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{By Email}

Our Ref: ATIC00784

26 January 2016

Dear [REDACTED]

PROVISION OF REQUESTED INFORMATION

Thank you for your clarity on your request for information about camelids, which we received on 12 January 2016. Your request has been handled under the Freedom of Information Act 2000.

The information you requested and our response is detailed below:

“I would like to formally request an electronic copy of the new 2015 APHA Camelid bTB Testing Operations Manual please.”

Please see attached at Appendix 1 the documents from APHA’s Operation Manual relating to camelid bTB testing.

Please note these are ‘live’ changing documents, i.e. that any copy thereof that may be made available only reflects the official APHA field instructions/guidance that was in force on the day of printing.

I attach an Annex which explains the copyright that applies to the information being released to you and contact details should you be unhappy with the service you have received.

If you have any queries about this letter, please contact the Access to Information Team at the email address below or postal address at the top of this letter.

Yours sincerely

ACCESS TO INFORMATION TEAM

Email: enquiries@apha.gsi.gov.uk

Annex

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In keeping with the spirit and effect of the Freedom of Information Act 2000/Environmental Information Regulations 2004, all information is assumed to be releasable to the public unless exempt. The information released to you may now be published on our website together with any related information that will provide a key to its wider context.

Complaints

If you are unhappy with the result of your request for information you may request an internal review within 40 working days of the date of this letter.

If you wish to request an internal review, please contact: The Access to Information Team at enquiries@apha.gsi.gov.uk or at the postal address at the top of this letter, who will arrange for an internal review of your case.

If you are not content with the outcome of the internal review, you have the right to apply directly to the Information Commissioner for a decision. Please note that generally the Information Commissioner cannot make a decision unless you have first exhausted APHA's own complaints procedure. The Information Commissioner can be contacted at:

Information Commissioner's Office
Wycliffe House
Water Lane
Wilmslow
Cheshire
SK9 5AF

index

Taken from: <http://intranet/v1p3r/workareas/Tuberculosis/Camelids/index.htm>

TB in Camelids Overview

Admin Tools
Export to Word
Show
<input type="checkbox"/> Documents
<input checked="" type="checkbox"/> Background
<input type="checkbox"/> Generics
Export
View all Feedback
Show Info Points
Switch off Admin Mode
There are 12 generics on this page:
Background
Policy Overview
Policy in England
Policy in Wales
Definitions and Interpretations
Roles and Responsibilities
Veterinary and Technical Officers
Worcester Specialist Service Centre
Cardiff Specialist Service Centre
APHA Laboratories
Food Standards Agency and Food Standards Scotland
Health and Safety

Index

- Background
- Policy Overview
- Dealing with Herds Under Long Term Restrictions
- Definitions and Interpretations
- Roles and Responsibilities
- Health and Safety

[Tuberculosis/Camelids/Background.html](#)

Background

1. Based on the currently available information from Great Britain (GB) and other countries, camelids can be considered incidental, spillover hosts to *Mycobacterium bovis* (*M. bovis*). In most cases these animals become infected through contact with one of the maintenance hosts and vectors of infection in GB (i.e. badgers and cattle, or environment contaminated by their secretions and excreta). There have been instances of transmission between camelid herds. Therefore camelids can behave as amplifiers (vectors) of *M. bovis* infection for other animals with which they come into contact. Natural transmission of the bacterium has been documented between tuberculous alpacas and close human in-contacts.

2. According to their ability to maintain TB within their own populations, Coleman and Cooke (2001) have classified spillover hosts to *M. bovis* as:

- hosts, where TB occurs within the species only as long as there is input from an external source (maintenance host). Spillover hosts may in turn be either 'dead-end' hosts (if the incidence and pathology of the disease indicates they play no significant role in its onward transmission) or 'amplifier' hosts (if they appear capable of transmitting *M. bovis* to other species).

3. TB is not a major health problem of South American camelids (llamas, alpacas, vicuñas, guanacos) worldwide but these species do occasionally become infected and develop clinical TB. The wildlife challenge of badgers can pose a particular risk for camelids in some areas of GB.

4. Reports of infection in their natural habitat in South America are scarce, but they do not typically co-habit with cattle in South America. Cases of TB caused by *M. bovis* have been diagnosed in llamas and alpacas in New Zealand, the USA, Holland, Ireland and GB.

5. TB is very difficult to diagnose in these species on clinical examination alone. TB should be considered in the differential diagnosis of all cases of chronic loss of condition and debilitating disease in these species, with or without obvious respiratory signs, particularly where camelids are reared (or originate) in areas of high bovine TB incidence. Post mortem examination of all unexplained deaths is recommended.

6. Bovine TB is a zoonotic disease and public health issues arise in camelids due to the tendency to spit a mixture of gastric contents and saliva. Where TB in camelids is confirmed by culture of *M. bovis* the, Animal and Plant Health Agency (APHA) must immediately inform the Consultant in Communicable Disease Control (CCDC) or Consultant in Public Health Medicine (CPHM) of the Local Health Authority so that any risks to human contacts can be investigated.

Policy Overview

1. Official Veterinarians (OVs) are not appointed as Veterinary Inspectors (VIs) under the Animal Health Act 1981 outside of emergency appointment in a notifiable disease outbreak situation. The OV therefore, does not have powers of entry and powers to restrict, seize, sample, test or mark animals if the camelid owner refuses to comply. In this situation, the OV should immediately contact APHA who will apply these powers where required.
2. In England, Scotland and Wales there is no statutory surveillance programme for TB in non-bovine animals at present.
3. There are statutory controls in Wales (The Tuberculosis (Wales) Order 2011) covering compulsory identification, records, movement restrictions, testing, slaughter and compensation arrangements.
4. Following consultation in England, statutory compensation applies since 1 October 2014. This change permits the relevant sections of the Animal Health Act 1981 to be implemented in England with regards to powers of entry and the requirement to test camelids after service of a notice, and to remove for slaughter any reactors or contacts.
5. Statutory controls were introduced in Scotland from 9 October 2015 for specified animals including camelids (alpacas, llamas, guanacos and vicunas). The Tuberculosis in Specified Animals (Scotland) Order 2015 makes provision for the notification of disease in these specified live animals where they are affected or suspected of being affected with TB. It also sets out identification requirements and provides for a veterinary inquiry, skin and blood testing and the taking of samples to be carried out as required in order to establish whether disease is present. Restriction notices relating to animal movements, isolation and the handling of milk from these animals may be served by APHA.

Policy in England

1. In England powers for TB control in camelids are within domestic legislation made under the Animal Health Act 1981.
2. There is a legal obligation on herd owners/keepers and veterinary practitioners to report to the local APHA office:

- suspect TB lesions in camelid carcasses with gross pathological (or histological) changes and
- where *M. bovis* is identified (by the person in charge of a laboratory) by laboratory examination of samples taken from live camelids or their carcasses or products.

3. There is currently no requirement in England, unlike in cattle, to report suspect TB infection in a live camelid. However, if an owner suspects their animal may be infected with TB, they should:

- contact their PVS
- be encouraged to arrange a Post Mortem Examination (PME) with their PVS on any camelid which dies on farm or shows signs which are suspicious of tuberculosis.

4. If TB cannot be ruled out at the PME, APHA will arrange culture of the samples at government expense.

5. In England, since 1 October 2014, under The Tuberculosis (Deer and Camelid) (England) Order 2014, Veterinary Officers (VOs)/Senior Veterinary Inspectors (SVIs) are able to require compulsory testing of camelids before a specified date and the Secretary of State may enforce their removal for slaughter if they react to a TB test or are contacts to infected animals. A formal Tuberculosis Test Notice (TN06/TN06(Welsh)) and TB Testing Notification Letter (TN07/TN07(Welsh)) to carry out testing by a given date may be served by APHA on herd owners and no prior approval from Defra Policy will be necessary. Statutory compensation will be paid by Defra in such cases. These additional powers as a result of moving to statutory compensation payments for reactors and close contacts should be used with owner's agreement wherever possible.

6. Vaccination and treatment of camelids for TB are also prohibited by this legislation.

Policy in Scotland

1. In Scotland, from 9 October 2015, powers for control of TB in non-bovines are provided by The Tuberculosis in Specified Animals (Scotland) Order 2015 which is made under the Animal Health Act 1981. Powers provided include:

- notification of suspect TB in live animals
- restrictions on movement and isolation
- veterinary inquiry
- testing after formal notification
- identification requirements
- reporting of test results

- compulsory slaughter
- prohibition of vaccination and treatment for TB
- precautions against spread of infection
- compensation.

2. Non-bovines under The Tuberculosis in Specified Animals (Scotland) Order 2015 are defined as:

- alpaca
- guanaco
- llama
- vicuña
- deer
- sheep
- goats, and
- pigs.

3. Where there is a reasonable suspicion of *M. bovis* infection in an unrestricted herd following disclosure of characteristic TB lesions at PME and there is a risk that further movements of susceptible animals may take place, a VI may serve a Notice Prohibiting Movement of Specified Animals (TN02/TN02(Welsh)) on the rest (or part) of the herd and initiate further investigation.

4. If the suspicion of clinical TB in a camelid is based on clinical grounds alone, in an otherwise unrestricted herd without post mortem evidence of infection or some epidemiological link to a TB incident with confirmed disease (be it through a forward or back-tracing, adjoining premises, or co-location with an infected cattle herd), it is up to the Official Veterinarian (OV)/owner to decide if they wish to:

- arrange for a private skin test
- keep the diseased animal(s) under observation (with symptomatic treatment) or
- euthanise them immediately for PME.

5. Where suspicion of TB has been reported but bacteriological tests conducted at APHA laboratories are negative for *M. bovis*, APHA will take no further action, other than to lift any restriction notice that has been served.

6. If TB is confirmed or if there is a strong suspicion of TB infection in camelids, movement restrictions will be imposed, if not already in place, and will remain until APHA is satisfied there is freedom from TB. Owners will be consulted on what further measures including testing will be required to resolve the incident.

7. If infected camelids are identified, APHA will TB test any cattle located on the same holding, and also initiate contiguous testing on neighbouring premises where appropriate.

[Tuberculosis/Policy_in_Wales.html](#)

Policy in Wales

1. Powers for control of TB in non-bovines are contained within The Tuberculosis (Wales) Order 2011 which is made under the Animal Health Act 1981, and the Tuberculosis (Testing and Powers of Entry) (Wales) Order 2008 which gives additional powers for testing.
2. Non-bovines under The Tuberculosis (Wales) Order 2011 are defined as deer, alpaca, guanaco, llama, vicuña and goats.
3. There is a legal obligation on herd owners and veterinary practitioners to report any cases where there is suspicion of infection with TB in a non-bovine animal.
4. There is also an obligation to detain, isolate and adopt precautions regarding milk sold for human consumption pending service of a restriction notice.
5. The legislation requires identification of deer, alpaca, guanaco, llama and vicuña and also the maintenance of movement records for these species.
6. Inspectors have the powers to require TB testing before a specified date and also to compensate for any animals slaughtered for the purpose of TB under the Animal Health Act.
7. Where there is a reasonable suspicion of *M. bovis* infection in an unrestricted herd following disclosure of characteristic TB lesions at PME a Veterinary Officer (VO) or Senior Veterinary Inspector (SVI) will serve movement restrictions and initiate further investigation. The TB-free status (equivalent to Officially Tuberculosis Free (OTF) status in cattle herds) of the herd will be suspended (equivalent to OTFS in cattle).
8. If the suspicion of TB in a camelid or goat is based on clinical grounds alone, the herd will lose its TB-free status and become equivalent to OTFS. A restriction Notice will be served and the clinical case should be euthanised, undergo PME, sampling and culture. Refer to instructions for clinical cases.
9. Whenever infection with TB is confirmed, movement restrictions will be imposed if not already in place and TB-free status will be withdrawn (equivalent to OTFW in cattle

herds). Restrictions will remain in place until APHA is satisfied that there is freedom from TB, when TB-free status can be reinstated.

10. If infected (*M. bovis* cultured) animals are identified, the case VO will conduct a Veterinary Risk Assessment (VRA) to determine the testing requirement for cattle and other non-bovine species co-located on the same holding. The need for contiguous testing of livestock will also be assessed. Refer to Case Management for details on co-located and contiguous herds.

11. Legislation prohibits the treatment of a non-bovine animal (as defined by the Order) for *M. bovis* unless written permission has been given by Welsh Government (WG).

Dealing with Herds Under Long Term Restrictions

1. When a camelid herd has been under long-term TB restrictions, e.g. due to lack of compliance with disease control requirements such as slaughter of reactors and/or further testing, or because in England and Scotland statutory skin testing was by owner consent before October 2014 and 2015 respectively, APHA may require testing to be completed under the new orders.
2. In England (using Article 12 of The Tuberculosis (Deer and Camelid)(England) Order 2014) camelid owners should be sent covering letter (TN07/TN07(Welsh)) and Notice (TN06/TN06(Welsh)) requiring them to carry out the testing. At the same time, Withdrawal of Restrictions Notice (TN10/TN10(Welsh)) should be issued to revoke the old Notice Prohibiting Movement of Specified Animals (TN02/TN02(Welsh)) and simultaneously re-impose restrictions (TN02) under the 2014 Order. It is recommended that before issuing these letters and notices, the VO/SVI communicates informally with owners about the statutory requirement to test and consequences for future movement restrictions.
3. In Wales, the Tuberculosis (Wales) Order 2011 (Article 9(1)) states that Welsh Ministers may serve on the keeper a notice requiring them to have any camelids tested for tuberculosis by a specified date.
4. In Scotland, the Tuberculosis in Specified Animals (Scotland) Order 2015 (Article 7) similarly permits Scottish Ministers to require camelids to be tested for TB after service of a notice.
5. In both Scotland and Wales, SVI/VOs must refer all incidents under long-term movement restrictions to the Scotland Veterinary Lead (SVL)/Veterinary Lead Wales (VLW) so that

consideration can be given to each on a case-by-case basis and further actions agreed concerning movement restrictions, testing, slaughter and compensation requirements.

[Admin/Definitions_and_Interpretations.html](#)

Definitions and Interpretations

1. For guidance on definitions and interpretations, please refer to the specific legislation you are working under or use the glossary for individual definitions.

[Tuberculosis/Non-Bovine_Role_of_AHVLA.html](#)

Roles and Responsibilities

1. Animal and Plant Health Agency (APHA) is committed to tackling tuberculosis by working in partnership with our stakeholders and policy partners.

APHA Offices

1. Regional Veterinary Leads (RVLs)/Scotland Veterinary Leads (SVLs)/Veterinary Leads Wales (VLW) are responsible for:

- investigating and controlling suspected breakdowns of TB by instigating programmes of further testing and slaughter
- liaison with policy partners, the Food Standards Agency (FSA) Operations Group, Local Authorities (LAs) and public health bodies
- the audit of Official Veterinarians (OVs) in the testing of animals for TB to agreed approach and standards
- issuing of licences for animal movements and approvals of premises
- monitoring compliance and assisting with enforcement.

Delivery Partners

1. In England and Wales APHA commission managed veterinary services from a number of Regional Delivery Partners (DPs). Under Service B of the agreement, each DP is contracted to carry out government paid testing of non-bovines across a defined geographical area.
 2. Using Sam APHA notifies the DPs of testing requirements and they are then responsible for ensuring that the work is completed.
 3. DPs are responsible for ensuring that specified quality standards are met. APHA retains the right to conduct field audits of the technical performance of individual OVs.

[Tuberculosis/Vet_Tech_Officers_Non-Bovine.html](#)

Veterinary and Technical Officers

1. Veterinary and Technical officers work under the direction of the RVL/SVL/VLW to:

- investigate and control breakdowns of TB in farmed non-bovine species
- investigate suspect and confirmed cases of *M. bovis* reported to APHA
- produce a disease report in confirmed incidents
- manage requests for licensing and approval
- liaise with stakeholders and other interested parties
- carry out other duties as required by the RVL/SVL/VLW.

[Tuberculosis/Worcester_SSC_Role.html](#)

Worcester Specialist Service Centre

1. Worcester Specialist Service Centre (SSC) are responsible for:

- the receipt of culture reports from the APHA laboratory when *M. bovis* is isolated from a non-bovine animal
- forwarding culture reports to the relevant APHA office
- the receipt of disease reports regarding action taken on the specific case
- ensuring disease reports to the relevant TB Policy Veterinary Advisors by the RVL/SVL/VLW
- retention of disease reports.

[Tracings/Tuberculosis/Cardiff_SSC_Action.html](#)

Cardiff Specialist Service Centre

1. Cardiff Specialist Service Centre (SSC) carries out tracing investigations on behalf of APHA and is responsible for undertaking tracings work for bovine tuberculosis and exotic diseases.

2. Cardiff SSC engages with local APHA offices to complete this work.

[Tuberculosis/AHVLA_Laboratories_NB.html](#)

APHA Laboratories

1. APHA laboratories are responsible for:

- reporting any suspect cases of bovine TB disclosed by Post Mortem Examination (PME) by emailing the material for examination form (TB50) to Worcester SSC
- post mortem, sampling and culture of animals submitted to the regional laboratory as a suspect clinical case or a reactor/direct contact and reporting the results of the PME and culture to the local office.

[Tuberculosis/FSA_Role_NB.html](#)

Food Standards Agency and Food Standards Scotland

1. The Food Standards Agency (FSA) and Foods Standards Scotland (FSS) are responsible for:

- Post Mortem Inspections (PMIs) in all red meat processing slaughterhouses
- collection of tissue samples from non-bovines species (deer, camelids, goats, sheep and pigs) as directed by APHA
- submission to an APHA laboratory for culture.

2. The FSA Manual for Official Controls ([MOC](#)) covers all work of OV's and Meat Hygiene Inspectors and includes:

- procedures relevant to TB in deer
- general rules for handling, isolation, inspection and judgement of carcasses for reactors, Direct Contacts (DCs), Inconclusive Reactor (IRs) and slaughterhouse cases
- instructions on reporting slaughterhouse case
- detailed instructions on sampling of reactors, DCs, IRs and slaughterhouse cases.

[Tuberculosis/Health_and_Safety.html](#)

Health and Safety

1. All staff undertaking TB field work must be familiar with APHA's generic suite of Risk Assessments (RAs).

2. This work involves particular hazards and controls identified in parts of:

- **RA1** Non-Animal Health Premises
- **RA2** Animal Interaction
- **RA4** Collection of Wildlife for Surveys
- **RA5** Working in Slaughterhouses, Factories, Mills and By-Products Premises
- **RA7** Post Mortem Rooms, Labs and Packing Rooms
- **RA10** Verbal and Physical Abuse
- **RA13** Animal Testing, Sampling and Bolusing
- **CRA1** Liquid Disinfectants
- **CRA2** Antec Virkon S
- **CRA9** Biological Agents
- **CRA11** Tuberculin.

3. When protective or defensive, camelids can spit (a projectile regurgitation of rumen contents). They can project this material very accurately up to five metres. Spitting is usually signalled by an extreme 'ears back' (ears pinned) expression, with the muzzle

lifted and neck straightened. This material can potentially be heavily contaminated with TB bacteria. This presents a significant risk of transmission if it enters:

- mouths
- eyes
- lungs, and
- unprotected wounds.

4. APHA staff may be called upon to test camelids or to carry out PMEs. PMEs should be carried out under controlled conditions in APHA laboratories. Carrying out PMEs on farm or in knackeries has the potential for exposing staff and others to TB infection so careful consideration should be given by staff as to where to conduct such activities, who could be affected and the controls put in place.

5. APHA staff are expected to wear dark coloured overalls (brightly-coloured clothing may startle camelids) and disposable gloves when working with camelids.

6. The use of a face mask (P3) to protect against inhalation of bacilli and eye protection using either goggles or a face visor is mandatory. Under hot airless conditions, staff may use a full face hood with positive pressure filtered (P3 equivalent) air blown into the hood as an alternative to a face mask (P3) and goggles. Where a member of staff uses a disposable face mask or a full face mask then they must hold the appropriate face fit certificate.

index

Taken from:

http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Suspicion_and_Confirmation_of_TB/index.htm

Suspicion and Confirmation of TB in Camelids

Admin Tools
Export to Word
Show
<input type="checkbox"/> Documents
<input checked="" type="checkbox"/> Background
<input type="checkbox"/> Generics
Export
View all Feedback
Show Info Points
Switch off Admin Mode
There are 16 generics on this page:
Overview
Suspicion of Disease
England
Wales
Reported Clinical Case
Report of Suspect Lesion
Suspected Animals at Markets, Shows and Sales (Scotland and Wales)
Camelids Co-located on Infected Cattle Premises
Herds on Contiguous Premises
Confirmation of TB
In England and Scotland
In Wales
Private Treatment of Camelids for TB
Wales
Disease Investigation and Reporting Procedures
Updating the Non-bovine TB Spreadsheet

Index

- Overview
- Reporting of Results and Case Definitions
- Suspicion of Disease
- Reported Clinical Case
- Report of Suspect Lesion
- Suspected Animals at Markets, Shows and Sales (Scotland and Wales)

- Camelids Co-located on Infected Cattle Premises
- Herds on Contiguous Premises
- Confirmation of TB
- Private Treatment of Camelids for TB
- Disease Investigation and Reporting Procedures
- Updating the Non-bovine TB Spreadsheet

[Tuberculosis/Suspicion_and_Confirmation_of_TB.html](#)

Overview

1. Under the Tuberculosis (England) Orders 2014 and the Tuberculosis and (Scotland) Order 2007, there is a statutory requirement to notify the suspected presence of TB in the carcass of any bovine, or other farmed or companion (pet) mammal to Animal and Plant Health Agency (APHA).

2. Under the Tuberculosis (Wales) Order 2010 and 2011, there is a statutory requirement to notify the suspected presence of TB in any carcass or live non-bovine animal. A non-bovine animal is defined as a:

- deer
- goat
- alpaca
- guanaco
- llama, or
- vicuna.

3. Furthermore, identification of *Mycobacterium bovis* (*M. bovis*) in samples taken from any mammal (other than man) is also notifiable to APHA unless the organism was present in the sample as a result of an agreed research procedure.

4. In England notifying the suspicion of TB in a living domestic animal in the course of clinical examination, surgery, by radiography or in biopsy material is not mandatory (except for cattle or deer), but private submission of carcasses or clinical samples from such cases to the APHA laboratory is encouraged.

5. In Wales suspicion of TB in any camelid living or dead must be notified to APHA.

6. In Scotland, under Article 4 of the Tuberculosis in Specified Animals (Scotland) Order 2015, keepers and veterinary surgeons who know or suspect that a living specified animal may be affected or suspected of having TB must report this to Scottish Ministers (APHA).

7. APHA field officers will facilitate the submission of tissue specimens (suspected TB granulomas/abscesses) to an APHA TB diagnostic laboratory for mycobacterial culture at Defra's expense. Such reports may come from:

- Private Veterinary Surgeons (PVSs)
- Food Standards Agency (FSA) or Food Standards Scotland (FSS) Inspectors
- animal owners or keepers
- private laboratories
- veterinary schools
- APHA Regional laboratories
- SAC Veterinary Investigation Centres in Scotland.

Reporting of Results and Case Definitions

1. A case of TB in camelids will only be considered as **confirmed** when *M. bovis* bacilli are cultured and the identity of the isolate is confirmed by spoligotyping.

2. Lesions in camelids caused by mycobacteria can be very similar in appearance at Post Mortem Examination (PME) to lesions caused by a variety of other organisms, even to experienced pathologists. Typical lesions at PME of tuberculosis in camelids are lung lesions that are white or cream in colour and bronchial or mediastinal lymph nodes that are caseous and enlarged. In cases of advanced infection, similar lesions may be found in a wide range of tissues as well as in the lung and associated lymph nodes. Cavitation of the lung is sometimes seen in large lesions. Lesions at other sites e.g. head lymph nodes, liver or mesenteric lymph nodes in the absence of lesions of the lung or bronchial or mediastinal lymph nodes should be regarded as atypical unless the Veterinary Investigation Centre conducting the PME has demonstrated acid-fast organisms typical of mycobacteria on stained smears direct from the lesions.

3. Those carrying out post mortem examinations on camelids should read the relevant sections of the In Practice article [Recognising the gross pathology of tuberculosis in South American camelids, deer, goats, pigs and sheep](#).

4. Lesions at PME which appear as **typical** for TB will be reported as Visibly lesioned (VL), any atypical lesions will be recorded on the Material for Examination at APHA Laboratories (TB50) as 'atypical' unless acid fast bacilli typical of mycobacteria have been demonstrated on a stained smear at the time of PME, in which case they may be reported as VL. If lesions are recorded as 'atypical' in the box on the Material for Examination at APHA Laboratories (TB50), this should be considered as 'NVL' by APHA field staff and recorded as such on the non-bovine spreadsheet.

5. Histopathology will be undertaken on VL and atypical camelid samples to give an early indication of mycobacterial infection. This will be reported as being positive or otherwise for Acid-Fast Bacteria (AFB) but as this group includes infection with *M. bovis*, *M. avium*, *M. microti* and *M. tuberculosis*, this finding is not specific to *M. bovis* and therefore should not be reported to owners/keepers and PVSs as positive but just an indication of the possible cause of the infection.

6. Unlike cattle, where isolation of *M. bovis* is usually confirmed by colony morphology in selective liquid and solid media alone, all mycobacterial isolates grown from camelid samples are subjected to spoligotyping methods to confirm the presence of *M. bovis*. This is because colleagues in the TB culture laboratories have previously found growth in non-bovine submissions that was typical of *M. bovis* but where the identity of the isolate was not subsequently confirmed as *M. bovis* by spoligotyping. Consequently, confirmation of *M. bovis* in camelid and other non-bovine samples takes approximately two weeks longer than it does in most equivalent cattle samples. Tissue from camelids, whether NVL, atypical or VL, will take a minimum of eight weeks to culture and to identify. However, if the lymph or other tissue submitted has lesions (VL), is atypical and an alternative diagnosis has not been obtained on histopathology or where the histology result is inconclusive or there is insufficient material and the first culture proved negative, the sample will be re-cultured. This will then delay reporting the final result by a further seven to eight weeks equating to approximately 16 weeks in total.

7. This explains why, in the case of camelids which are removed as suspected clinical cases or as the first reactors to a skin or serological test for TB, we await the final culture result before confirming the herd as infected with *M. bovis* and that we delay making decisions on slaughtering or setting future testing protocols and interpretation of blood tests. This increases specificity of the tests and reduces the likelihood of imposing restrictions and testing in herds infected with slaughtering false positives perhaps due to *M. microti* or some other organism.

8. However, once *M. bovis* has been confirmed by laboratory culture and genotyping in a previous reactor or clinical case, all subsequent test reactors with typical visible lesions of TB at PME should be considered as 'confirmed cases' for the practical purposes of managing the TB incident, and no further cultures should be attempted from these cases.

[Tuberculosis/Camelids/Suspicion_of_Disease.html](#)

Suspicion of Disease

1. Suspicion of disease in a camelid may be:

- suspicion of clinical disease
- suspicion of TB lesions at a PME
- because of high risk of infection due to epidemiological links and/or contact with other herds e.g. tracings from infected camelid herds,Â camelid herds co-located with or contiguous to a herd of cattle, goats, deer, pigs or other livestock in which *M. bovis* infection has been confirmed.

[Tuberculosis/Suspicion_of_Disease_for_Goats_and_Camelids.html](#)

England

1. Where TB caused by *M. bovis* is strongly suspected during post-mortem examination or post-mortem meat inspection of farmed mammals other than cattle, APHA must serve movement restrictions on the holding of origin of the animal(s) pending the final laboratory culture report, unless:

- the remaining animals in the affected holding are pets and there is no likelihood of movement off the premises and no risk of spread to other animals or
- the suspicion of TB only relates to an epidemiological link, such as a tracing or close proximity to an infected holding (contiguous or shared premises) and any testing required by APHA is not overdue.

2. The restriction notice (TN02) can be used by APHA to restrict movement and to isolate the affected animals, the affected group or the whole herd. The notice requires the specified animals to be kept under control in such a manner as may be stipulated by the Veterinary Officer (VO)/Senior Veterinary Inspector (SVI) of APHA or to be confined to a defined part of the premises. It should be used in a manner commensurate with the risk.

Scotland

1. Where bovine TB is suspected in mammalian species other than cattle/deer, it is not necessary to apply movement restrictions unless:

- cattle/deer are also present on the same premises, or
- in the case of farmed species (e.g. camelids, pigs, goats, sheep), there is a significant risk that other animals in the same group as the suspect case may be moved to other holdings before the culture results are available.

2. The restriction notice (TN02) can be used by APHA to restrict movement and to isolate the affected animals, the affected group or the whole herd. The notice requires the specified animals to be kept under control in such a manner as may be stipulated by the APHA VO/SVI or to be confined to a defined part of the premises. It should be used in a manner commensurate with the risk.

Wales

1. Where bovine TB is suspected in mammalian species other than cattle, movement restrictions must be served unless:
 - the animal is a pet and there is no likelihood of movement off the premises and no risk of spread to other animals, or
 - following a veterinary risk assessment where the suspicion of disease relates to an epidemiological link, the risk of spread to other animals is considered negligible or very low.
2. The restriction notice (TN02/TN02(Welsh)) can be used by APHA to restrict movement and to isolate the affected animals, the affected group or the whole herd. The notice requires the specified animals to be kept under control in such a manner as may be stipulated by a VO/SVI or to be confined to a defined part of the premises. It should be used in a manner commensurate with the risk.
3. All herds of non-bovine animals, as defined by the Order, will have their OTF status suspended when the restriction notice is served.
4. In all cases where *M. bovis* infection cannot be confirmed by culture of the bacterium from skin or blood test reactors, only one negative comparative tuberculin skin test (SICTT) of the affected camelid herd is required to lift the movement restrictions by service of a Notice - Withdrawal of Movement Restrictions on Specified Animals (TN10). Herd restrictions triggered by a report of a suspected slaughterhouse, post mortem or clinical case which is subsequently negated by histopathology and/or culture can be lifted without the need for a negative TB skin test. No serological blood tests will routinely be used in such **unconfirmed** cases.
5. In Wales only, where the presence of *M. bovis* is suspected but not confirmed on culture, the herd must be assessed against epidemiological criteria in order to determine any requirement to withdraw TB-free status due to an increased risk of infection. Refer to Case Management and the sections below for further details on testing requirements.

Reported Clinical Case

1. Management of suspected clinical TB cases will be informed by veterinary judgement because clinical signs are not pathognomonic.

2. If TB is not suspected, no restriction will be served and follow up action will be the responsibility of the owner and their private vet.

3. When TB is suspected, restrictions will be served. 

~~~~~ *Background Section* ~~~~~

Where there is an established link with infection which makes the level of suspicion high, e.g. previous infection in the herd, or the animal is traced from an infected herd. Veterinary opinion is that infection with TB is likely. 

~~~~~ *End Background* ~~~~~

4. In GB, the legislation under the Animal Health Act 1981 permits the Minister to slaughter an affected, suspected or exposed animal without the owners consent if an APHA VO/SVI considers it necessary and essential.

5. Where TB cannot be ruled out, follow up monitoring will be required. In these cases the owner should be advised to isolate the animal and consult their PVS, with the provision that treatment of camelids for TB is not permitted in England, Scotland and Wales. A reminder should be given that TB in animals caused by *M. bovis* is a zoonotic disease.

