Ice-Berg Disease Case Study

Stuart Mitchell, Whitriggs

Farm Advisory Service

National Advice Hub
T: 0300 323 0161
E: advice@fas.scot
W: www.fas.scot

The Mitchell family farm approximately 1050 acres across Whitriggs and Denholm Hill farms. This family run business acted as the Borders Monitor Farm for QMS Scotland from 2016-19.

Prior to becoming a monitor farm, the family had little knowledge of iceberg diseases. In 2016, at the start of the project the farm had 1000 Llyen ewes which had been a closed flock since 2001.

At one of the monitor farm meetings it was pointed out that the scanning percentage of 175% for the 1000 ewe Lleyn flock was lower than should be expected for the breed and the Mitchell's management. Many similar flocks achieve a lambing percentage of around 200%. This had never been highlighted to the Mitchell family as their scanning percentage was always consistent with the previous year's scanning, despite having gradually improved management practices.

Investigations started to try and find a possible cause to explain the flocks lower than expected scanning result. This first included checking the mineral status of the flock which was found to be within normal levels. They also tested for liver fluke which was negative. It was then suggested that blood tests should be taken to further screen for an answer. A decision was made to test 24 ewes from the 1000 ewe flock – 12 cull ewes and 12 gimmers were randomly selected. The results came back a week later with 11 cull ewes and 5 gimmers testing positive for Maedi Visna (MV).

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MV is a chronic viral disease which despite having a slow progressive onset, is highly contagious and fatal. The disease causes progressive paralysis, wasting, arthritis and chronic mastitis. Additionally, there is an impact on flock efficiency with a reduction in conception, increased lamb mortality and reduced growth rates as well as increased culling rates. As a closed flock for over 15 years this result came out of the blue but did help explain some of the issues within the flock. Two weeks after lambing was a particularly difficult period. Hungry lambs were being picked up despite the ewe's bags appearing full. On investigation, despite the full appearance there was little milk in them. In hindsight this had been happening frequently over the last couple of years, alongside an increasing number of ewes culled with lumpy udders.

Typically 300 gimmers were kept as replacements annually. Following the positive test for MV, all replacement gimmers were tested. These results came back at scanning time in February 2018 with 51% testing positive. Gimmers testing negative were separated from the flock and moved to Denholmhill so they could be completely isolated from the rest of the flock. Only one staff member supervised the lambing of the clear sheep. Moving between the two flocks involved implementing strict cross contamination measures including changing clothes and using a different vehicle in an attempt to reduce the spread. This was a massive undertaking during lambing time.
In August 2018 all negative gimmers were tested again, alongside all the ewes. Two-thirds of these gimmers now tested positive for MV despite the farm's best efforts at keeping them isolated. Initial testing of gimmers is not always accurate as MV can take up to six months to show up in a blood test. Unfortunately, the results of the ewes were worse with 82% testing positive, leaving just 170 ewes testing negative for MV.

Due to the significant levels of infection present within the flock, the family made the decision to dispose of their entire flock and not purchase any replacements. All sheep were fattened and sold. This provided some income to the farm, although stock were sold for significantly less than their breeding value. The last animals were sold off farm during April 2019.

Benchmarking was used to analyse the impact that MV was having on the farm's finances. This highlighted that the disease was costing the farm approximately £50,000 in income/annum. The need to sell the flock was clear to the family, despite being an extremely difficult decision to make. The percentage of the flock infected with MV was so high that it was almost impossible to eradicate. The family already had other enterprises on farm including cattle, grain and red deer hinds to provide additional sources of income. The decision was made to expand the farms existing deer enterprise by purchasing a further 100 hinds – helping to replace the sheep enterprise.

In hindsight, the Mitchells now recognise there were small signs present that something was not right within their flock. For example, the number of ewe lambs retained each year was gradually increasing and was heading towards 400 head – in comparison to the previous 300. There was also less choice in replacement females, with more being kept and the number of lambs reared not increasing. Additionally, there was an increase on input spending to ensure ewes were in peak condition, with no benefit ever observed in the farms returns.

The Mitchell's advice is to make sure you know your flock. Monitor benchmarking data on farm each year and compare results. Question results if they are lower than usual or lower than expected compared to similar farms. Without benchmarking, these diseases can easily go undetected until it is too late. The Mitchells would recommend all farms that don't know their MV status begin to blood test cull ewes and screen for iceberg diseases, as essentially the sooner you know the status of your flock the better chance you have of tackling and eradicating any disease present.