Readily available and cost-effective tools can help reduce – or even eliminate – BVD

Time to 'call t ime' on BVD

There is evidence of BVD – past or present – in 70% of UK dairy herds. As NML unveils its new BVD surveillance scheme, industry experts urge producers to use new tools and get rid of the disease.

text **Karen Wright**

Despite vaccines and other control measures, Bovine Viral Diarrhoea (BVD) still remains a major drain on the UK cattle industry. It causes huge fertility problems, suppresses the immune system and can cause calf deformities.

Professor Joe Brownlie from the Royal Veterinary College would like to see the UK 'beat' BVD. "It's important we get rid of BVD," he says. "It would bring productivity, health and welfare benefits.

Joe Brownlie: "We are lagging behind other European countries with BVD control"

"We're lagging behind other European countries here. Scandinavia is BVD free – a status it has achieved by getting rid of all persistently infected – or PI – animals. PI animals are reservoirs of infection."

Professor Brownlie fully supports the Scottish initiative that, from later this year, will ban the movement of PI cattle. "This initiative will force many producers into better BVD control and surveillance – in Scotland and in the north of England.

"And this control must operate on a regional or community basis. It's far more effective than individual farm control, particularly in densely populated areas such as Cheshire or the south west. BVD is directly contractable from animal to animal so getting rid of BVD in a region lowers the risk of the infection coming back."

When it comes to control procedures, there is no doubt that vaccination plays an important part. "It's well worth vaccinating cattle for BVD if it's done properly but, like any vaccination programme, it's rarely 100% effective. There's always some level of breakdown and for this reason we need to employ other tools."

Biosecurity, routine surveillance and the identification and removal of PI animals are required.

Avoid 'one-off' tests

"Bulk milk tests are useful for surveillance but they mustn't be 'one-offs'. Instead they should be carried out regularly to allow the vet to build up a picture of the herd's 'normal' antibody levels," adds Professor Brownlie. Deviations from this can then be picked up and interpreted. And from this information, the vet and producer will know if further investigation is needed.

The main focus should be on youngstock using routine blood testing so infected animals are picked up as early as possible to minimise the damage caused. And tag-and-test services, where a small tissue sample is taken at the time of tagging and tested for BVD antigens, are highly reliable. Switzerland has used a tag and test approach to eradicate BVD in its dairy herds.

Jane Montgomery from XL Vet practice Lambert Leonard & May in Cheshire is developing a more comprehensive BVD control service for clients that she hopes will help to stamp out the devastating consequences of the disease.

"It's a complicated disease and if there's a PI animal in the herd it will provide a constant threat to herd mates and neighbouring cattle. That's why it's important that we tackle control within a region and not on an isolated farm. To get 100% control we have to find and remove these PI animals. Far too many producers are still under the illusion that they've controlled BVD once they've vaccinated their herd."

She supports the use of bulk milk tests for milking herds. "Measuring the bulk milk antibody level is an easy way to establish a herd's level of exposure to BVD and routine testing is an inexpensive method of monitoring any changes. Bulk milk PCR testing for BVD virus, on smaller groups (less than 50 cows) is also a useful method of detecting any PI animals within the milking herd. I plan to use tag-and-test much more as it is a practical, cost-effective and accurate way of identifying potential PI animals and active infections."

BVD Monitor

NML – part of the NMR group – has recently added BVD Monitor to its disease surveillance services. The first step involves quarterly monitoring of BVD antibody levels in bulk milk samples to establish the current status. Subsequent deviations from this will guide the farm's vet to further action if necessary.

"Bulk milk samples for detecting BVD antibodies are highly reliable," says NML's Healthcheck manager Steve West. "If the herd is exposed to the virus, competent – 'healthy' – animals will produce high levels of antibody, which will be detected by the antibody ELISA test and indicate that there may be an active infection within the herd.

"It's vital that routine tests are carried out so 'normal' levels for the herd can be detected and unexplained deviations pursued."

Around 98% of all herds send bulk milk samples to NML for payment purposes so no further sampling is needed for users of BVD Monitor. NML will automatically take a quarterly sample for testing and send the results back to the producer and their vet. "This makes BVD Monitor a seamless and cost-effective service," adds Mr West.

Within BVD Monitor, NML also provides ELISA blood testing for unvaccinated youngstock aged between eight and 18 months old. ELISA tests can also be carried out on individual cow milk samples to pinpoint active infections or potential PI animals.

"We've also included a tag-and-test option to help PI identification or to confirm calf BVD status," adds Mr West. "Ideal for youngstock and beef cattle, an ear tissue sample is collected as the tag is applied."

Results from tag and test will flag up potential P1 animals. Other causes for the antigen being present, such as a very recent infection of a naive animal, must be ruled out and this is done by isolating the animal and blood testing three weeks later. The same or higher levels of antigen in this second test would indicate a PI animal. Vet interpretation is important at this point. |

Jane Montgomery: "To get 100% control we have to find and remove PI animals"

BVD factfile

When a naïve, pregnant cow becomes infected with BVD virus in the first 120 days of gestation, the foetus becomes infected and becomes 'tolerant' to the virus and cannot eliminate it. It becomes persistently infected throughout the rest of the pregnancy and for the rest of its calf and adult life. It sheds huge quantities of the virus and transmits the disease when it comes into contact with other animals.

The majority of PI animals will scour, waste away and die during the first 18 months of life. Some will survive, go on to breed and give birth to a PI calf before entering the milking herd.

Once a PI calf infects other animals they will become (acutely) infected, show clinical symptoms and subsequently produce antibodies that give some protection against further challenge, although it is not lifelong protection. These acutely infected animals can also become an infection risk and a potential source of the BVD virus to other animals.