

# Frontal Assault on BVD

Montana producers take aggressive action to identify and eliminate bovine viral diarrhea.

by Ed Haag

► When it comes to cattle persistently infected with BVD, looks can be deceiving. This seemingly healthy cow and calf are both PI-positive.

Researchers say that with the tests and vaccines available today, there is no reason bovine viral diarrhea (BVD) can't be eliminated, and Montana State University (MSU) beef producers are out to do just that.

Last year, the estimated costs attributable to BVD to just one segment of the U.S. beef industry exceeded \$3 billion. That number applies only to the losses incurred in the nation's feedlots and does not include cow-calf, stocker, seedstock and dairy operations.

Surprisingly, a majority of experts in the field say those losses were totally preventable. "There is no reason why any beef or milk producer should have BVD in his herd," says Jim Evermann, a professor in the College of Veterinary Medicine at Washington State University. "We just have too many tools at our disposal to combat the disease."

If BVD-infected cattle go undetected, they can affect a beef operation's bottom line in a variety of ways, ranging from secondary infections due to suppressed immune systems to poor reproductive performances among infected heifers and cows.

Evermann notes that beef and dairy operators who continue to ignore the implications of the disease can now add another expense to that list — the expense of litigation. He believes those who sell BVD-

infected animals, knowingly or unknowingly, to other beef producers will face serious liability issues.

"With tests available, ignorance will no longer be an excuse," he says.

Clint Peck, director of the Montana Beef Quality Assurance program at MSU, considers it more of a moral issue than a legal one. "We feel it is the moral responsibility of anyone selling cattle — seedstock or otherwise — to market animals that are disease-free," he says. "Certainly with regard to PI (persistently infected) BVD animals, with the testing protocol available today, we have an affordable and practical means with which to assure buyers they are receiving PI-free animals."

## Insidious disease

What makes BVD such an insidious disease, Evermann says, is that it manifests itself in two distinct types: acute (transient) and persistent infection. He notes that each BVD type should be treated as a separate problem and addressed with a different set of tools.

Acute BVD, the most common form of the two, is an infection lasting several weeks, with a contagious phase of 14-42 days. Cows and heifers contracting acute BVD any time

during pregnancy are susceptible to aborting. In addition, the acute form can lead to enteric and respiratory tract diseases, infertility or reduced conception rates, congenital abnormalities and birthing PI calves.

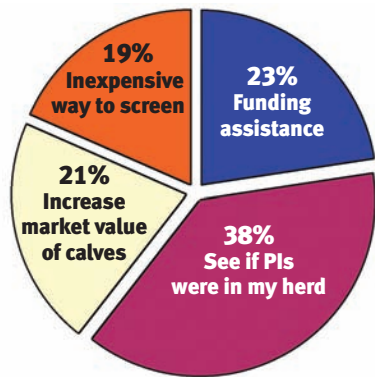
Acute BVD can be eliminated from the herd by testing all animals for BVD, culling those that test positive for PI, and establishing an aggressive vaccination program for all calves when they reach 5 and 6 months of age. An annual booster should be administered to all heifers and cows prior to breeding.

"This is important because we are not only protecting the mother cow from BVD, but we are also preventing her from giving birth to a PI calf," Evermann says.

The cost of the vaccine is \$5-\$7 per head, depending on the number of animals being vaccinated. Evermann notes that several U.S. Department of Agriculture (USDA)-approved vaccines are available, and it is wise to consult with your veterinarian to determine the type best-suited to your operation. He adds that all new animals should be tested for BVD prior to being introduced into the herd.

Unlike acute BVD animals, which often display clinical symptoms, PI animals may

### Why did you choose to participate in the Project?\*



\*Responses to survey of ranches enrolled in the Montana BVD-PI Herd Screening Project.

not display any overt signs of BVD, even though they remain infectious throughout their lives and represent a serious threat to herd health.

“Beef producers concerned about the future of their herd should test for and cull all PIs,” Evermann says. “As long as these animals are around, there will be outbreaks of BVD and the accompanying consequences.”

### Persistent infection

PI cattle are infected with the BVD virus before birth at 80-100 days of gestation. Unable to produce BVD antibodies, these animals spend the rest of their lives shedding active virus particles in their saliva, urine and feces. PI-infected bulls also transmit BVD through their semen.

If the permanently infectious state is not enough to motivate a beef producer, Evermann points out there are other reasons to eliminate PI animals from the herd. Research shows that most are suboptimal performers, with almost half dying before 18 months of age. If heifers reach maturity, they are more likely to have reproductive problems; and if they do give birth, it will be to another PI calf.

It is estimated a single BVD calf that goes undetected will eventually be responsible for infecting 15 of its herdmates.

A recent study conducted at a large Kansas feedlot indicates that PI cattle are the primary means of transmission for BVD in U.S. feedlots. “Cattle Empire Feedlots in Satanta, Kan., calculates that a single PI doubles the cost of gain for that entire pen,” says John Paterson, Extension beef specialist for MSU.

### Montana has a plan

It is information like that which initially motivated Paterson and his colleagues at MSU to initiate a statewide program to

identify and remove all PI cattle from the state’s beef herds. Supported by the Montana Stockgrowers Association and funded through the Montana Beef Network, the program was implemented in response to concerns voiced by some feedlot operators in Nebraska.

“We had been working for five or six years trying to reduce morbidity on calves,” Paterson says. “And then, about 18 months ago, these feedyard guys call and say we might be looking at BVD on some of these calves out of Montana.”

