

## 16. The Tuberculin Testing of Camelids

16.1 Tuberculin supplied for testing cattle can be used for camelids.

16.2 There are similarities to testing in deer but for camelids the vet does not need to be on the deer testing panel (although this would be desirable).

16.3 Tuberculins (0.1 ml) should be injected intradermally on the right (avian) and left (bovine) sides of the thoracic cage in the axilla. This area generally has no or very little fibre, so the injection sites may not need to be clipped or shaved before the skin thickness is measured and the tuberculin injected. If the animals have no eartags, tattoos or other permanent markings, they can be identified for testing purposes using temporary (e.g. spray) marks.

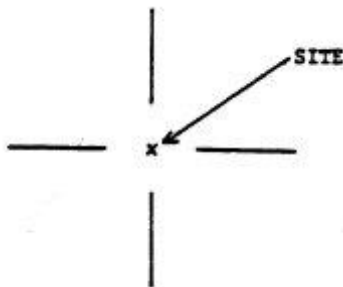
### Equipment

16.4 The equipment required varies from that listed in the Tuberculin testing instructions for cattle in the following details:

- instead of dental or McIntock syringes, disposable 1 ml syringes graduated 0.1cc and fine needles 25/26G needles should be used. The syringes to be used for avian tuberculosis should be marked with red tape;
- engineer's (Vernier) callipers or the equivalent (as for deer), which are calibrated to measure accurately to at least 0.5 mm must be used by the testing vet for all officially requested tests and must be strongly recommended to all other vets carrying out private tests;
- marker pens will be required to mark the test sites;
- sharps container for used needles, etc.

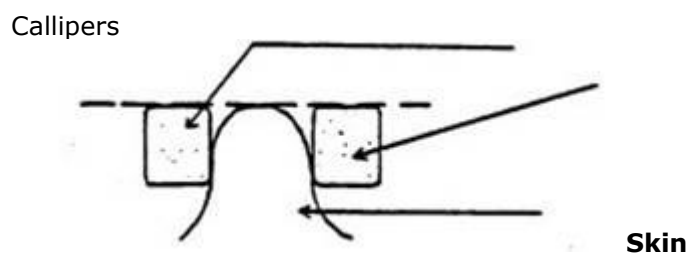
### Test Technique

- Syringes and needles must be sterile before use.
- Mark the injection sites with the marker pen as shown in the diagram.



16.5 Raise a fold of skin at each site, measure accurately with the callipers and record the measurement to the nearest 0.5mm.

16.6 To achieve as uniform a standard of measurement as possible the following measurement technique should be adopted:



16.7 The calliper jaws should be aligned with the fold of skin as shown in the diagram above.

16.8 Measurements will be influenced by skin tension, by the amount of pressure placed by the callipers and by the amount of skin picked up for measurement. Make every effort to standardise the conditions for both injections and readings.

- Draw 0.1ml of tuberculin into the appropriate syringe. Insert the 25/26 gauge needle with the bevel edge outwards obliquely into the prepared area.
- Make the injection of 0.1ml of the appropriate tuberculin so that it is lodged intradermally and check that a pea-like nodule is palpable.
- If such a nodule is not present and it is likely that the tuberculin has been injected subcutaneously, a further injection should be made in the same axilla 8-10 cm away (3 to 4 inches).
- Re-measure the fold of skin at each site after 72 hours and record again to the nearest 0.5 mm along with description of the reaction.
- During testing it is important that needles should be changed frequently as they can become blunt very quickly.

### Health & Safety Warning

Unlike cattle, camelids can spit a mixture of gastric contents and saliva. This is a potential zoonotic risk. Please take appropriate health and safety precautions (see [Chapter 46](#) of the Operations Manual for details).

### Reading and Interpretation

16.9 Tested camelids will be considered potentially infected (reactors) if a positive reaction (i.e. >2mm increase or detectable oedema) is observed at the bovine tuberculin injection site 72 ( $\pm$  4) hours after injection and the increase in skin thickness at the bovine injection site exceeds that measured at the avian injection site. Any other animals will be considered negative. Test results should be recorded on the standard cattle test charts ([TB52\(LT\)/TB52\(VI\)](#), [TB52A\(LT\)/TR52\(VI\)](#)) and submitted promptly to the DVM. If a camelid fails the skin test, the whole herd will be placed under Article 18 or 17 or 16 restrictions if not already in force. TB restrictions will remain in force until all test reactors have been slaughtered and undergone post-mortem examination.

16.10 Any camelids that may have moved out of an infected herd should be forward traced and tuberculin tested once at the Department's expense. It is difficult to define a time window for forward tracings in the absence of any testing history for most camelid herds. Where the infection appears to be due to the purchase of infected stock, tracing investigations should span the period since the arrival of the infected camelid(s). By contrast, where the presumed origin of the TB incident is lateral spread into camelids from local cattle or wildlife source, then the window for forward tracings will be determined by the most likely date of exposure for the diseased camelid(s), based on pathological and epidemiological findings. Testing of any forward traced

animal should take place at least 90 days after the animal left the infected flock. The test should be read using the same interpretation as set out in the previous paragraph. If the owners refuse to allow testing of traced animals, or if there is suspicion that the traced animal could be moved prior to testing, only the traced camelid should be placed under Article 18 or 17 or 16 restrictions. The notice to restrict movements onto or off the premises should confine the traced animal to the premises and isolate it from other susceptible animals until slaughtered, tested clear or dead. In the absence of individual animal ID (i.e. where the current owner cannot conclusively identify which animals came from the infected herd), there may be no option but to check test the entire destination herd. Back tracing investigations and testing of the suspected herd(s) of origin of a tuberculous camelid should also be undertaken.

16.11 Consideration should also be given to testing camelid herds contiguous with cattle herds with a confirmed TB breakdown, where the epidemiological investigation (DRF [TR150](#)) reveals such herds and indicates that camelids might be a source of (or at risk of) infection. Again, this will be at the Department's expense and with the owner's agreement and understanding of the implications.

16.12 Private tuberculin testing of camelid herds of unknown status at the owner's request can be permitted provided that the owner is willing to pay an OV to perform the test. Animal Health will supply the necessary tuberculin free of charge. The OV doing the test will need to write the results up on the usual [TB52\(LT\)/TB52\(VI\)](#), [TB52A\(LT\)/TR52\(VI\)](#) forms and send those to the DVM. Animal Health must inform the herd owner, in advance of testing, of the possible repercussions of a positive test result (e.g. herd restrictions).

16.13 Further guidance on the investigation and reporting procedures for cases of tuberculosis in camelids can be found at: **Disease Investigation > Disease Reporting Procedures > [TB in South American Camelids](#)**