BOVINE TUBERCULOSIS WORKSHOP

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Exercise: On July 10 you are called to a farm in a non-endemic area with:

400	m.a. hinds
200	weaners
10	breeding stags
50	velveting stags
50	yearling stags

They wish to do their first whole herd test (WHT).

The farmer has been farming deer for six years with a closed herd except for buying in 2 or 3 stags annually. He has done sale-testing of weaners in the past and has not had any reactors in the animals. He sold 10 velveting stags two years ago and, at a sale test carried out by another vet, had 2 reactors which were held for CCT but gave avian > bovine reactions and were passed as negative. He has sent yearlings and 2 year old stags for slaughter in the past and all were "clean". He requests that you use a CCT because he thinks he has some "non-specificity" on his farm.

[A] What test do you use?

[B] What animals do you test under the new scheme?

You do the WHT over the next week and you find:

10 reaction animals in the 400 hinds;
2 reaction animals in the 10 breeding stags, and
3 reaction animals in the 50 velveting stags.

[C] What do you do?

Actual course of action taken by vet and farmer (provided by supervisor).

[D] What animals should be killed?

[E] What is the next step?

Discussion:

[A] Options: CCT or ST

Arguments: There is not enough information or history to justify use of the CCT for a first WHT. It is MAF policy to use only the ST on the first WHT. The ST is a primary test while the CCT is an ancillary test.

Conclusion: Use ST.

[B] Under the rules of the new Tb scheme the herd is classified as "Transitional" and therefore the minimum WHT should include all females over 15 months and all males over 2 years, i.e., in this case 400 m.a. hinds, 10 breeding stags and 50 velveting stags. However, if there is any reason to suspect that the risk of Tb is high, then the test should also include the weaners and yearling stags.

[C] Immediate actions:

(a) Clinically examine the reaction animals for signs of Tb. These may include swollen lymph nodes, poor condition, sinus tracts, abscesses, etc.

Isolate and tag all reaction animals.

(b) Discuss the history of the herd with the farmer. Points of interest include grazing and feeding management, stock movements onto and off the deer farm, use of cattle, sheep or goats to assist grazing management, deer purchases, leasing of stags, proximity of the farm to other farms where Tb has been found, presence of feral deer, goats, cattle, pigs and possums, etc.

In this case the farmer provided the following history.

i) You find that he has been feeding the hinds on silage and grain out of long troughs which are surrounded by mud and experience has shown that this can lead to increased non-specific reactivity.

ii) The farmer bought in 3 stags in February from an accredited herd which you know has subsequently suffered a Tb breakdown. You discover that one of the reactor stags is one of the bought in stags.

On further questioning you discover that the three bought-in stags were single sire mated with groups of 40 hinds over March-April and then chased with existing stags. Fortunately the farmer has lists of the hinds mated to stags and you discover that 8 out of 10 hind reactors are in 2 mating groups (80 hinds) put to 2 of these new stags.

The new stags, which each cost $5,000, have been running with the herd breeding stags since the end of the rut (2 months). The velveting stags are run separately.

You get the farmer to bring in all the breeding stags and you find they have all lost considerable condition over the rut. Moreover, one of 3 new stags looks in very poor condition, although it was -ve to the S.T. No other reactors appeared clinically affected.

Based on this history you discuss with the farmer the following options:

(a) Slaughter some or all reaction animals on farm and necropsy.

(b) Send some or all reaction animals to deer slaughter premise as reactors, having first tagged them with a MAF approved tag.

(c) Isolate for 90 days and CCT.

(d) Isolate and blood test (BTB) some or all reaction animals.

(Note: the ELISA test is now routinely done on all BTB samples. This test is not officially approved but does give useful information on the degree of risk of individual animals).

At this point it must be emphasised that there is no single best way of proceeding and that it is recommended that the local MAF should also be involved in these decisions. However, based on the history given by the farmer and the pattern of reactions found to the ST it seems likely that bovine Tb may have been introduced by the 3 stags bought in February from the accredited herd which has subsequently had a Tb breakdown. There is also a suggestion of background non-specific reactivity in deer not exposed to these stags.

The most immediate need is to obtain more information in order to assess whether or not there truly is bovine Tb present and to estimate the size of the problem and therefore the degree of risk within the herd. The CCT is not appropriate in this situation because there is a real risk that bovine Tb is present and a delay of 90 days could increase the risk of spread within the herd and also to feral animals on the farm.

The major workshop discussion concentrated on the options of slaughter (necropsy or DSP) or BTB. It was felt by the majority that the 3 new stags were all suspect but because they were nominally worth $5,000 each the farmer would be reluctant to slaughter them. Therefore, the BTB was the first choice because as well as being relatively quick it also had the advantage of providing information about an animal's prior exposure and gave an assessment of risk. The problem with slaughter was that an NVL was very unsatisfactory, providing no information on an animal's prior exposure, and even finding a lesion was not wholly satisfying because it still had to be confirmed by histology as being an acid fast tubercle and the differentiation between avian and bovine Tb could take 3 or 4 months.

Other choices involved whether to immediately slaughter the reactor hinds and stag or to BTB them, or to do nothing to the other reactors until the BTB result came through on the 3 stags.

In the exercise the following course was taken by the vet and farmer.

The history strongly suggests that Tb has been brought in by the new stags.

They decide to isolate all the reactors (plus the 2 new stags) and keep the 2 suspect mating groups of hinds separate.

They do a BTB on the 3 new stags (only 1 of which was a reactor), and all the other reactors (1 breeding stag, 3 velveting stags and 10 hinds).

BTB results show:

a) all 3 new stags have bovine reactivity:

the reactor - moderate bovine
the thin non-reactor - very high bovine, high ELISA
the healthy non-reactor - low bovine.

b) low bovine, high avian in the other breeding stag.

c) high avians in the velveting stags.

d) low to moderate bovine and moderate avian in the 8 hinds from the suspect mating groups.

e) high avians in the 2 hinds from the non-suspect mating groups.

[D] What animals should be killed?

The 3 new stags and the 8 high risk hinds.

The thin non-reactor, high BTB, high ELISA stag was slaughtered immediately and necropsied. It was generalised Tb.

The other 2 new stags and the 8 hinds that had been in contact were sent to a D.S.P. as reactors. One of the stags had a retropharyngeal lesion and the other was NVL. Four of the 8 hinds had small lesions, the other 4 were NVL.

[E] What is the next step?

The BTB was repeated on the remaining reactors and the rest of the herd was skin tested again in 3 months.