BVD IN YOUR HERD: EAR TODAY AND GONE TOMORROW

A new skin test offers promise in eliminating BVD carriers from beef herds

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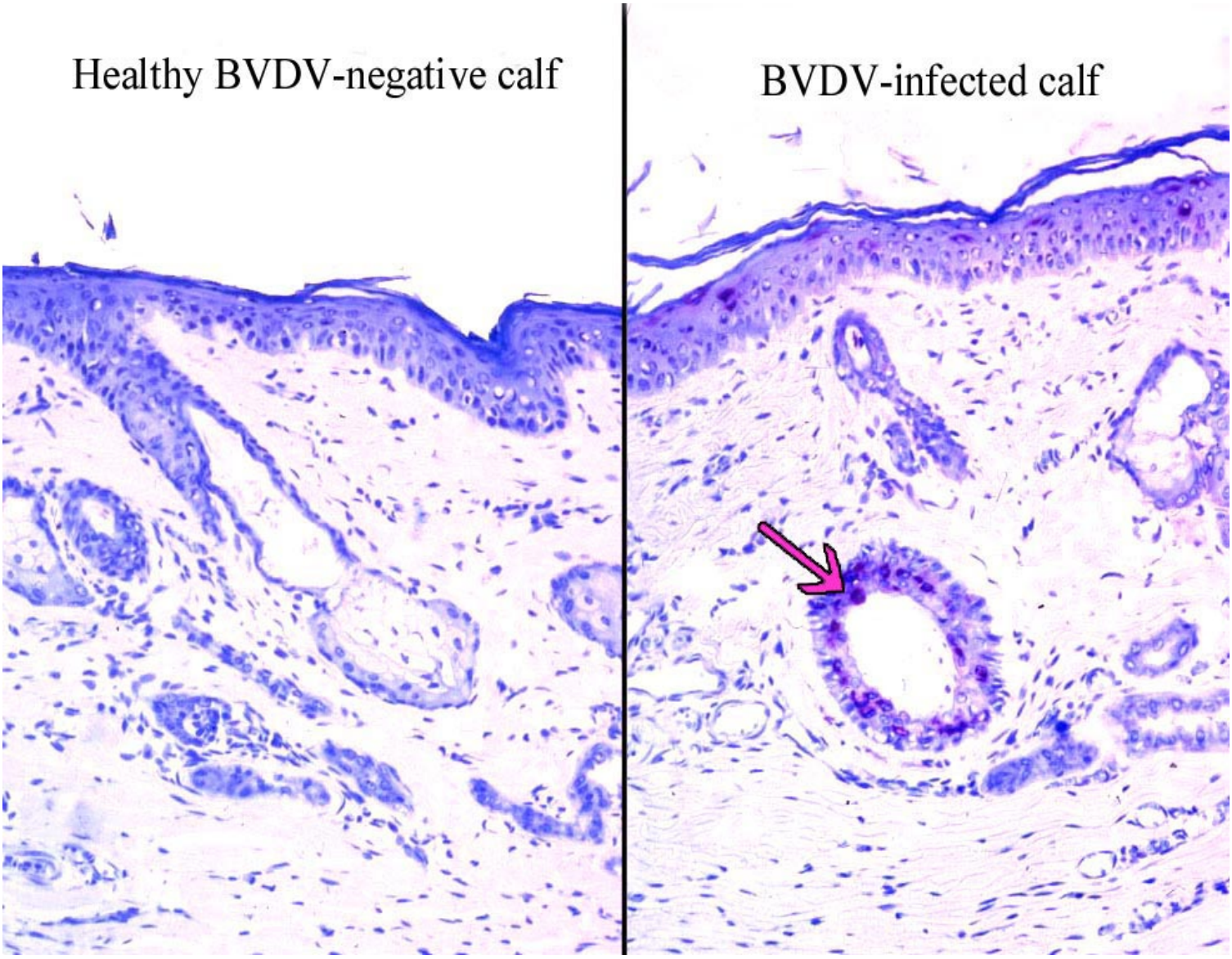
Producers are aware that the BVD virus (BVDV) is responsible for tremendous losses to the beef industry, ranging from promoting pneumonias in calves to causing abortions in cows. Although the virus can be transmitted across fences and by co-mingling of livestock, in most range beef herds the main source of the virus is from carrier animals in the herd that are persistently infected (PI). Carriers are infected in utero in the first 4 months of pregnancy, before the fetal immune system has developed sufficiently to recognize the virus as foreign. As the fetal immune system develops, it thinks that the virus is "normal" and no rejection attempt is made. Thus, a carrier PI animal results and sheds the virus throughout its life.

Eradication possible

It is possible to eradicate BVDV from a herd and some European countries are trying it on a national scale. We are aware of several herds in Wyoming and elsewhere that have done so, although reintroduction is always a possibility. Eradication would be hard if you are a public lands rancher with mixed ownership of herds. For herds that are closed to other cattle, especially during the breeding season and early pregnancy, eradication may be an economic reality.

New Skin Test

The Wyoming State Veterinary Laboratory is now offering a new test on skin biopsies or ear notches. In PI animals, the virus is found in high concentrations in the skin. Rather than using blood, veterinarians and ranchers may want to consider using ear notches from ear marking activities. This test has been found to be highly accurate in early research. Using formalin preserved ear notches or biopsies, the tissue is sectioned and stained with an antibody against BVDV. The test is known as the BVD-IHC (immunohistochemistry) test. Skin that is positive in the test will have cells in hair shafts that stain red (below, right; arrow). By contrast, normal skin lacks these red-staining cells (below, left).



Traditional testing involves blood samples from all cattle in the herd. Virus is detected in the blood by use of a test known as the ELISA. Although highly accurate in animals over 2-3 months of age, the ELISA test has limitations when used on baby calves. Colostrum antibodies against the BVDV interfere with the test. The skin test should eliminate this problem.

An Eradication Scheme

Early eradication efforts were often unsatisfactory because only the cows and replacement heifers were tested. New research reveals that calves nursing pregnant cows during the breeding season are the most likely carriers. This is the reason that BVDV continued to be a problem in some herds even though all adult carriers had been eliminated. With this in mind plus the fact that calves from PI cows are always infected, one can effectively find any carrier calves, and thus identify any potential PI dams, by BVD-IHC testing of the calves initially. This eliminates the cost and hassle of testing the bulk of the cow herd. Dams of any infected calves then need to be tested to see if they are PI's also. The traditional ELISA test on blood can be used on these individuals plus the replacement heifers, cows without calves, and the bull battery.

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