6. Follow-up action will be as follows:

- if the level of suspicion increases, euthanise and post mortem as above
- in the case of an alternative diagnosis, restrictions can be lifted
- if a suspect dies or is voluntarily slaughtered before a diagnosis is made, APHA must arrange for carcass removal and post mortem. Post mortem may establish an alternative diagnosis. An absence of lesions will imply that clinical signs were not associated with TB. Restrictions can be lifted without the need for a check test or for tissue samples to be sent for culture
- if a suspect dies and the carcass is disposed of by the keeper without enabling APHA to arrange post mortem testing, restrictions cannot be lifted on any remaining restricted animals until they have passed at least one comparative skin test (check test) with negative results, 90 days after the disposal in the case of camelids
- when characteristic lesions are detected and the animal has been compulsorily slaughtered, submit tissue samples for culture. An immediate comparative skin test can be carried out at the discretion of APHA and with the owner's consent. If test results are negative, this will not count as a qualifying short interval test if *M. bovis* is eventually confirmed on culture

- the sensitivity of skin testing when a camelid already has clinical disease is likely to be poor. A negative TB skin test in such an animal cannot be used as a reliable indicator of freedom from infection. Refer to Arranging the Test for guidance on arranging the TB test.

[Tuberculosis/Report_of_Suspect_Lesion.html](#)

Report of Suspect Lesion

1. A report of a suspect lesion may come from a slaughterhouse, a private lab or from the private vet. There is a legal obligation on herd owners and veterinary practitioners to report any cases of disease with gross pathological (or histological) findings suggestive of TB to the local APHA office.
2. The local office will contact the owner, inform them of the suspicion if they are not already aware, then carry out a disease investigation and assess the risk.
3. It is necessary to apply movement restrictions unless the animal is a pet and there is no likelihood of movement off the premises of other susceptible livestock and no risk of spread to other animals. APHA have the option to carry out an immediate herd skin test. Whether a comparative or bovine only skin test is used will depend upon the level of suspicion concerning the lesions, or whether there is an epidemiological link to a confirmed case. Blood testing is usually not considered at this stage until infection is confirmed on culture, however, if there is considerable evidence of infection such as typical TB-like lesions in multiple organs in several camelids and a highly suspicious case history, then the case VO/SVI may seek the approval of the Veterinary Advisor (VA) in Defra/Scottish Government (SG)/WG.
4. In England and Scotland, if the culture result is reported as negative for *M. bovis*, the owner should be informed, restrictions should be lifted if appropriate and no further action taken. In Wales, if following a Veterinary Risk Assessment (VRA) it is considered there is a high risk that this is *M. bovis*, (based upon histopathology, epidemiology or other factors), a comparative skin check test of the herd may be required. If negative test then restrictions may be lifted provided culture is also negative.
5. If the culture result is reported as positive for *M. bovis*, the owner should be informed and actions taken as detailed in Confirmation of TB below.

[Tuberculosis/Suspected_Animals_Markets_Shows_Sales.html](#)

Suspected Animals at Markets, Shows and Sales (Scotland and Wales)

1. Where reports of suspected disease in animals at markets, shows, exhibitions and sales are received, the Scotland Veterinary Lead (SVL)/Veterinary Lead Wales (VLW) should arrange for a disease investigation and report.
2. If it is found that an animal is, or may be, infected a licence (TN57a(SW)/TN57a(SW)(Welsh)) must be issued by APHA to move the animal either to its premises of origin, or to another premises under VLW approval, e.g. a slaughterhouse.
3. Where the animal is returned to the premises of origin, APHA must serve a restriction notice (TN02/TN02(Welsh)).
4. The market operator/occupier must cleanse and disinfect the market accommodation in which the suspected animal was confined at their own expense.
5. If the market operator/occupier defaults, cleansing and disinfection can be carried out and the expenses recovered from the defaulter.

[Tuberculosis/Camelids/Co-located_on_Infected_Premises.html](#)

Camelids Co-located on Infected Cattle Premises

1. In England and Scotland, where a camelid herd is co-located with an infected cattle herd with OTF status withdrawn (or culture confirmed *M. bovis* infection in pigs, sheep, goats or captive deer) on the same restricted premises and infection has not been demonstrated in the camelids themselves, APHA must serve a Notice Prohibiting Movement of Specified Animals (TN02/TN02(Welsh)). This can be lifted once the Notice Prohibiting the Movement of Bovine Animals (TB02/TB02(Welsh)) has been withdrawn from the infected cattle herd and the entire camelid herd has undergone one single intradermal comparative tuberculin skin test (SICTT) with negative results followed 10 to 30 days later (after day one of the test (TT1)) by either a serial DPPVetTB/IDEXX blood test or a four spot Enferplex test at Government expense 

~~~~~ *Background Section* ~~~~~

'Co-located' in this context involves occupation of the same holding as the infected cattle herd with potential for direct or indirect transmission between cattle and camelids (in buildings with a shared airspace and/or on shared grazing areas), or exposure to a common source of *M. bovis* infection. Refer to Case Management for details on herd status 

~~~~~ *End Background* ~~~~~

2. In Wales, co-located camelids with infected cattle or other non-bovine livestock (pigs, sheep, goats, captive deer) will be considered as part of the same epidemiological unit. APHA will serve a Notice Prohibiting Movement of Specified Animals (TN02/TN02(Welsh)) and the camelids will undergo a skin test (bovine tuberculin only) followed 10 to 30 days later by parallel DPPVetTB/IDEXX blood tests. Further skin testing with the infected cattle or other livestock may also be required, whether the cattle breakdown is Officially Tuberculosis Free status Suspended (OTFS) or OTFW.

3. The decision as to whether the restrictions should remain in force or be withdrawn due to effective segregation should only be taken by the RVL/SVL/VLW and based on:

- whether camelids have received the required number and type of skin and blood tests (appropriate to the country involved)
- the control measures adopted by the owner to effectively segregate the cattle from the untested animals on the same farm for the period before infection could have entered the infected group
- the likely source of infection for the cattle herd and the potential routes of transmission as determined by a veterinary risk assessment of the management of the two species on the affected farm, and
- whether the risk of direct or indirect contact continues during the breakdown (restrictions must remain in place on the camelids until a comparative skin test is carried out on the camelids after the potentially releasing test in the cattle). Similarly, the cattle will remain under restriction pending the completion of the camelid testing.

4. The Consultant in Communicable Disease Control (CCDC)/Consultant in Public Health Medicine (CPHM) should not be notified in the case of co-located camelids, unless or until *M. bovis* infection has been confirmed in the camelid herd itself. The CCDC/CPHM should already be aware that *M. bovis* infection has been found in the cattle herd.

5. The movement licence (TN24/TN24(Welsh)) should be used to authorise the movement of camelids direct to slaughter. The general movement licence (TN24c/TN24c(Welsh)) may be used where a camelid herd is restricted and movements to slaughter are frequent, providing no risk is attached to the use of a general licence. As most camelids rarely have any slaughter value, they will usually be slaughtered on the premises and removed to a knackery for disposal (no licence usually required).

[Tuberculosis/Camelids/Contiguous_Premises.html](#)

Herds on Contiguous Premises

1. Camelid herds that are identified as being contiguous 

~~~~~ Background Section ~~~~~

Contiguous is defined as premises or parcels of land with susceptible livestock present on them. In high risk areas of England and Wales these are:

• immediately adjacent to the breakdown herd (infected group), or  
• separated by a small river or road or a parcel of land which is:  
• unstocked and less than 1km, or  
• woodland, or  
• suitable habitat for badger or deer.

In low risk areas of England, Scotland and Wales these include:

• immediately adjacent to the breakdown holding, or  
• separated by a small river or road.

Where there is considered to be a very low risk of wildlife involvement in an area, contiguous testing may only need to involve camelids on parcels of land adjacent to the infected livestock group (possible nose-to-nose contact) and where the land was recently occupied by the infected livestock, probably in the last 60 days.

Consideration of possible straying incidents will be considered along with the effectiveness of biosecurity arrangements, whether there is any overdue testing in local herds. Contiguous testing is carried out not only to identify an origin for the infection but also to determine whether infection has spread from the infected livestock.

~~~~~ End Background ~~~~~

to cattle herds (or other infected non-bovine animals) affected by an OTFW breakdown, must be considered for testing following the same criteria for identification of contiguous herds as that used for cattle herds, i.e. where the epidemiological investigation reveals that camelids might be a source of (or at risk of) infection.

2. One comparative tuberculin skin test with negative results will be required followed by either serial DPPVetTb/IDEXX blood testing 10 to 30 days after day one (TT1) or a four spot Enferplex test at APHA's expense (England and Scotland only). In some cases, where camelids and cattle are co-located on the contiguous premises, both the cattle and camelids will be tested unless a Veterinary Risk Assessment (VRA) determines otherwise.

3. The herd should not, in principle, be subjected to TB restrictions (TN02/TN02(Welsh)) pending TB testing, unless a VRA concludes otherwise or unless testing becomes overdue.

[Tuberculosis/Confirmation_of_TB.html](#)

Confirmation of TB

1. Confirmation of infection with *M. bovis* will normally be by receipt of a positive culture for *M. bovis* from an APHA TB diagnostic laboratory.

2. Where *M. bovis* infection has been confirmed in non-bovines, restrictions (TN02/TN02(Welsh)) will be served (unless already served) and will remain in place until the Regional Veterinary Lead (RVL)/Scotland Veterinary Lead (SVL)/Veterinary Lead Wales (VLW) is satisfied that the herd is free from infection.

[Tuberculosis/Camelids/Confirmation_TB_England_Scotland.html](#)

In England and Scotland

1. Movement restrictions on camelid herds with confirmed *M. bovis* infection can only be removed after:

- all suspect animals (including any skin and blood test reactors) have been slaughtered and
- all remaining animals have undergone two consecutive skin tests (bovine tuberculin only) with negative results at intervals of 90 days or more, supplemented by at least one combined parallel serological test 10 to 30 days after the first skin test (this could be the initial skin check test, the disclosing skin test, or the first short interval test (SIT)).

2. The blood samples will be subjected to a DPPVetTB/IDEXX/two spot Enferplex test combination of tests (owner can select any two tests out of the possible three available) at APHA Starcross using parallel interpretation (i.e. animals which are positive to either or both blood tests will be slaughtered as reactors). For APHA to lift the movement restrictions, the whole herd must complete at least one round of DPPVetTB/IDEXX/Enferplex testing, on top of the single intradermal skin tests (bovine tuberculin only). It is therefore possible to delay the blood testing round until after the first or second short interval tests but ideally this sampling should be done as early in the course of the test programme as possible to remove infected animals early. Exceptionally more than one round of blood testing may be permitted if there is evidence of persistent infection in the herd after the first blood test (e.g. in the form of VL skin test reactors or clinical cases with typical TB lesions) but permission must first be sought from the RVL/SVL.

3. In England and Scotland, APHA can consider requests from keepers for additional Enferplex blood testing of skin and DPPVetTB/IDEXX test negative animals at the owner's expense. Owners/keepers must first seek approval via their PVS from APHA to privately test the camelids using Request to Test - TB Testing of Deer and Camelids

(TN184/TN184(Welsh)) and the PVS must report the results to APHA using the same form. Private Enferplex blood testing may only take place after all animals in the herd have been subjected to skin and blood tests administered by APHA to further enhance the detection of any infected animals that may have been missed by the other tests. Any camelid positive on the two spot interpretation of the Enferplex test will be deemed a reactor and slaughtered with the payment of compensation.

4. Alternatively, owners of herds in which *M. bovis* has been isolated may opt for private slaughter (without compensation) instead of testing the remaining animals.

5. APHA Veterinarians can require both skin and blood tests to be carried out after a Tuberculosis Test Notice (TN06/TN06(Welsh)) and TB Testing Notification Letter (TN07/TN07(Welsh)) have been issued.

6. The movement licence (TN24c/TN24c(Welsh)) may be used to authorise any direct movements of live camelids to a place of slaughter.

7. The withdrawal notice (TN10) should be used to lift restrictions when appropriate.

[Tuberculosis/Confirmation_of_TB_in_Wales.html](#)

In Wales

1. Where infection is confirmed as *M. bovis* the TB status of the herd will be withdrawn (equivalent to OTFW in cattle herds). Refer to Case Management for more details.

2. Any herd where TB status has been suspended will be assessed against epidemiological criteria to identify any additional risk of infection and TB status may be withdrawn in these cases, even if culture results are negative for *M. bovis* (equivalent to OTFS-epi in cattle herds).

3. Camelid herds with TB status suspended (for example, at a co-located herd test where the cattle breakdown is OTFS) will require one clear comparative TB skin test of all the animals under restrictions at least 90 days after removal of the last reactor in the breakdown herd. In addition, a blood test of all skin-test negative animals will be carried out between days 10 and 30 after the skin test using the DPPVetTB and IDEXX test combination in **serial** interpretation (i.e. a reactor must be positive to both tests).

4. Movement restrictions on camelid herds with their TB status withdrawn (equivalent to OTFW/OTFS-epi in cattle herds) can only be removed after:

- all suspect camelids (including any skin and blood test reactors) have been slaughtered and
- all remaining animals have undergone two consecutive tuberculin skin tests (bovine tuberculin only) with negative results at intervals of 90 days or more, supplemented by at least one combined DPPVetTB/IDEXX parallel serological test 10 to 30 days after the first skin test (this could be the initial skin check test, the disclosing skin test, or the first SIT).

5. The blood samples will be subject to a DPPVetTB/IDEXX combination of tests at APHA Starcross using parallel interpretation (animals which are positive to either or both blood tests will be slaughtered as reactors). For APHA to lift the movement restrictions, the whole herd must complete at least one round of DPPVetTB/IDEXX testing, in addition to the skin tests. It is therefore possible to delay the blood testing round until after the first or second short interval tests but ideally this sampling should be done as early in the course of the test programme as possible to remove infected animals early. APHA will have discretion, in consultation with Welsh Government (WG TB Policy team), to repeat the serological test if clinical cases or VL skin test reactors continue to be detected later during the breakdown, e.g. after the first blood test.

6. The private use of the Enferplex Test as an alternative for or supplementary test to the combined DPPVetTB/IDEXX blood tests has not been approved in Wales (refer to Ancillary Testing section).

7. As an alternative to testing, the whole herd in which *M. bovis* has been isolated may be privately slaughtered.

8. Legislation provides powers to enforce testing and herds should not be left under permanent restrictions.

9. The movement licence (TN24c/TN24c(Welsh)) can be used to authorise any direct movements of live camelids to a place of slaughter.

10. The withdrawal notice (TN10/TN10(Welsh)) can be used to lift restrictions when appropriate.

[Tuberculosis/Private_Treatment_of_Camelids.html](#)

Private Treatment of Camelids for TB

England

1. Legislation prohibits the therapeutic treatment of camelids for TB without written consent of APHA other than ensuring the basic welfare requirements of the animal.

Scotland

1. A TB test and slaughter regime is incompatible with the treatment of animals for TB.
2. The Tuberculosis in Specified Animals (Scotland) Order 2015 (Article 11) specifically prohibits the treatment and vaccination of specified non-bovine animals against TB, except with the written consent of APHA on behalf of Scottish Ministers.

[Tuberculosis/Private_Treatment_Wales.html](#)

Wales

1. Legislation prohibits the treatment of a non-bovine animal (as defined by the Order) for TB unless written permission has been given by Welsh Government (WG).
2. Where a request to allow treatment has been made to the local APHA office a Veterinary Risk Assessment must be completed and the VLW will make a recommendation to the relevant VA in WG for consideration.

[Tuberculosis/Disease_Investigation_and_Reporting.html](#)

Disease Investigation and Reporting Procedures

1. If *M. bovis* is isolated from a non-bovine animal, the APHA laboratory will forward the details to the Worcester Specialist Service Centre (SSC) [non-bovine shared mailbox](#). Details such as the owner's name and address, CPH number, and other information to identify the Region involved will be provided on the laboratory report.
2. Worcester SSC will forward the report to the shared mailbox of the relevant APHA office (according to the location of the animal).
3. APHA offices can access the APHA Culture Results Status Tool (also referred to as the APHA Crystal system) in order to check details or to obtain more details, such as spoligotype, if available.
4. If bacteriological tests confirm infection with *M. bovis* in mammals other than cattle/farmed deer, the RVL/SVL/VLW must:
 - advise the land owner/keeper to take measures to prevent TB spreading from the affected group of animals to any cattle/deer kept on the same and adjacent premises
 - check that the affected animal or group of animals was placed under movement restrictions when suspicion of TB was reported. If restrictions were not served at the time, issue the Notice Prohibiting Movement of Specified

Animals (TN02/TN02(Welsh)) and advise owners of the public health implications

- arrange for the relevant local public health official to be notified (Consultant in Communicable Disease Control (CCDC) in England and Wales and Consultant in Public Health Medicine (CPHM) in Scotland) (TR389). In the case of domestic animals other than cattle, the notification should include the:
 - details and the phone numbers of the holding/address
 - affected animal(s)
 - clinical, pathological and bacteriological findings so that the CCDC/CPHM can carry out tracings and risk assessments of any human contacts
 - phone number of the holding/address (where possible) in accordance with the guidance agreed with the Department of Health in 2000.

5. Guidance from Public Health England/Wales (PHE/PHW) for the management of human contacts exposed to *M. bovis* infected animals is available at [GOV.UK](https://www.gov.uk). This guidance covers how PHE should approach the risk assessment and TB screening of human in-contacts on infected premises. It should prove of assistance as background information for APHA veterinary field staff liaising with the CCDCs/local Health Protection Units, particularly in England, about a particular OTFW breakdown in cattle or a culture-confirmed incident of *M. bovis* infection involving other domestic species. There are no available versions for Scotland and Wales although Scottish and Welsh Public Health Authorities have followed this guidance. The following links provide contact details for CCDCs/CPHMs:

- [Public Health England](https://www.gov.uk) website
- [Public Health Wales](https://www.gov.uk) website
- Health Protection Scotland - refer to the TB Notifications section in the Scotland Contacts List on the Scotland SharePoint site for details of the CPHM.

6. If new developments of public health significance are identified during the incident, the APHA VO/SVI may need to follow up the initial notification with further updates.

7. The case vet must complete a disease report and include:

- consideration of direct and indirect contact with cattle, other susceptible species such as camelids and goats and with wildlife
- summary of the case with an introduction and main findings and issues
- clinical history, timings, personnel involved, course of disease:
 - clinical signs
 - treatments (if appropriate)
 - laboratory findings and culture
 - risk/infection window (other animals on property at risk)

- notices and restrictions
- animal movements (source and spread tracings)
- maps with details of neighbours such as any susceptible species and the TB testing history on those premises
- wildlife issues (if appropriate)
- public health issues, e.g. involvement of children/elderly, CCDC/respiratory nurse involvement
- other issues including biosecurity
- approach to case to ensure disease freedom and lifting of restrictions etc.
- suggestions/recommendations for future management.

8. The case vet should determine the source of infection as far as possible using the following tools, and in liaison with the RVL/SVL/VLW and the relevant TB Veterinary Advisor (VA) in APHA, Scottish Government or Welsh Government:

- homerange mapping and spoligotype using Spatially Presented Interactive Disease Atlas (SPIDA)
- local TB status and testing history
- relevant epidemiological reports
- any available local information on TB status in wildlife.

9. If there is any epidemiological evidence that the infection could have been acquired from cattle or other farm livestock or been transmitted to them, the testing history of resident and neighbouring cattle herds should be reviewed, and in cases of doubt, check testing (CT) initiated as soon as practicable.

10. The RVL/SVL/VLW will:

- ensure that all necessary information is included and all necessary actions taken
- forward the report to the TB non bovine team in the Worcester SSC [non-bovine shared mailbox](#)
- the [non-bovine team](#) will forward the report to the relevant TB Veterinary Advisor (VA) in [APHA](#), [Scottish Government](#) or [Welsh Government](#), copied to the Worcester SSC [non-bovine shared mailbox](#)
- ensure that the spreadsheet for non-bovine cases has been updated with all necessary information, noting that the postcode must be that of the location of the infected animal at the time of infection with *M. bovis*. The spreadsheet is available on the shared drive in the appropriate office/region folder. Refer to Updating the Non-bovine TB Spreadsheet below for further guidance.

11. Worcester SSC will store the report in a folder in the mailbox.

12. When restrictions are lifted by a withdrawal notice (TN10/TN10(Welsh)), the Chief Environmental Health Officer (CEHO)/Local Authority/CCDC/CPHM should be informed by letter (TN21).

[Tuberculosis/Updating_the_Non-bovine_Spreadsheet.html](#)

Updating the Non-bovine TB Spreadsheet

1. APHA offices are required to record cases of non-bovine TB on the non-bovine TB spreadsheet and to ensure all associated actions were entered. This spreadsheet provides:

- an up to date record of the situation regarding cases of *M. bovis* in non-bovine animals
- an audit trail of actions taken following a positive sample
- a reporting tool for data requests from Defra.

2. RVL/SVL/VLW must ensure that:

- all cases of non-bovine TB reported (confirmed and unconfirmed) are recorded on the non-bovine TB spreadsheet upon initial notification and all relevant information is entered
- the spreadsheet is maintained on a case by case basis and any actions completed are recorded immediately 

~~~~~ Background Section ~~~~~

A guidance sheet is available within the non-bovine TB spreadsheet. 

~~~~~ End Background ~~~~~

- in confirmed non-bovine cases, TB investigation reports must be forwarded by email to the relevant TB Policy Advisor and the [TB Non-bovine](#) mailbox.

3. The non-bovine TB spreadsheets can be found on the Shared Drive in the ~~Performance~~ Measurement/TB Non-Bovine folder within each APHA office area folder. Instructions to access this are as follows:

- in Windows Explorer select 'Tools', 'Map Network Drive'
- choose 'Z:/ drive'
- in the folder box key in: \\wordcsdev\data_server\AH_FILE_SHARE\
Performance
- tick reconnect at logon
- click 'Finish'

- APHA offices must complete the non-bovine TB spreadsheet by region except for Scotland, Wales and the South West Region where it must be completed for individual offices
- the spreadsheet is located in the 'TB Non-Bovine' folder. 

~~~~~ Background Section ~~~~~

The non-bovine TB spreadsheet is password protected and access is gained by using the allocated password already used for other information (such as Priority Performance Report or TB Tracing). 

~~~~~ End Background ~~~~~

Performance Indicators

1. The non-bovine spreadsheet will support the reporting of non-bovine performance indicators as detailed on the Internal Operational Dashboard Performance Year spreadsheets,

index

Taken from:

http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Skin_Test/index.htm

Skin Testing Camelids

| Admin Tools |
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| Export to Word |
| Show |
| <input type="checkbox"/> Documents |
| <input checked="" type="checkbox"/> Background |
| <input type="checkbox"/> Generics |
| Export |
| View all Feedback |
| Show Info Points |
| Switch on Admin Mode |

Index

- Overview
- Testing Qualifications for Official Veterinarians
- Health and Safety Warning

Overview

1. There is no programme of routine surveillance testing in Great Britain (GB) for non-bovines.

In England and Scotland

1. Under the Animal Health Act, Veterinary Inspectors (VIs) have the power to test any animals (not just cattle) for TB.
2. In England, the Tuberculosis (Deer and Camelid)(England) Order 2014 allows the powers within the Animal Health Act 1981 to be used to enforce entry to premises, to test and to slaughter reactors and direct contacts as appropriate and to pay compensation. Formal notices to require owners to test are provided and prior agreement to release reactors and pay compensation is no longer necessary. In England, the Official Veterinarian (OV) should refer to their Delivery Partner (DP) for payment.

3. In Scotland, the Tuberculosis in Specified Animals (Scotland) Order 2015 gives similar powers as in England. These include powers of entry, a veterinary inquiry, testing, slaughter of reactors and direct contacts and the payment of compensation (refer to the Compensation section for Scotland as the payments vary from those used in England and Wales).

In Wales

1. The Tuberculosis (Wales) Order 2011 introduced powers and procedures for camelids, goats and deer in Wales. There are now powers to enforce TB testing and compensation will be paid for animals that are compulsorily slaughtered.
2. Agreement prior to testing to release reactors voluntarily is therefore not necessary before testing is carried out.
3. There is no requirement to apply withdrawal periods for the use of meat and milk in camelids following skin TB testing. 

~~~~~ Background Section ~~~~~

Tuberculin has a zero withdrawal period for meat and milk within the target species (bovines) and therefore Veterinary Medicines Directorate (VMD) made the decision in February 2011 that a zero withdrawal may also apply to the use of tuberculin off label by the cascade in non-bovines. 

~~~~~ End Background ~~~~~

Testing Qualifications for Official Veterinarians

1. Tuberculin testing of camelids using either the Single Intradermal Comparative Tuberculin Test (SICTT) or Single Intradermal Tuberculin Test (SITT) (bovine tuberculin only) must be performed by a veterinary surgeon. This will either be a Veterinary Officer (VO)/Senior Veterinary Inspector (SVI) of Animal and Plant Health Agency (APHA), or an OV qualified to test camelids. Most testing will be carried out by OVs contracted to a Veterinary Delivery Partner (VDP) in England and Wales, though in Scotland an OV working for a practice may carry out this work with the agreement of the Scottish Government (SG).

2. It is a legal requirement in England and Wales that an OV must first seek permission from APHA to test camelids, even if undertaking private testing as they will be using tuberculin provided at APHA expense. In Scotland it is an APHA requirement that OVs seek permission to test camelids.

3. An OV who has completed the on-line course with Improve International and been awarded the Official Controls Qualification (Veterinarian) (OCQ)(V) TT qualification (tuberculin testing in cattle and other species, e.g. camelids, deer and goats) is permitted to test camelids. The OV must obtain the revalidation qualification with Improve International every two years to continue to test. Some OVs awarded the OCQ(V) TT under 'grandfather rights' will not have completed the on-line training with Improve International but will be allowed to undertake this testing of camelids until 31 March 2017 subject to APHA being satisfied that they have the necessary experience (see below). After this date, these OVs must have completed the revalidation qualification in order to continue to test camelids.

4. Where an OV is to undertake any testing of camelids (skin or blood tests), they must first complete part one of Request to Test - TB Testing of Deer and Camelids (TN184/TN184(Welsh)) and send this to their local APHA office. APHA staff will make a check with the OV Team at Worcester Specialist Service Centre (SSC) to ensure that the designated OV holds the OCQ(V) TT qualification. An APHA Vet will contact the OV to discuss the correct testing protocols and procedures to be used, and ensure that they have the appropriate equipment to conduct the skin test accurately. Where it becomes clear that an OV has little or no experience of performing these tests in camelids, where possible, an APHA Vet should attend and supervise at least the start of the test to ensure that the correct testing procedures are being followed.

5. Once satisfied that the OV holds the OCQ(V) TT qualification, and is suitably experienced in the procedures, the APHA Vet will complete part two of Request to Test - TB Testing of Deer and Camelids (TN184/TN184(Welsh)) and return it to the OV.

6. Where camelids are tested at APHA expense by an OV, the OV should refer to their DP for payment.

7. Those OVs undertaking export testing must, in addition to the requirements at points four and five above, have experience of testing camelids and have read and understood the specific guidance on testing and interpretation of results, in the appropriate notes for guidance associated with the export health certificate.

8. Those signing export certification must also hold the OCQ(V) UX qualification (refer to Export Procedures).

Health and Safety Warning

1. Unlike cattle, camelids can spit a mixture of gastric contents and saliva. This is a potential zoonotic risk. Agency staff are required to take the appropriate health and safety precautions as detailed in the Health and Safety work area. The normal minimum expected precautions when handling camelids include use of safety visor/goggles, FFP mask (P3) or fit tested full face option, and BCG vaccination of all agency staff undertaking the testing and handling of camelids.

What_and_When_to_Test

Taken from:

http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Skin_Test/What_and_When_to_Test.html

What and When to Test in Camelids

| Admin Tools |
|--|
| Export to Word |
| Show |
| <input type="checkbox"/> Documents |
| <input checked="" type="checkbox"/> Background |
| <input type="checkbox"/> Generics |
| Export |
| View all Feedback |
| Show Info Points |
| Switch on Admin Mode |

Index

- Eligibility
- Arranging the Test in England
- Arranging the Test in Scotland
- Arranging the Test in Wales
- Private Testing
- Dealing with Positive Results in Private Tests
- Which Skin Test to Use

Eligibility

1. Camelids can be tuberculin skin tested at the Department's expense if:
 - infection with *Mycobacterium bovis* (*M.bovis*) has been confirmed by bacteriological culture of tissues of a previous clinical case or necropsy submission from the affected herd or
 - they are identified as forward or back tracings from a herd with confirmed *M. bovis* infection or
 - they are co-located with, or contiguous to, a cattle herd affected by an Officially Tuberculosis Free Status Withdrawn (OTFW) breakdown or non-bovine farmed animals with confirmed *M. bovis* infection, or
 - in Wales, there is a high level of suspicion of infection with TB (epidemiological risk assessed).

2. Additionally, where there is a reasonable suspicion of *M. bovis* infection in an unrestricted herd following disclosure of characteristic TB lesions at Post Mortem Examination (PME), a Veterinary Officer (VO)/Senior Veterinary Inspector (SVI) will serve Notice Prohibiting Movement of Specified Animals (TN02/TN02(Welsh)) on the rest (or part) of the herd and consider the need for an immediate comparative tuberculin skin test (check test - Single Intradermal Comparative Cervical Test (SICCT)) after discussion and agreement from the owner if possible, as described below, pending receipt of culture results.

3. There are circumstances when private TB testing may be carried out, e.g. for export purposes or where the owner requests a test for management and disease control of purchased animals. Private testing is carried out at the owner's expense and requires prior permission from Animal and Plant Health Agency (APHA). Private skin testing will be conducted by the owner's veterinary surgeon, and private blood testing can be done either by submitting samples to APHA Starcross (DPPVetTB/IDEXX tests) or by SureFarm Ltd (Enferplex Test) (refer to instructions below for more details).

Arranging the Test in England

1. The following orders provide powers and procedures for non-bovines, as defined in the Orders. This includes the power to enforce TB testing and slaughter with payment of compensation at government expense:

- The Tuberculosis (England) Order 2014
- The Tuberculosis (Deer and Camelid) (England) Order 2014 and
- The Tuberculosis (Deer and Camelid) Slaughter and Compensation (England) Order 2014.

2. Where a requirement has been identified for TB testing a herd or animal the local Animal and Plant Health Agency (APHA) office must serve a Tuberculosis Test Notice (TN06/TN06(Welsh)) and TB Testing Notification Letter (TN07/TN07(Welsh)) on the keeper.

3. The Notice (TN06/TN06(Welsh)) must specify:

- the earliest and latest date the skin test can be completed
- the type of test (skin and/or blood) required and the animals requiring testing
- the person designated to carry out the test
- the date movement restrictions will be applied if the test is not completed (and results received by the APHA office).

4. The office must:

- complete the Notice (TN06/TN06(Welsh))
- post with the covering letter (TN07/TN07(Welsh)) to the owner
- create a work schedule for testing on Sam (refer to Standard Operating Procedure (SOP) TB Work Management for Non-Bovines (WMTB1a)).

5. Under the powers of the legislation, the owner is required to facilitate the test at their own expense.

6. Failure to carry out a test by the date specified in the Notice (TN06/TN06(Welsh)) will result in movement restrictions being applied and any actions necessary by APHA to facilitate the testing of the animals specified are cost recoverable (such as the use of mobile crushes or contractors).

Arranging the Test in Scotland

1. The following orders provide powers and procedures for non-bovines, as defined in the Orders. This includes the power to enforce TB testing and slaughter with payment of compensation at government expense:

- The Tuberculosis (Scotland) Order 2007
- The Tuberculosis in Specified Animals (Scotland) Order 2015.

2. Where a requirement has been identified for TB testing a herd or animal, the local APHA office must serve a Tuberculosis Test Notice (TN06/TN06(Welsh)) and Covering Letter (TN07/TN07(Welsh)) on the keeper.

3. The Notice (TN06/TN06(Welsh)) must specify:

- the earliest and latest date the skin test can be completed
- the type of test (skin and/or blood) required and the animals requiring testing
- the person designated to carry out the test
- the date movement restrictions will be applied if the test is not completed (and results received by the APHA office).

