

Test your calves for BVD - the sooner after birth the better

The cornerstone of BVD control is identifying and removing persistently infected (PI) animals before they have the opportunity to infect susceptible pregnant cows during the critical window for generating PI calves. Concerns have previously been raised about using the antigen ELISA to test calves under 35 days of age because of the potential for maternal antibodies ingested through colostrum to bind with the virus leading to false negative results. The results from PCR should be unaffected by the presence of maternal antibodies since the test looks directly for the presence of viral RNA.

It has previously been recommended to wait until calves are over 35 days of age before testing with an antigen ELISA to minimise the risk of false negative results. However, this creates logistical challenges for farmers since the most convenient time to collect samples is often at tagging or disbudding. The additional inconvenience of arranging a separate sampling event at a later date or collecting blood samples instead of ear notch samples may deter farmers from testing their calves.

Since that recommendation was made, there have been changes to the antigen ELISA methodology that have increased its reliability for testing ear notch samples in young calves. Most European countries with national BVD control programmes have been successfully testing calves from birth using the antigen ELISA on ear notch samples for more than a decade and recent preliminary field data from New Zealand suggests that the antigen ELISA is likely to perform similarly under New Zealand farming conditions.

Bringing New Zealand in line with international practices for testing calves, the BVD Steering Committee now recommends that calves in New Zealand can be tested any time after birth using PCR or antigen ELISA on ear notch samples and PCR only on serum/blood samples.

Recommended diagnostic tests to screen calves under 35 days of age for BVD viral shedding

| | PCR | Antigen ELISA |
|-------------|-----|---------------|
| Ear Notch | ✓ | ✓ |
| Serum/Blood | ✓ | ✗ |

All diagnostic tests for BVD should be performed at an IANZ accredited laboratory using a rigorously validated test methodology. A diagnostic laboratory may choose not to offer certain tests on certain samples for calves under 35 days of age so check with your usual provider before submitting samples.

PCR is highly sensitive and will detect TI animals as well as PI animals. This test may be useful in situations where there is uncertainty about the true infection status of the herd since it will maximise the chance of detecting active viral circulation. However, there is no clear cut-off value to distinguish between TI and PI animals, which may result in some TI animals being unnecessarily culled if farmers are unwilling or unable to hold positive animals for 3 to 4 weeks to confirm the BVD status through repeat testing. By comparison, the antigen ELISA is less likely to detect low shedding TI animals so may be more appropriate in herds with known active BVD infections where the primary goal is to identify and remove PI animals.

Although both test methods have excellent sensitivity and specificity for detecting BVD virus in cattle, there is always the potential for false positive and false negative results to occur. We strongly recommend that farms have additional monitoring programmes in place to detect any potential breakthroughs before they cause significant problems in the herd. This includes annual bulk milk testing (PCR and ELISA) for dairy herds and youngstock antibody screening tests for beef or dairy herds.