

# Calving Ease

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## Too Many Sick Calves? Consider the piBVD Calf!

- **How is a persistently-infected BVD (piBVD) calf created?**
- **How can a piBVD calf be a herd problem?**
- **How can we find a piBVD calf if we suspect one is present?**
- **What can we do to prevent having a piBVD animal in the herd?**

### How is a persistently-infected BVD calf created?

Let's take a moment to review the basic biology of the persistently-infected BVD (piBVD) calf. How are these calves created? The "persistently-infected" state refers to an immunity condition. The calf's body does not recognize the BVD virus as a threat to her health. The virus is allowed to live and reproduce in her body.

How did this happen? If a dam is exposed to the BVD virus when the fetus is developing between 30 and 140 days-carried-calf the fetus is exposed to the virus. Unfortunately, the fetal immune system is not developed enough to recognize the virus as a threat – as the immune system develops the virus is allowed to continue living in the calf. She is infected but not "sick." Her body will continue to shed the virus in urine, feces, and saliva as long as she lives.

There is no treatment for this infection. The animal must be culled. Once she is identified as a piBVD case the only ethical moral course of action is to sell her for slaughter. Never, ever sell a piBVD heifer as a dairy replacement.

### How can a piBVD calf be a herd problem?

All piBVD infected animals, regardless of age, shed huge numbers of the highly contagious virus daily in their urine, feces and saliva. Lactating cows also shed the virus in their milk.

In a calf enterprise the presence of a piBVD calf means that many other calves will be exposed to the virus. It is easy to see how the airborne virus particles can be transferred in a calf barn. Even in outdoor hutch housing nearby calves will be exposed this way, too. Also, the saliva often gets passed from calf to calf by our hands. The urine and feces get on our clothing and boots as well as our hands – carrying the pathogen from calf-to-calf very easily.

Most of the newly infected calves (these are the non-piBVD calves) will get sick (usually not too severely). Their bodies will mount an immune response and kill the virus. Now, they are temporarily immune. BUT, if the exposure continues (the piBVD calf is still nearby) their immunity will weaken over time and they may get mildly ill again.

The net effect of all this sickness is to create a continually immune-suppressed population of calves. Their feed conversion efficiency may be compromised. Also, any time the calves are exposed to other pathogens we may have a spike in treatment rates. Remember, these infections are not BVD but rather sickness caused by any opportunistic parasite, bacteria or virus that happens to be around our calves.

### **How can we find a piBVD calf?**

Most piBVD calves die early in life. Unfortunately, some will survive for several years – even get into the milking herd. Some of these survivors will grow more slowly than their age cohort. We might cull them as “poor doers.” It is common for others, however, to grow normally and look just like all the other heifers.

Just looking at a heifer is not a reliable way to find a piBVD animal. Either a sample of blood or skin should be sent to a laboratory for reliable analysis. Developing a farm-specific plan for identifying piBVD animals should be done in consultation with the farm’s veterinarian.

### **What can we do to prevent having a piBVD animal in the herd?**

A consistently applied vaccination program for all animals is essential. A number of commercial vaccines are available that work well to create protective immunity against this virus. Talk with your herd veterinarian about choosing a vaccine that will work well for your herd. And, work with your vet on an immunization schedule that is practical for your dairy that will keep all animals protected. It is especially important to keep these vaccinations up-to-date if you take animals to fairs, shows or exhibitions. The chance of exposure in those settings is likely to be exceptionally high.

A common myth is that vaccination can eliminate BVD. Vaccines help decrease the number and severity of problems. Good vaccination programs help lower the chances of abortion storms, diarrhea and pneumonia outbreaks. Even following a well-planned vaccination protocol will not one-hundred percent eliminate all the reproductive losses or totally prevent PIs. Immunity from vaccinating only decreases the likelihood of these occurring.

Do not bring calves, heifers, cows or bulls on the dairy that have not been tested negative for piBVD status. Get the advice of your veterinarian for planning this testing. Often a second sample (usually blood) taken three to four weeks after the initial sample will be needed to positively identify a piBVD case.

Never assume that because a pregnant dam tested negative that her fetus is also negative. It is true that a piBVD positive dam will always have a piBVD positive calf. BUT, a negative-test dam can have a piBVD positive calf. All that had to happen is for the negative dam to be exposed to the virus between 30 and 140 days in gestation for her fetus to potentially become piBVD positive.

Always test any calf that the dairy intends to raise that comes from a purchased female. Of all the positive results that have come back to our veterinary practice in the past decade the majority of them came from dams that were housed outside the control of the dairy before they calved (for example, purchased springers).

If your dairy has heifers raised by an outside heifer raiser consider selecting a company that has all of its clients piBVD test their heifers before sending them to be raised.

**Thanks to Attica Veterinary Associates, P.C. for their support of Calving Ease.  
Remember to search for “Calves with Sam” blog for profit tips for calf rearing.**