4. The office must:

- complete the Notice (TN06/TN06(Welsh))
- post with the covering letter (TN07/TN07(Welsh)) to the owner
- create a work schedule for testing on Sam (refer to Standard Operating Procedure (SOP) TB Work Management for Non-Bovines(WMTB1a))

5. Under the powers of the legislation, the owner is required to facilitate the test at their own expense, i.e. providing suitable handling facilities and appropriately trained and sufficient staff to handle the animals.

6. Failure to carry out a test by the date specified in the Notice (TN06/TN06(Welsh)) will result in movement restrictions being applied and any actions necessary by APHA to facilitate the testing of the animals specified are cost recoverable (such as the use of mobile crushes or contractors).

Arranging the Test in Wales

1. The following orders provide powers and procedures for non-bovines, as defined in the Order, in Wales. There are now powers to enforce TB testing at government expense and the upkeep of movement records:

- The Tuberculosis (Wales) Order 2011
- The Tuberculosis (Wales) Order 2010 and
- The Tuberculosis (Testing and Powers of Entry) (Wales) Order 2008.

2. Where a requirement has been identified for TB testing a herd or animal the local APHA office must serve a Tuberculosis Test Notice (TN06/TN06(Welsh)) and covering letter (TN07/TN07(Welsh)) on the keeper.

3. The Notice (TN06/TN06(Welsh)) must specify:

- the earliest and latest date the test can be completed
- the type of test (skin and/or blood) required and the animals requiring testing
- the person designated to carry out the test (Official Veterinarian (OV) or APHA Vets)
- the date movement restrictions will be applied if the test is not completed (and results received by the APHA office).

4. The office must:

- complete the Notice (TN06/TN06(Welsh))
- post with the covering letter (TN07/TN07(Welsh)) to the owner
- create a work schedule for testing on Sam SOP Work Management for Non-Bovines ([WMTB1a](#)) .

5. Under the powers of the legislation, the owner is required to facilitate the test at their own expense.

6. Failure to carry out a test by the date specified in the Notice (TN06/TN06(Welsh)) will result in movement restrictions being applied and any actions necessary by APHA to facilitate the testing of the animals specified are cost recoverable (such as the use of mobile crushes or contractors).

Private Testing

1. Private skin and blood testing may be undertaken voluntarily for TB surveillance as part of a scheme promoted by the industry. Pre-movement testing in the 90 days before shows, matings or before purchasing animals are further scenarios. These arrangements also apply to the TB testing of camelids required for certain exports, which must also be paid for by the owner/exporter.
2. Private tuberculin skin testing of camelid herds (or individual animals) of unknown TB status at the owner's request can take place with prior permission from APHA using Request to Test - TB Testing of Deer and Camelids (TN184/TN184(Welsh)). Owners will need to be aware that they will be responsible for paying an Official Veterinarian (OV) to perform the tests. The OV carrying out the test must hold the qualification OCQ (V) TT, Tuberculin testing in cattle and other species.
3. Additionally, owners will be permitted to use the available blood tests in these scenarios. The Enferplex test offered by SureFarm Ltd, or the combined DPPVetTB/IDEXX test using serial interpretation at APHA Starcross. In Wales, the private use of Enferplex as an alternative to the DPPVetTB and IDEXX tests has been approved. The four spot format of the Enferplex test should achieve a diagnostic specificity of 99.99% and remove the need for retesting of seropositive animals. Boosting (Priming) of the antibody response using the intradermal injection of tuberculin 10 to 30 days before blood sampling is strongly recommended to achieve the modest sensitivity (~55%) of the high specificity blood tests. Annual TB testing of camelid herds is recommended, although this frequency may be reduced in low risk areas after the first two years with negative results. The blood test(s) should be carried out on all camelids in the herd (up to 50 animals) or on a statistical sample randomly selected on larger herds.
4. Private DPPVetTB/IDEXX blood testing of suspect TB clinical cases may be appropriate in England. In Scotland and Wales, suspicion of clinical cases is notifiable so compulsory (not private) testing would apply here. Where a camelid presents with clinical signs where TB is one of many possible diagnostics and APHA or the Private Veterinary Surgeon (PVS) wish to rule out TB, camelid owners will be able to submit blood samples privately to APHA Starcross or to SureFarm Ltd for testing at their own expense. In order to minimise false positive results on premises where *M. bovis* infection has not been confirmed APHA will apply a high specificity rule with the DPPVetTB/IDEXX tests being read in serial interpretation (animal must be positive on both tests to be classified as a

reactor). In Wales and Scotland, private testing is only appropriate if TB is not suspected in clinical cases.

5. APHA must inform the herd owner, in advance of testing, of the possible repercussions of a positive test result (e.g. herd restrictions, compulsory slaughter of reactors). Herds which are already under restrictions or being tested as part of official investigations by APHA will not be permitted to carry out private testing at the same time. Checks will be made at APHA Starcross on any private blood samples submitted to ensure that samples are not tested for statutory and private purposes at the same time.

6. APHA will supply the tuberculin free of charge.

7. The OV/PVS carrying out the testing will need to obtain prior authorisation to undertake any private skin and blood test via a Request to Test - TB Testing of Deer and Camelids (TN184/TN184(Welsh)) and must complete the test chart (TN52A/TN52A(Welsh), TN52B/TN52B(Welsh)) and promptly send the results to the local APHA office along with section three of the Request to Test - TB Testing of Deer and Camelids (TN184/TN184(Welsh)) completed. This is a legal requirement of the TB Orders.

Dealing with Positive Results in Private Tests

1. A camelid with a positive result to a private comparative skin test or private serial DPPVetTB/IDEXX blood test or to a 4-spot Enferplex test, should be considered infected, isolated and compulsorily slaughtered with payment of statutory compensation. The herd should be restricted by APHA by service of Notice Prohibiting Movement of Specified Animals (TN02/TN02(Welsh)) pending PME and culture results. **No retesting of the positive animal is permitted.**

2. In Scotland, the herd should similarly be restricted by APHA after a TB reactor is identified at a private test. The Scottish Order has powers to compulsorily slaughter such reactors, with a subsequent PME and culture at the Department's expense. The Scottish Government (SG) will pay compensation to the owner (refer to instructions below) in such cases. However, when only positive to an Enferplex blood test, current policy in Scotland is to conduct a comparative skin test with serial DPPVetTB/IDEXX testing 10 to 30 days later to confirm the initial Enferplex result.

3. When no TB lesions are disclosed at PME of an animal positive to a private test and cultures are negative for *M. bovis*, restrictions may be lifted and no herd testing is carried

out. However, when suspect (characteristic) TB lesions are disclosed and samples are culture positive for *M. bovis*, a confirmed TB herd breakdown will be initiated so that two consecutive skin tests (bovine tuberculin only) with negative results must be carried out on the herd at a minimum interval of 90 days (the first skin test must be at least 90 days after the reactor(s) is effectively isolated) and supplemented by at least one parallel blood test using two out of any three of the available tests, either DPPVetTB/IDEXX/two spot Enferplex tests.

4. If a reactor dies or is privately culled by the owner in the meantime, APHA will not make a retrospective payment (ex gratia or compensation) for that animal and the welfare of the animal must be observed and no undue suffering permitted.

Which Skin Test to Use

1. Skin testing in camelids will be carried out using either the Single Intradermal (bovine tuberculin only) Skin Test (SITT) or the Single Intradermal Comparative Tuberculin Test (SICTT) in the axilla. The test to be used will depend on the TB status of the animal(s) to be tested or the circumstances and reason for testing. The relevant Veterinary Lead (VL) should be consulted if the test falls outside the protocols as described.

2. The single intradermal (**bovine tuberculin only**) test will be used when: 

~~~~~ Background Section ~~~~~

Using the bovine only skin test increases the sensitivity as compared to the comparative test. It will be accompanied by a slightly decreased specificity. This interpretation of the test is equivalent to 'super-severe' so that any reaction with an increase of over 2mm or oedema is positive, and will result in that animal being classified as a reactor. Use of this interpretation must always be agreed by the APHA Veterinary Advisor in advance and is only used in the face of a severe incident. 

~~~~~ End Background ~~~~~

- infection with *M. bovis* has been confirmed by culture
- a veterinary risk assessment confirms that a tracing is a high risk (spread tracing):
 - in Wales, any tracing from an OTFW breakdown, whether confirmed or not, will be considered high risk)

- the relevant VL believes that increased sensitivity is necessary upon risk assessment and has gained approval from the relevant Veterinary Advisor (VA)
- suspect lesions are found at slaughter which are **strongly** characteristic of bovine TB or where there is a strong epidemiological link to a confirmed *M. bovis* incident.

3. The single comparative test (SICCT) will be used in the following situations:

- where infection with TB is suspected following a post-mortem report (no obvious links to confirmed infection), but culture results are pending
- where skin testing is undertaken as a result of a disease investigation i.e.:
 - camelid herds identified by APHA as contiguous to or co-located with infected cattle herds with OTF status withdrawn. In Wales, herds co-located with cattle herds will usually be tested with the bovine tuberculin only test
 - or confirmed *M. bovis* infection in pigs, sheep, goats or captive deer. In Wales, herds co-located with confirmed infection in pigs, sheep, goats and deer will usually be tested with the bovine tuberculin only test
 - or back (source) tracings from *M. bovis*-infected herds
- when owners wish to have a private test done by the veterinary surgeon, e.g. export tests, pre-movement tests.

Equipment

Taken from:

http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Skin_Test/Equipment.html

Camelid Testing Equipment

| Admin Tools |
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| Export to Word |
| Show |
| <input type="checkbox"/> Documents |
| <input checked="" type="checkbox"/> Background |
| <input type="checkbox"/> Generics |
| Export |
| View all Feedback |
| Show Info Points |
| Switch on Admin Mode |

Index

- Storage and Use of Tuberculin
- Withdrawal Periods for Tuberculin in Non Bovines
- Testing Equipment for Camelids on Day One
- Testing Equipment for Camelids on Day Two

Storage and Use of Tuberculin

1. Regional Operations Directors (RODs)/Operations Director Scotland (ODS)/Operations Director Wales (ODW) must ensure an adequate supply of tuberculin is available for use by Animal and Plant Health Agency (APHA) staff and for issue to Official Veterinarians (OVs) in their local area as required.
2. When issuing tuberculin supplies to OVs, RODs/ODS/ODW should take into account the expiry date and the likely quantity needed.
3. Supplies of tuberculin are limited so, RODs/ODS/ODW **must** ensure tuberculin is not stockpiled at APHA offices or OV practices and that it is used in accordance with this guidance.
4. When using avian and bovine tuberculin supplies to carry out a test on a particular holding, ensure that the vials used have the same batch number respectively. Do not mix

different sizes of vials or different batch numbers at the same test (i.e. on the same chart).

5. Tuberculin must be used efficiently and the following rules **should normally** be applied:

- for tests of up to and including 80 animals, use 2.2ml vials only
- for tests of 81 or more animals, use 5.2ml vials only.

6. Store and use the tuberculin in accordance with the Summary of Product Characteristics (SPC) sheet, available on the [Veterinary Medicines Directorate](#) website. Further guidance is available in the Veterinary Medicines and Residues section of the Operations Manual.

7. When tuberculin is taken from the office for use at a test, do not subject it to temperatures below 2°C or above 37°C, or expose to direct sunlight, especially when being transported in motor vehicles. In hot weather consider using cool boxes with Freezella packs (the tuberculin vial must not be in contact with the Freezella pack). In cold weather below 2°C, consider using cool boxes without freezella packs.

8. When carrying out testing:

- follow the above instruction to ensure the most cost effective use of tuberculin
- take only the appropriate amount of tuberculin onto the farm
- keep the vials in a cleanable container and as clean as possible whilst testing to avoid contamination of the vial
- if there is a risk of tuberculin freezing, consideration should be given to suspend the test.

9. After completion of the test:

- if testing cattle, goats, pigs or sheep, empty McIntock guns at the end of each testing day
- if testing camelids and deer, dispose of any excess tuberculin and disposable syringes as pharmaceutical waste at the end of the day
- clean and wipe over with surgical spirit any unopened vials without piercing, breaking or damaging the rubber tops and return to the appropriate storage facility
- once opened, tuberculin should be used within the working day
- it is not permissible to use opened tuberculin on more than one farm premises on the same day.

Withdrawal Periods for Tuberculin in Non Bovines

1. Tuberculin is not licensed for use in non-bovines, however there is no requirement to apply withdrawal periods for the use of meat and milk in non-bovine species following skin TB testing.

Testing Equipment for Camelids on Day One

1. The following equipment is required:

- disposable 1 ml syringes graduated in 0.1 ml and clearly identified as avian and bovine syringes. McLintock syringes are not appropriate for testing Camelids
- 25/26G needles
- engineer's vernier callipers 

~~~~~ Background Section ~~~~~

There are numerous vernier callipers available on the market. Vernier callipers are intended for the engineering industry, with no equivalent vernier calliper available specifically for veterinary use. 

~~~~~ End Background ~~~~~

or constant pressure callipers 

~~~~~ Background Section ~~~~~

Calibrated to measure accurately to at least 0.5 mm. Must be used for all officially requested tests and must be strongly recommended to all other Veterinary Surgeons carrying out private tests. Holtain callipers and ball end callipers are not suitable. 

~~~~~ End Background ~~~~~

- equipment to mark the test site e.g. marker pens, electric clippers (with spare blades) or scissors
- sharps container for needles and syringes
- a supply of avian and bovine tuberculin
- tuberculin testing note book or equivalent
- appropriate protective clothing (e.g. visor/safety goggles
 - FFP mask (P3) (or fit tested full face option)
 - knee pads - good for bleeding work
 - disposable suits (dark colour)

- gloves
- the latest versions of official forms (available from APHA offices):
 - test charts (TN52A, TN52A(Welsh))
 - test reports (TN52B, TN52B(Welsh)).

2. APHA offices have been supplied with vernier callipers for use in the skin test in camelids. Refer to Field Equipment for guidance on ordering vernier callipers. 

~~~~~ Background Section ~~~~~

The vernier callipers may measure in 'inches' and 'mm'. The operator must ensure the setting is set to 'mm' throughout the test and the callipers are set to zero for each animal. It is recommended a replacement battery is kept within the case (batteries are purchased and provided locally). The vernier callipers may be cleansed and disinfected using the protocol provided for battery operated clippers, refer to the Battery Operated Clippers Disinfection Protocol for guidance. 

~~~~~ End Background ~~~~~

Testing Equipment for Camelids on Day Two

1. Equipment required for day two of the TB skin test:

- engineer's vernier callipers - the same ones used on Day One of the test
 - Vernier callipers must be:
 - calibrated to measure accurately to at least 0.5mm
 - used for all officially requested tests, and
 - strongly recommended to all Veterinary Surgeons carrying out private tests
- tuberculin testing note book or equivalent (the same one used on Day One - where appropriate)
- appropriate protective clothing e.g.:
 - visor or safety goggles
 - FFP mask
 - FFP mask (P3) (or fit tested full face option)
 - knee pads - good for bleeding work
 - disposable suits (dark colour)
 - gloves
- the latest versions of official forms (available from APHA offices):
 - testing forms (TN52A/TN52A(Welsh)/TN52B/TN52B(Welsh))
 - for agency staff only:
 - in England and Scotland, movement restriction notices (TN02)
 - in Wales, a copy of the Information Note (TN181/TN181(Welsh)) which must be given to the keeper as

automatic movement restrictions will apply following disclosure of a reactor.

Skin_Test_Day_One

Taken from:

http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Skin_Test/Skin_Test_Day_One.html

Skin Test Day One

| Admin Tools |
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| Export to Word |
| Show |
| <input type="checkbox"/> Documents |
| <input checked="" type="checkbox"/> Background |
| <input type="checkbox"/> Generics |
| Export |
| View all Feedback |
| Show Info Points |
| Switch on Admin Mode |

Index

- Personal Cleansing and Disinfection on Entering and Leaving a Farm
- TB Skin Testing
- Test Procedure
- Test Technique
- Administration of Medicines
- Clinical Inspections and Examinations

Personal Cleansing and Disinfection on Entering and Leaving a Farm

1. Ensure on arrival (prior to contact with any livestock) that the vehicle, protective clothing and footwear are clean and suitable for the task being carried out in order to minimise the risk of transmission of disease between premises.
2. When arranging a visit to a farm, ensure that you meet their individual biosecurity protocols wherever possible, e.g. freedom from contact with other livestock for a given period. However, extreme biosecurity requests should be refused if it makes the task on farm impossible to achieve.
3. On completion of the task, thoroughly clean and disinfect all protective clothing and footwear before leaving the farm premises or appropriately dispose of offsite.

4. Carry sufficient disinfectant approved under the relevant Diseases of Animals (Approved Disinfectants) Order for this purpose and use at the appropriate dilution specified for TB in the list of approved disinfectants published on the [Defra](#) website.

TB Skin Testing

1. Tuberculin testing of camelids is by the Single Intradermal Comparative Tuberculin Test (SICTT) or by the Single Intradermal Skin Test (bovine tuberculin only) applied in the posterior axillary region (behind the elbow). 

~~~~~ Background Section ~~~~~

Intradermal tuberculin tests in the posterior axillary site are also the prescribed tests for TB in camelids in the following countries: 

- USA (Animal and Plant Health Inspection Service, US Department of Agriculture)
- Argentina (SENASA - National Food Hygiene and Quality Service)
- New Zealand (Alpaca Association of New Zealand)
- Canada (Canadian Food Inspection Agency).

~~~~~ End Background ~~~~~

2. The tuberculin skin test has not been fully validated in camelids, but there is now ample empirical evidence from *M. bovis*-infected herds in GB showing that the sensitivity of the comparative test in this species is low. Therefore, in Wales, mandatory use of the single intradermal skin test (bovine tuberculin only) and antibody parallel blood testing using the STAT-PAK and IDEXX^Â is required for all infected herds and some high risk tracings. 

~~~~~ Background Section ~~~~~

Infected is defined as positive for *M. bovis* on culture throughout GB. In Wales additionally, this includes any herd in which reactors are disclosed and epidemiological assessment considers them to be infected. Any Officially Tuberculosis Free Withdrawn (OTFW) breakdown, whether confirmed or not, will be required to have parallel antibody testing. Camelid breakdowns should be managed on a case-by-case basis in consultation with Welsh Government. 

3. The comparative intradermal test has a high specificity and is the official pre-export TB test for camelids traded within the European Union (EU). Due to the high specificity it is to be used for assessing the TB status of camelid herds in which *M. bovis* infection has not been identified, but it needs to be performed meticulously in order to achieve reasonable sensitivity.

4. Tuberculin testing of camelids using either the SICTT or Single Intradermal Tuberculin Test (SITT) (bovine tuberculin only) must be performed by a veterinary surgeon. This will either be:

- a Veterinary Officer (VO)/Senior Veterinary Inspector (SVI) of Animal and Plant Health Agency (APHA), or
- an Official Veterinarian (OV) qualified to test camelids.

5. Most testing will be carried out by OVs contracted to a Veterinary Delivery Partner (VDP) in England and Wales, though in Scotland an OV working for a practice may carry out this work with the agreement of the Scottish Government (SG). It is a legal requirement in England and Wales that an OV must first seek permission from APHA to test camelids, even if undertaking private testing as they will be using tuberculin provided at APHA's expense. In Scotland it is an APHA requirement that OVs seek permission to test camelids.

6. An OV who has completed the on-line course with Improve International and been awarded the Official Controls Qualification (Veterinarian) (OCQ)(V) TT qualification (tuberculin testing in cattle and other species, e.g. camelids, deer and goats) is permitted to test camelids. The OV must obtain the revalidation qualification with Improve International every two years to continue to test. Some OVs awarded the OCQ(V) TT under 'grandfather rights' will not have completed the on-line training with Improve International but will be allowed to undertake this testing of camelids until 31 March 2017 subject to APHA being satisfied that they have the necessary experience (refer to instructions below). After this date, these OVs must have completed the revalidation qualification in order to continue to test camelids.

7. Where an OV is to undertake any testing of camelids (skin or blood tests), they must first complete part one of Request to Test - TB Testing of Deer and Camelids (TN184/TN184(Welsh)) and send it to their local APHA office. APHA staff will make a check with the OV Team at Worcester to ensure that the designated OV holds the

OCQ(V) TT qualification. An APHA Vet will contact the OV to discuss the correct testing protocols and procedures to be used, and ensure that they have the appropriate equipment to conduct the skin test accurately. Where it becomes clear that an OV has little or no experience of performing these tests in camelids, where possible, an APHA Vet should attend and supervise at least the start of the test to ensure that the correct testing procedures are being followed.

8. Once satisfied that the OV holds the OCQ(V) TT qualification, and is suitably experienced in the procedures, the APHA Vet will complete part two of Request to Test - TB Testing of Deer and Camelids (TN184/TN184(Welsh)) and return it to the OV. A copy of the TN184/TN184(Welsh) form should be passed to the non-bovine admin team to record the details in the non-bovine spreadsheet.

9. Where camelids are tested at APHA expense by an OV, the OV should refer to their Delivery Partner (DP) for payment.

10. Those OVs undertaking export testing must, in addition to the requirements detailed above, have experience of testing camelids and have read and understood the specific guidance on testing and interpretation of results, in the appropriate notes for guidance associated with the Export Health Certificate.

11. Those signing export certification must also hold the OCQ(V) UX qualification (refer to Export Procedures).

Test Procedure

1. The tuberculin supplied for skin testing of cattle is not currently licensed for use in non-bovines. However, in the absence of a specifically licensed product, it can be used 'off-licence' in camelids. There is no milk or meat withdrawal period for tuberculin following skin testing.

2. Tuberculins (0.1 ml) should be injected intradermally on each side of the thoracic cage in the axilla. This area generally has no or very little fibre, so the injection sites should not need to be clipped before the skin thickness is measured and the tuberculin injected. However, they will need to be marked and a marker pen is the most suitable method.

3. To carry out the comparative test make one injection on each side of the animal at identical sites in the axilla. Use the avian tuberculin on the left hand side of the animal and the bovine tuberculin on the right hand side.
4. To carry out the single test apply only one injection of bovine tuberculin and inject on one side only in the axilla (it does not matter which side but the right side of the animal is by convention usually used. (The left side can be used if more practical).
5. If the animals have no ear tags, tattoos or other permanent markings, they can be identified for testing purposes using temporary marks (e.g. spray). Most camelids are electronically identified using microchips so a reader should be available for use at the farm. A Veterinary Inspector (VI) may require the camelid to be individually identified by the owner in England and Scotland.
6. The Tuberculosis (Wales) Order 2011 requires that 'the keeper of a deer, alpaca, guanaco, llama or vicuna must mark or identify it in a manner approved by the Welsh Ministers'.
7. For camelids it is not intended to prescribe the form of mark or identification but to leave this to keepers to decide what is appropriate for their type of animal. Compensation will not, however, be paid in cases where reactor animals are not marked or identified in an approved manner.

Test Technique

1. Disposable 1ml syringes graduated 0.1cc and fine 25/26G needles should be used. McLintock syringes are **not** appropriate for testing camelids. Syringes and needles must be sterile before use. If the comparative test is to be carried out mark the syringes to be used for injecting avian tuberculin with red tape.
2. Mark the injection sites with a marker pen as shown in the following diagram:



3. Raise a fold of skin at each site, measure accurately with the Vernier callipers and record the measurement to the nearest 0.5mm, unless the calliper model allows for a more precise measurement, e.g. down to 0.1mm. 

~~~~~ Background Section ~~~~~

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.

~~~~~ End Background ~~~~~

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

Callipers



Skin

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

6. 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.

7. 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.

8. 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 shortly after the injection.

9. 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 to 10cm away (3 to 4 inches). Record the change of injection site in the 'Remarks' column of the test chart, and remark the injection site with a permanent marker.

10. For health and safety reasons so as to avoid the possibility of 'injuries', it has been decided to use a fresh needle for each injection. In order to avoid re sheathing needles, it may be necessary to discard both the needle and its syringe in the clinical waste container.

Administration of Medicines

1. There is no legal authority to prevent the administration of medicines during a tuberculin test.
2. Unless treatment is required for welfare reasons, Veterinary Officers (VOs)/Senior Veterinary Inspectors (SVIs)/OVs should discourage the owner from administering medicines to the animals being tested until the result of the test has been read and confirmed as clear at 72 hours.
3. Administration of drugs may interfere with the response to the test. If drugs have been administered, it should be noted on the test report forms (TN52A/TN52A(Welsh)/TN52B/TN52B(Welsh)).

Clinical Inspections and Examinations

1. A visual inspection of all animals tested should be carried out at every tuberculin test, to identify any animals showing clinical signs of TB or any other notifiable disease.
2. Check the chest area to look for any swelling which might indicate tuberculous fistulae.
3. Certify this inspection on the test report (TN52B/TN52B(Welsh)).
4. Additionally, a clinical examination of any suspected animals should be carried out. This includes reactors, emaciated animals, etc. and any animals showing any evidence of clinical tuberculosis. Report the result of this examination on the test/blood sample form.
5. Owners or keepers are required to assist during the clinical examination. If it is not possible to carry the test out satisfactorily, the test report should be annotated accordingly.

Skin_Test_Day_Two

Taken from:

http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Skin_Test/Skin_Test_Day_Two.html

Skin Test Day Two

| Admin Tools |
|--|
| Export to Word |
| Show |
| <input type="checkbox"/> Documents |
| <input checked="" type="checkbox"/> Background |
| <input type="checkbox"/> Generics |
| Export |
| View all Feedback |
| Show Info Points |
| Switch on Admin Mode |

Index

- Personal Cleansing and Disinfection on Entering and Leaving a Farm
- Day Two Reading Actions
- Reading and Interpretation
- Single Intradermal Comparative Tuberculin Test (SICTT)
- Single Intradermal Skin Test (Bovine Tuberculin Only)
- Recording and Submission of Test Results
- Service of Restrictions
- Advice to Owners

Personal Cleansing and Disinfection on Entering and Leaving a Farm

1. Ensure on arrival (prior to contact with any livestock) that the vehicle, protective clothing and footwear are clean and suitable for the task being carried out in order to minimise the risk of transmission of disease between premises.
2. When arranging a visit to a farm, ensure that you meet their individual biosecurity protocols wherever possible, e.g. freedom from contact with other livestock for a given period. However, extreme biosecurity requests should be refused if it makes the task on farm impossible to achieve.

3. On completion of the task, thoroughly clean and disinfect all protective clothing and footwear before leaving the farm premises or appropriately dispose of offsite.
4. Carry sufficient disinfectant approved under the relevant Diseases of Animals (Approved Disinfectants) Order for this purpose and use at the appropriate dilution specified for TB in the list of approved disinfectants published on the [Defra](#) website.

Day Two Reading Actions

1. Read the test at 72 (± 4) hours after the initial injection of tuberculin.
2. Confirm the identity of the animal against the testing record from day one so that reference can be made to the initial skin measurements and a proper interpretation of the test made.
3. Examine, palpate and re-measure the fold of skin at every injection site and record the measurements to the nearest 0.5mm in the testing record, unless the calliper model allows for a more precise measurement, e.g. down to 0.1mm, along with a description of the type of reaction observed. 

