



The impact of TB testing on Johne's milk antibody test results

This new research clearly demonstrates the impact of SICCT on Johne's milk antibody results. Further research is needed to determine how best to use this information in the management of Johne's disease.

It has long been known that if a Johne's antibody test is carried out soon after a TB skin test, an increase in the number of positive results is seen. This led to advice being given to farmers and vets to leave a minimum interval after a TB skin test before carrying out a Johne's test (42 days for milk testing and 90 days for blood testing). This ensures that any impact from the TB skin test (SICCT) has sufficiently diminished and has no effect on the Johne's antibody results.

There has been anecdotal evidence that this phenomenon was not observed in herds with a very low Johne's disease prevalence, leading to a theory that the TB test is stimulating Johne's-infected animals to produce antibodies, while those cows not Johne's infected remain unaffected.

Research has now been carried out to investigate this theory further.

The research

Over 800,000 cows were included in the research, and were categorised as Johne's 'Infected' (based on the standard definition for a J5 Red cow) and 'Non-infected' (if they did not meet the criteria of a J5 Red cow). Of the cows in the data set, 8% were classified as 'Infected'. (It should be noted that a proportion of the cows defined as 'Non-infected' in this study will in fact have Johne's disease but have not yet reached the stage of J5 Red.)

For 'Infected' cows, there was an immediate increase in the Johne's antibody result after SICCT. This would indicate an increase in the sensitivity of the test.

For 'Non-infected' cows, there was a significantly smaller increase in Johne's antibody results, and the increase was delayed (15–28 days post-SICCT), which would indicate a reduction in test specificity.

Discussion

The association between SICCT and Johne's antibody results is confirmed by this new research. It also demonstrates that the effect is different in 'Infected' and 'Non-infected' animals.

The fact that 'Infected' cows show an immediate response would add weight to the theory that we are seeing a boosted immune response (anamnestic effect) in those animals and increasing the sensitivity of the test. The smaller, delayed response in 'Non-infected' cows suggests a primary non-specific immune response to the avian PPD injection.

The impact on overall accuracy of the Johne's test differs with herd prevalence and this must be considered when interpreting results.

Points to bear in mind when scheduling a Johne's test after a SICCT

There may be circumstances where it is beneficial to schedule a Johne's test after a SICCT. However, the following points should be considered and it should always be done in consultation with a veterinary surgeon.

- To take advantage of the increased sensitivity without further compromising specificity, Johne's testing should be carried out within 14 days of the SICCT
- If testing is carried out 15–28 days post-SICCT, specificity is reduced and you may see an increase in false positives
- Herd prevalence must be considered. The impact in herds with <5% Johne's prevalence is unclear
- We do not fully understand what a positive result post-SICCT means compared with a standard positive. It should be used as an indicator of infection and a prompt to manage the animal appropriately. It does not mean that the animal needs to be culled
- Be mindful of the impact further disclosure of positive animals could have on milk contracts

Minimum interval between a SICCT and Johne's test

Current recommendations to leave a minimum interval of 42 days (milk) and 90 days (blood) between a SICCT and Johne's test remain and should be followed, unless directed otherwise by your veterinary surgeon.

[Read the full research paper on the ScienceDirect website.](#)