Initially, Paterson was incredulous. “Montana cattlemen are professionals who vaccinate for BVD in the fall,” he says. “Around here that is just routine management.”

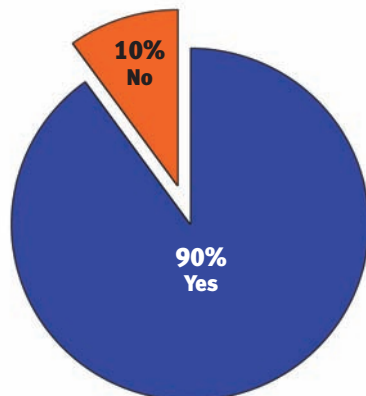
But as he and others looked more closely they began to realize that a reservoir of PI-infected animals might exist in some Montana beef herds.

“Clint Peck, director (of the) Montana Beef Quality Assurance Program, led the charge on this one,” Paterson says. “He suggested a survey to see if we had PI BVD in Montana; get the incidence rate if we did; and then figure out, from an educational standpoint, how we work with the rancher and his veterinarian to eradicate it.”

Out of those initial goals emerged Montana’s current BVD screening program. Implemented in 2006, the program screened 38,500 calves for PI BVD in its first year, surpassing all expectations. “We were just praying a year ago that just maybe we would get 10,000 calves,” Paterson says. “As of [Feb. 15, 2007], we probably have 55,000 calves in the program.”

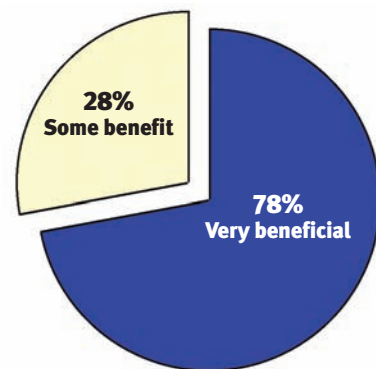
He adds that the program’s goal for 2007 is screening 100,000 Montana calves for their PI status. “We can make a serious dent in the prevalence of this disease if we can screen 100,000 calves for persistent infection.”

### Do you currently vaccinate calves for BVD?\*



\*Responses to survey of ranches enrolled in the Montana BVD-PI Herd Screening Project.

### Rate the benefits of the Montana BVD-PI Herd Screening Project for your cattle operation\*



\*Responses to survey of ranches enrolled in the Montana BVD-PI Herd Screening Project.

Paterson says. “Montana ranchers should feel proud of the leadership they’ve demonstrated in this voluntary, industry-driven approach to animal health management.”

Of the 38,500 animals screened in 2006, 24 tested positive for PI. “The good news is that the incidence is extremely low — 0.07%,” Paterson says. “The bad news is that it is here.”

He attributes the overwhelmingly positive response to the voluntary program to the direct participation of the Montana Stockgrowers Association and the cooperative groundwork established with the large-animal veterinarians in the state. “It is understood that the program will help with the screening, but if a PI positive is identified, it is between the owner of the calf and his veterinarian to develop a management program to clean up his herd,” Paterson says.

Mo Harbac, program assistant and one of the people charged with working directly with the beef producers, credits the ranchers with their ability to grasp the implications of the BVD screening program and respond appropriately. “I was impressed by how quickly they lost their skepticism after we presented them with the information,” she says. “Most of the questions, after reading our material, were on how to collect the samples from their herd.”

Peck has witnessed this enthusiasm firsthand with scores of ranchers who can’t wait to become involved with the project. “More often than not, these ranchers are so anxious to get started testing that they pull the application forms off our web site while we are talking to them,” he says.

### The time is right

Bruce Hoffman, a veterinarian based in Churchill, Mont., and president of Animal

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Profiling International — the company that provides testing services for the Montana program — believes that recent innovations in protocols and screening technology have allowed the program to expand at its unprecedented level.

“To my knowledge, Montana’s PI BVD screening program is the largest one out there,” he says. “As a cow-calf testing program, there is nothing to rival its scope and size.”

He notes that one real advantage of Montana’s program is its producer-friendly sample collection procedure. A small earnotch — the size of a pie-shaped piece taken from a dime — is collected from each animal being tested. The notches are then placed in individual tubes, labeled and submitted. Results are e-mailed to the participant the next business day after receipt of the samples.

Earnotches can be frozen for up to 30 days, facilitating sampling over an extended period of time. This is particularly useful for operations that, logistically, cannot collect all their samples at once.

One innovation that Hoffman believes has contributed to the overall acceptance of the Montana program is a cost-saving procedure that pools contributed tissue samples (usually 28 or fewer tissue samples per pool). If the BVD virus is detected in the “pool,” the individual tissue samples making up the pool are tested using the antigen capture ELISA method.

“Because we are screening a couple dozen samples at once, the cost is significantly less than it would be if they were done individually,” Hoffman says. “This makes large-scale testing, like we are seeing in Montana, financially practical.”

Hoffman is hopeful the successes that screeners are now seeing in their PI BVD ID program will serve as an incentive for other beef producing states. “We think that the model we have generated here, which involves the type of test we use, and the educational effort is worth duplicating elsewhere,” he says. “We have already taken it to several other states and producer groups who are now seriously considering starting a similar program in their part of the country.”

For more information on the Montana PI BVD program, go to its web site at [www.mtbqa.org](http://www.mtbqa.org) and click on “projects.” For those interested in joining or starting a program outside of Montana, contact Peck at (406) 896-9068, (406) 671-0851 or [cpeck\\_99@yahoo.com](mailto:cpeck_99@yahoo.com).