~~~~~ Background Section ~~~~~

Due to the thinness of the skin and the often minimal skin reactions it is essential to measure every injection site regardless of the result of the palpation in order to reduce any loss of diagnostic sensitivity. 

~~~~~ End Background ~~~~~

4. To have a comparative reading between first and second day of the test the fold of skin must be raised in the same plane on both days and the callipers placed at right angles to the fold of skin on both days.
5. If a swelling is present on the second day, raise the skin fold so any swelling is at the top of the skin fold and measure the swelling at the widest point with the callipers in the same plane as on the first day.
6. Interpret the results.

Measure Skin Thickness

1. Raise a fold of skin at each site, measure with the callipers and record this measurement to the nearest 0.5mm in the testing notebook. The calliper jaws should be aligned with the fold of skin as shown in the following diagram:



Reading and Interpretation

1. The 'reaction' is the increase in skin thickness or presence/absence of oedema at 72 (\pm four) hours following the intradermal injection of tuberculins.
2. Pay close attention to the character of the swelling, particularly to the presence of oedema, when describing the reaction to a TB test. It is important to distinguish between a skin swelling which constitutes a reaction and any small skin reaction that has arisen from the trauma caused by the injection itself.
3. Record all skin swellings which show an increase of more than 2mm in the thickness of the skin fold and any swelling (irrespective of size) showing oedema as positive reactions. The interpretation and decision on whether such an animal is a reactor is dependent on the comparative (SICTT) or bovine tuberculin only test is being used. The Regional Veterinary Lead (RVL)/Scotland Veterinary Lead (SVL)/Veterinary Lead Wales (VLW) is the final arbiter.
4. For the purpose of describing reactions to the test in the TB testing record and on the appropriate test chart (TN52A/TN52A(Welsh)), use the following abbreviations only:
 - C (Circumscribed) $\hat{=}$ a discrete non-oedematous reaction
 - SO (Some Oedema) $\hat{=}$ any reaction where oedema is present
 - + (positive) $\hat{=}$ an increase of more than 2mm in skin thickness **or any reaction with oedema**
 - - (negative) $\hat{=}$ an increase of 2mm or less in skin thickness **with no oedema**.
5. Record the results at the time of the test in the testing record.

Single Intradermal Comparative Tuberculin Test (SICTT)

1. All reactions showing an increase of more than 2mm in the thickness of the skin fold or any oedema at the reaction site will be considered positive.

2. Animals tested by the SICTT (comparative test) will be considered as reactors if a positive reaction (i.e. >2mm increase or detectable oedema) is observed at the bovine tuberculin injection site 72 (± four) hours after injection and the increase in skin thickness at the bovine injection site exceeds that measured at the avian injection site.
3. Skin test-negative animals must be blood tested between 10 and 30 days after the injection of tuberculin at day one (TT1). Refer to Ancillary Testing for more details.
4. If cultures for *M. bovis* subsequently give a positive result, the test will be re-interpreted as a single intradermal (bovine tuberculin only) skin test using the readings for the bovine tuberculin injection only and a blood test for all skin negative animals must be arranged between 10 and 30 days after the injection of avian and bovine tuberculins.

Single Intradermal Skin Test (Bovine Tuberculin Only)

1. When the single intradermal skin test (bovine tuberculin only) is used, animals will be considered as reactors if a positive reaction (i.e. >2mm increase or detectable oedema) is observed at the bovine site 72 (+/- four) hours after injection.
2. Any other animals will be considered negative.
3. Where the blood test is to be applied, skin test-negative animals must be blood tested between 10 and 30 days after the injection of tuberculin at day one (TT1). Refer to Ancillary Testing for details.

Recording and Submission of Test Results

1. Test results should be recorded on the test charts (TN52A/TN52A(Welsh)/TN52B/TN52B(Welsh)) and submitted promptly to the APHA office.
2. Part 3 of the Request to Test Form (TN184/TN184(Welsh)), must also be enclosed with the test chart.
3. For tests with reactors or Inconclusive Reactors (IRs), telephone the APHA office and send the test charts either by fax or post on the same day the test was completed or by noon the following day. Original tests charts should follow within three working days.
4. For tests where there are no reactors or IRs, the test chart should be returned no later than five working days from the day the test was completed.

5. APHA will then advise you and the owner of any further necessary action.

Service of Restrictions

1. Where reactors are disclosed and if the herd is not already under movement restrictions:

- in England and Scotland, APHA will serve restriction notices (TN02)
- in Wales, automatic movement restrictions will apply and the keeper must be provided with a copy of the Information Note (TN181/TB181(Welsh)).

2. Restrictions will remain in place until the Regional Veterinary Lead (RVL)/Scotland Veterinary Lead (SVL)/Veterinary Lead Wales (VLW) is satisfied that the herd is free from infection.

3. Official Veterinarians (OVs) should verbally inform the owner that reactors have been identified, that they must be isolated from the rest of the herd and that full herd movement restrictions apply (or continue to apply). Inform the local APHA office who will then serve restrictions. In Wales, automatic restrictions will apply and the keeper must be provided with a copy of the Information Note (TN181/TN181(Welsh)).

Advice to Owners

1. A range of bovine TB leaflets are available on the [APHA](#) website.

2. Further advice and guidance leaflets relating to public health and bovine TB are available on the following websites:

- [Public Health England](#)
- [Health Protection Scotland](#)
- [Public Health Wales](#).

Action_on_Receipt_of_Results

Taken from:

http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Skin_Test/Action_on_Receipt_of_Results.html

Action on Receipt of Results

| Admin Tools |
|--|
| Export to Word |
| Show |
| <input type="checkbox"/> Documents |
| <input checked="" type="checkbox"/> Background |
| <input type="checkbox"/> Generics |
| Export |
| View all Feedback |
| Show Info Points |
| Switch on Admin Mode |

Index

- Actions in the Office
- Further Testing of Camelids in England and Scotland
- Further Testing of Camelids in Wales
- Movements

Actions in the Office

1. If the test is clear:

- notify the owner of the results and any further testing requirements (TN31/TN31(Welsh))
- if restrictions can be lifted, issue a withdrawal Notice (TN10/TN10(Welsh)) and covering letter (TN33/TN33(Welsh)).

2. If reactors are identified at the test:

- notify the owner of the results (TN35(ES)/TN35(W)/TN35(Welsh)/TN31/TN31(Welsh))
- serve a Notice of Intention to Slaughter (TN03/TN03(Welsh))
- arrange for the completion of the Valuation of Non-Bovine Animals for TB Compensation Purposes form (TN01/TN01(Welsh))
- arrange slaughter of the reactors and any Direct Contacts (DCs) and
- arrange a Post Mortem Examination (PME) as appropriate
- in Scotland, notify the Scottish Government (SG) of the results.

Further Testing of Camelids in England and Scotland

1. If infection with *Mycobacterium bovis* (*M. bovis*) is suspected e.g. in contiguous or co-located herds, or in a traced animal, only one clear comparative skin test is required before restrictions can be lifted, followed 10-30 days later with the combined DPPVetTB/IDEXX blood test using serial interpretation.
2. If TB is confirmed, either by visible lesion (VL) and/or positive culture results, the herd will need to pass a minimum of two clear consecutive skin tests (single intradermal skin test (bovine tuberculin only)) before movement restrictions can be lifted. The tests should be completed at 90 day intervals. Blood testing using the DPPVetTB/IDEXX combination with parallel interpretation will be applied 10-30 days after the first skin test.
3. If the required tests are clear, restrictions can be lifted. Refer to Case Management for details.
4. Any check test carried out less than 90 days after the death of a tuberculous camelid will not count towards the two negative herd tests normally required for removal of restrictions after tissue culture proves positive for *M. bovis*.

Further Testing of Camelids in Wales

1. Where skin testing is undertaken as a result of a disease investigation, e.g. in contiguous herds, or in a herd containing back-traced animals, herds will have their Officially Tuberculosis Free (OTF) status assessed against epidemiological criteria to determine any additional risk.
2. Where additional risk is identified (includes camelid herds contiguous with infected cattle herds with OTF status withdrawn (OTFW), or back (source) tracings from *M. bovis* infected herds), the comparative skin test will be applied followed 10-30 days later in negative-testing animals with a DPPVetTB/IDEXX blood test used in serial interpretation. Consideration will be given to suspending the TB-free status of the herd in such cases.
3. Where the additional risk identified involves camelid herds co-located with cattle herds or confirmed *M. bovis* infection in pigs, sheep, goats or captive deer), their TB-free status will be withdrawn (OTFW in cattle herds) and they will require additional tests. Co-located camelids with infected cattle and other livestock herds are considered as part of the same epidemiological unit. Such herds will require a single intradermal skin test (bovine tuberculin only) followed in negative animals 10-30 days later by a **parallel** DPPVetTB/IDEXX blood test at the Government's expense (parallel interpretation

means that if an animal is positive on one of the blood tests, it is considered infected and removed as a reactor). A further round of skin testing using the single intradermal skin test (bovine tuberculin only) carried out 90 days or more from the date of the first skin test must be completed with negative results before the herd's TB-free status can be reinstated.

4. Where additional risk is not identified, TB-free status will remain suspended and one clear comparative tuberculin skin test is required followed 10-30 days later by blood tests using the DPPVetTB/IDEXX combination in a **serial** manner. If either or both blood tests are negative, it is a negative result.

5. If the breakdown is assessed to be TB-free status withdrawn (OTFW status in cattle) either by:

- visible lesion and/or positive culture results, or
- herds are considered to pose a high risk after epidemiological factors have been considered (equivalent to unconfirmed OTFW or OTFS-epi cattle herds), or
- if source or spread tracings to and from the breakdown are considered high risk after Veterinary Risk Assessment (VRA), or
- camelid herds are co-located with infected cattle herds or *M. bovis* infected herds of pigs, sheep, goats and captive deer (this will normally be the case in Wales as camelids resident on a holding with these infected livestock will normally be considered as managed together)
- then herds will need to pass a minimum of two clear consecutive skin tests before movement restrictions can be lifted following removal of the last positive animal. The tests should be completed at 90 day intervals and will be single intradermal skin tests (bovine tuberculin only).

6. The skin tests will be followed 10-30 days after the first skin test by at least one round of antibody testing of skin-test negative animals using a DPPVetTB/IDEXX combination by parallel interpretation (an animal which is positive on one of the blood tests is considered infected and a reactor).

7. If reactors are identified at any test and the incident is either TB-free status withdrawn or confirmed on culture with *M. bovis*, two further clear tests (bovine tuberculin only) at 90 day intervals will be required before restrictions can be lifted. Refer to Case Management for details.

8. Any check test carried out less than 90 days after the death of a tuberculous camelid or a reactor to skin or blood tests will not count towards the two negative herd tests normally required for removal of restrictions.

9. New TB herd breakdowns, following identification of reactor(s), are assigned a withdrawn status (OTFW in cattle herds) where:

- lesions typical of TB are identified at the post-mortem examination (inspection) of reactors
- Mycobacterium bovis is cultured in samples from at least one animal in the herd
- a herd has TB skin test reactor(s) and has had its TB-free status withdrawn in the previous three years
- a herd has TB skin reactors and is contiguous to another herd with its TB-free status currently withdrawn, unless a VRA determines otherwise, regardless of result of post mortem examination or culture
- an additional epidemiological risk is identified by the Animal and Plant Health Agency (APHA).

Movements

1. The specific movement licence (TN24/TN24(Welsh)) or general movement licence (TN24c/TN24c(Welsh)) should be used to authorise movements directly to slaughter.

2. In Wales, a general licence will rarely be appropriate as movements to slaughter will seldom take place.

index

Taken from:

http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Ancillary_Testing/index.htm

Ancillary Testing in Camelids

| Admin Tools |
|--|
| Export to Word |
| Show |
| <input type="checkbox"/> Documents |
| <input checked="" type="checkbox"/> Background |
| <input type="checkbox"/> Generics |
| Export |
| View all Feedback |
| Show Info Points |
| Switch on Admin Mode |

Index

- [Ancillary Antibody Tests Overview](#)
- [Blood \(Antibody\) Testing in England](#)
- [Blood Testing in Scotland](#)
- [Blood Testing in Wales](#)
- [Testing Process in England](#)
- [Testing Process in Scotland](#)
- [Testing Process in Wales](#)
- [Blood Testing in Tracing Herds](#)
- [Blood Testing in Herds where TB has not been Confirmed](#)
- [Testing in Herds Co-located with or Contiguous to Confirmed TB Incidents in Other Livestock](#)
- [Private TB Testing of Camelids in Unrestricted Herds](#)
- [Suspect TB Clinical Cases](#)
- [Arranging Statutory Blood Tests for Camelids](#)
- [Collection of Antibody Test Samples](#)
- [Dispatch of Antibody Test Samples](#)
- [Dispatch Methods for UN3373 Category B Samples by Animal and Plant Health Agency](#)
- [Camelid Antibody Test Results](#)

Ancillary Antibody Tests Overview

1. The Chembio lateral flow STAT-PAK rapid antibody test has been used in camelids on an experimental basis for some years. In 2012, the Animal and Plant Health Agency (APHA) at Weybridge carried out a Camelid Blood Testing Validation Project (TN185) in

which sufficient numbers of camelids of known infection status were subjected to several different tests to assess their performance.

2. Following this validation work, the Stat-PAK-Test and the IDEXX ELISA test were made available at APHA Starcross for official TB testing of camelids. These blood tests are based on the detection of antibodies to a set of recombinant *Mycobacterium bovis* (*M. bovis*) antigens and are known to detect tuberculosis animals in a range of species.

3. Using the two tests together, either in a parallel (either test is positive for a positive test outcome) or serial (both tests must be positive for a positive test outcome) interpretation provides options for high sensitivity (parallel) or high specificity (serial) respectively, depending upon the epidemiological context of the herd. Parallel testing provides a sensitivity of 81.3% and a specificity of 95.8%. Serial testing provides a sensitivity of 56.5% and a specificity of 99.7%. The use of these combined tests in various situations is described in the sections below.

4. Production of the STAT-PAK test has since been superseded by the dual band Chembio DPPVetTB (Dual Pathway Platform) lateral flow test. Testing the DPPVetTB test against alpaca samples from the Camelid Blood Testing Validation Project Guidance Note (TN185) showed an equivalence of this test with all other antibody tests, as a stand-alone test and in parallel and serial interpretations.

5. The Enferplex TB test (offered by SureFarm Ltd, a subsidiary of Synergy Farm Health Ltd) is a chemiluminescent multiplex ELISA system which identifies the presence of antibody to *M. bovis* antigens. There are seven different TB antigens (spots) used in the test and these are placed separately as spots on the surface of the test well. If antibody to bovine TB is present in the blood sample, it will bind to the relevant antigen(s) in the test well. The binding is detected via a luminescent reaction which can be measured and quantified. If the threshold for each antigen spot is exceeded, a positive reaction is deemed to have occurred. If a positive reaction occurs to two or more antigens, the animal is considered to be infected.

6. At this interpretation (two spot), the test has maximum sensitivity of 66.7% in camelids and is 96.9% specific. If there is a response to more antigens, the test becomes more specific, but less sensitive, such that when there are four positive spots the test is considered 99.9% specific (meaning almost no false positives) but 55.1% sensitive i.e. equal to the serial combined test (detailed above). The use of this test in various situations is described in the relevant sections below.

7. Equipment has now been installed and staff trained at APHA Starcross to carry out the Enferplex Test for statutory testing only. Owners will have the option to select any two of the three available tests (DPPVetTB/IDEXX/Enferplex).

Blood (Antibody) Testing in England

1. Due to the limitations of the skin test any two of the three antibody tests in a combined test package are used as a compulsory ancillary (parallel) test of skin test-negative animals in camelid herds with **confirmed** *M. bovis* infection to enhance the overall sensitivity of TB testing, ideally 10 to 30 days after the initial herd skin test. However, the Case Veterinary Officer (VO)/Senior Veterinary Inspector (SVI) may exceptionally re-apply for further blood tests if sound evidence emerges of persistent infection in the herd after the removal of the initial set of blood test reactors. All three tests can also be used in situations where disease is **not confirmed**, e.g. co-located, contiguous and back-traced camelids herds, using an interpretation that maximises diagnostic specificity and reduces the probability of false positive results, at the expense of sensitivity.

2. All animals identified by APHA as positive to the antibody tests at the relevant interpretation must be released for slaughter and will attract the usual level of statutory compensation, once removed from the farm by APHA.

3. APHA in England also offers the serial DPPVetTB/IDEXX blood tests to camelid owners and private veterinarians for private testing of unrestricted animals at the owners expense. Boosting or priming of the antibody response using the skin test 10 to 30 days before blood sampling is still recommended for all blood tests. PVSs/Official Veterinarians (OVs) are required to seek permission to take samples for TB testing using Request to Test - TB Testing of Deer and Camelids (TN184/TN184(Welsh)) and to inform APHA that such testing is taking place in advance.

Blood Testing in Scotland

1. In Scotland, skin and blood testing will be used in a similar manner to that used in England and all three blood tests are available at APHA Starcross. The basis for compensation paid in Scotland varies from that in England and Wales. Refer to Valuation and Compensation for further details. In statutory testing situations, once the Notice (TN06) and covering letter (TN07/TN07(Welsh)) forms are signed and issued to owners, testing will commence. It is expected that where a skin test is carried out, this will be followed by combined DPPVetTB/IDEXX/Enferplex blood tests carried out 10 to 30 days

after the injection of tuberculins. Under normal circumstances, the blood test will only be used when *M. bovis* is cultured or there is strong evidence of an epidemiological link to infected camelids. Owners will be requested to select which of the three tests are used for combined testing (refer to instructions below).

2. The blood tests will normally be used once at the beginning of the eligible TB breakdown following detection of *M. bovis* in tissue cultures. However, the Case VO/SVI may exceptionally re-apply for further blood tests if sound evidence emerges of persistent infection in the herd after the removal of the initial set of blood test reactors.

3. Camelid owners or private veterinarians will be offered the combined test DPPVetTB/IDEXX for private testing (Enferplex cannot be offered for private testing by APHA Starcross) at their expense after first notifying APHA. Request to Test - TB Testing of Deer and Camelids (TN184/TN184(Welsh)) should be used by the Private Veterinary Surgeon (PVS) and sent to APHA to inform them of the tests to be done. Reactors disclosed at private tests may be eligible for statutory compensation payments - refer to Valuation and Compensation for further details.

Blood Testing in Wales

1. For new breakdowns, compulsory blood testing is required when *M. bovis* is confirmed on culture, for high risk tracings and in other high risk situations. The combined DPPVetTB/IDEXX blood tests will be carried out at APHA Starcross on a single blood sample. This will enhance the overall performance of TB testing under various scenarios and therefore speed up the resolution of the breakdown.

2. Approval to use the blood tests DPPVetTB/IDEXX must be obtained in advance and must follow the procedures outlined in Procedure and Technique for Blood Testing. OVs must use Request to Test - TB Testing of Deer and Camelids (TN184/TN184(Welsh)) to notify the local APHA office of their intention to test (skin and blood tests are both approved on this same form) and this will normally be sent in by the OV at the time a skin test is requested of the Veterinary Delivery Partners (VDP) by APHA. This will allow checks to be made on the qualifications held by the OV and their competency to carry out the required testing (e.g. protocols, equipment).

3. The blood tests will normally be used once at the beginning of the eligible TB breakdown following detection of *M. bovis* in tissue cultures. However, the Case VO/SVI may exceptionally re-apply for further blood tests if sound evidence emerges of persistent infection in the herd after the removal of the initial set of blood test reactors.

4. All animals identified by APHA as positive to either or both blood tests (parallel interpretation) in *M. bovis* infected herds must be released for slaughter and will attract the statutory payment once removed from the farm by APHA.

5. In Wales, the private use of Enferplex as an alternative test to DPPVetTB/IDEXX tests for herds considered at risk of infection but where there is no post mortem evidence has not as yet been approved.

6. Blood testing in TB breakdown herds where *M. bovis* infection has been confirmed on culture.

Testing Process in England

1. Once *M. bovis* has been confirmed on any camelid premises, the owner will be issued with a Tuberculosis Test Notice (TN06/TN06(Welsh)) and a TB Testing Notification Letter (TN07/TN07(Welsh)). These instruct the owners to have their camelid herd tested within a specified time using initially a single intradermal skin test (bovine tuberculin only) followed by the combined DPPVetTB/IDEXX/two spot Enferplex blood tests (any two tests out of the three available) using parallel interpretation.

2. A clotted blood sample should be taken from every camelid which has tested negative to a skin test. The samples should be taken between 10 to 30 days after a skin test. Animals which are positive to either or both of the selected blood tests (parallel interpretation) in *M. bovis* infected herds must be released for slaughter and will attract the usual level of statutory compensation once removed from the farm by APHA.

3. APHA may consider requests for additional Enferplex testing if not initially selected, at the owner's expense, of animals that have already had skin and DPPVetTB/IDEXX tests with negative results, i.e. to further enhance the detection of any infected animals that may have been missed by these tests. Use of Enferplex does not obviate the need for a skin test 10 to 30 days before the blood sample is taken. In this situation where *M. bovis* has been confirmed by laboratory culture, the sensitivity of the testing regime needs to be maximised so a camelid will be considered positive on a private Enferplex test if it reacts to two or more antigens (two spot rule). Such animals will be slaughtered compulsorily and statutory compensation paid by APHA.

Testing Process in Scotland

1. Owners of camelid herds in which *M. bovis* has been confirmed will be required to test the remainder of their camelids. Initially a single intradermal skin test (bovine tuberculin

only) will be used followed by the combined DPPVetTB/IDEXX/two spot Enferplex blood tests using parallel interpretation (owner may select which two tests they would like used by the testing laboratory).

2. A clotted blood sample should be taken from every camelid which has tested negative to a skin test. The samples should be taken between 10 to 30 days after a skin test. Animals which are positive to either or both blood tests (parallel interpretation) in *M. bovis* infected herds must be released for slaughter and will attract the usual level of statutory compensation once removed from the farm by APHA. Refer to Valuation and Compensation for further details.

3. APHA may consider requests for additional Enferplex testing, at the owner's expense, of animals that have already had skin and DPPVetTB/IDEXX tests with negative results, i.e. to further enhance the detection of any infected animals that may have been missed by these tests. Use of Enferplex does not obviate the need for a skin test 10 to 30 days before the blood sample is taken. In this situation where *M. bovis* has been confirmed by laboratory culture, the sensitivity of the testing regime needs to be maximised so a camelid will be considered positive on a private Enferplex test if it reacts to two or more antigens (two spot rule). The option to slaughter the positive animal and pay compensation will be considered by APHA/Scottish Government (SG).

Testing Process in Wales

1. The Tuberculosis Orders in Wales provide the necessary powers to enforce TB testing at Government expense. No Consent letter is required.

2. Where a requirement has been identified for TB testing a herd or animal, the local APHA office must serve a Notice (TN06/TN06(Welsh)) and covering letter (TN07/TN07(Welsh)) on the keeper.

3. Skin testing of the infected herd will be carried out using the single intradermal (bovine tuberculin only) test. Arrangements to take a single blood sample from each animal testing negative to this skin test will be made between days 10 and 30 after injection of tuberculin following the first skin test.

4. Each blood sample will be tested using both the DPPVetTB and IDEXX ELISA at APHA Starcross. Parallel interpretation of the DPPVetTB and IDEXX tests will be used whereby an animal which yields a positive result to either or both tests will be deemed positive and culled. The result will be reported by the laboratory as a combined '(sero)positive' or '(sero)negative' animal. All seropositive animals will be removed as reactors.

5. Further blood testing of the herd should be carried out:

- if further post mortem evidence emerges of infection with TB in animals that had passed a skin and blood tests (e.g. new clinical cases, found-dead or culled animals with visible lesions typical of TB), unless informed by a veterinary risk assessment that this is unnecessary
- in all other circumstances only if indicated as beneficial by a Veterinary Risk Assessment (VRA) endorsed by the Veterinary Lead Wales (VLW).

6. For APHA to lift movement restrictions, the whole herd must complete one round of DPPVetTB/IDEXX testing, in addition to two rounds of negative skin tests.

7. In Wales, the private use of Enferplex as an alternative test to the DPPVetTB/IDEXX has not been approved.

Blood Testing in Tracing Herds

England and Scotland

1. All spread tracings from *M. bovis* confirmed breakdown herds will be tested using the single intradermal skin test (bovine tuberculin only) followed by any two out of DPPVetTB/IDEXX/two spot Enferplex blood testing 10 to 30 days after the skin test injections using parallel interpretation. The skin test should not be undertaken until at least 90 days after the animal(s) had moved from the confirmed (origin) premises.

2. For all back (source) tracings from *M. bovis* infected herds, the herd will be subject to a single comparative tuberculin skin test (SICCT) followed by either the DPPVetTB/IDEXX combination using serial interpretation (remove only those positive to both tests) **or** the four spot Enferplex blood test 10 to 30 days after the skin test injections.

3. Owners of source herds will have the alternative option of having their animals tested with Enferplex, at their own expense, instead of the serial DPPVetTB/IDEXX tests if the Enferplex test is not initially used. APHA will not usually enforce slaughter and pay compensation unless the camelids are deemed positive to four or more antigens (four spot rule), this will minimise the probability of false positive results and unnecessarily culling animals and restricting the herd. If *M. bovis* infection is eventually confirmed in the camelid herd itself, a confirmed breakdown will be initiated and APHA will proceed as for infected herds.

4. The local APHA office investigating the breakdown (origin APHA office) will have discretion to waive the antibody tests for individual spread tracings that are considered to

pose a low risk of spreading infection to other herds. For example, where skin and blood testing of the source herd discloses few reactors and visible lesions are not extensive, or where the spread tracings had limited contact with the infected animals on the farm of origin, or depending on the timing of movements out of the farm of origin. When there is a mixture of high risk (hot) and normal tracings from camelid herds with confirmed TB infection, these will probably have been managed together and so will be treated as high risk on a precautionary principle. However, the discretion to waive testing will remain with the APHA case vet for the source herd and not the receiving office.

5. All contact herds and movements must be declared by the owner of the index premises at the time of the breakdown and APHA will endeavour to complete all tracings within six months of confirmation of *M. bovis* infection.

Wales

1. TB spread or source tracings identified as a result of confirmed TB infection or OTFW-epi status in other herds (whether cattle, camelid or other livestock species) will be screened using both skin and blood tests, as follows:

- spread (forward) tracings - these animals will require a single intradermal (bovine tuberculin only) skin test followed 10 to 30 days later by combined DPPVetTB/IDEXX blood testing using parallel interpretation. The skin test should not be undertaken until at least 90 days after the animal(s) had moved from the confirmed (origin) premises
- source (backward) tracings. These herds will require one comparative skin test with negative results supplemented with a serial DPPVetTB/IDEXX blood test at Government expense.

2. The private use of Enferplex as an alternative to the DPPVetTB/IDEXX blood tests has not been approved in Wales.

3. The local APHA office investigating the breakdown will have discretion to waive the antibody tests for individual spread tracings that are considered to pose a low risk of spreading infection to other herds. For example, where skin and blood testing of the source herd discloses few reactors and visible lesions are not extensive, or where the spread tracings had limited contact with the infected animals on the farm of origin, or depending on the timing of movements out of the farm of origin. When there is a mixture of high risk (hot) and normal tracings from camelid herds with confirmed TB infection, these will probably have been managed together and so will be treated as high risk on a precautionary principle. However, the discretion to waive testing will remain with the APHA case vet for the source herd and not the receiving office.

Blood Testing in Herds where TB has not been Confirmed

England and Scotland

1. Where infection with TB is suspected (based upon the nature, distribution and histology of lesions), but culture results are pending, an immediate check test (comparative skin test) may be used at the discretion of APHA and with the owner's consent. The comparative test will usually be conducted by the owner's PVS at the owner's expense.
2. In exceptional cases, where there is strong evidence of infection such as several animals with characteristic TB lesions at PME in several organ systems, or where the case history indicates TB infection and an epidemiological link to a confirmed cases, APHA staff may additionally carry out a check blood test to avoid delays that may exacerbate the problem. The VO/SVI should first seek the agreement of the RVL/SVL/Regional Epi Leads before taking any action. The owner will be given the choice between using either a four spot enferplex test **or** the serial DPPVetTB/IDEXX combination - these tests will be done at government expense. Â
3. In cases where there are subsequent positive culture results, the results of these tests (skin and blood) may be re-interpreted, and further animals removed, in order to better manage the risk of further spread within the herd.
4. These check tests will not count as qualifying tests for the purposes of withdrawing the movement restrictions (as the skin test was performed 90 days after the death/removal of the index case on the premises).Â Any animal which is positive to a check test should be isolated and removed and if the subsequent culture result is negative (i.e. full parallel testing is not triggered) the herd would be subject to a comparative skin test at least 90 days after the removal of the last test reactor. If that follow up skin test is negative, APHA will lift the movement restrictions.
5. It is anticipated that blood testing will only have taken place after skin tests have been carried out first and not as a standalone test. Private blood tests will not be permitted once statutory controls are in place, for example, movement restrictions.

Wales

1. In OTFS breakdowns, where culture results are pending, a comparative skin test (non-qualifying check test) may be arranged with the owner's consent. The blood tests will not be used at this stage unless there is unequivocal evidence of infection such as typical Visible Lesion (VL) cases at PME or where case history suggests that bovine TB is present

despite no culture results being available. The case VO/SVI should discuss the matter with the VLW and seek their agreement to conduct additional blood testing.

2. If the culture results are subsequently positive, the skin test results can be re-interpreted as a single intradermal test (bovine tuberculin only) and blood sampling of skin test negative animals undertaken for testing with the combined DPPVetTB/IDEXX tests at APHA Starcross. These results will use a parallel interpretation so that if positive to either or both tests, the animal will be classified as a reactor and culled.

Testing in Herds Co-located with or Contiguous to Confirmed TB Incidents in Other Livestock

England and Scotland

1. These herds which are associated with known infection on either the same premises as an infected herd (co-located) or are contiguous/adjacent to local infected herds are required to have one comparative skin test followed 10 to 30 days later by a blood test using either the DPPVetTB/IDEXX combination using serial interpretation **or** the four spot Enferplex test.

2. In Scotland, special permission is required from the SG Veterinary Advisor before a blood test can be used.

3. Any animals that react to either the serial DPPVetTB/IDEXX tests or the four spot Enferplex test will be slaughtered with compensation as per the arrangements operating in England or Scotland at the time. The sensitivity of these blood tests is maximised when given bovine tuberculin ten days or more before sampling.

4. If *M. bovis* is eventually confirmed in the camelid herd itself, the herd will be placed under Notice Prohibiting Movement of Specified Animals (TN02/TN02(Welsh)) restrictions and APHA will proceed as with a confirmed breakdown. By contrast, if the skin and antibody tests only disclose NVL and culture negative reactors, an unconfirmed breakdown will be initiated and only one comparative skin test of the remaining animals with negative results will be necessary to lift restrictions.

Wales

1. Contiguous herds to OTFW or OTFS-epi cattle breakdowns are required to have a single comparative skin test supplemented with a DPPVetTB/IDEXX combination blood test using **serial** interpretation (animal has to be positive to both tests before being considered a reactor). These tests will be conducted at government expense.

2. However, unlike England and Scotland, for camelids co-located with infected cattle herds (OTFW or OTFS-epi) or there is confirmed *M. bovis* infection in pigs, sheep, goats or captive deer on the same premises, the default position is to consider the camelids as being part of the same epidemiological unit. In Wales camelids co-located with OTFW cattle will be tested using a single intradermal test (bovine tuberculin only) followed up by DPPVetTB and IDEXX ELISA testing in parallel interpretation between 10 and 30 days after the skin test. Camelids co-located with OTFS cattle will be tested using the comparative intradermal test followed up with DPPVetTB and IDEXX ELISA testing using serial interpretation.

3. The use of Enferplex as an alternative to the DPPVetTB and IDEXX tests for these mandatory situations has not been approved in Wales.Â

Private TB Testing of Camelids in Unrestricted Herds

Request to Test

1. Private skin and blood testing is already available in England and Wales, subject to written permission from (and notification of test results) to APHA via a Request to Test - TB Testing of Deer and Camelids (TN184/TN184(Welsh)) as per article 12(5) of the Tuberculosis (Deer and Camelid)(England) Order 2014 and article 11(3) of the Tuberculosis (Wales) Order 2011.
2. In Scotland private testing should be notified to SG, and Request to Test - TB Testing of Deer and Camelids (TN184/TN184(Welsh)) may be submitted to APHA before testingÂ commences.

Circumstances When Private Testing May be Used

1. Owners and keepers of camelids who wish to pre-movement test their animals prior to sale, to attend shows or for mating movements, may now have them blood sampled and tested at APHA Starcross using the DPPVetTB/IDEXX combination with serial interpretation or the Enferplex Test through their PVS. Owners may also supplementÂ the mandatory comparative skin test required for exports with either the Enferplex Test or serial DPPVetTB/IDEXX combination a minimum of ten days after the skin test. Some owners may also wish to undertake voluntary routine TB surveillance as part of a scheme promoted by the industry and endorsed by Defra. These blood tests will be arranged with private veterinary surgeons and paid for by camelid owners (details will be released at a future date).

Boosting (Priming) of Blood Tests

1. Priming of the antibody response by intradermal injection of tuberculin before blood sampling is strongly recommended. Without priming, the sensitivities quoted for the tests (~55% for both the four spot Enferplex test and the serial DPPVetTB/IDEXX tests) may not be achieved.
2. In England and Scotland, for private TB testing of unrestricted camelids, it is envisaged and recommended that camelids are first injected with both avian and bovine Purified Protein Derivative (PPD) and skin test reactions read as part of a comparative test before the antibody test takes place 10 to 30 days later. However, a private Enferplex or serial DPPVetTB/IDEXX negative result will not be invalidated simply because the private vet decided not to carry out a skin test (or the bovine PPD priming) before blood sampling, although in that case the herd owner and private vet need to be aware of the reduced sensitivity of the blood tests and the lower degree of confidence attached to a seronegative result. The risk of not priming with tuberculin for an anamnestic antibody boost is one of false negative results, rather than false positives.
3. In Wales, the Tuberculosis (Wales) Order 2011, requires the results of a tuberculosis test to be reported immediately. The test should be read when tuberculin is used as part of a comparative skin test which Welsh Government (WG) would advocate for its prime boosting effect. Assuming a skin test is negative, private testing using the DPPVetTB/IDEXX or Enferplex blood tests can be used 10 to 30 days later.

Action on Results

1. Camelids which are positive to the serial DPPVetTB/IDEXX combination in England, Scotland and Wales will be slaughtered and will attract statutory compensation. In England and Scotland, APHA will not enforce slaughter nor pay compensation for positives to the Enferplex test unless deemed positive to four or more antigens (four spot rule) in order to minimise the probability of false positive results and unnecessarily culling animals and imposing restrictions.
2. In Wales, private testing can take place (herds presumed TB-free, pre-movement or pre-export testing, movements for mating and to shows) using the comparative skin test applied 10 to 30 days before either serial DPPVetTB/IDEXX or Enferplex blood testing. In Wales, the use of Enferplex as an alternative to other blood tests has not been approved when statutory or mandatory testing is required.
3. It is permissible for owners and private vets to use the Enferplex Test in Wales (as in Scotland and England) at the owner's expense privately. In England and Wales, owners or veterinary surgeons wishing to use this test must first seek prior written permission

using Request to Test - TB Testing of Deer and Camelids (TN184/TN184(Welsh)) from WG/APHA, and the person to whom permission is given must report results immediately to WG/APHA. In Scotland, owners and PVSs are requested to notify APHA using Request to Test - TB Testing of Deer and Camelids (TN184/TN184(Welsh)) and to return test charts after testing.

4. After a TB incident, it is recommended by APHA that owners have a private (voluntary) herd test conducted 12 months after the incident finishes (TB restrictions lifted by Withdrawal of Restrictions Notice (TN10/TN10(Welsh))). The owner may choose to use the combined serial DPPVetTB/IDEXX blood tests available at APHA Starcross or arrange a private four spot Enferplex test via their PVS, both at their own expense. The use of a priming tuberculin is recommended but the owner can choose whether to have this read as part of a skin test.

Suspect TB Clinical Cases

1. In England and Scotland, where a camelid presents with clinical signs and TB is one of a number of possible diagnoses and the private vet wishes to rule out TB, camelid owners will be able to submit blood samples privately to APHA Starcross for antibody testing at their own expense. APHA will apply the high specificity (99.7%) rule with the DPPVetTB/IDEXX tests. Alternatively, the owner may wish to apply privately for a four spot Enferplex test via their PVS and performed by SureFarm Ltd.

2. In Wales, suspicion of TB in camelids based upon the clinical signs presented, is notifiable to APHA. In response to a report case a veterinary investigation will be initiated and appropriate action taken:

- in an otherwise unrestricted herd, if tuberculosis is not suspected, no restrictions will be imposed. Following the inquiry a herd owner is free to undertake private TB testing after obtaining the necessary authorisation from APHA using Request to Test - TB Testing of Deer and Camelids (TN184/TN184(Welsh))
- if as a result of the veterinary inquiry TB is suspected, the herd will be placed under movement restrictions and further investigation undertaken. The animal may be skin/blood tested at government expense under a formal Notice (TN06/TN06(Welsh)) and covering letter (TN07/TN07(Welsh)) using the single intradermal (bovine tuberculin only) skin test followed 10 to 30 days later by the DPPVetTB and IDEXX blood tests using parallel interpretation. Whilst testing will be undertaken in the vast majority of cases, the WG has powers to compulsorily slaughter with appropriate compensation and subject to post mortem examination if this is considered appropriate.

Arranging Statutory Blood Tests for Camelids

1. An approval to take blood samples is no longer required as this is normal practice following mandatory skin testing. However, it is recommended that veterinary staff should contact APHA Starcross to advise them of the numbers of blood samples that they can expect to receive from APHA offices, and the date of arrival at the laboratory.
2. The local APHA office must serve a Notice (TN06/TN06(Welsh)) and covering letter (TN07/TN07(Welsh)) on the keeper. This specifies that the herd will require both skin and blood tests.

Collection of Antibody Test Samples

1. The APHA office or the PVS must contact APHA Starcross to:
 - arrange a suitable date for sample submission, providing at least **one week's** notice
 - stipulate which tests are required (DPPVetTB/IDEXX/Enferplex) as appropriate (England and Scotland only) - Camelid TB Serology Package Statutory Sample Submission Form (TN183) (statutory samples) or Camelid TB Serology Package - Private Sample Submission Form (TN186) (private submissions)
 - provide APHA Starcross with the **history of the breakdown** leading up to the blood test.
2. Use a 6ml plain red top vacutainer without anti-coagulant (for serum collection) from the standard veterinary field kit. 

