Case Study

PESTIVIRUS REPRODUCTIVE BREAKDOWN IN A DAIRY SYSTEM

PRODUCER/VETERINARIAN

Sam and Fleur Tonge. Sam is also a veterinarian.

PRODUCTION SYSTEM

The Tonge's farm is located at Casino in the Northern Rivers district of NSW. They calve 300 cows per year with an annual production of two million liters. The herd is now self-replacing and has been in operation since 1981.

A decision was made in 1988 to close the herd. The farm is well fenced with good boundary fences. It was assumed that these two factors would ensure that biosecurity would be good, and the risk of disease incursion would be low.

The herd's reproductive performance has always been closely monitored. The reproductive parameters indicated that the herd was performing at above average levels. Sam and Fleur worked closely with the local LLS veterinarian for herd health advice. Their herd was also involved with the Sentinel Herd project monitoring the movements of Arboviruses throughout Australia.

In the early 2000's the herd was involved in a research project run by Dr Peter Kirkland, a virologist at EMAI . The project investigated the prevalence of Neospora in NSW cattle herds. The results of this investigation demonstrated that 80% of the herd were seropositive to Neospora. This provided the farm with a baseline exposure for this disease. Due to the anticipated difficulties associated with finding and buying Neospora negative cows with appropriate genetics, it was decided to live with this disease and accept the associated reproductive inefficiencies.

DISEASE INCURSION

The pestivirus infection occurred in 2003. The first sign was a decline in reproductive performance. This was evident in late term abortions and an increase in the number of irregular return to heat intervals. There were also a series of sudden deaths. Sam commented that he observed 30 abortions and 8 cows died from peracute pneumonia. The cause of death was confirmed by post mortem. There were also a series of calves born that were ill thrifty and very difficult to rear.

The Tonges found this period very stressful as they were uncertain about the cause of these issues.

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At this time, the perception of pestivirus was that it was a disease of no real significance. It was widespread within the district with no major impacts or production issues resulting from its presence.

The veterinarians were suspicious that Neospora was a high probability in the differential diagnosis of these issues. Through the LLS, Peter Kirkland was approached and he offered to retest the herd. The results indicated that the incidence of Neospora was no different from the previous testing. However, the reproductive analysis indicated a severe decline in efficiency. On this basis Neospora was ruled out as the cause.

Peter Kirkland agreed with the conclusion and offered to test for pestivirus using the same serum collected for the second Neospora investigation. These results showed very recent exposure with the majority of the cows being 3+. This confirmed that pestivirus was responsible for the herd's reproductive issues.

In this case, the serology indicated that every cow tested had a positive titre to Pestivirus. At this time their belief was that they could rely on this immunity generated from the recent disease event and not worry about vaccination.

They found that PIs did not survive due to immunosuppression and complications arising from pestivirus. Their clinical impression was that PI's didn't transfer disease particularly well due to poor interaction with the herd. They were able to show this with serology in the heifers indicating the mob to only be partially seroconverted after the exposure period. This result surprised them as these heifers should have had plenty of time to get exposed.

Their first encounter with pestivirus was that it caused a train wreck in regards to cost and disease. The incomplete exposure and the inability to keep PIs alive presented a real risk to them. They felt they were once again heading towards a naive herd and this train wreck scenario would repeat. They had remained a closed herd and still had not been able to identify where the original infection came from. A big issue that they identified was that the exposed older cows would end up out of the herd and naive heifers were coming through behind them. PI exposure wasn't working and not giving them the protection they needed to avoid another very costly pestivirus breakdown.

They identified what they felt were their two options:

1. Run the gauntlet, or;
2. Look at a safety-first approach and start vaccinating.

RESOLUTION & MANAGEMENT

It took a long time to recover and work their way out of the train wreck situation. It was clear to them that pestivirus was a manageable disease through vaccination and that it was economically viable to start vaccinating.

We have trust in the vaccine that we have protection, and it has been simple program to adopt and implement. Once our cows are vaccinated, we know they are protected. To ensure ongoing coverage they maintain annual boosters.

All programs are set up before heifers are first joined. They find Pestigard easy to administer and it fits in with other vaccines they are using including Ultravac BEF, Ultravac 7in1, and Ultravac Botulinum.

As a result of their pestivirus management program, respiratory disease in our calves has reduced. They have also seen an overall improvement in herd health. Calf health is much better although they do manage calves better including improved colostrum management. They also vaccinate cows pre calving with Ultravac 7in1 and Ultravac Scourshield.

Sam concludes that it is difficult to achieve very high reproductive performance in an all-year round calving herd. Their approach is to remove all variables and manage as many known risks as possible. They see using Pestigard as a very reliable measure in giving them protection against a disease that has cost them significantly in the past.

In their business they put herd health costs as non-negotiables because on a business basis the cost of these products are insignificant compared to reproductive inefficiencies and the cost of a disease breakdown.

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