

Hello and Happy New Year!! I hope that you all had a good Christmas with your families and friends and that you have all made some realistic New Year resolutions!!

December was a bit of a shock to the system weather wise – certainly a sudden drop in temperature – but probably even more shocking this year after such a warm November. Most shocking to neonates – don't forget to get those calf coats on.

Last month, I went on a refresher course for Johnes – mainly concentrating on dairy herds, but much of the information translates to beef. The National Johnes Action Plan has been running for over 5 years now and the NMR data presented shows a reduction in the presence of Johnes on infected dairy farms nationally. It is unrealistic to think that we can eradicate the disease but there have definitely been large steps in the reduction of infection. Certainly within our practice, the incidence of disease is starting to decrease in dairy herds as the changes made 5 years ago are starting to come through.

If you are receiving this newsletter then you are probably receiving an invoice for work done in December as well. We count ourselves very fortunate to have the vast majority of you paying us promptly but I need to remind some that our terms are full payment within 30 days. Bills that are not paid for within that time receive a 5% surcharge monthly until paid.

The weather has now resumed normal service – extremely wet! Very best wishes from all of us here for good health and a very Happy New Year. See you in 2023.

Mary

Understanding the TB test

Background on bovine TB

Bovine TB is caused by a bacterium called Mycobacteria bovis. TB in cattle is incurable and although clinical signs are rarely seen since routine screening for TB was introduced, if left undiagnosed this disease will cause coughing, loss of condition and death. Importantly, bovine TB can be passed to humans, commonly through the consumption of milk from infected cows. Therefore, being able to verify that a cow is free from disease is extremely important from a public health and trade perspective.

The skin test

This is the test that we are all familiar with and so an understanding of the rationale behind it is helpful. Cattle naturally infected with TB will first have to recognise the bacteria and then form an immune response bespoke to this disease. Once this process has occurred, the immune system is then



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'primed' and further exposure to TB will result in a quicker and larger immune reaction.

The skin test uses this immune response to identify those cows infected with TB. On the first day of the test, we inject a small volume of bovine TB protein into the skin and the 'lump' we are looking for on the second day is a result of the immune response. Those with a 'primed' immune system produce a larger lump.

As you'll be aware, we inject at two sites on day 1 of the test. This is because there are other bacteria (e.g. *Mycobacterium avium*) that don't cause disease in cattle, but that are similar enough to bovine TB that they can 'prime' the immune system to respond strongly when exposed to the bovine TB protein used in the test. We compare the size of the two lumps and if the bovine TB protein (the bottom lump) produces a larger reaction than the avian top lump, then this is evidence of infection with bovine TB. However, if the top lump is bigger than the bottom lump then this is evidence that the cow is reacting to other bacteria and is not infected with bovine TB specifically.

Myth busting

While testing at farms we get asked many questions about the TB test. There are some common themes that come up that we think may be helpful to address.

"I had a reactor but no lesions were found and nothing could be cultured- was my cow slaughtered unnecessarily?"

Although this isn't impossible, it is much more likely that the skin test is correct in this situation. The accuracy of the test is such that if five thousand cows that didn't have TB were tested, then only one of those cows would be incorrectly diagnosed with TB. This means that false positive results are very uncommon and the test has simply picked up the disease before lesions can be seen or bacteria can be easily cultured.

"Should I be worming/fluking my cattle to help pass the test?"

There is no scientific or biological evidence that worming, fluking or the presence of worms or fluke will affect the test. However, farmers are still advised not to administer any medications on day one of the test or between the two days to reduce any chance that this may interfere with the test.

"A cow has passed several TB tests but was found to have lesions at the abattoir- how is this possible?"

The skin test is more likely to miss a cow that is infected with TB than falsely identify a cow with TB. There are two main periods of time when the test will not detect an infected cow- very early in the course of infection before she has mounted an immune response and late in the course of infection when a cow is no longer mounting an immune response. Unfortunately, it is therefore possible for a test to miss a cow that is heavily infected with TB.



Cow with a larger avian TB reaction (top lump) than bovine reaction (bottom lump). This cow would pass the skin test



If anyone has any questions about TB testing that hasn't been discussed here then feel free to get in touch and we'll all be happy to chat. Alternatively resources such as the online TB Hub <https://tbhub.co.uk/tb-testing-cattle/> can be really useful covering not just the actual testing process but advice on prevention and what to do in the event of a breakdown (but let's hope that doesn't happen!).

This month's author Dominic Day.

Office opening hours

Monday – Friday (Except Bank Holidays)

8.30am - 5.30pm

Emergency out of hours service

Weeknights 5.30pm - 8.30am

Saturday & Sunday all day