~~~~~ Background Section ~~~~~

There are no temperature requirements for the samples collected for DPPVetTB, Enferplex and IDEXX antibody testing. 

~~~~~ End Background ~~~~~

3. It is best practice to submit a full tube (red top vacutainer without anti-coagulant) per animal but a minimum of half a tube from each animal to be tested is acceptable.
4. Blood samples must be collected between 10 and 30 days post skin test application.



~~~~~ Background Section ~~~~~

Blood should be collected between 10 and 30 days after the skin test as both the signal strength and sensitivity of the blood tests are boosted by the injection of tuberculin (anamnestic effect).



~~~~ End Background ~~~~

5. Submit samples on the Camelid TB Serology Package Statutory Sample Submission Form (TN183) ensuring that each animal's identification is recorded on the form. The form must be completed legibly and accurately, indicating the reasons for the testing and interpretation required (parallel or serial).

6. Sample collection for official purposes should be done by APHA staff. However, where resource dictates or where the use of the PVS would improve compliance, it is acceptable to use Official Veterinarians (OVs) for blood sampling. Private tests should always be done by the owner's veterinary surgeon at their expense.

Dispatch of Antibody Test Samples

1. Dispatch samples to APHA Starcross and include the completed Camelid TB Serology Package Statutory Sample Submission Form (TN183).

2. The samples must arrive by 3pm to allow APHA Starcross time to process the samples on the day of receipt. Samples must be dispatched on the same day as collection and be sent using an APHA preferred dispatch method (next day service). For more information on dispatch methods please refer to Dispatch Methods for UN3373 Category

B Samples by APHA. 

~~~~ Background Section ~~~~~

There are no temperature requirements for the samples collected for DPPVetTB, Enferplex and IDEXX antibody testing.



~~~~ End Background ~~~~

3. Clearly label the package 'Camelid TB Serology' and indicate the herd of origin and the date of sampling on the package.

4. Samples must be packaged in accordance with ADR Regulations and only packing material that complies with P650 instructions (applying the UN3373 Biological Substance Category B classification) should be used (see pages 146/147 of the ADR Regulations and

Packing Instruction P650) or refer to Quick Reference Guide to ADR and Sample Packing (GEN01) for further guidance.

Dispatch Methods for UN3373 Category B Samples by Animal and Plant Health Agency

1. The Animal and Plant Health Agency (APHA) preferred courier/postal supplier is Topspeed and where appropriate, Royal Mail (see Royal Mail restrictions below).

Using Topspeed

1. Topspeed Couriers Ltd are the APHA supplier for courier services to collect and deliver Category B samples, and where required, Category A samples. Topspeed offer a dedicated same day and next day service and will advise on the most appropriate solution at point of booking.

2. During office hours, email Topspeed providing:

- your name and office location
- the type of work i.e. gamma interferon or interlab transfer
- the collection address and destination address for the consignment
- the number of consignments and sizes (only if excessive i.e. likely to fill a small van)
- the preferred collection time and delivery time required at the laboratory
- any special requirements for handling and delivery
- contact name and number at the point of collection either at the office or Animal Health Officer (AHO)/Veterinary Officer (VO)/Senior Veterinary Inspector (SVI) if samples are being collected from a farm. Topspeed will make contact in advance of a collection to confirm when the driver will be turning up and to check that the samples are ready.

3. You should provide Topspeed with 24 hours notice of a collection to allow the collection to be scheduled into a drivers route. Consider providing Topspeed with monthly sampling plans which will allow them to resource collections in advance. Send these to Topspeed titled 'APHA Sample Plans' with the office location.

4. Where sampling plans have been supplied, confirmation should still be provided to Topspeed that the collection is required ideally with 24 hours notice.

Missed Collections

1. If a consignment is not collected at the agreed time and there has been no contact with the driver, call Topspeed immediately.

Charges and Payment

1. Topspeed charges are £45 per consignment for next day delivery. Where multiple packages are for one destination pack them up into one consignment where possible i.e. several bio-bottles can be packed in a plastic bag and sealed with a cable-tie. This will be treated as one consignment and will cost £45. For the same day service there is a minimum charge of £100 and £1 per mile thereafter.

2. Payment will be monthly by invoice by Region. All payments will come out of local budgets. Each location should consider raising a single purchase order for the year based on an estimate of the total charges.

Sample Handling and Packaging

1. Samples should continue to be collected and packaged in accordance with existing Operations Manual instructions.

2. Topspeed are not contracted to provide packaging which should continue to be ordered from stores. Where packaging is reusable i.e. bio-bottles, Topspeed will collect from the labs and redistribute around the network.

Laboratory Service

1. Delivery and collection times should be arranged locally with Topspeed. Topspeed will collect and deliver at the agreed times unless contacted beforehand to confirm there are no collections required on a specific day.

2. Surveillance and Laboratory Services Department (SLSD) management will advise Topspeed of arrangements for out of hours collections and deliveries, i.e. where it is located, how to access for each site, etc.

3. Topspeed will provide rolls of barcodes and address labels in order that the dispatch log can be completed prior to collection.

4. Multiple packages going to the same destination should be bagged together to make one consignment. You should use a clear plastic bag sealed with a bag tie, both available from stores. Details are below. The barcode and address label should be affixed to the outer bag for the consignment. Topspeed will use this barcode for their tracking of the consignment.

5. Topspeed will collect the internal mail where required. If the destination is the same as the samples, bag them all together. If there is only a single letter for internal mail, consideration should be given to the urgency of using the courier, or if the item could be

sent via Royal Mail. The cost per consignment is £45, this will be the same if it is one letter or ten parcels.

6. Laboratories will be required to purchase their own packaging. Reusable items such as bio-bottles will be distributed round the network by Topspeed as they are used.

Using Royal Mail

1. UN3373 Category B Samples are classified by Royal Mail as restricted material. The Government framework agreement with Royal Mail requires government departments (APHA) to abide by Royal Mail General Terms and Conditions.

2. The Royal Mail General Terms and Conditions permit the carriage/transport of UN3373 Category B Sample only when the total volume/mass of the package must not exceed 50mls/50grms.

3. Royal Mail use road, rail and air within the UK and have to comply with various transport regulations e.g. ADR and International Air Transport Regulations (IATA).

4. The volume restriction is a legal requirement imposed on them by Civil Aviation Authority and as with any legal requirement any breach may lead to legal action being taken. The sender is responsible for ensuring samples are packaged and dispatched in accordance with Royal Mail General Terms and Conditions.

5. If samples are sent via Royal Mail, Safe Box (stock code PZI0018) available from stores should be used.

Camelid Antibody Test Results

1. APHA Starcross will normally return results to the submitting APHA VO/SVI or PVS.

2. Test results will be reported by APHA Starcross although not as individual tests, i.e. parallel or serial rather than DPPVetTB or IDEXX or Enferplex. Depending on the interpretation used, any camelids considered to be reactors must be valued in accordance with Valuation and Compensation for Camelids, slaughtered and subject to Post Mortem Examination (PME) as per normal procedures.

3. Record positive results on Sam as Dangerous Contacts (DCs) against the preceding skin test.

index

Taken from:

http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Valuation_and_Compensation/index.htm

Valuation and Compensation for Camelids

| Admin Tools |
|--|
| Export to Word |
| Show |
| <input type="checkbox"/> Documents |
| <input checked="" type="checkbox"/> Background |
| <input type="checkbox"/> Generics |
| Export |
| View all Feedback |
| Show Info Points |
| Switch on Admin Mode |

Index

- Valuation and Compensation
- Valuation and Compensation in England
- Payment of Compensation in England
- Valuation and Compensation in Scotland
- Payment of Compensation in Scotland
- Valuation in Wales
- Payment of Compensation in Wales
- Breaches of the Tuberculosis Order and Reduction in Compensation Payments in Wales
- Death of Reactors or Direct Contacts before Slaughter

Valuation and Compensation

Overview

1. In England, compensation has been paid for many years on an ex gratia basis and a fixed value of £750 per animal. However, from 1 October 2014, The Tuberculosis (Deer and Camelid) Slaughter and Compensation (England) Order 2014 came into force. This Order provides for the payment of statutory compensation of £750 for each camelid slaughtered compulsorily as a result of being affected or suspected of being affected by tuberculosis (South American camelids).

2. In Scotland, from 9 October 2015, The Tuberculosis in Specified Animals (Scotland) Order 2015 came into force. Article 21 provides for the payment of statutory compensation for specified animals, which includes camelids, if slaughtered compulsorily for TB under section 32(1) of the Animal Health Act 1981. The schedule to this Order provides a table of values - camelids 18 months of age or under are valued at Â£750 each and breeding animals over 18 months old are valued at Â£1500. However, if the animal is considered to have a lower value than that in the schedule, there are provisions in Article 22 to determine the value of the animal and to pay the lesser figure between it and the schedule value.

3. Provision has been made in Wales to pay compensation as calculated in the Tuberculosis (Wales) Order 2011.Â

Valuation and Compensation in England

1. Article 5 of The Tuberculosis (Deer and Camelid) Slaughter and Compensation (England) Order 2014 allows the Secretary of State to cause camelids to be compulsorily slaughtered if they have been affected or exposed to tuberculosis or are suspected of being affected. Where such animals are identified for slaughter, a Notice (TN03/TN03(Welsh)) will be issued to the owner advising them of this decision.

2. Compensation will be paid at the fixed rate of Â£750 per animal. This figure is not currently subject to reduction due to failure to comply with testing instructions.

3. The Notice of Intended Slaughter (TN03/TN03(Welsh)) and the Valuation Form (TN01/TN01(Welsh)) will usually be completed in the office from the test charts and other information provided by the Veterinary Officer (VO)/Senior Veterinary Inspector (SVI) dealing with the case when reactors and dangerous contacts (DCs) are identified for slaughter, and a file copy retained in the office. Alternatively, this notice can be given to the owner at an arranged valuation visit when the Valuation Form (TN01/TN01(Welsh)) can be handed to the owner. In England, it is not necessary for an owner or their agent to sign the Valuation Form (TN01/TN01(Welsh)).

4. Details of the valuations must be recorded by TB Admin staff on the Non-Bovine spreadsheet.

5. Some camelid reactors/DCs may be pets or owners may be reluctant for them to be assigned to an abattoir.Â Under these circumstances, owners can arrange for their private veterinary surgeon to euthanize the camelid(s) on the premises at their own expense and after valuation has taken place. This must not be allowed to interfere with the arrangements to conduct a post mortem examination of the animal in a suitable

location. Alternatively, provided there are adequate staff resources available, Animal and Plant Health (APHA) Veterinary staff may also euthanize reactors.

Payment of Compensation in England

1. Once confirmation of slaughter of reactors/DCs is received (either from a Private Veterinary Surgeon (PVS), knackerman or APHA staff), the Valuation Form (TN01/TN01(Welsh)) would be signed by a VO and countersigned by the Field Team Leader/RVL. An EO or above in the reactor team 

~~~~~ Background Section ~~~~~

This will vary between offices and may be a dedicated TB Admin team dealing with TB in other species 

~~~~~ End Background ~~~~~

will then check the accuracy of the Valuation Form (TN01/TN01(Welsh)), the amounts to be paid and whether the form is properly countersigned.

2. The Valuation Form (TN01/TN01(Welsh)) must be given to the Finance Team in the office to arrange for batching of the payments, completion of the supplier number and to sign off the form. An EO or above on the signatory panel will authorise the payments for Company 01 (DEFRA). A copy of the forms will be kept in the office (not scanned into Sam) and then sent to Shared Services Directorate (SSD) (Shared Services and Communications LTD (SSCL)) Alnwick for processing and payment to the owner.

Disputes Over Valuations and Refusal to Allow Reactor Removal

1. If a herd owner refuses to allow the removal of reactors due to the compensation system, an Animal Health Officer (AHO)/VO/SVI must explain (either whilst on farm, over the telephone or at a further visit):

- how the compensation system works and the reason for its introduction
- the legal implications and possible legal action from refusing to remove reactors.

2. If agreement to remove reactors is not obtained the AHO/VO/VI must inform the owner that they will be contacted in five days by APHA, if they have not already contacted the office before then. The purpose of this is to answer any questions and enter into further discussions with the herd owner.

3. If the owner still refuses to allow the removal of reactors, APHA must:

- follow procedures to remove reactors in order to take action for obstruction or refusal to allow slaughter
- inform the owner that APHA will report them to the Local Authority (LA) for consideration of enforcement action.

Valuation and Compensation in Scotland

1. Article 13 of The Tuberculosis in Specified Animals (Scotland) Order 2015 allows the Minister to cause camelids to be compulsorily slaughtered if they have been affected or exposed to tuberculosis or are suspected of being affected. Where such animals are identified for slaughter, a Notice of Intended Slaughter (TN03/TN03(Welsh)) will be issued to the owner advising them of this decision.
2. APHA staff must arrange for a valuation appointment with the herd owner, before reactors are removed from the farm.
3. At the valuation appointment the officer should determine the category of animal being valued and assign the appropriate value on the Valuation of Non-Bovine Animals for TB Compensation Purposes (TN01/TN01(Welsh)).
4. Compensation will be paid at the fixed rate of Â£750 for camelids 18 months of age or under and non breeding animals over 18 months old. Breeding animals over 18 months old are valued at Â£1500. In situations where an animals actual value is considered less than the table figures, the market value would be paid instead. Valuation should normally take place by agreement between APHA and the owner, Article 22 provides for joint or dual valuers where necessary.
5. A copy of the valuation form must be left with the owner and submit the original form to the Scotland Veterinary Lead (SVL) or APHA staff with delegated authority without delay for countersigning.
6. Details of the valuations must be recorded by TB Admin staff on the Non-Bovine spreadsheet.
7. Some camelid reactors/DCs may be pets or owners may be reluctant for them to be assigned to an abattoir. Under these circumstances, owners can arrange for their PVS to euthanize the camelid(s) on the premises at their own expense and after valuation has taken place. This must not be allowed to interfere with the arrangements to conduct a post mortem examination of the animal in a suitable location. Alternatively, provided there are adequate staff resources available, APHA Veterinary staff may also euthanize reactors.

8. If the valuation is for reactors from a new breakdown, a VO/SVI may also arrange to complete a Disease Report Form (DRF) - Part 1 (TR150) and a non bovine DRF manuscript report at the same time as the valuation. A case summary should be added to the monthly TB report for Scottish Government (SG).

Payment of Compensation in Scotland

1. Once confirmation of slaughter of reactors/DCs is received (either from a PVS, knackerman or APHA staff), the Valuation Form (TN01/TN01(Welsh)) should be signed by the SVL (or person delegated this responsibility as per cattle) to authorise that compensation is properly payable. The countersigning officer must not be the officer who originally signed the valuation form.
2. Following countersignature, APHA staff must immediately process the form for payment.
3. Enter all valuation details onto Sam in the 'Update Valuation Details' screen. Sam will calculate the compensation payable.
4. SG require details of individual compensation amounts for reactor animals. After entry of valuation details onto Sam, a copy of the Valuation Form (TN01) must be scanned and emailed to the TB Policy Team, Scotland with the subject header 'Protect Personal copy TN01'.
5. The Valuation Forms (TN01/TN01(Welsh)) used for valuation visits should not be scanned onto Sam but stored off system in an appropriate file. Refer to Standard Operating Procedure (SOP) Batching, Scanning and Associating (ODRM02) for further details on scanning, classifying and storing documents off-system.
6. Compensation is not payable if the animal dies on farm before slaughter, unless there has been unreasonable delay (see Disputed, Excessive or Unsatisfactory Valuations).

Disputes Over Valuations and Refusal to Allow Reactor Removal

1. If a herd owner refuses to allow the removal of reactors due to the compensation system, an Animal Health Officer (AHO)/VO/SVI must explain (either whilst on farm, over the telephone or at a further visit):
 - how the compensation system works and the reason for its introduction
 - the legal implications and possible legal action from refusing to remove reactors.

2. If agreement to remove reactors is not obtained the AHO/VO/VI must inform the owner that they will be contacted in five days by APHA, if they have not already contacted the office before then. The purpose of this is to answer any questions and enter into further discussions with the herd owner.

3. If the owner still refuses to allow the removal of reactors, APHA must:

- follow procedures to remove reactors in order to take action for obstruction or refusal to allow slaughter
- inform the owner that APHA will report them to the Local Authority (LA) for consideration of enforcement action.

Valuation in Wales

1. The Tuberculosis (Wales) Order 2011 introduces new powers and procedures for camelids, goats and deer in Wales. Set compensation values will be paid for animals that are compulsorily slaughtered. Veterinary Improvement Notices may be applied and may result in a reduction in set compensation figures.

2. The value of a non-bovine animal slaughtered for tuberculosis is to be calculated using the following formula:

- $A \times B = C$
- A = the set figure for each species and category of non-bovine animal provided by the Schedule to the Tuberculosis (Wales) Order 2011
- B = the factor provided (0.05, 0.5 or 0.75) for an overdue test, breach of Veterinary Improvement Notice (VIN) or a breach of obligations.
- C = the value of the non-bovine animal to be paid as compensation.

3. The set compensation values are found within the Tuberculosis (Wales) Order 2011 and the Valuation Form (TN01/TN01(Welsh)).

4. APHA staff must arrange for a valuation appointment with the herd owner, before reactors are removed from the farm.

5. At the valuation appointment the officer should determine the category of animal being valued and assign the appropriate value on the Valuation Form (TN01/TN01(Welsh)).

6. On return to the office, the APHA officer must record a declaration as a note on Sam to detail what evidence they have used to determine the category i.e. movement/birth records, size of animal.

7. If the valuation is for reactors from a new breakdown, a Veterinary Officer (VO)/Senior Veterinary Inspector (SVI) may also arrange to complete a DRF (TR150) and a Non Bovine DRF manuscript report at the same time as the valuation. This is done so that if the incident is later confirmed, a report must be sent to the Welsh Government (WG) describing the risks and exit strategy for the case.

8. Some non-bovine reactors may be pets or owners may be reluctant for them to be assigned to an abattoir. Under these circumstances, owners can arrange for their PVS to euthanise the camelid(s) on the premises at their own expense and after valuation has taken place. This must not be allowed to interfere with the arrangements to conduct a post mortem examination of the animal in a suitable location. Alternatively, provided there are adequate staff resources available, APHA veterinary staff may also euthanise reactors.

Disputes with the Schedule-based Compensation System

1. If a herd owner refuses to allow the removal of reactors due to the schedule based compensation system, the Animal Health Officer (AHO)/VO/SVI must explain (either whilst on farm, over the telephone or at a further visit):

- how the schedule based compensation system works and the reason for its introduction
- the legal implications and possible legal action from refusing to remove reactors.

2. If agreement to remove reactors is not obtained the AHO/VO/SVI must inform the owner that they will be contacted in five days by APHA, if they have not already contacted the office before then. The purpose of this is to answer any questions and enter into further discussions with the herd owner.

3. If the owner still refuses to allow the removal of reactors, APHA must:

- follow procedures to remove reactors in order to take action for obstruction or refusal to allow slaughter
- inform the owner that APHA will report them to the Local Authority (LA) for consideration of enforcement action.

Recording Valuations

1. Record all valuation data on the non-bovine spreadsheet.

Payment of Compensation in Wales

1. Where Welsh Ministers cause a non-bovine animal to be slaughtered the compensation must be paid promptly.
2. After confirmation of slaughter the Operations Director Wales (ODW) must arrange for the Valuation Form (TN01/TN01(Welsh)) to be completed as follows:
 - enter the amount of compensation payable for each animal in the column marked 'Compensation Payable (Â£)'
 - enter the total payment due to the owner
 - indicate on the Official Use page whether a compensation reduction may apply. In such cases, the recalculation of compensation will be carried out by the Welsh Government (WG).
3. Once the valuation form has been completed it should be signed by the ODW (or person delegated this responsibility) to authorise that compensation is properly payable. The countersigning officer must not be the officer who originally signed the valuation form.
4. Immediately after confirmation of slaughter, APHA staff must send the Valuation Form (TN01/TN01(Welsh)) to the TB Team, WG within ten working days for payment.
5. APHA staff must direct any compensation payment enquiries to the TB Team, WG.

Breaches of the Tuberculosis Order and Reduction in Compensation Payments in Wales

1. The Tuberculosis (Wales) Order allows for the reduction of compensation payments where:
 - the keeper has failed to comply with the conditions of a Veterinary Improvement Notice (VIN) 

~~~~~ Background Section ~~~~~

VINs came into force on 1 January 2011. 

~~~~~ End Background ~~~~~

- the keeper has failed to test animals in accordance with Article 9(1)

- the keeper has committed an offence under the Tuberculosis (Wales) Order.

2. If cattle, goats or camelids have not been tested because it is not safe to do (described in the legislation as 'reasons of practicability and include difficulties in gathering the animal safely due to its wildness or the nature of the terrain on which it is kept') refer to Reduction of Compensation for the Slaughter of Wild and Unmanageable Cattle and Breaches of Veterinary Improvement Notices below.

3. Refer to the Legal and Enforcement work area for general guidance on enforcement.

Breaches of the Tuberculosis (Wales) Order

1. The Order requires that a breach of the Order can be proved beyond reasonable doubt.

2. The process map below outlines the procedure for referrals to the TB Team, Welsh Government (WG).



[Print Process Map](#)



3. When the case Veterinary Officer (VO) receives initial information of a breach of the Tuberculosis Order they must:

- review the available evidence
- pay particular attention to the notices and notifications issued to the farmer to ensure they are correct (if it is decided to refer the case to the TB Team, WG this will form part of the evidence relating to the breach)
- discuss the case with the Veterinary Lead Wales (VLW) (or person delegated this responsibility)
- use the guidance notes (TR325(W)) and the available evidence to determine if there is a breach of the Order
- decide if it is appropriate to refer the case to the TB Team, WG and the relevant enforcement agency.

4. Further TB testing should not be carried out on the farm without discussion with the TB Team, WG. 

~~~~~ *Background Section* ~~~~~

Compensation can only be reduced for reactors at tests carried out after WG



has provided a formal notification that they believe the order has been breached beyond reasonable doubt.

*~~~~ End Background ~~~~*

5. If it is decided that the breach should be referred for potential compensation reduction, the case VO must:

- complete the referral form (TR326(W)) using the guidance notes (TR325(W)):
  - include an assessment of the severity of the case and likely impact of the breach
  - list the ear tag numbers or other identification of the non-bovines affected by the non-compliance where possible
  - where there are multiple breaches of the order, list all of the breaches
- collate adequate evidence
- pass the referral form (TR326(W)) and supporting documents to the VLW

6. On receipt of the referral documentation, the VLW must:

- review the case
- decide if further investigation is required by the Local Authority (LA) to establish evidence beyond reasonable doubt. If further investigation is required:
  - discuss with the relevant LA
  - refer the case to the LA (the LA should feed back their findings to the case VO within an agreed timescale)
  - copy the referral to WG
  - notify the TB Team, WG by telephone and email the notification proforma (TR327(W))
  - copy the notification proforma (TR327(W)) to the Regulatory Hun
  - forward the evidence to the TB Team, WG without delay
  - send a copy of all the evidence to the LA.

7. When the LA findings are available (where further investigation by the LA was requested), the case VO/VLW/LA and the TB Team, WG should discuss the case.

8. If the VLW (or person delegated this responsibility) decides that referral is appropriate, they must:

- sign the referral form (TN326(W)) and email it to:
  - the TB Team, WG
  - the Regulatory Hub 

*~~~~~ Background Section ~~~~~*

The Regulatory Hub will enter the details onto the Animal Movement Enforcement System (AMES), therefore it is important that the Regulatory Hub are notified of all referrals



*~~~~ End Background ~~~~*

- send a hard copy to the LA
- inform the farmer in writing (TR313(W)/TR313(W)(Welsh)) of the case details and that the case has been referred to the TB Team, WG.

9. If the case VO/VLW subsequently decides after assessment of the case that reduction of compensation is not appropriate or there is insufficient evidence, they must notify the TB Team, WG and the Regulatory Hub.

10. On receipt of the evidence the TB Team will discuss the case in detail with the case VO/VLW and the LA. In some cases it may be necessary for the LA or the Defra Investigation Branch to carry out further investigations (e.g. interviewing the farmer or gathering further evidence) before there is enough evidence for WG to decide on compensation reduction.

11. The TB Team will decide on the basis of the evidence provided whether the Order has been breached and whether there is sufficient evidence to reduce future compensation payments. The LA enforcement of the legislation is unchanged by this process.

12. If the TB Team decides that the Order has been breached beyond reasonable doubt, they will formally notify the APHA office (within ten days) and the farmer of the decision and compensation for reactors found at tests carried out during the next six months must be reduced. Where the herd is not tested during the next six months, the reduction will apply at the next herd test:

- following a breach of the order on one occasion compensation is reduced by 50%
- following a breach of the order on more than one occasion compensation is reduced by 95%.

13. Record the enforcement activity on Sam against the customer record. Refer to Standard Operating Procedure (SOP) Instigate Enforcement Procedures([WMTB18](#)).

14. The Regulatory Hub will provide an Animal Health and Welfare Management and Enforcement System (AMES) report to APHA offices of farms where illegal activity has been referred to WG.

15. If it is decided that an offence has been committed and therefore compensation reduction is necessary, APHA offices must send a referral form (TB165(W)) with the valuation form (TN01/TN01(Welsh)) to the TB Team. Do not send the valuation form (TN01/TN01(Welsh)) to the TB Team for processing until a decision has been made by WG as to whether compensation should be reduced.

16. If the farmer wishes to appeal against the decision to reduce compensation, direct them to the TB Team, WG who will organise the appeal process.

#### Other Breaches of the Tuberculosis (Wales) Order where a Referral has been Made

1. The Regulatory Hub will provide APHA offices with a weekly AMES report of breaches of the TB Order that have been referred to WG (excluding cases of late testing).
2. APHA offices must check compensation payments against this report before sending Valuation Forms (TN01/TN01(Welsh)) to WG to process for payment.

#### Breaches of Legislation Other than The Tuberculosis (Wales) Order

1. Where breaches of legislation other than the Tuberculosis (Wales) Order are identified, refer to the relevant enforcement agency where appropriate.
2. These breaches should not be referred to the TB Team, WG unless there is also a breach of the Tuberculosis (Wales) Order.

#### Reduction of Compensation for Overdue Tests

1. The non-bovine spreadsheets are available on the shared drive in the Performance Measurement/TB Non-Bovine folder within each AHPA office area folder.
2. The monitoring spreadsheets will be populated by APHA offices when tests are allocated to non-bovine herds and will include the following details:
  - the date the test was due
  - the date the test was completed.
3. Where the interval between the due date and the test completion date is:
  - more than 60 days but not more than 90 days, the amount of compensation payable is reduced by 25%
  - more than 90 days but not more than 180 days, the amount of compensation payable is reduced by 50%

- more than 180 days, the amount of compensation payable is reduced by 95%.

4. When the Valuation Form (TN01/TN01(Welsh)) is processed for payment APHA offices must check the test due date and the date the test was actually completed.

5. If the test is more than 60 days overdue:

- complete a referral form (TB165(W))
- send the referral form (TB165(W)) with the Valuation Form (TN01/TN01(Welsh)) to the TB Team, WG
- scan the referral form into Sam as evidence that it was sent.

6. WG will confirm the amount of compensation paid in an email to the Regional office mailbox.

#### Reduction of Compensation for the Slaughter of Wild and Unmanageable Cattle and Breaches of Veterinary Improvement Notices

1. The amount of compensation payable may also need to be recalculated where animals have been slaughtered as wild and unmanageable, or if there has been a breach of a Veterinary Improvement Notice (VIN).

2. The Regulatory Hub will provide APHA offices with a weekly AMES report of breaches of the TB Order (excluding cases of late testing).

3. APHA offices must check compensation payments against this report before sending Valuation Forms (TN01/TN01(Welsh)) to WG to process for payment.

4. Where animals were slaughtered as wild and unmanageable or a VIN has been breached:

- complete a referral form (TB165(W))
- copy the referral form the Regulatory Hub 

*~~~~~ Background Section ~~~~~*

The Regulatory Hub will enter the details onto AMES. 

*~~~~~ End Background ~~~~~*

- send the referral form (TB165(W)) with the Valuation Form (TN01/TN01(Welsh)) to the TB Team, WG
- scan the referral form into Sam as evidence that it was sent.

5. Refer to Procedures for Wild and Unmanageable Cattle in Wales for further guidance.

## Death of Reactors or Direct Contacts before Slaughter

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1. An animal designated as a reactor, or proposed for slaughter as a Direct Contact (DC), may die before it can be officially slaughtered.

2. If the animal dies on farm (before or after it has been valued for TB compensation purposes or ex gratia payment has been agreed):

- the loss is the responsibility of the owner
- no compensation or ex-gratia payment is payable, provided there has been no undue delay on the part of APHA in removing the animal from the herd:
  - this is confirmed under the Animal Health Act, section 32
  - if there is difficulty in applying this instruction, the matter should be referred (with a report of the facts) to the relevant Regional Operations Director (ROD)/Operations Director Scotland (ODS)/Operations Director Wales (ODW), for consideration. No indication should be given to the herd owner that the instruction may be varied in any case.

3. Herd owners are responsible for the welfare of the animals until they are euthanised or leave the premises, and this may involve necessary treatment. In the case of an animal scheduled for removal to a slaughterhouse, this may affect the salvage of the animal, but will not affect the compensation or ex-gratia payment.

