them easier for terrorists to work with. Finally, because livestock are the primary vector for pathogenic transmission, there is no weaponization obstacle to overcome.

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## **Chalk's Recommendations**

Short-to medium-term recommendations include the following:

1. Conducting a comprehensive needs analysis to determine appropriate investment requirements for the federal emergency management infrastructure.
2. Increasing the number of state and local personnel with the skills to identify and treat exotic foreign animal diseases.
3. Assessing how to foster more coordinated and standardized links between the U.S. agricultural and intelligence communities.
4. Focusing attention on issues of law enforcement and the use of forensic investigations to determine whether disease outbreaks are deliberate or naturally occurring.
5. Revisiting the effectiveness of the passive (voluntary) disease reporting system, especially in providing more consistency with indemnity payments to compensate farmers for destroyed livestock.
6. Evaluating surveillance, internal quality control, and emergency response at food processing and packing plants to weigh the immediate costs of improving biosecurity against the long-term benefits of instituting those upgrades.

Over the longer term, additional effort should be directed toward standardizing and streamlining food-supply and agricultural safety measures within the framework of a single, integrated strategy that cuts across the missions and capabilities of federal, state, and local agencies.

### **Bovine Viral Diarrhea BVD Update (April 2006)**

Montana's Beef Quality Assurance Program started a statewide screening project to determine incidence of persistently infected (PI) BVD cattle. To date, 50 ranches have enrolled and this involves 28,276 calves, replacement heifers and bulls in the program.

**For more information about this program, call John Paterson, Extension Beef Specialist at 994-5562**

### **Winners and judges of the graduate student poster competition at the Montana Livestock Forum and Nutrition Conference.**

