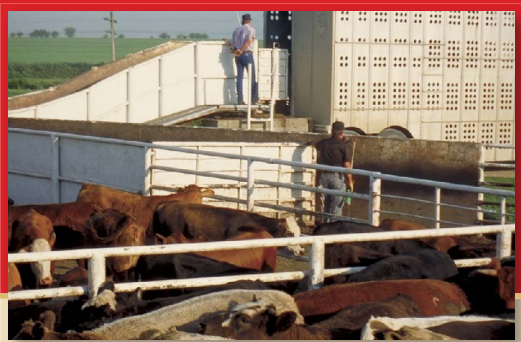


# SHORT COURSE

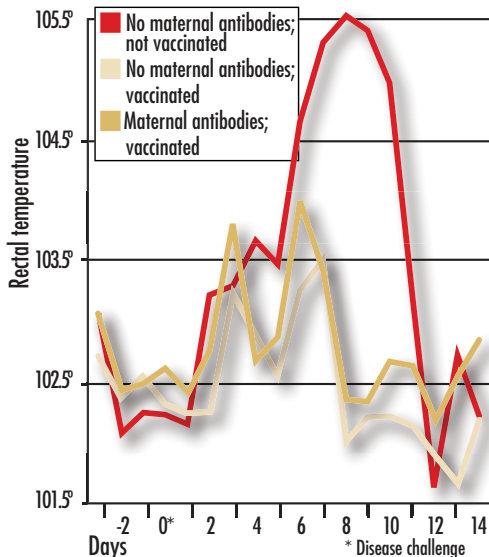
FIRST IN A SERIES



## BVD VACCINE: WHY MODIFIED-LIVE VACCINES CAN FAIL



Fort Dodge Animal Health Technical Services Consultant Dave Ellefson, DVM, explains why feeders can still face problems predicting the consistent effectiveness of most modified-live vaccines. Here's what you can do about it.



**EVEN WHEN** they carried maternal antibodies—which should have interfered with vaccine response—calves vaccinated with PYRAMID® 5 showed less fever and clinical signs of disease than unprotected calves.<sup>1</sup>

**PYRAMID®** with METASTIM® increases immunological response by improving antigen presentation to the immune system. Trials show 95 percent of PYRAMID 5-vaccinated calves showed no clinical type II BVD signs following virulent challenge.<sup>2</sup>

### EVERY FEEDER WHO UNLOADS

**A POT OF CALVES** plays the same guessing game. When did those calves get a last dose of viral vaccine? Did they ever? That's why 98 percent go ahead and hit them with a round, even though we all realize it's the worst time to do it. Often the modified-live vaccine fails to live up to expectations because it was overcome by BVD antibodies the calves were already carrying—from their dam, natural exposure or previous vaccination.

We are learning more about the role of antibodies and the impact they can have in protecting your calf from getting sick. The challenge for cow/calf producers is selecting a vaccine that will overcome maternal antibodies; for the confinement producer, selecting one that will overcome antibodies generated by early vaccination. For modified-live vaccines to stimulate a strong immune response, these vaccine viruses must replicate within the animal. Antibodies can block this replication and diminish or negate the immune response, making the calf more susceptible to illness.

It doesn't take much. Maternal antibodies can last up to 183

days, and BVD titers as low as 1-to-64 can interfere with the immune response. As a consequence, one large heifer study recommended no calf that receives colostrum be vaccinated at younger than 100 days old.<sup>3</sup>

However, new research published last year in the *Journal of the American Veterinary Medical Association* shows it doesn't have to happen.<sup>1</sup> A team of South Dakota veterinarians fed crossbred calves colostrum with and without BVD antibodies, and then vaccinated them with Fort Dodge's PYRAMID modified-live BVD vaccine just five weeks later. When those calves were intentionally infected with type II BVD 3.5 months later, the PYRAMID-vaccinated group developed little or no disease. In contrast, 57 percent of those not given the vaccination either died or had to be put down.

It was the first study of its kind to demonstrate a single dose of modified-live BVD vaccine given at so young an age can stimulate a strong protective immune response—even when calves carry high concentrations of maternal antibodies. The authors suggested the adjuvant in the vaccine—which no other commercial modified-live BVD vaccine uses—could explain the effect.

If you would like more information on this topic, please click on the "Contact Us" tab at [www.FortDodgeLivestock.com](http://www.FortDodgeLivestock.com).

**PYRAMID® TRIANGLE® PRESPONSE® TRICHGUARD® PRISM™**



<sup>1</sup> Zimmerman AD, Boots RE, Valli JL, Chase CC. Evaluation of protection against virulent bovine viral diarrhoea virus type 2 in calves that had maternal antibodies and were vaccinated with a modified-live vaccine. *J Am Vet Med Assoc.* 2006 Jun 1;228(11):1757-61.  
<sup>2</sup> Data on file, Fort Dodge Animal Health.

<sup>3</sup> Munoz-Zanzi CA, Thurmond MC, Johnson WO, et al. Predicted ages of dairy calves when colostrum-derived bovine viral diarrhoea virus antibodies would no longer offer protection against disease or interfere with vaccination. *J Am Vet Med Assoc.* 2002 Sep 1;221(5):678-85.

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