4. If an animal dies in transit (from the time it steps onto the tailboard of the transport) after APHA has taken charge of it for the purposes of slaughtering it under the arrangements for the eradication of TB, the government is not obliged to make a compensation or ex-gratia payment.

5. Regional Veterinary Leads (RVLs)/Scotland Veterinary Leads (SVLs)/Veterinary Leads Wales (VLW) may recommend payment following ascertainment of the facts.

index

Taken from:

[http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Haulage\\_and\\_Slaughter/index.htm](http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Haulage_and_Slaughter/index.htm)

## Haulage and Slaughter of Camelids

| <b>Admin Tools</b>                             |
|------------------------------------------------|
| Export to Word                                 |
| Show                                           |
| <input type="checkbox"/> Documents             |
| <input checked="" type="checkbox"/> Background |
| <input type="checkbox"/> Generics              |
| Export                                         |
| <a href="#">View all Feedback</a>              |
| Show Info Points                               |
| Switch on Admin Mode                           |

### Index

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- Haulage in England and Scotland
- Haulage in Wales
- Slaughter in England and Scotland
- Slaughter in Wales

### Haulage in England and Scotland

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1. Haulage may be arranged by the Animal and Plant Health Agency (APHA) or the owner. This may be haulage of the live animal to the place of slaughter, but in most cases will be haulage of the carcass to a place where the Post Mortem Examination (PME) can be undertaken.
2. If arranged by APHA, the Regional Veterinary Lead (RVL)/Scotland Veterinary Lead (SVL) must ensure:
  - the rates charged by the haulier are competitive
  - all appropriate legislation is observed by a contractor employed to move live animals or carcasses to the APHA laboratory or other place for slaughter and/or Post Mortem Examination (PME).
3. Owners may haul the carcasses themselves. In these cases, advice should be given to ensure that biosecurity and health and safety is not compromised.

## Haulage in Wales

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1. The contract in place for bovines can be used for non-bovines. Refer Haulage, Slaughter and Salvage in Wales.

## Slaughter in England and Scotland

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1. Slaughter will usually take place on farm using a licensed slaughterman.
2. Euthanasia by injection will be appropriate where the animal is a pet. Decisions will be on a case by case basis but it is unlikely that the local office will have appropriate drugs or experienced Veterinary Officers (VOs)/Senior Veterinary Inspectors (SVIs), so that euthanasia may be carried out by them.
3. Owners can request that their Official Veterinarian (OV) euthanise their animals at their own expense, but they must agree to release the animals for PME and the euthanasia must be at a time and place that allows collection and subsequent PME.
4. The owner may agree to the APHA office making the appropriate arrangements for the slaughter of animals.
5. Owners can request that they make their own private arrangements for slaughter at a slaughterhouse. The slaughter must be at a place and time that allows PME of the reactor or Direct Contact (DC) where necessary. The following implications must be explained to the owner:
  - the owner will be responsible for haulage and slaughter costs
  - the carcase may be declared unfit for human consumption and have no value.
6. In either case the office should:
  - complete and issue to the herd owner a licence (TN24) authorising the movement of reactors to the destination slaughterhouse
  - complete the proposal to slaughter form (TN55) and send to the owner to accompany the animal and copy to the destination slaughterhouse.
7. Advise the owner that while the animals are still in their possession, it is the owner's responsibility for meeting the animals' welfare requirements, including supplying food and water.
8. Reactor or DC animals must be presented at the slaughterhouse with a Food Chain Information (FCI) declaration form obtained from the Food Standards Agency (FSA).

9. For animals submitted to red meat processing slaughterhouses the FSA will record Post Mortem Investigation (PMI) findings on the material for examination form (TB50) (regardless of whether tissue samples were submitted for culture or not) and submit copies to APHA offices and laboratories and the FSA headquarters.

10. APHA will notify the OV at the slaughterhouse of the sampling requirements for all reactors/DCs and they will be responsible for the collection and submission of samples as appropriate.

## Slaughter in Wales

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1. Slaughter will usually take place on farm using a licensed slaughterman.

2. Owners can request that their Official Veterinarian (OV) euthanise their animals at their own expense, but they must agree to release the animals for PME and the euthanasia must be at a time and place that allows collection and subsequent PME.

3. Advise the owner that while the animals are still in their possession, it is the owner's responsibility for meeting the animals' welfare requirements, including supplying food and water.

index

Taken from:

[http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Post\\_Mortem\\_Sampling\\_and\\_Culture/index.htm](http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Post_Mortem_Sampling_and_Culture/index.htm)

## Post Mortem, Sampling and Culture

| <b>Admin Tools</b>                             |
|------------------------------------------------|
| Export to Word                                 |
| Show                                           |
| <input type="checkbox"/> Documents             |
| <input checked="" type="checkbox"/> Background |
| <input type="checkbox"/> Generics              |
| Export                                         |
| <a href="#">View all Feedback</a>              |
| Show Info Points                               |
| Switch on Admin Mode                           |

### Index

---

- Overview
- What and When to Post Mortem and Sample
- Reports of Suspicion of TB
- Post Mortem Examination or Post Mortem Investigation of Reactors or Direct Contacts
- Private Post Mortem Examination and Sampling
- Slaughterhouse Cases
- Action Following Notification of a Slaughterhouse Case
- Spoligotype Identification

### Overview

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1. All reactors and Direct Contacts (DCs) will be submitted to slaughter at a slaughterhouse, or slaughtered at the premises by Animal and Plant Health Agency (APHA) or by the Private Veterinary Surgeon (PVS). They will:

- be transported to a regional APHA laboratory, SAC laboratory in Scotland or other suitable premises e.g. knacker's yard for large numbers for Post Mortem Examination (PME) and, where appropriate, samples taken and cultured or
- receive an Ante Mortem and Post Mortem Inspection (PMI) at a slaughterhouse 

*~~~~~ Background Section ~~~~~*

Owners may decide to make private arrangements for the slaughter of their animal. APHA will not accept responsibility if the carcass is condemned and will not pay any privately arranged haulage retrospectively. This arrangement can only be allowed if the Post Mortem Examination (PME)/Post Mortem Investigation (PMI) and sample collection is not compromised by the time and place chosen for slaughter.

*~~~~~ End Background ~~~~~*

by the Food Standards Agency (FSA)/Foods Standards Scotland (FSS) and, where appropriate, samples will be submitted by the FSA/FSS to APHA Weybridge for culture or

- have a private PME, arranged by the owner and samples taken by private arrangement and at owners cost.
2. Animals that are reported as suspect cases, either as clinical suspects or suspect lesions at a routine PME, will be submitted to an APHA laboratory (or SAC in Scotland) for PME and/or sampling.
  3. Animals reported as having suspect lesions at a slaughterhouse will be treated as a slaughterhouse case and samples will be collected and submitted by the FSA/FSS.
  4. APHA will determine the sampling requirements and instruct the APHA/SAC laboratory or the FSA/FSS Official Veterinarian (OV) at the slaughterhouse on the appropriate samples to be taken and submitted for culture.
  5. The material for examination form (TB50) should be used when submitting samples to the APHA laboratory from all species other than cattle and badgers.
  6. The FSA/FSS will inspect carcasses and collect and submit samples as instructed by the local APHA office to the appropriate APHA laboratory.

## What and When to Post Mortem and Sample

1. A Post Mortem Examination (PME) should be attempted on all test reactors/Direct Contacts (DCs) and the findings recorded.

2. Reactors/DCs submitted for slaughter at a slaughterhouse will be subjected to a Post Mortem Inspection (PMI) by the FSA/FSS and results will be noted on the material for examination form (TB50) submitted with the animal.

3. Once *Mycobacterium bovis* (*M. bovis*) infection has been confirmed in a group of non-bovine farm animals (i.e. alpacas, llamas, goats, pigs, sheep, etc.) by tissue culture, APHA should not submit further tissue samples for culture from subsequent TB clinical/post mortem/slaughterhouse cases or TB test reactors, unless this is essential to determine:

- whether or not movement restrictions may be lifted from the affected premises (e.g. a batch of non-visibly lesioned (NVL) reactors **without** concurrent visible lesions (VLs) in a potentially final herd test)
- a new epidemiological group appears to be involved in the outbreak.

4. Where a programme of repeat ante-mortem testing is not in place on the premises and post mortem surveillance alone is being relied upon for lifting of restrictions, then any slaughterhouse cases will generally be submitted for culture. If in doubt, consult with the relevant Veterinary Lead.

5. A sampling protocol has been introduced to provide a cost effective way of confirming herd breakdowns and providing information for disease control.

6. The following process map outlines the sampling protocol required for reports of suspect disease and skin or gamma test reactors/DCs:



7. The APHA office is responsible for:

- providing the FSA/FSS with instructions for the sampling protocol to be used for reported slaughterhouse cases
- providing the APHA/SAC laboratory with the sampling instructions where PME is carried out at the regional laboratory
- following the sampling protocol when submitting samples from animals examined at places other than slaughterhouses.

8. Samples will be submitted to the relevant APHA laboratory.

9. Case Veterinary Officers (VOs/SVI) must advise herd owners that:

- not all reactors, DCs or Inconclusive Reactors (IRs) will be cultured and

- the failure to detect VLs or *M. bovis* in a reactor does not rule out infection in that animal.

## Reports of Suspicion of TB

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1. Suspect TB lesions may be detected at a commercial slaughterhouse during routine inspection of carcasses (slaughterhouse case), or may be identified at a routine PME undertaken at the owners request by their Private Veterinary Surgeon (PVS).
2. Where the animal originates from a herd that is not on restrictions for TB tissue samples from the VL animal should be taken and submitted for culture and genotype.
3. If more than one animal has been identified from the same herd samples should be taken from a maximum of three VL animals and these should be the animals with the most characteristic TB lesions.

## Post Mortem Examination or Post Mortem Investigation of Reactors or Direct Contacts

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1. A PME should be attempted on all test reactors/DCs and the findings recorded.
2. Sampling will depend on the TB status of the herd and PME results of the reactors/DCs.
3. If *M. bovis* has already been isolated and a genotype is available no further sampling is required providing:
  - the reactors are from the same epidemiological group and there are no exceptional circumstances that require investigation
  - there is at least one VL reactor/DC.
4. If the reactors are from a different epidemiological group and VL animals are seen, tissue samples should be submitted for culture from a maximum of three VL animals.
5. If no visible lesions are seen in any of the reactors/DCs from one test tissue samples (pooled NVL samples) should be submitted from a maximum of six animals.

## Post Mortem Examination and Sampling at Regional Laboratories

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1. Where PME is to be carried out by a APH/SAC Regional laboratory, the local APHA office will arrange haulage of the reactor/DC at a convenient time for the laboratory to carry out the PME.

2. The local office will inform the laboratory of the sampling protocol appropriate to the reactor/DC.

3. The APHA/SAC laboratory will report the findings of the PME to the local office using the form material for examination form (TB50) and samples will be taken as appropriate.

## Private Post Mortem Examination and Sampling

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1. Not all non-bovine animals will be subject to a PME or culture of samples.

2. Owners must be notified if a PME or culture is not to be carried out and given the opportunity to request a private PME or culture.

3. Slaughter may be arranged at a time and place to allow a private PME and submission of samples for culture.

4. APHA will not cover any additional costs which may result from the slaughter of the animal(s) at a time and place to allow private PME.

## Slaughterhouse Cases

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1. A **slaughterhouse case** is where suspected lesions of bovine TB are found in a carcase of an animal slaughtered for human consumption. These animals are **not** reactors/DCs where sampling has been requested.

2. The FSA/FSS is responsible for collecting samples from slaughterhouse cases identified during meat inspection duties.

3. FSA/FSS staff must immediately report any suspicion of TB to the local APHA office. This is a statutory obligation under the Tuberculosis Orders. Details of the suspect case can initially be given by telephone.

4. The OV must complete a material for examination form (TB50) and email or fax it to APHA as soon as possible. Upon receipt, APHA will use the material for examination form (TB50) with herd information to decide if tissue samples need to be sent to the laboratory.

5. When directed by APHA, the FSA/FSS is responsible for the collection and submission of tissue samples to the designated APHA laboratory with a complete material for

examination form (TB50). A copy of the material for examination form (TB50) must be emailed or faxed to the APHA office and the original form (TB50) must accompany the samples.

6. APHA offices must provide FSA/FSS staff in local slaughterhouses with blank copies of the current versions of the material for examination form (TB50).

## Action Following Notification of a Slaughterhouse Case

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1. For all slaughterhouse cases, APHA staff must:

- trace the farm of origin and pass details to a TB Lead VO (LVO) to assess the sampling requirements for the lesion and instruct on culturing requirements:
  - if the LVO rules out suspicion of TB from the description of the lesion and, in liaison with the FSA/FSS decides not to proceed with the slaughterhouse case, it must be reported to the RVL/SVL/VLW and copied to the relevant Veterinary Advisor
  - if the LVO is confident that it is a TB lesion and the originating herd is a positive breakdown herd, do not send cultures unless the animal is from a separate epidemiological group
  - if the animal has originated from a herd, flock or group which is not restricted for TB control samples should be collected for submission to APHA Weybridge from a maximum of three animals from the same herd, flock or group
  - if the premises of origin is in another APHA office area, inform the APHA office in that area of the suspect case. Send copies of the material for examination forms (TB50) to the APHA office responsible for the herd of origin and request instructions for sampling and culture of the lesion
- notify the owner or keeper of the slaughterhouse case animal and serve movement restrictions (TN02/TN02(Welsh)) on the herd/flock of origin or a specified group, if it is not already restricted.

## Spoligotype Identification

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1. Tissue samples are cultured to enable the molecular characterisation of the *M. bovis* isolate using a combination of spoligotyping and Variable Number Tandem Repeat (VNTR)-typing (genotyping).

2. Only one genotyped isolate is necessary to identify the spoligotype for each breakdown. Past evidence shows that the spoligotype rarely changes as the breakdown progresses.

3. The spoligotype information is used by case VOs to support the epidemiological investigation into the origin of the breakdown.

4. Only one *M. bovis* isolate is necessary, if submitting more than one VL mark the material for examination form appropriately to indicate that there are more VLs from one group and only one result is required.

5. Once a spoligotype result is obtained, do not request further cultures and molecular typing, unless it is an exceptional case.

6. Exceptional cases where requests for further cultures and molecular typing can be permitted include:

- separate epidemiological groups
- suspected multiple sources of purchased infection, or a change in the local situation
- an unexpected change to the predicted disease spread within the herd, which may be attributed to a different origin of disease.

Collection\_and\_Sample\_Submission

Taken from:

[http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Post\\_Mortem\\_Sampling\\_and\\_Culture/Collection\\_and\\_Sample\\_Submission.html](http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Post_Mortem_Sampling_and_Culture/Collection_and_Sample_Submission.html)

## Collection and Sample Submission

| <b>Admin Tools</b>                             |
|------------------------------------------------|
| Export to Word                                 |
| Show                                           |
| <input type="checkbox"/> Documents             |
| <input checked="" type="checkbox"/> Background |
| <input type="checkbox"/> Generics              |
| Export                                         |
| <a href="#">View all Feedback</a>              |
| Show Info Points                               |
| Switch on Admin Mode                           |

### Index

---

- Collection of Samples
- Collection of Samples from Visible Lesion Animals
- Collection of Samples from Non-Visible Lesion Reactors and Direct Contact Animals

### Collection of Samples

---

1. Submit material from non-bovine species, whether visibly lesioned (VL) or non-visibly lesioned (NVL), to an Animal and Plant Health Agency (APHA) laboratory using the material for examination form (TB50/TB50C).
2. The material to be submitted will depend on the results of the Post Mortem Examination (PME)/Post Mortem Investigation (PMI).

### Collection of Samples from Visible Lesion Animals

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1. The tissue sample should include a portion of normal adjacent tissue.
2. It is essential that tissue material harvested for culture is collected cleanly and dissected free from surrounding tissues (as much as possible) by the use of sterile instruments, as culture media for *Mycobacteria* are prone to overgrowth by fast growing contaminants.

3. Material for culture must be as free from fat and muscle as possible as they prevent proper maceration of the sample. Remove fat and muscle at the time of examination before the node has been chilled, frozen or sliced.
4. Good selection and trimming of samples should be practiced before packing and despatch of the samples where health and safety considerations allow this.
5. Samples from more than one animal must not be pooled.
6. If urgent histological examination is required, in addition to cultural examination, clearly mark the material for examination form (TB50/TB50C) with 'urgent histological required'.
7. In any case in which a negative diagnosis cannot be made, immediately serve a Form A (TN02/TN02(Welsh)) detention and isolation notice on the owner of the premises of origin.

## Collection of Samples from Non-Visible Lesion Reactors and Direct Contact Animals

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1. Pooled samples of lymph nodes (NVL pool) will be collected where NVLs have been identified.
2. Each pooled sample should consist of up to 30ml of tissue from an individual animal. Do not fill 60ml pots more than two thirds full when sending NVL samples.
3. Samples from NVL animals should solely or predominantly consist of the commonest sites of lesions, as they are the sites most likely to be successful in culturing *Mycobacterium bovis* (*M. bovis*) if it is present in small numbers.
4. Choose hyperplastic areas of node in preference to normal tissue. Only include abnormal or haemorrhagic sections of the nodes inspected in any additional portions of lymph nodes which are added to the NVL pool, so the culture material is not diluted.
5. Do not add mesenteric lymph nodes to the NVL pool as they are routinely contaminated. Submit only as a site of VL or abnormal section/cut if these are the only lesions available to culture.
6. Only include other lymph nodes if abnormal. Alternatively, abnormal lymph node samples can be taken to the APHA office and examined in the safety cabinet if available.

Sample\_Handling\_and\_Despatch

Taken from:

[http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Post\\_Mortem\\_Sampling\\_and\\_Culture/Sample\\_Handling\\_and\\_Despatch.html](http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Post_Mortem_Sampling_and_Culture/Sample_Handling_and_Despatch.html)

## Handling and Despatch of Samples

| <b>Admin Tools</b>                             |
|------------------------------------------------|
| Export to Word                                 |
| Show                                           |
| <input type="checkbox"/> Documents             |
| <input checked="" type="checkbox"/> Background |
| <input type="checkbox"/> Generics              |
| Export                                         |
| <a href="#">View all Feedback</a>              |
| Show Info Points                               |
| Switch on Admin Mode                           |

## Index

---

- Overview
- Accompanying Paperwork for Sample Submission
- Sample Packaging, Storage and Despatch by Animal and Plant Health Agency
- Samples Received at Animal and Plant Health Agency Laboratories

## Overview

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1. For each suspected animal, the Animal and Plant Health Agency (APHA) offices are responsible for submitting the relevant samples to APHA Weybridge for culture and arranging the appropriate tracing to determine the premises of origin. Most APHA offices are not equipped to submit samples themselves from camelid post-mortems and rely on the APHA laboratory conducting the Post-Mortem Examination (PME) to submit samples for culture.
2. Steps should be taken to confirm the diagnosis and send samples of the suspected lesions to the APHA laboratory for typing using the sample submission form (TB50).

## Accompanying Paperwork for Sample Submission

---

1. Complete one sample and submission form (TB50) for each animal from which samples are being submitted to APHA, with:

- all relevant sections
- if urgent histology is required mark this clearly in the 'Remarks' section
- for visibly lesioned cases a description and location of lesions found at post mortem e.g.:
  - the number (single, multiple, miliary)
  - type (calcified, caseous, fibrous, purulent)
  - size and position in the organ where significant.

2. Submit the original submission form (TB50) with the samples and place a copy on file. The submission form (TB50) is normally sent to the TB in Other Species Admin Team to scan onto Sam and to record details on the Non-Bovine spreadsheet.

3. The APHA laboratory will allocate a unique AF reference number for each submission.

## Sample Packaging, Storage and Despatch by Animal and Plant Health Agency

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1. Collection of non-bovine TB tissue samples by APHA are limited to PME carried out in knackers' yards, hunt kennels and other places although this is rare due to health and safety concerns.Â Collection of samples in approved red meat processing abattoirs is the responsibility of the Food Standards Agency (FSA) under APHA's direction.

2. In exceptional circumstances carcasses and samples may be sent direct to APHA Weybridge by private practitioners using the material for examination form (TB50) but each submission must be discussed with the Regional Veterinary Lead (RVL)/Scotland Veterinary Lead (SVL)/Veterinary Lead Wales before it is made and a submission point (laboratory) agreed if necessary.

### APHA Preferred Packing Method

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1. The preferred method to package TB tissue samples for submission to APHA

Weybridge are in 60ml Cellstor screw top pots. 

*~~~~~ Background Section ~~~~~*

Cellstor pots must be used in all cases unless there are exceptional circumstances. In exceptional circumstances, use an individual polythene bag for each animal and tightly knot the bag to prevent leakage.Â Do not use snap-seal or zip lock bags. Polythene bags must not be used for packing TB samples routinely. 

*~~~~~ End Background ~~~~~*

2. Enclose tissue samples from each animal in an individual cellstor pot and **tightly** screw the lid shut to prevent leakage, taking care not to cross thread.
3. The tissue sample will normally consist of any characteristic lesion(s) (for a visibly lesioned (VL) animal) or a pooled set of lymph nodes for groups of non-visibly lesioned (NVL) animals.
4. Mesenteric (gut) lymph nodes should only be submitted if they are the only lesions available to culture. This is to minimise contamination of pooled sample with enteric bacteria that could inhibit the growth of *Mycobacterium bovis* (*M. bovis*) in the culture media.
5. Mark each pot with the relevant County Parish Holding (CPH) number and the animal's ear tag number or clipped Roman Numerical number. This is best done by attaching a sticky label with these details outside the pot.
6. Place individual cellstor pots in polythene bags, tightly knot the bag and remove the excess after the knot. Seal each individual pot in its own bag (even if more than one post is submitted from an individual animal).
7. If more than one pot is submitted for an individual animal, place bagged pots together inside another bag to ensure they are kept together when they arrive at APHA Weybridge. Annotate the material for examination form (TB50) if more than one cellstor pot is sent per animal.
8. Only in exceptional circumstances should polythene bags be used. 

~~~~~ *Background Section* ~~~~~

Place the first bag in a second bag that is also tightly knotted. Mark the outer,  second bag (preferably using sticky labels) with the CPH number and the animal's ear tag or clipped Roman Numerical number, ensuring the number remains visible and not included in the knot. If samples from more than one animal are in more than one bag, double bag all individual bags relating **to that one animal** and enclose in a single outer bag. Do not place all bagged samples from a herd in a single outer bag as the risk of leakage and cross contamination is too high. However, double bagged samples from individual animals from the same herd can be submitted in the same Biojar (to reduce costs). Do not use snap-seal or zip lock polythene bags.

~~~~~ *End Background* ~~~~~

9. All packing (cellstor pots, identification labels, outer box etc.) and paperwork must be free from contamination of any sort (e.g. blood, faeces) when it is despatched.

10. Contaminated paperwork must be, photocopied or re-written to ensure clean copies are sent to APHA Weybridge.

11. Do **not** despatch material on Fridays, Saturdays or Sundays. On these days samples should be stored at 4 to 6°C for despatch on the next working day.

12. If samples have to be stored chilled **for more than three days**, contact the TB diagnostic laboratory at APHA Weybridge for advice. Only freeze samples on APHA request.

### Packing Samples using Bio-bottle (Pathopak) Packing

1. Pack the double wrapped samples in the Biojar or (UN3373 container) and ensure the lid is secure. Fill the Bio-bottle with sufficient absorbent material to absorb all exudates in case of breakage.

2. Sample cellstor pots from different herds may be placed in the same Bio-bottle, provided the pots are securely packaged in separate polythene bags for each herd.

3. If bags have been used and material from more than one herd is being submitted, use separate Bio-bottle for each herd.

4. Place the paperwork for the samples (TB50) in a polythene bag or snap-seal bag and secure to the outside of the relevant Bio-bottle.

5. Place the Bio-bottle in the cardboard sleeve and despatch to arrive the **next day** at APHA Weybridge. If possible, the outer boxes used to package the Bio-bottle should be no larger than 300 x 400x 500 mm, to ease handling in the safety cabinets at the APHA laboratory.

### Packing Samples Using Bioshield Packing

1. If there are a large number of samples to be sent for TB diagnosis it may be more cost effective to use the Bioshield packing instead of a number of Bio-bottle.

2. Bioshield boxes are only suitable for cellstor sample pots and not for bagged samples.

3. Mark each empty cellstor sample pot with the relevant CPH number and the animal's ear tag number or clipped Roman Numerical number. This is best done by attaching a sticky label with these details to the outside of the pot.

4. Place the empty labelled pot and bagged sample in the safety cabinet for a VO to examine/trim (only applicable to APHA offices that examine/trim samples prior to submission to APHA).

5. Place the pot in a medium sized polythene bag, tie a knot at the top of the bag and remove excess after the knot.

6. Open the Bioshield box remove the following:

- pathoseal bag
- document pouch
- specimen rack.

7. Keep the ESP spacers (expanded polystyrene) at the bottom of the box.

8. Place all the bagged sample pots in the spaces provided in the specimen rack.

9. Place the specimen rack inside the pathoseal bag and seal it.

10. Place the bagged specimen rack on top of the ESP spacers.

11. Copy the material for examination form (TB50) and place the paperwork for each holding in a small bag and label with the owner's name.

12. Place all the bagged forms inside the document pouch and place them on top of the specimen rack.

13. Close the Bioshield box and seal with blue security label.

### Packing Regulations and Labelling Requirements for Diagnostic/Pathological Samples

---

1. The carriage of any sample material (including tissues as part of a sampling regime) by road, air or sea must be in accordance with The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009.

2. Tissue samples submitted for bovine TB (bTB) are classified as **Biological Substance Category B**. This assigns United Nations number 3373 (UN3373) and requires them to be packaged in accordance with ADR Regulations Packing Instruction P650. ADR Regulations determine how dangerous goods should be carried by road. 

*~~~~~ Background Section ~~~~~*

ADR is the European Agreement concerning the International Carriage of Dangerous Goods by Road (from the French abbreviation; Accord européen relatif au transport international des marchandises dangereuses par route). 

*~~~~~ End Background ~~~~~*

3. Only packaging material that complies with P650 packing instructions applying to UN3373 should be used (see pages 145/147 in Part 4 of [ADR Regulations](#)). The packaging materials outlined in the packing instructions above meets ADR Regulations and UN3373 P650 standards if used as described. Refer to Quick Reference Guide to ADR and Sample Packing (GEN01) for further guidance.

4. APHA offices must ensure bTB samples are transported to the relevant APHA laboratory using APHA/Defra preferred courier service. This will ensure the carrier is approved for the Carriage of Dangerous Goods - **Biological Substance Category B UN3373**.

5. Royal Mail are only permitted to accept carriage of Biological Substance Category B UN3373 when the total volume/mass of the package does not exceed 50ml/50g. Tissue samples will generally exceed this volume and Royal Mail should not be used. Refer to Dispatch Methods for UN3373 Category B Samples by APHA for further guidance.

6. Order APHA sample labels, parcel labels, Bio-bottles, Bioshield boxes and 60ml Cellstor screw top pots from APHA laboratories via Local Equipment Managers (LEMs).

7. Special arrangements for dispatch of samples during Christmas and Easter holidays will be circulated by APHA laboratories in advance.

## Samples Received at Animal and Plant Health Agency Laboratories

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1. If APHA laboratories encounter a problem with the quality of a TB sample or its packaging, they will complete the samples received report (TR107) and email it to the

relevant RVL/SVL/VLW who must take remedial action. If the quality of the reported sample is out of the control of APHA offices, RVL/SVL/VLW must inform the APHA laboratory and the Veterinary Advisor so that particular problem areas can be identified and addressed centrally.

2. Confirmation that tissue samples have been processed at APHA can be obtained electronically by checking the APHA Culture Results Status Tool (also referred to as the APHA Crystal system). This also allows TB culture and genotyping results to be obtained electronically. Instructions on its use can be viewed on the website by accessing the links to the two submission pages and clicking on the **Help** link.

Action\_on\_Receipt\_of\_Results

Taken from:

[http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Post\\_Mortem\\_Sampling\\_and\\_Culture/Action\\_on\\_Receipt\\_of\\_Results.html](http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Post_Mortem_Sampling_and_Culture/Action_on_Receipt_of_Results.html)

## Action on Receipt of Results

| <b>Admin Tools</b>                             |
|------------------------------------------------|
| Export to Word                                 |
| Show                                           |
| <input type="checkbox"/> Documents             |
| <input checked="" type="checkbox"/> Background |
| <input type="checkbox"/> Generics              |
| Export                                         |
| <a href="#">View all Feedback</a>              |
| Show Info Points                               |
| Switch on Admin Mode                           |

## Index

---

- Updating Non-Bovine Spreadsheet with Results of Post Mortem Examination or Sampling
- Updating the Non-bovine TB Spreadsheet
- Reporting Post Mortem Examination Results to Owners and Official Veterinarians
- Reporting Culture Results to Owners and Official Veterinarians

## Updating Non-Bovine Spreadsheet with Results of Post Mortem Examination or Sampling

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1. Results of the Post Mortem Examination (PME)/Post Mortem Investigation (PMI) and cultures should be added to the non-bovine spreadsheet.

## Updating the Non-bovine TB Spreadsheet

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1. APHA offices are required to record cases of non-bovine TB on the non-bovine TB spreadsheet and to ensure all associated actions were entered. This spreadsheet provides:

- an up to date record of the situation regarding cases of *M. bovis* in non-bovine animals

- an audit trail of actions taken following a positive sample
- a reporting tool for data requests from Defra.

2. RVL/SVL/VLW must ensure that:

- all cases of non-bovine TB reported (confirmed and unconfirmed) are recorded on the non-bovine TB spreadsheet upon initial notification and all relevant information is entered
- the spreadsheet is maintained on a case by case basis and any actions completed are recorded immediately 

*~~~~~ Background Section ~~~~~*

A guidance sheet is available within the non-bovine TB spreadsheet. 

*~~~~~ End Background ~~~~~*

- in confirmed non-bovine cases, TB investigation reports must be forwarded by email to the relevant TB Policy Advisor and the [TB Non-bovine](#) mailbox.

3. The non-bovine TB spreadsheets can be found on the shared drive in the Performance Measurement/TB Non-Bovine folder within each APHA office area folder. Instructions to access this are as follows:

- in Windows Explorer select 'Tools', 'Map Network Drive'
- choose 'Z:/ drive'
- in the folder box key in: \\wordcsdev\data\_server\AH\_FILE\_SHARE\
- tick reconnect at logon
- click 'Finish'
- APHA offices must complete the non-bovine TB spreadsheet by region except for Scotland, Wales and the South West Region where it must be completed for individual offices
- the spreadsheet is located in the 'TB Non-Bovine' folder. 

*~~~~~ Background Section ~~~~~*

The non-bovine TB spreadsheet is password protected and access is gained by using the allocated password already used for other information (such as Priority Performance Report or TB Tracing). 

*~~~~~ End Background ~~~~~*

Performance Indicators

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1. The non-bovine spreadsheet will support the reporting of non-bovine performance indicators as detailed on the Internal Operations Dashboard Performance Year spreadsheets.

## Reporting Post Mortem Examination Results to Owners and Official Veterinarians

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1. When PME/PMI results are received, complete a PME preliminary results letter (TN22(ES)/TN22(W)/TN22(W)(Welsh)) to notify the owner of the animal(s) in writing of the PME/PMI findings.

