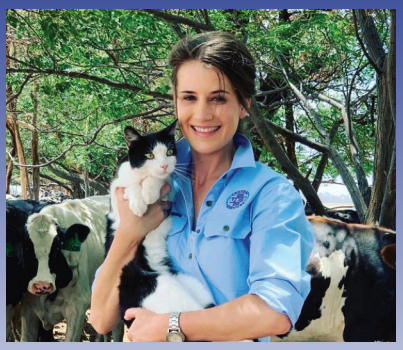
Case Study

PESTIVIRUS DISEASE IN A LARGE SCALE COMMERCIAL AND TRADE BREEDING ENTERPRISE



VETERINARIAN

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CASE REGION OR ORIGIN

Cowra, Central Tablelands, NSW

CASE BACKGROUND

In 2020 a large-scale breeding enterprise experienced a significant calving loss percentage, that was estimated at approximately 20% from one cohort. This cohort was a mob of 300 head of two-year-old first calving heifers. The heifers had been scanned in calf with a confirmed artificial insemination date only (first week of September) and confirmed pregnant during the autumn at six weeks (42 days). Heifers were retained (bred on farm) and exposed as weaners to purchased cattle. These purchased cattle were from mixed vendors and majority had unknown backgrounds. The retained heifers were vaccinated with 7 in 1 and had an exposure-based management strategy for Pestivirus prior to joining.

I received a phone call from the client as approximately two weeks post the expected due date in September the producer had identified approximately 50-60 head had not calved and according to the producer looked "dry".

The concern in this situation was an unknown cause of reproductive wastage and the possibility of ongoing loss.

CASE INVESTIGATION

Due to evidence of reproductive wastage we instigated an investigation. All 57 animals were healthy and well at the time of examination and no abnormalities were detected (clinically or reproductively at this time).

We conducted Pestivirus testing (among other tests (Leptospirosis, Neospora)) on the 19% of heifers involved in the affected cohort. The results confirmed recent infection with the heifers revealing mainly 3, >3 and antibody negative scores (see image one).

These results indicated that there was active Pestivirus in the cohort and most interestingly we can see that there a number of antibody negative animals. This indicates that we have either a number of persistently infected animals, a number of animals recently exposed to Pestivirus or that the exposure-based management strategy has failed.

Due to the large number of heifers and now calves involved in the remainder of the originally involved cohort we were unable to feasibly complete further testing. It was decided going forward that all calves weaned from the cohort would be sold as terminal animals due to the high possibility of a persistently infected calf. Interestingly, this mob of calves at weaning had poor results (low weaning weights and higher mortality (approximately 8%) compared to other weaning groups when compared to marking rates). Therefore, knowing that these calves were part of a cohort experiencing active Pestivirus while calves were in utero it can be hypothesised that this was due to a percentage of the calves experiencing immunosuppressive effects of the Pestivirus disease.

"I encourage routine monitoring of Pestivirus and implementation of a Pestigard vaccination program to protect your valuable enterprise".

Antibody results for Pestivirus from 29 head of heifers suspected to have had reproductive wastage from group of 57 head.

EMAI VIROLOGY

Pestivirus Antibody AGID Test (BVD)

Lab No.	Result
0001	Antibody NEGATIVE
0002	Antibody NEGATIVE
0003	Antibody NEGATIVE
0004	Antibody NEGATIVE
0005	3
0006	Antibody NEGATIVE
0007	Antibody NEGATIVE
0008	>3
0009	3
0010	Antibody NEGATIVE
0011	Antibody NEGATIVE
0012	Antibody NEGATIVE
0013	Antibody NEGATIVE
0014	3
0015	Antibody NEGATIVE
0016	Antibody NEGATIVE
0017	3
0018	Antibody NEGATIVE
0019	>3
0020	Antibody NEGATIVE
0021	2
0022	3
0023	Antibody NEGATIVE
0024	3
0025	Antibody NEGATIVE
0026	2
0027	3
0028	Antibody NEGATIVE
0029	>3

Pestivirus Antibody Results:

NEGATIVE	Never infected, or transiently infected in the past week, or persistently infected.
1	(Low) Transiently infected up to several years ago. Occasionally seen in persistently infected animals.
2	(Intermediate) Transiently infected. May remain at this level for several years.
3	(High) Transiently infected in the past 6–9 months.
>3	(Very High) Transiently infected in the past 1–3 months, or pregnant with a persistently infected foetus.

* Antibody in calves up to 5 months old may have been passively acquired.

IMPACT

Like many Pestivirus disease scenarios, this case study resulted in immediate and ongoing issues for this enterprise.

Heifers that experienced reproductive wastage – these heifers were sold and therefore impacted the young retained heifer group for this enterprise.

Weaner group of heifer cohort – these calves were considerably poorer doing (as mentioned above) compared to the other cohort calves across the enterprise. These calves therefore did not reach their potential and there was loss due to reduced value of these calves. Furthermore, the enterprise was impacted in regard to the number of retained heifers kept as future breeding stock. This was most noticeably an impact due to more recent (2021–2022) stock prices, in particular replacement heifers.

Further costs can be included when assessing the total impacts that Pestivirus disease has had on this enterprise, including testing costs, treatment costs (sick calves due to immunosuppression) and increased prices for replacement cattle.

KEY LEARNING

This case study very directly reveals the importance of disease management in any livestock enterprise. Unfortunately, in this case the producer believed that they were managing Pestivirus disease using an exposure-based management strategy. This case showed us that there can be breakdowns in management plans and therefore it is essential that a more accurate strategy is implemented.

Indeed, this case allows us to value routine vaccination protocols and the importance of pregnancy testing to highlight if reproductive wastage does occur at any stage from joining through to weaning. Furthermore, we also highlight the need for biosecurity and the risks involved when socialising trade cattle with unknown history with possibly naïve home bred and retained breeders.

From this case I encourage routine monitoring of Pestivirus and implementation of a Pestigard vaccination program to protect your valuable enterprise.