

TB testing – A new test!

Enferplex

Many of you reading this newsletter will have at some point been shut down with TB. The high levels of TB in the South West of England combined with frequent testing results in many breakdowns across the region. As you all know TB breakdowns can be hugely emotionally and financially draining and it may feel like we are getting nowhere with TB but there is reason for optimism!

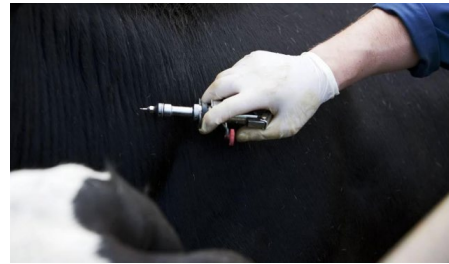


The results of the four-year badger cull in Gloucestershire have shown significant decreases in new TB breakdowns across the region of 66%. This is fantastic news and is a credit to the hard work put in by many farmers and stakeholders. Unfortunately, although badger culling has reduced TB in some areas, culling alone will not eradicate TB. The problem is that even if we control the wildlife that play a big role in spreading TB there is still a huge reservoir of infection within the cattle population that is not being found.

Current TB testing:

The vast majority of tests for TB in this country are done using the comparative skin test, a test which you will all be familiar with. The other test that the government is using more and more is the Gamma interferon blood test - I'm sure many of you will also have experience with this test. Both tests are looking at the cow's immune response to TB to determine whether the animal is infected. The

main problem with both tests is that they do not identify all the animals with TB within a herd. Let's pretend that we have 100 cows that definitely have TB: if we use the skin test it will tell us a maximum of 80 of these animals have TB but the range is huge. It can be as low as 35! If we use the Gamma test it will tell us that between 80 and 90 cows have TB. This number is expressed as a percentage and known as the sensitivity of a test. This is the reason that these tests are repeated in TB breakdowns, to give the test more chances to pick up the disease. However, TB infected animals are still slipping through the net.



On the other hand, if we had 10000 animals that definitely didn't have TB, the skin test would tell us that 2 animals had TB - a very tiny percentage therefore of false positives. The skin test is more accurate at finding TB than looking for lesions at slaughter. Just because a cow does not have lesions it doesn't mean it doesn't have TB. The major drawback of the Gamma blood test is that if we had 10000 animals that definitely didn't have TB it would tell us that 350 of them did have it. We obviously want to avoid false positives. This number is also expressed as a number and called the specificity.

While no test is perfect, both of these TB tests have major drawbacks. They are both good at picking up TB at a herd level but not so good at clearing out infection from a herd.

A cow's immune response to TB:

The cow's immune response to TB infection is very complex but can be simplified into two distinct responses: The cell mediated response and the antibody response. Both play an important role in protecting the cow but are turned on and off at different stages of the disease process.



In the early stages of TB the cell mediated response is dominant, this is what the skin and gamma test are looking for. Once the disease progresses, the cell mediated response is reduced and the antibody response takes over. This is why, in the later stages of TB the skin and gamma test miss infected animals. It's the story many of you will have experienced of the old cull cow who has had countless negative skin test comes back with lesions at cull. This cow's cell mediated response, that the skin test is looking for is virtually non-existent. What we need is a test that looks for the antibody response. Two of these are now available.

Idexx ELISA

This is a government approved blood test which APHA will authorize in breakdowns which have lasted more than 2 years and which have already undergone gamma interferon testing. There are fewer false positives than for gamma interferon testing, but unfortunately it isn't much more sensitive than the skin test.

Enferplex

There is a relatively new blood test for cattle called the Enferplex test. It also looks for the antibody immune response to TB and it picks up more cows both in the earlier and late stages of TB infection.

It has undergone studies and has been validated for use internationally, however our government have yet to approve it. APHA have put major restrictions on its use. Herds need to meet certain criteria to use it, it must be funded by you and no compensation is paid. The criteria are complex and too much to detail here but if you are interested please speak to your vet, and also speak to your NFU rep to try and get APHA to make the Enferplex test more readily available for proactive vets and farmers.

The test is extremely accurate. It can pick up 94.5% of infected animals within a herd if performed between 10-25 days after a skin test but also finds relatively few false positives compared with gamma interferon. It can also assess the level of infection, allowing cows to be put into risk categories and culled/managed accordingly (like with Johne's testing). There is also work on going to allow the test to be done on milk samples in future.

The skin test is here to stay both from a disease testing point of view and because it "primes" the antibody response in the cow before blood testing. We hope the use of Enferplex testing will go alongside the current tests to further tighten the control of TB.

There is a huge amount of information about TB testing, wildlife control and ways to protect your herd on the TB hub website: www.tbhub.co.uk and also an interactive map of TB breakdowns at: www.ibtb.co.uk. Ben Sellick is also an approved TBAS advisor and can offer, free of charge, visits to discuss TB control. If you would like to book a visit with Ben please ring the office on 01666 823035.

All the best,

Chris