2. Use the information provided in the following tables to report the lesions on the preliminary results letter (TN22(ES)//TN22(W)/TN22(W)(Welsh)) and post to the owner:

| <b>Lymph Node</b>          | <b>Abbreviation</b> | <b>Location</b> |
|----------------------------|---------------------|-----------------|
| Retropharyngeal            | RP                  | head            |
| Parotid                    | PA                  | head            |
| Submandibular/Submaxillary | SM                  | head            |
| Bronchial and Mediastinal  | BM                  | chest           |
| Hepatic                    | HEP                 | liver           |
| Prescapular                | PSc                 | shoulder        |
| Superficial Inguinal       | SI                  | upper hind leg  |
| Mesenteric                 | MES                 | intestinal      |

|              |                     |                 |
|--------------|---------------------|-----------------|
| Supramammary | SMA                 | udder           |
| <b>Organ</b> | <b>Abbreviation</b> | <b>Location</b> |
| Lungs        | Lu                  | lungs           |
| Liver        | Li                  | liver           |
| Udder        | U                   | udder           |
| <b>Other</b> | <b>Abbreviation</b> | <b>Location</b> |
| Pleura       | PI                  | chest           |
| Other        | O                   | n/a             |

## Reporting Culture Results to Owners and Official Veterinarians

1. When culture results become available, Animal and Plant Health Agency (APHA) laboratories will enter them onto the material for examination form for visible lesion (VL) animals (TB50) and send them back to the relevant APHA office.
2. On receipt of the material for examination form for VL animals (TB50) containing the final culture results, complete a results of bacteriological culture letter (TN23(ES)/TN23(W)/TN23(W)(Welsh) and post it to the owner of the animal(s) to notify them in writing of the final laboratory results.
3. Following the first isolation of *M. bovis* from a TB incident with unconfirmed disease (where only non-visible lesion (NVL) reactors had been previously found), send a letter (TN13) notifying the Consultants in Communicable Disease Control (CCDC) and Consultants in Public Health Medicine (CPHM) of the confirmed disease.

index

Taken from:

[http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Case\\_Management/index.htm](http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Case_Management/index.htm)

## Case Management

| <b>Admin Tools</b>                             |
|------------------------------------------------|
| Export to Word                                 |
| Show                                           |
| <input type="checkbox"/> Documents             |
| <input checked="" type="checkbox"/> Background |
| <input type="checkbox"/> Generics              |
| Export                                         |
| <a href="#">View all Feedback</a>              |
| Show Info Points                               |
| Switch on Admin Mode                           |

## Index

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- Testing Programme for Camelids in England and Scotland
- Testing Programme for Camelids in Wales
- Officially Tuberculosis Free Status Suspended in Wales
- Officially Tuberculosis Free Status Withdrawn in Wales
- Action in Highly Suspicious (Unconfirmed) Incidents
- Co-located Herds
- Direct Contacts and Depopulation
- Tracings
- Action Required for Tracings by Animal and Plant Health Agency Office
- Contiguous Premises
- Withdrawal of Restrictions
- Dealing with Herds Under Long Term Restrictions
- Private Testing Outside Breakdown Situations

## Testing Programme for Camelids in England and Scotland

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1. Where *Mycobacterium bovis* (*M. bovis*) infection has been confirmed in a camelid herd, restrictions (TN02) will be served (unless already served) and will remain in place until the Regional Veterinary Lead (RVL)/Scotland Veterinary Lead (SVL) is satisfied that the herd is free from infection.

2. This means that movement restrictions can only be removed once:

- all suspect camelids (including any skin and blood test reactors) have been slaughtered, and
- all remaining animals have undergone two consecutive single intradermal skin tests (bovine tuberculin only) with negative results at intervals of 90 days or more, and
- the skin test is supplemented by at least one combined (DPPVetTB/IDEXX/two spot Enferplex test - owner chooses two out of these blood tests) as a parallel serological test 10 to 30 days after the first skin test (this could be the initial skin check test, the disclosing skin test, or the first short interval test (SIT)).

3. The Animal and Plant Health Agency (APHA) may consider requests for additional Enferplex testing at the owner's expense of animals that have already been skin and DPPVetTB/IDEXX tested with negative results. This is to further enhance the detection of any infected animals that may have been missed by the other tests. In this situation where *M. bovis* has been confirmed by laboratory culture, the sensitivity of the testing regime needs to be maximised so a camelid will be considered positive on a private Enferplex test if it reacts to two or more antigens (two spot rule). Such animals will be slaughtered compulsorily and statutory compensation paid by APHA. The private Enferplex test cannot currently be done by APHA and must be tested via SureFarm Ltd.

4. APHA have discretion to repeat the serological tests if clinical cases or visible lesion (VL) skin test reactors continue to be detected later during the TB breakdown, e.g. after the first blood test.

5. In England testing can be enforced by invoking the powers of entry within the Animal Health Act and reactors isolated and slaughtered compulsorily with payment of statutory compensation (The Tuberculosis (Deer and Camelid) (England) Order 2014 and The Tuberculosis (Deer and Camelid) Slaughter and Compensation (England) Order 2014).

6. In Scotland a similar situation to that in England occurs in that testing, restrictions, slaughter and payment of statutory compensation are all mandatory under the Tuberculosis in Specified Animals (Scotland) Order 2015.

7. If infected camelids located on a farm are identified, APHA will TB test any cattle (and possibly any other non-bovine livestock) present on the breakdown (co-located) and neighbouring premises (contiguous). Every effort will be made to forward-trace and test any animals originating from such infected herds using a single intradermal (bovine tuberculin only) skin test and the DPPVetTB/IDEXX/two spot Enferplex test combination using parallel interpretation (owner may choose any two blood tests out of the three available). Blood samples will be taken 10 to 30 days after a skin test, and any positive

camelids to either or both blood tests will be slaughtered and will attract the usual level of compensation appropriate to the country of residence.

8. Where appropriate, herds of origin of an animal with a positive culture of *M. bovis* will be back-traced and tested (one comparative skin test supplemented with either a four spot Enferplex Test or the DPPVetTB/IDEXX combination using serial interpretation at government expense). It is recommended that a skin test is carried out 10 to 30 days prior to the Enferplex Test as with the DPPVetTB/IDEXX combination in order to achieve maximum sensitivity.

9. Defra advises that suspect clinical cases of TB should be notified to APHA and the animals culled. In England and Scotland, the legislation prohibits the use of vaccines or therapeutic treatments against tuberculosis in camelids without the written consent of APHA other than to protect the welfare of the animal. As there are currently no known efficacious anti-TB drugs available, consent would normally be refused. Owners need to be aware of the risks posed by treating suspect cases.

10. Following identification of a positive *M. bovis* animal two clear consecutive single intradermal skin tests (bovine tuberculin only) with negative results at 90 day intervals supplemented with at least one round of DPPVetTB/IDEXX/two spot Enferplex (owner may choose any two out of the three tests available) blood testing using parallel interpretation are required. The testing programme may be limited to a specified group if the Veterinary Risk Assessment (VRA) allows this.

11. When a camelid herd is tuberculin skin and blood tested at regular intervals to lift movement restrictions, and the second qualifying (restriction-lifting) herd skin test only identifies reactors with non-visible lesions (NVL) only one further herd skin test is required.

12. Any check test carried out less than 90 days after the death or isolation of a tuberculous camelid will not count towards the two negative herd skin tests normally required after tissue culture proves positive for *M. bovis*.

13. In any situation where TB testing of camelids discloses skin or blood test reactors without any post mortem evidence of *M. bovis* infection e.g.:

- at a privately paid for test, or
- a check test of camelids co-located or contiguous to infected cattle (as recommended by a VRA), or
- animals traced from an infected herd, etc.

- then only one comparative skin test (SICCT) for the remaining animals with negative results will be necessary to lift the restrictions (may not apply in Wales).

## Testing Programme for Camelids in Wales

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1. Non-bovine herds/animals, as defined by the Order, will be classed as Officially Tuberculosis (TB) Free (equivalent to OTF in cattle) until such a time as that status is suspended (equivalent to OTFS) or withdrawn (equivalent to OTFW).
2. Incidents will be managed on a case-by-case basis and where necessary, in consultation with Welsh Government (WG) TB Policy Team.
3. The Enferplex test **cannot** be used in Wales as an alternative test to the DPPVetTB/IDEXX blood tests. Consideration of its additional use with the DPPVetTB/IDEXX tests may be permitted under some circumstances and only after approval has been given by the Veterinary Lead Wales (VLW)/WG.

## Officially Tuberculosis Free Status Suspended in Wales

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1. The TB-free status of a camelid herd (equivalent to OTF in cattle) will be suspended when there is suspicion of infection with *M. bovis* in the herd due to either:
  - a tuberculin skin test with positive results (reactor animals)
  - a blood test with positive results to either DPPVetTB or IDEXX (reactor animals)
  - suspicion of clinical signs of TB in an animal
  - suspicion of lesions typical of *M. bovis* in a carcass
  - identification of a high epidemiological risk.
2. Herds with TB-free status suspended (other than TB suspected following a post-mortem report) will require one clear comparative TB skin test of all the animals under restrictions at least 90 days after removal of the last reactor. In addition, a blood test of all skin-test negative animals will be carried out between days 10 and 30 after the skin test using the DPPVetTB and IDEXX test combination in **serial** interpretation (i.e. a reactor must be positive to both tests).
3. If cattle are located on the same holding it will be necessary to consider the OTF status of those cattle. If one group of animals, either non-bovines or cattle, have their OTF status changed (suspended or withdrawn), the other group should also have their

OTF status changed (suspended or withdrawn) and testing regime actions appropriate to that herd must be applied.

4. There should not be situations where either non-bovines or cattle are OTFS on a holding with a herd of animals which are classed as OTFW.

5. Upon receipt of the culture results:

- positive results will withdraw TB-free status
- negative culture results from a suspected slaughterhouse case will lead to withdrawal of restrictions (TN10/TN10(Welsh)), regaining of TB-free status and no further action
- negative culture results from a clinical suspect with detectable lesions - TB-free status regained and a withdrawal notice (TB10/TB10(Welsh)) should be served.

6. If results for other cases are negative, the TB-free status will remain suspended (OTFS) and herds must be assessed against the following criteria:

- has the herd had its TB-free status withdrawn in the previous three years?
- is the herd contiguous to another herd (bovine or non-bovine) with its OTF status currently withdrawn?

7. Review the criteria as follows:

- the 'withdrawn OTF status in the last three years' should be considered as the status of the herd within the three year period. This will include status of any cattle co-located on the holding. Check Sam for any incident within the last three years where the OTF status has been withdrawn (or disease has been confirmed). Camelids on the same holding as infected cattle will be considered as part of the same epidemiological unit
- is the herd contiguous to another herd with its OTF status currently withdrawn (OTFW)? Refer to the criteria for identifying contiguous premises detailed in Contiguous Testing. The increased risk to contiguous herds could be due to contact with infected cattle or camelids on adjoining land or common simultaneous exposure to a local wildlife source of infection. Contiguous premises which are OTFW should not change the OTF status of the suspended herd where:
  - the Case Veterinary Officer (VO)/Senior Veterinary Inspector (SVI) can be confident that the origin of infection is from purchased animals and
  - there is no evidence of amplification within the purchased group and/or the resident herd and
  - the reactor(s) have been in secure housing since purchase and have had no access to wildlife

- the contiguous premises is a wildlife proof unit such as an Approved Finishing Unit (AFU)
- APHA offices can assess the OTF status of contiguous premises against the list of premises which the VO has marked as requiring contiguous testing following the Disease Investigation Visit.

8. New breakdowns should be assessed following Post Mortem Examination (PME) results and only those where OTF status remains suspended are to be assessed.

## Officially Tuberculosis Free Status Withdrawn in Wales

1. Herds located in Wales will have their TB-free status withdrawn (OTFW) when:

- culture results are reported as positive
- a higher risk is identified in an OTFS herd due to an epidemiological link (equivalent to OTFS-epi in cattle).

2. Camelid herds with their TB-free status withdrawn will require:

- two clear consecutive single intradermal (bovine tuberculin only) skin tests at 90 day intervals
- a blood test of all skin-test negative animals will be carried out between days 10 and 30 after the first skin test using the DPPVetTB/IDEXX test combination in **parallel** interpretation (i.e. a reactor is positive to either test alone or both tests).

3. In Wales the private use of the Enferplex test as an alternative to the DPPVetTB and IDEXX tests has not been approved in cases requiring statutory testing. Permission to use this test will need to be sought from the WG.Â

4. The legislation in Wales prohibits the use of vaccines or therapeutic treatments against tuberculosis in camelids without the written consent of the WG. As there are currently no known efficacious anti-TB drugs available, consent would normally be refused.

Treatments to protect the welfare of the animal are still permitted.

## Action in Highly Suspicious (Unconfirmed) Incidents

1. The use of blood tests in TB incidents is normally reserved until after there is confirmation of *M. bovis* infection on culture. Where there is evidence of infection such as several animals with characteristic TB lesions at PME in several organ systems, or where the case history indicates TB infection, the case VO/SVI has discretion on a case-by-case basis to request that the blood tests be used with the owner's consent. The VO/SVI

should seek the agreement of the RVL/SVL/VLW/Regional Epi Leads before taking any action.

2. The Consultant in Communicable Disease Control (CCDC)/Consultant in Public Health Medicine (CPHM) are normally only notified of TB incidents when a positive culture result has been received from the APHA laboratory. If there is evidence of a large body of infection, for example several clinical cases/skin test reactors with multiple extensive lesions on PME, located in endemic bTB areas of the country, prior to this confirmation being received, the case VO/SVI has discretion to inform Public Health England (PHE)/CPHM/CCDC of the incident or at least a date when the final culture result is likely to be available. This will enable the public health authorities to take any action they feel necessary such as to discuss the health implications of the case with herd owners thus permitting early intervention and advice.

3. There may be other management issues which need to be initiated in these high risk incidents. Case VOs/SVIs are encouraged to discuss these issues with Senior Veterinary Managers on a case-by-case basis and take any action necessary to mitigate the effects of the infection.

## Co-located Herds

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1. Where camelids are co-located with cattle herds affected by OTFW breakdowns or non-bovine farmed animals with culture confirmed *M. bovis* infection (pigs, sheep, goats and captive deer) the default position is to consider the camelids as being part of the same epidemiological unit.

2. In England and Scotland, a comparative skin test will be required followed either by the DPPVetTB/IDEXX tests 10 to 30 days later using serial interpretation or the four spot Enferplex test. Tests will be conducted at government expense. If *M. bovis* is eventually confirmed in the camelid herd itself, APHA will proceed as for a confirmed breakdown. These tests benefit from an anamnestic response when given bovine tuberculin ten days or more before sampling. Any camelids which react to the four spot test should be slaughtered and compensation paid according to the rules operating in either Scotland or England.

3. In Wales, if cattle are located on the same holding it will be necessary to consider the OTF status of those cattle. If one group of animals, either non-bovines or cattle, have their TB-free or OTF status withdrawn, the other group should also have their TB-free or OTF status withdrawn and testing regime actions appropriate to an OTFW herd must be applied. There should not be situations where either non-bovines or cattle are OTFS on a holding

with a herd of animals which are classed as OTFW. A single intradermal (bovine only) skin test will be required in Wales for camelids co-located with infected cattle herds or with confirmed *M. bovis* infected non-bovines followed 10 to 30 days later with a DPPVetTB and IDEXX blood test in parallel interpretation.

## Direct Contacts and Depopulation

1. Where disease is extensive in a herd and other camelids within the herd are thought to be affected with TB or may have been exposed to tuberculous infection, the slaughter of additional Direct Contacts may be considered.
2. Total or partial depopulation of the herd can be undertaken compulsorily with the approval of the appropriate Department (Defra/Scottish Government (SG)/WG).

## Tracings

1. Any animals that may have moved out of an infected (culture positive) herd should be spread (forward) traced and tested. The tracing exercise will be undertaken manually by the local APHA office or with assistance from Cardiff Specialist Service Centre (SSC).
2. The test will be at APHA's expense.
3. It is difficult to define a time window for forward tracings in the absence of any surveillance testing programme for non-bovine herds.
4. 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 animal(s).
5. Where the presumed origin of the TB incident is lateral spread into non-bovine species from local cattle or wildlife source, then the window for spread tracings will be determined by the most likely date of exposure for the diseased animal(s), based on pathological and epidemiological findings.
6. Source tracing investigations and skin check testing of the suspected herd(s) of origin of a tuberculous animal should also be undertaken. This will be undertaken manually at the local APHA office or with assistance from Cardiff SSC.
7. Individual animals/herds identified as spread (forwards)/source (backwards) tracings from a *M. bovis* infected herd do not, in principle, need to be placed under immediate restrictions. However, they should be restricted if there is a risk to disease spread.

## Testing Requirements for Tracings in GB

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1. Requirements for testing will be considered on a case-by-case basis. All traced camelids will be tested at the government's expense.
2. Spread (forward) tracings from confirmed breakdown herds (OTFW herds in Wales) - one single intradermal (bovine tuberculin only) skin test followed 10 to 30 days later by the DPPVetTB/IDEXX/two spot Enferplex blood test combination using parallel interpretation (owner can choose any two tests out of the available three). In Wales, use of the Enferplex test is not permitted for statutory testing situations. This skin test should be carried out not less than 90 days after the movement from the infected herd.
3. The local APHA office investigating the breakdown will have discretion to waive the antibody tests for individual spread tracings that are considered to pose a low risk of spreading infection to other herds. For example, where skin and blood testing of the source herd discloses few reactors and visible lesions are not extensive, or where the spread tracings had limited contact with the infected animals on the farm of origin, or depending on the timing of movements out of the farm of origin. When there is a mixture of high risk (hot) and normal tracings from camelid herds with confirmed TB infection, these will probably have been managed together and so will be treated as high risk on a precautionary principle. However, the discretion to waive testing will remain with the case vet for the source herd and not by the receiving office.
4. Source (backward) tracings - one comparative skin test followed 10 to 30 days later by either the DPPVetTB/IDEXX blood test combination using serial interpretation or the four spot Enferplex test (this test is not available in Wales for this situation). The local office investigating the breakdown will again have discretion to waive the antibody tests for individual TB tracings that are considered to pose a low risk of spreading infection to other herds. Any discretion to waive antibody testing will need to be made by the Case Vet for the source herd and not by the receiving office.
5. If *M. bovis* infection is eventually confirmed in the source herd, APHA will proceed as for infected herds. In such a source herd which is unrestricted, APHA will not be expected to enforce slaughter and pay compensation unless the camelids are deemed positive to four or more antigens (four spot rule), this will minimise the probability of false positive results and unnecessarily culling animals and restricting the herd.
6. In Wales, the alternative use of Enferplex has not been approved, with WG agreement, it may be used additionally to the DPPVetTB/IDEXX blood tests.

7. Where tracings require testing, issue a Tuberculosis Test Notice (TN06/TN06(Welsh)) and covering letter (TN07/TN07(Welsh)) informing the owner of the need to trace test.

8. All tracings must be identified within six months of the confirmation of *M. bovis* in the index case. Once identified and the owner of the traced animal(s) notified that testing is required, a period of two months is allowed for testing to be completed. If testing becomes overdue, restrictions must be served and zero tolerance applied.

## Action Required for Tracings by Animal and Plant Health Agency Office

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### England and Scotland

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1. In the absence of statutory powers to register, identify and record movements of camelids, APHA must rely on owners' co-operation to provide records of movements and tracings.
2. Any traced animals should be identified and the office responsible for the destination herd should be informed.
3. Any necessary testing of spread traced animal(s) should take place at least 90 days after the animal left the infected herd.
4. 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, APHA should place the traced camelid(s) under restrictions (TN02). The restriction notice (TN02) should confine the traced animals to the premises and isolate them from other susceptible animals until slaughtered, tested with negative results or dead. The owner will be sent a TB Test Notice (TN06/TN06(Welsh)) requiring testing before a specified date and if testing has not been completed by that date the herd will be restricted (TN02).
5. In the absence of compulsory individual animal identification for camelids and 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.
6. If the owner of the traced animal declines the offer to test that animal they must be warned of the public health implication should that animal have undisclosed infection.

### Wales

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1. The Tuberculosis (Wales) Order 2011 provides powers and procedures to deal with TB in camelids, goats and deer in Wales. There are now powers to enforce the upkeep of movement records of camelids, although there is not a central database for recording this information.
2. Tracing of camelids is therefore a manual process and will be carried out by the local APHA office or with assistance from Cardiff SSC until further notification.
3. Any traced animals should be identified and the office responsible for the destination herd should be informed.
4. Any necessary testing of spread traced animal(s) should take place at least 90 days after the animal left the infected herd.
5. The owner will be sent a TB Test Notice (TN06/TN06(Welsh)) requiring testing before a specified date and if testing has not been completed by that date the herd will be restricted (TN02/TN02(Welsh)).
6. If owners refuse to allow testing of traced animals, or if there is suspicion that the traced animal could be moved prior to testing, APHA should place the traced camelid(s) under restrictions (TN02/TN02(Welsh)). The restriction notice (TN02/TN02(Welsh)) should confine the traced animals to the premises and isolate them from other susceptible animals until slaughtered, tested with negative results or dead.

## Contiguous Premises

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### England and Scotland

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1. Camelid premises that are contiguous to a herd (cattle, camelids, pigs, sheep, goats or captive deer) with culture-positive *M. bovis* infection should be identified. In England and Scotland, a Tuberculosis Test Notice (TN06/TN06(Welsh)) and TB Testing Notification Letter (TN07/TN07(Welsh)) must be sent to the owner. It will not be necessary to place the herd under immediate restriction unless there is a risk of disease spread.
2. Contiguous camelid herds will be subject to a comparative skin test (SICCT) followed 10 to 30 days later by either the DPPVetTB/IDEXX blood test using serial interpretation or the four spot Enferplex test.
3. If the herd has not been tested by the due date on the Tuberculosis Test Notice (TN06/TN06(Welsh)) the herd should be placed under Notice Prohibiting Movement of

Specified Animals (TN02/TN02(Welsh)) and zero tolerance applied to the herd. Refer to Non-compliance with Testing for details. Normally the camelid herd owner will be given 60 days to complete testing after being informed that such a test is required by APHA.

## Wales

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1. Camelid premises that are contiguous to an OTFW (cattle or camelid) herd should be identified.
2. Testing of contiguous camelid herds (contiguous to OTFW camelid or cattle herds) will be required as follows:
  - identify premises highlighted as necessary for testing by the VO and send a Tuberculosis Test Notice (TN06/TN06(Welsh)) and covering letter (TN07/TN07(Welsh)) to the owner
  - it will not be necessary to place the herd under immediate restriction unless a risk of disease spread has been identified
  - a comparative skin test will be used followed by DPPVetTB and IDEXX ELISA testing in serial interpretation
  - if the herd has not been tested by the due date on the Tuberculosis Test Notice (TN06/TN06(Welsh)) the herd should be placed under restrictions (TN02/TN02(Welsh)) and zero tolerance applied to the herd. Refer to Non-compliance with Testing for details.
3. The testing requirements for cattle herds contiguous to OTFW camelid herds is identical to that for OTFW cattle herds.

## Withdrawal of Restrictions

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### England and Scotland

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1. Where suspicion of TB has been reported in domestic species other than cattle and deer, but bacteriological tests conducted at APHA laboratories are negative for *Mycobacterium bovis* (*M. bovis*), APHA offices have no further action, other than to lift any restriction notice that has been served with a withdrawal notice (TN10).
2. Where TB has been confirmed in domestic species other than cattle and deer by culture of *M. bovis*, the herd, or a specified group from the herd, will be placed under restrictions by service of a notice (TN02).
3. The restriction notice (TN02) must remain in place until:
  - completion of a clear skin and blood testing programme or

- the specified animals die or are slaughtered.

## Wales

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1. When specific herds with their TB-free status suspended (OTFS) pass **one** Short Interval Test (SIT) with negative results and 10 to 30 days later DPPVetTB/IDEXX blood tests at serial interpretation, movement restrictions (TN02/TN02(Welsh)) can be lifted by serving a withdrawal notice (TN10/TN10(Welsh)). This allows the herd to regain its TB-Free (OTF) status.
2. When herds with their TB-free status withdrawn (OTFW) pass the required **two** single intradermal (bovine tuberculin only) SITs 90 days or more apart with negative results and 10 to 30 days after the first test pass a DPPVetTB/IDEXX blood test at parallel interpretation, movement restrictions (TN02/TN02(Welsh)) can be lifted by the serving of a withdrawal notice (TN10/TN10(Welsh)). This allows the herd to regain its OTF status.

## Dealing with Herds Under Long Term Restrictions

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1. When a camelid herd has been under long-term TB restrictions, e.g. due to lack of compliance with disease control requirements such as slaughter of reactors and/or further testing, or because in England and Scotland statutory skin testing was by owner consent before October 2014 and 2015 respectively, APHA may require testing to be completed under the new orders.
2. In England (using Article 12 of The Tuberculosis (Deer and Camelid)(England) Order 2014) camelid owners should be sent TB Testing Notification Letter (TN07/TN07(Welsh)) and Tuberculosis Test Notice (TN06/TN06(Welsh)) requiring them to carry out the testing. At the same time, a Withdrawal of Notice (TN10/TN10(Welsh)) should be issued to revoke the old Notice Prohibiting Movement of Specified Animals (TN02/TN02(Welsh)) and simultaneously re-impose restrictions using restriction notice TN02/TN02 under the 2014 Order. It is recommended that before issuing these letters and notices, the VO/SVI communicates informally with owners about the statutory requirement to test and consequences for future movement restrictions.
3. In Wales, the Tuberculosis (Wales) Order 2011 (Article 9(1)) states that Welsh Ministers may serve on the keeper a notice requiring them to have any camelids tested for tuberculosis by a specified date.
4. In Scotland, the Tuberculosis in Specified Animals (Scotland) Order 2015 (Article 7) similarly permits Scottish Ministers to require camelids to be tested for TB after service of a notice.

5. In both Scotland and Wales, SVI/VOs must refer all incidents under long-term movement restrictions to the SVL/VLW so that consideration can be given to each on a case-by-case basis and further actions agreed concerning movement restrictions, testing, slaughter and compensation requirements.

## Private Testing Outside Breakdown Situations

1. When private testing is carried out as part of a TB breakdown situation, refer to What and When to Test - Dealing with Positive Results in Private Tests.
2. Where a herd is presumed TB free and has undergone private voluntary routine, pre-movement or pre-export testing, camelids reacting to either a comparative skin test or to the serial DPPVetTB/IDEXX tests will be considered positive and removed as reactors. Notification will be either by the PVS or from the laboratory, and once notified, herd movement restrictions will be triggered.
3. Owners may wish to have their camelids blood tested using the Enferplex test. This can be arranged by a private veterinary surgeon and at the owner's expense. As with the DPPVetTB/IDEXX combination of tests, it is recommended that a skin test is applied 10 to 30 days prior to blood samples being taken as this will maximise sensitivity in the blood test.
4. Official Veterinarians (OVs) who wish to undertake private testing (either skin or blood tests) on behalf of owners must seek permission in advance from APHA. This is not only because the tuberculin is owned by APHA but it is also a legal requirement in the TB Orders of England and Wales and it is important to remind the OV that they must send in a copy of the skin test chart (TN52A/TN52A(Welsh)/TN52B/TN52B(Welsh)) to APHA. It also allows checks on the competency of the OV/PVS to perform a skin test and that they have the correct equipment available.
5. When an owner or an OV contacts APHA, the OV must be asked to complete Part 1 of the Request to Test Form (TN184/TN184(Welsh)) and return it to the local APHA office. An APHA VO/SVI should then contact the OV Team at Worcester to see if the OV has the Official Controls Qualification (Veterinarian) (OCQ)(V) TT qualification from Improve International. In Scotland the APHA vet must seek agreement from the relevant policy teams or the Veterinary Lead. The OV should be contacted and enquiries made of the competence of the OV to carry out testing on camelids, and whether they can comply with the test protocols. Once this is obtained, the OV may be given permission to carry

out private testing, using part 2 of the Request to Test Form (TN184/TN184(Welsh)). On completion of the test, the OV must complete Part 3 and return it to the local APHA office with the test chart. The APHA Admin Team in the Regional Office must record details on the Non-Bovine spreadsheet.

6. APHA Starcross will offer to carry out a serial DPPVetTB/IDEXX test on blood samples from camelids. Use the Camelid TB Serology Package - Private Sample Submission Form (TN186) when submitting samples for a private test. Owners will be expected to pay for this test. Such a test combination will only be offered privately as long as the animals tested are not part of an existing TB investigation by APHA staff.

7. In cases where *M. bovis* has already been cultured (contiguous or co-located camelid herds, or animals back-traced to an infected herd, post mortem cases with samples taken) contiguous or co-located camelid herds, or animals back-traced to an infected herd, post mortem cases with samples taken) and a skin and blood testing programme commenced, APHA will consider requests for additional Enferplex testing at the owner's expense of animals that have already been skin and DPPVetTB/IDEXX tested with negative results. This may further enhance the detection of any infected camelids that may have been missed by the other tests. Such animals will be considered positive on a private Enferplex test if they react to four or more antigens (four spot rule) in these circumstances. In England and Scotland, APHA Starcross can offer to blood test using the four spot Enferplex test as an alternative to the DPPVetTB/IDEXX combination at government expense.

8. In cases where owners want to undertake private testing (pre-movement, pre-sale/show and pre-export tests), camelids which are positive to the private serial DPPVetTB/IDEXX combination or the Enferplex test in England and Wales will be slaughtered and will attract compensation. In England and Scotland, APHA will not enforce slaughter nor pay compensation for positives to the Enferplex test unless deemed positive to four or more antigens (four spot rule) in order to minimise the probability of false positive results and unnecessarily culling animals and imposing restrictions. The serial DPPVetTB/IDEXX test and the four spot Enferplex test have equivalent high specificity.

9. In Wales, private testing can take place (herds presumed TB-free, pre-movement or pre-export testing, movements for mating and to shows) using the comparative skin test possibly with serial DPPVetTB/IDEXX blood testing. The private use of Enferplex as an

alternative to these tests has also been approved in Wales. Owners wishing to use this test must first seek permission from WG.

10. At the conclusion of an incident (withdrawal of movement restrictions), it is recommended that a private antibody test is carried out after 12 months. This can be any two tests of the four spot Enferplex Test/DPPVetTB/IDEXX combination done at APHA Starcross. Priming with tuberculin is recommended 10 to 30 days before blood samples are taken but the owner can decide whether to read the skin test.

index

Taken from:

<http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Licensing/index.htm>

## Licensing Movements Onto and Off Premises

| <b>Admin Tools</b>                             |
|------------------------------------------------|
| Export to Word                                 |
| Show                                           |
| <input type="checkbox"/> Documents             |
| <input checked="" type="checkbox"/> Background |
| <input type="checkbox"/> Generics              |
| Export                                         |
| <a href="#">View all Feedback</a>              |
| Show Info Points                               |
| Switch on Admin Mode                           |

### Index

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- Overview
- Movements of Animals Other than Bovines onto a Premises under TB Restrictions
- Movements of Camelids off a Premises under TB Restrictions

### Overview

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1. Any herd or group of animals placed under movement restrictions (TN181/TN181(Welsh)/TN02/TN02(Welsh)) will require a licence from the local Animal and Plant Health Agency (APHA) office to authorise any movement of animals onto or off the premises or part premises specified in the notice (TN02/TN02(Welsh)).
2. Generally movements are only allowed direct to slaughter.
3. Carcasses do not require licensing off the premises.

### Movements of Animals Other than Bovines onto a Premises under TB Restrictions

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1. Movements may take place under licence (TN15(E)/(S)/(W)) onto premises that are under TB restrictions due to a suspected or confirmed case of *Mycobacterium bovis* (*M. bovis*) infection in another herd/group of non-bovine farmed animals.
2. If the owner of a TB-restricted non-bovine herd/flock wants to bring in cattle or other non-bovine species onto their premises, APHA can use the existing licence for cattle (TB20/TB16/TB16(Welsh)) or other species (TN15(E)/(S)/(W)) moving onto TB restricted holdings.
3. Licensing of any such movements is subject to a favourable Veterinary Risk Assessment (VRA).
4. Ensure the following information is adequately described on the licence:
  - premises of destination
  - premises of origin
  - identification of the animal to be moved.

## Movements of Camelids off a Premises under TB Restrictions

1. Movements of a live animal direct to a slaughterhouse can be authorised using a specific licence (TN24/TN24(Welsh)), although this is unlikely to be necessary in camelids.
2. Licensing of any such movements is subject to a favourable VRA.
3. Ensure the following information is adequately described on the licence:
  - premises of destination and
  - premises of origin
  - identification of the animal to be moved.

index

Taken from:

[http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Biosecurity\\_Measures/index.htm](http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Biosecurity_Measures/index.htm)

## Biosecurity Measures

| <b>Admin Tools</b>                             |
|------------------------------------------------|
| Export to Word                                 |
| Show                                           |
| <input type="checkbox"/> Documents             |
| <input checked="" type="checkbox"/> Background |
| <input type="checkbox"/> Generics              |
| Export                                         |
| <a href="#">View all Feedback</a>              |
| Show Info Points                               |
| Switch on Admin Mode                           |

## Index

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- Personal Cleansing and Disinfection on Entering and Leaving a Farm
- Cleansing and Disinfection of Equipment
- Cleansing and Disinfection following Removal of Reactors or Affected Animals
- Failure of an Owner to Comply with Cleansing and Disinfection Requirements
- Wildlife

## Personal Cleansing and Disinfection on Entering and Leaving a Farm

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1. Ensure on arrival (prior to contact with any livestock) that the vehicle, protective clothing and footwear are clean and suitable for the task being carried out in order to minimise the risk of transmission of disease between premises.
2. When arranging a visit to a farm, ensure that you meet their individual biosecurity protocols wherever possible, e.g. freedom from contact with other livestock for a given period. However, extreme biosecurity requests should be refused if it makes the task on farm impossible to achieve.
3. On completion of the task, thoroughly clean and disinfect all protective clothing and footwear before leaving the farm premises or appropriately dispose of offsite.

4. Carry sufficient disinfectant approved under the relevant Diseases of Animals (Approved Disinfectants) Order for this purpose and use at the appropriate dilution specified for TB in the list of approved disinfectants published on the [Defra](#) website.

## Cleansing and Disinfection of Equipment

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1. After testing and before leaving the farm, thoroughly clean and disinfect all equipment that is taken onto a farm and that has been in contact with livestock.
2. In testing cattle, goats, pigs or sheep maintain TB syringes in accordance with the manufacturer's instructions. When using disposable syringes, dispose of them as pharmaceutical waste along with all used needles and part used/opened bottles of tuberculin.
3. Animal and Plant Health Agency (APHA) staff if using battery operated clippers, use the battery operated clippers disinfection protocol at **all** times. 

*~~~~~ Background Section ~~~~~*

APHA's policy on the use of battery operated clippers is as follows:   
'It is considered the cleaning protocol is sufficient if correctly applied and the risk should be no greater than our current use of McLintock syringes'.

*~~~~~ End Background ~~~~~*

## Cleansing and Disinfection following Removal of Reactors or Affected Animals

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### England and Scotland

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1. Immediately isolate all reactors and Direct Contacts (DCs) from contact with any other animals following their identification. There may be occasions where isolation is not practical or not appropriate for health and safety reasons and this should be for local discretion. Camelids are sociable animals and become stressed when separated from the rest of the group. Sometimes it is appropriate to isolate the affected animal with one other low value animal and test them together, or to ensure that the reactor or DC are enclosed within sight and sound of other camelids.

2. As soon as reactors or affected animals have been removed for slaughter, advise the owner that good biosecurity is essential and that effective Cleansing and Disinfection (C & D) is good practice.
3. Serve a notice (BT05/BT05(Welsh)) requiring C & D following the removal of any reactors or affected animals on the owner. One signed copy of the C & D Notice (BT05/BT05(Welsh)) requiring cleansing and disinfection should be served on the owner. The original must be signed by the owner and returned to the local office at the end of the breakdown.
4. By default, the premises requiring C & D should be annotated on the notice as '*All grazing, buildings, fixtures and equipment having contact with or contaminated by excreta from animals under TB restriction*'.
5. Alternatively the decision as to which premises should be included on the notice must follow a Veterinary Risk Assessment (VRA) by the case Veterinary Officer (VO) or Senior Veterinary Inspector (SVI).
6. Once the C & D Notice (BT05/BT05 (Welsh)) has been served at the beginning of the breakdown it will not be served again, except in exceptional circumstances. 

~~~~~ *Background Section* ~~~~~

This may include continuing and persistent infection with *M. bovis*, sale of buildings or termination of a rental agreement and vacating the infected premises. 

~~~~~ *End Background* ~~~~~

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7. In exceptional circumstances, specific locations can be added to the notice and a time period for completion of C & D may be included. In these cases consider an inspection following notification of completion of C & D.
8. Return the C & D Notice (BT05/BT05(Welsh)) to the local office, with the owner declaration completed, at the end of all breakdowns where the Officially Tuberculosis Free (OTF) status has been withdrawn and before movement restrictions can be lifted (TN10/TN10 (Welsh)). Explain this to the owner at the time of the Disease Report Form (DRF) visit and check that the owner declaration has been completed at a date after removal of all reactors and DCs associated with that breakdown.

9. The RVL/SVL should arrange for inspection of a proportion of buildings subject to a C & D Notice (BT05/BT05(Welsh)) and this would be expected to be 10% of breakdowns where OTF status has been withdrawn. Inspections can be carried out whilst visiting premises for other reasons.

10. A withdrawal notice (TN10/TN10(Welsh)) releasing restrictions and restoring OTF herd status must not be served on premises where OTF status has been withdrawn until the APHA office has received a copy of the C & D Notice (BT05/BT05(Welsh)) with the farmer's signed declaration indicating the date of completion of C & D.

11. Provide the following information as guidance to the owner:

- the contaminated parts of the buildings and bedding should be sprayed or saturated with an approved disinfectant before the bedding and manure are removed
- the bedding and manure should be removed and stacked. Alternatively it may be spread on arable land. Care should be taken to prevent other animals (deer, bovines, camelids, goats or pigs) gaining access to the stack or the land on which the bedding and manure have been spread
- the parts of the buildings should then be thoroughly scraped, the scrapings removed and the parts scrubbed and washed thoroughly and finally sprayed with an approved disinfectant
- all utensils or other articles contaminated by the animals removed for slaughter or used for disinfection should be cleansed and washed thoroughly and finally washed with an approved disinfectant
- the boots worn by and the hands of persons who have carried out the disinfection should be washed in an approved disinfectant.

## Wales

1. Immediately isolate all reactors and Direct Contacts (DCs) from contact with any other animals following their identification. There may be occasions where isolation is not practical or not appropriate for health and safety reasons and this should be for local discretion.

2. Explain the requirements for the cleansing and disinfection (C & D) of buildings to the occupier so it can be done as soon as the animals have been removed for slaughter.

3. Serve a notice (BT05/BT05(Welsh)) requiring C & D following the removal of any reactors or affected animals on the owner.

4. By default, the premises requiring C & D should be annotated on the notice as '*All grazing, buildings, fixtures and equipment having contact with or contaminated by excreta from animals under TB restriction*'.

5. Alternatively the decision of what premises should be included on the notice must follow a Veterinary Risk Assessment (VRA) by the case Veterinary Officer (VO).

6. Once the C & D Notice (BT05/BT05(Welsh)) has been served at the beginning of the breakdown it will not be served again, except in exceptional circumstances. 

~~~~~ *Background Section* ~~~~~

E.g. extensive infection with *M. bovis* the sale of land or termination of a rental agreement. 

~~~~~ *End Background* ~~~~~

7. In exceptional circumstances, specific locations can be added to the notice and a time period for completion of C & D may be included. In these cases consider an inspection following notification of completion of C & D.

8. Return the C & D Notice (BT05/BT05(Welsh)) to the local office, with the owner declaration completed, at the end of all breakdowns where the Officially Tuberculosis Free (OTF) status has been withdrawn and before movement restrictions can be lifted (TN10/TN10(Welsh)). Explain this to the owner at the time of the Disease Report Form (DRF) visit and check that the owner declaration has been completed at a date after removal of all reactors, DCs and IRs associated with that breakdown.

9. Advise the owner of:

- the possibility of milk being contaminated by disinfectants so they can take any necessary precautions to avoid it
- the cleansing and disinfection procedure required as stated on the reverse of the C & D Notice (BT05/BT05(Welsh)) which is summarised below:
  - the specified building and its contents shall be sprayed with an approved disinfectant before the bedding and manure are removed
  - the bedding and manure should then be removed and stacked for at least three weeks and then spread onto arable land. Care should be taken to prevent any livestock coming into contact with this bedding and manure

- once scraped of manure, the building, equipment and utensils therein should then be sprayed with an 'approved' disinfectant at the appropriate dilution
- the boots, protective clothing and hands of the persons carrying out the cleansing and disinfection should then be washed with an 'approved' disinfectant, as should any equipment or parts of vehicles coming into contact with the manure during the cleansing and disinfection procedure.

10. If in the opinion of the case VO there is a high risk of environmental contamination with *M. bovis* arising from liquid or semi-liquid excreta (slurry) and dirty water runoff from cattle buildings, consideration must be given to the inactivation (by chemical disinfection or prolonged storage) and safe disposal of such effluent. This must be seriously considered on premises with severe TB breakdowns with confirmed disease e.g. those ending in a total or partial herd slaughter. In any case, inform herd owners that they must seek permission from the case VO before moving excreta out of farms affected by a TB breakdown.

11. If the reactors or affected animals have been housed in unconventional systems e.g. on slats, provide appropriate advice pertinent to the design of the building involved. The VO must consider the above principles when giving this advice.

12. Serve one signed copy of the C & D Notice (BT05/BT05(Welsh)) requiring cleansing and disinfection on the owner. The original must be signed by the owner and returned to the local office at the end of the breakdown.

13. The Veterinary Lead Wales (VLW) should arrange for inspection of a proportion of buildings subject to a C & D Notice (BT05/BT05(Welsh)) and this would be expected to be 10% of breakdowns where OTF status has been withdrawn and in all cases of total depopulation. Inspections can be carried out whilst visiting premises for other reasons.

14. A withdrawal notice (TN10/TN10(Welsh)) releasing restrictions and restoring OTF herd status must not be served on premises where OTF status has been withdrawn until the APHA office has received a copy of the C & D Notice (BT05/BT05(Welsh)) with the farmer's signed declaration indicating the date of completion of C & D.

## Failure of an Owner to Comply with Cleansing and Disinfection Requirements

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1. Ensure the owner is aware of the notes on the cleansing and disinfection (C & D) Notice (BT05/BT05(Welsh)) and that if they do not comply, APHA will arrange for the

procedure to be carried out at the owners' expense. Make it clear to the owner that the use of contractors to complete this task is likely to be more expensive than if they comply with the notice themselves.

2. If an owner refuses to carry out C & D, the Regional Veterinary Lead (RVL)/Scotland Veterinary Lead (SVL)/ Veterinary Lead Wales (VLW) will consider whether APHA should arrange for it to be carried out at the owner's expense.

3. If a decision is made for APHA staff to carry out the C & D, APHA office staff must keep a record of all costs incurred.

## Wildlife

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1. Information and guidance on husbandry best practice are available on the [Defra](#) website.

2. In some areas of the country where TB is endemic in the wildlife population, Official Veterinarians (OVs) and APHA may be asked for advice on cleansing and disinfection (C & D) e.g. following the discovery of a suspected diseased animal found dead on the premises.

3. Consider the appropriate course of action using local knowledge and, if appropriate, advise the farmer on C & D and wildlife biosecurity.

index

Taken from:

[http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Monitoring\\_Compliance\\_and\\_Enforcement\\_in\\_Wales/index.htm](http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Monitoring_Compliance_and_Enforcement_in_Wales/index.htm)

## Monitoring Compliance and Enforcement in Wales

| <b>Admin Tools</b>                             |
|------------------------------------------------|
| Export to Word                                 |
| Show                                           |
| <input type="checkbox"/> Documents             |
| <input checked="" type="checkbox"/> Background |
| <input type="checkbox"/> Generics              |
| Export                                         |
| <a href="#">View all Feedback</a>              |
| Show Info Points                               |
| Switch on Admin Mode                           |

### Index

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- Overdue Testing
- Compliance Monitoring of TB Testing
- Procedures for Wild and Unmanageable Animals in Wales

### Overdue Testing

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1. It is the herd owner's responsibility to arrange for their TB tests to be completed on time and the results submitted to the Animal and Plant Health Agency (APHA).
2. APHA is obliged to inform the herd owner in writing when:
  - a TB test is required
  - a TB test is cancelled
  - TB testing requirements change (e.g. test type, test date, officer to act)
  - a movement restriction notice (TN02/TN02(Welsh)) is being served
  - a withdrawal notice (TN10/TN10(Welsh)) is being served.
3. Herd owners will be sent a Tuberculosis Test Notice (TN06/TN06(Welsh)) and covering letter (TN07/TN07(Welsh)) to explain the earliest and latest dates (the testing window) that their TB test can be completed. The Notice also includes a warning of the implications if a TB test becomes overdue.

4. The testing window gives herd owners some flexibility with regard to the timing of their test.

5. Agency offices must accept notifications that a TB test has been completed, even if the Official Veterinarian (OV) has not yet submitted the test chart. It is recommended that confirmation is obtained from the OV if the notification comes from a farmer.

## Compliance Monitoring of TB Testing

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1. Agency offices must monitor outstanding testing using the non-bovine spreadsheet.

2. OVs/Delivery Partners (DPs) must report any overdue tests that are the result of a refusal to allow testing to the agency for investigation.

3. All overdue tests are subject to formal procedures and no stage should be omitted. The Tuberculosis (Wales) Order includes the following measures for herd owners whose tests go overdue:

- compensation reduction for all tests that go overdue by more than 60 days
- referral to the Local Authority (LA) for tests that go overdue by 60 days.

### Stage One

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1. Stage one of the overdue testing process begins at 31 days after the MF date (the first day the test is overdue). All Stage one processes must have been completed within 30 calendar days of this date. 

*~~~~~ Background Section ~~~~~*

Keepers have 30 days from the MF date to complete the test. Therefore a test is overdue at 31 days after the MF date. 

*~~~~~ End Background ~~~~~*

2. As a proactive and preventative measure, agency offices should make checks in advance of tests becoming overdue.

3. Agency offices must:

- review all overdue cases
- reduce the number of restricted herds where possible resolving genuine outstanding tests by working with OVs/DPs and livestock owners

- for overdue tests where a general licence has been issued, issue a cancellation notice (TN24d/TN24d(Welsh)) to revoke it
- if herds are not already under restriction, serve a movement restriction notice (TN02/TN02(Welsh))
- for tests where OV/DPs have identified refusals to allow testing, complete a refusal to test report (TR245) and include:
  - how the OV/DP has identified the test as a refusal
  - dates when contact was made and refusal given
  - methods of contact
- if an OV practice/DP anticipates an inability to complete testing, refer the case to the Veterinary Lead Wales (VLW) who may consider re-allocating testing to another OV practice
- where the reason for not testing is due to practical reasons (e.g. unmanageable animals or difficult terrain), refer to The Slaughter of Wild and Unmanageable Animals in Wales below
- issue overdue test letters (TN235(W)/TN235(W)(Welsh) with copies of restriction notices (TN02/TN02(Welsh))) to all the remaining outstanding cases, regardless of whether a test is apparently booked, by recorded or hand delivery
- copy the warning letters to:
  - the LA or other enforcement authority, in order that they may consider prosecution
  - the herd owner's OV practice/DP.

4. The warning letters inform herd owners of the following:

- the requirements of Article 9 of the Tuberculosis (Wales) Order 2011 to comply with all reasonable requirements of the Welsh Government (WG) as to the collection, penning and securing of non-bovines for the purposes of the tuberculin testing (including blood testing requirements)
- the owner's liability for all expenses incurred in enforcing the testing requirements
- the date the current test was due to be completed before
- the date by which the test is expected to be completed
- that failure to complete the required tuberculosis testing may be considered an intentional breach of the cross compliance requirements (which carries a significant reduction in single farm payments). If the test is not completed within 90 days of becoming overdue it will be passed onto the relevant Paying Agency for action
- that where reactors are found and the test has not been completed on time, the amount of compensation payable may be reduced by as much as 95%. Refer to Reduction of Compensation for Overdue Tests in Valuation and Compensation for further guidance
- that compensation reduction may also apply when:
  - the keeper does not comply with a requirement imposed by the Order
  - WG carries out the required test under Article 9(5) of the Order

- that if it is not possible for the keeper to have the test completed due to the animals being unmanageable, such animals must be treated as being affected with TB. Under such circumstances the Welsh Ministers can arrange for the slaughter of these animals. Refer to Procedures for Wild and Unmanageable Animals in Wales for further guidance.
5. If an owner has refused to test, but then agrees to have their herd tested, the test may at the VLW discretion, be referred back to the OV/DP or VO/SVI.
6. If an owner does not wish to use an external supplier then the VLW has the discretion to offer APHA staff to complete the testing.

## Stage Two

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1. Cases that are approximately 30 calendar days overdue will reach stage two of the overdue test process. All stage two processes must be completed at 60 calendar days from the overdue date.
2. Agency offices must:
- reduce the number of restricted herds where possible resolving genuine outstanding tests by working with OVs/DPs and owners
  - liaise with OVs/DPs and issue formal notices (TN63(W)/TN63(W)(Welsh)) with covering letters (TN238(W)/TN238(W)(Welsh)) regardless of whether a test has apparently been booked, giving the owner at least seven days notice of the Department's intention to enter onto their land to carry out the tests and stating the timeline of action already taken to complete the test 

*~~~~~ Background Section ~~~~~*

VLW may wish to consult with the LA before the issue of the formal notice (TN63(W)/TN63(W)(Welsh)). While not mandatory it is advisable to seek co-operation at this stage and the VLW may wish to consider asking the LA to hand deliver the formal notice. 

*~~~~~ End Background ~~~~~*

- copy the formal notices to the enforcement authorities
  - start to gather evidence for the LA and the Rural Payments Division (RPD)
  - update the non-bovine spreadsheet.
3. The VLW must carry out one of the following actions:
- arrange, through the DP for an OV to visit the farm at the time specified in the formal notice (TN63(W)/TN63(W)(Welsh))

- arrange for a SVI/VO/Lay Tester to visit the premises at the time specified in the formal notice (TN63(W)/TN63(W)(Welsh)) to attempt to carry out the testing (necessary where the herd owner is refusing to allow testing).
4. If the herd owner refuses entry or any of their reasonable requirements (e.g. collection of animals), the visiting officer must complete the on farm risk assessment (TR243) with details of the visit.
5. The VLW should consider an approach to organisations such as the National Farmers Union (NFU), Farm Crisis or persons of standing within the agricultural community who might be able to persuade the owner to comply with the statutory requirements.

### Referral Stage

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1. Cases that are approximately 60 calendar days overdue will reach the referral stage of the overdue test process.

2. Agency offices must:

- review all cases to ensure that all relevant action has been completed
- refer the remaining cases to the LA as breaches of the Tuberculosis Order
- update the non-bovine spreadsheet.

3. The VLW must arrange for a breach of the Order letter (TN18) to be sent to the LA including the following copies:

- test notification letter (TNL)
- restriction notice (TN02/TN02(Welsh)) and covering letter
- refusal to test report (TR245)
- overdue test letters (TN25(W)/TN25(W)(Welsh))
- formal notice (TN63(W)/TN63(W)(Welsh)) and covering letter (TN26(W)/TN26(W)(Welsh))
- on farm risk assessment (TR243).

4. Agency offices must contact the Cross Compliance Team to confirm if the farmer is a claimant of Single Farm Payments. If so the Cross Compliance Team will pass cases on to the relevant Paying Agency and this will be classed as an intentional breach of the Cross Compliance Requirements.

5. The Cross Compliance Team are the single point of contact between APHA and each Paying Agency in GB for sending or receiving information and reports.

6. If the farmer is a claimant:

- complete the cross compliance referral form (TR322)
- email it to the Sam mailbox (for association to the customer record) ensuring the email is copied to the Cross Compliance Team, Worcester Specialist Service Centre (SSC).

#### Stage Four (Post Referral)

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1. APHA offices must:

- continue to monitor any outstanding cases and record any actions taken
- monitor outstanding cases for the purposes of compensation reduction
- involve members of the farming community (farming unions etc.) and work with them to persuade herd owners to comply with testing
- record the final test completion date on the non bovine spreadsheet.

2. Where reactors are found at a test which is overdue by more than 60 days but not more than 90 days a 25% reduction will apply. If the test is overdue by more than 90 days but not more than 180 days, a 50% reduction in compensation will apply. If the test is overdue by more than 180 days, a 95% reduction in compensation will apply. The TB Team, WG must be advised of the need to make reductions when the valuation form (TN01/TN01(Welsh)) is forwarded for payment. Refer to Reduction of Compensation for Overdue Tests in the Valuation and Compensation section for further guidance. 

*~~~~~ Background Section ~~~~~*

The extraction calendar (TR306(W)) contains a self calculating 'Number of days overdue' column and a 'Number of reactors' column to allow APHA offices to keep a record of those tests that require compensation to be reduced. 

*~~~~~ End Background ~~~~~*

### Procedures for Wild and Unmanageable Animals in Wales

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1. If animals are not tested due to practical reasons where they are unmanageable or on difficult terrain, the Duty Vet must complete a refusal to test report (TR245) and pass it to the VLW for assessment.
2. If the refusal to test report (TR245) is received before the test is overdue, the VLW should MF the file until the due test date.
3. When the test is one day overdue (MF date plus one day):

- the APHA office must issue a breach of Order letter (TN27(W)/TN27(W)(Welsh)) to the farmer which explains the requirements of the Order
- the case VO should arrange a farm visit with the LA to complete an on farm risk assessment (TR243) with details of the visit.

4. If the case VO decides that testing can be completed, the APHA office must continue with overdue testing procedures. Refer to Compliance Monitoring of TB Testing for guidance on overdue procedures.

5. If the case VO decides that the animals are un-testable (described in the legislation as 'reasons of practicability and include difficulties in gathering the animal safely due to its wildness or the nature of the terrain on which it is kept'), the APHA office must:

- serve a notice of intention to slaughter (TN03/TN03(Welsh)) by hand delivery at the farm visit or by recorded delivery
- arrange valuation and slaughter by an APHA contractor
- advise the owner that:
  - animals may need to be valued after slaughter
  - compensation will be payable at a rate determined by the TB Team, WG
- notify the Regulatory Hub of all cases where animals are slaughtered as wild and unmanageable. 

*~~~~~ Background Section ~~~~~*

The Regulatory Hub will retain a complete record of breaches of the Tuberculosis Order on the Animal Movement Enforcement System (AMES). 

*~~~~~ End Background ~~~~~*

6. In order to ensure that compensation reductions are applied, a value referral form (TN165(W)) must accompany the valuation form (TN01/TN01(Welsh)) when it is issued to WG for payment and a copy of the value referral form (TN165(W)) should also be sent to the Regulatory Hub. For guidance on compensation procedures refer to Reduction of Compensation for Overdue Tests.

## Veterinary\_Improvement\_Notices\_in\_Wales

Taken from:

[http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Monitoring\\_Compliance\\_and\\_Enforcement\\_in\\_Wales/Veterinary\\_Improvement\\_Notices\\_in\\_Wales.html](http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Monitoring_Compliance_and_Enforcement_in_Wales/Veterinary_Improvement_Notices_in_Wales.html)

# Veterinary Improvement Notices in Wales

| <b>Admin Tools</b>                             |
|------------------------------------------------|
| Export to Word                                 |
| Show                                           |
| <input type="checkbox"/> Documents             |
| <input checked="" type="checkbox"/> Background |
| <input type="checkbox"/> Generics              |
| Export                                         |
| <a href="#">View all Feedback</a>              |
| Show Info Points                               |
| Switch on Admin Mode                           |

## Index

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- Issuing Veterinary Improvement Notices
- Compliance Monitoring Following Issue of a Veterinary Improvement Notice

## Issuing Veterinary Improvement Notices

---

1. The Tuberculosis (Wales) Order 2011 allows a Veterinary Officer (VO)/Senior Veterinary Inspector (SVI) to serve a Veterinary Improvement Notice (VIN) (TN174(W)/TN174(W)(Welsh)) on the keeper of a non-bovine animal in cases where the VO/SVI thinks that the keeper should do something or stop doing something for the purpose of preventing the spread of bovine TB.

2. All completed VINs must be cleared by the Veterinary Lead Wales (VLW) before issue to a farmer:

- the VO/SVI should complete all sections of the VIN and pass to the VLW or the person delegated for this role by the VLW
- the VLW, or delegated person, should check that the VIN has been completed correctly and that the requirements, as stated on the VIN, are clear, auditable and reasonable.

3. The VO/SVI must:

- populate the VIN (TN174(W)/TN174(W)(Welsh)) stating:
  - the action required
  - the timescale to complete the action and
  - the duration that the action is required for
- obtain clearance from the VLW to issue the VIN (TN174(W)/TN174(W)(Welsh))
- issue the VIN (TN174(W)/TN174(W)(Welsh)) to the keeper with a covering letter (TN28(W)/TN28(W)(Welsh)) and ask that the keeper sign the notice
- copy the VIN (TN174(W)/TN174(W)(Welsh)) and covering letter (TN28(W)/TN28(W)(Welsh)) to the Local Authority (LA) and the TB Team, Welsh Government (WG).

4. Refer to the guidance notes (TR30(W)) for further guidance on issuing VINs.

## Compliance Monitoring Following Issue of a Veterinary Improvement Notice

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1. The VO/SVI should arrange for monitoring of compliance with the VIN by following the procedures below.

2. If a VIN has been complied with by the stated deadline, the inspecting officer must:

- record the compliance with a note on Sam
- inform the LA and the TB Team, WG.

3. If a VIN has not been complied with by the stated deadline, the inspecting officer must also:

- record the non-compliance as a note on Sam
- record the details of the non-compliance on a manuscript report and include a clear description of how the VIN has not been complied with
- attach photographs to the manuscript report if appropriate
- prepare the VIN breach letter (TN29(W)/TN29(W)(Welsh)) and pass to the VLW for signing
- arrange for the signed VIN breach letter (TN29(W)/TN29(W)(Welsh)) to be sent to the farmer
- arrange for copies of the VIN (TN174(W)/TN174(W)(Welsh)), manuscript report of non-compliance and VIN breach letter (TN29(W)/TN29(W)(Welsh)) to be sent to:
  - the LA
  - the TB Team, WG
  - the Regulatory Hub. 

~~~~~ Background Section ~~~~~

The Regulatory Hub will enter details of cases of non-compliance with a VIN onto the Animal Movement Enforcement System (AMES).



~~~~ End Background ~~~~

4. Where a VIN has not been complied with, Animal and Plant Health Agency (APHA) staff must carry out ongoing monitoring of compliance with the VIN at subsequent tests:

- record further reports of compliance or non-compliance on Sam
- copy all reports to the LA, the TB Team, WG and the Regulatory Hub.

5. Where a VIN is not complied with, the value of animals will be calculated in accordance with the schedule of the Tuberculosis (Wales) Order 2011 until it is complied with. To ensure any necessary re-calculations are made to compensation where a VIN has been breached, refer to the instructions at Payment of Compensation.

index

Taken from:

http://intranet/v1p3r/workareas/Tuberculosis/Camelids/Public_Health/index.htm

Public Health Overview

| Admin Tools |
|--|
| Export to Word |
| Show |
| <input type="checkbox"/> Documents |
| <input checked="" type="checkbox"/> Background |
| <input type="checkbox"/> Generics |
| Export |
| View all Feedback |
| Show Info Points |
| Switch on Admin Mode |

Index

- Human Health Aspects

Human Health Aspects

1. The primary reason for testing animals for Tuberculosis (TB) is for the protection of public health. TB in animals caused by *Mycobacterium bovis* (*M. bovis*) infection is a zoonosis. 

~~~~~ *Background Section* ~~~~~

A zoonosis is a disease that can be transmitted between animals and humans.   
Studies undertaken in England and Wales in the 1930s and 1940s estimated that around 6% of human deaths due to all forms of TB were due to *M. bovis* infection, principally from ingestion of milk. More recently there have been cases in a private veterinary surgeon and a camelid owner which have been attributed to contact with camelids.

~~~~~ *End Background* ~~~~~

2. *M. bovis* can be naturally transmitted from animals to humans through:

- the oral route (consumption of unpasteurised milk, milk products and theoretically, uncooked meat) - probably unlikely to occur when dealing with camelids

- the respiratory route (infectious aerosols generated by infected animals and their carcasses)
- more rarely, the cutaneous route (contamination of cuts and abrasions of the skin while handling infected animal tissues).

3. Additional public health issues arise in camelids due to the tendency to spit a mixture of gastric contents and saliva.

4. Where *M. bovis* in camelids is confirmed, the Animal and Plant Health Agency (APHA) must send a letter (TR389) informing the Consultant in Communicable Disease Control (CCDC) in England and Wales or the Consultant in Public Health Medicine (CPHM) in Scotland so that any risks to human contacts can be investigated. Record the written notification on the Sam case file. The following links provide contact details for CCDs/CPHMs:

- Public Health (England) [website](#)
- Public Health (Wales) [website](#)
- see the TB Notifications section in the Scotland Contacts List on the Scotland SharePoint site.

5. If new developments of public health significance are identified during a TB breakdown, the case Veterinary Officer (VO) may need to follow up the initial notification with further updates.

6. When restrictions are then lifted by a withdrawal notice (TN10/TN10(Welsh)) the CCDC/CHPM should be informed by letter (TN21).

7. Guidance from Public Health England (PHE) for the management of human contacts exposed to *M. bovis* infected animals is available at [GOV.UK](#). This guidance covers how PHE should be approaching the risk assessment and TB screening of human in-contacts on infected premises. It should prove of assistance as background information for veterinary field staff liaising with the CCDs/local Health Protection Units, particularly in England, about a particular OTFW breakdown in cattle or a culture-confirmed incident of *M. bovis* infection involving other domestic species.

8. There are no available versions for Scotland and Wales although Scottish and Welsh Public Health Authorities have followed the predecessors of this guidance.

9. Defra advises that suspect clinical cases of TB should be notified to the agency and the animals culled. In England, the legislation prohibits the use of vaccines or therapeutic treatments against tuberculosis in camelids without the written consent of the agency

other than to protect the welfare of the animal. As there are currently no known efficacious anti-TB drugs available, consent would normally be refused. Owners need to be aware of the risks posed by treating suspect cases.

10. In Wales, legislation prohibits the treatment of a non bovine animal (as defined by the Order) for TB unless written permission has been given by Welsh Government.

11. In Scotland, there is legislation that prohibits the use of vaccines or therapeutic treatments against tuberculosis in camelids and other specified animals.

12. The vast majority of cases of human TB diagnosed in GB are due to *Mycobacterium tuberculosis* infection and only between 20 and 40 people are diagnosed every year with TB caused by *M. bovis*. This is approximately 0.5% to 1% of all culture-confirmed human TB cases and is in line with the incidence of human *M. bovis* infections in most developed countries.

13. Where suspicion of TB has been reported in domestic species other than cattle and deer, but *M. bovis* infection is not confirmed by bacteriological tests conducted at APHA laboratories, there is no need for APHA offices to get further involved. Notification to public health officials (CCDC or CPHM) of *M. microti* infections in mammals (the organism is most commonly isolated from cats), although not required, is considered good practice. This member of the *M. tuberculosis* complex is attenuated for most people and cattle, but it can cause TB in immune-compromised persons.