

# **CLARIFICATION OF INFORMATION**

## **REQUESTED FOR**

### **RECOGNITION OF A REGION**

**Disease: Bovine Tuberculosis (*Mycobacterium bovis*)**

**Region: Australia**

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**Disease:** Bovine Tuberculosis (*Mycobacterium bovis*)  
**Region:** Australia

## 1. The authority, organisation and infrastructure of the veterinary services organisation in Australia.

### What veterinary force is available in the region for carrying out regulatory programs for livestock disease?

Australia has about 6700 professionally qualified veterinarians. About 78% are engaged in private practice, 8% are employed by government (Commonwealth and State/Territory), and the remainder are employed by other organisations, mainly universities and industry. These veterinarians are assisted by about 4400 animal health technicians.

Australian States and Territories are responsible for disease control and eradication within their own boundaries. The Commonwealth provides advice and coordination, and in some circumstances financial assistance for national eradication programs of significant diseases. Each State/Territory is subdivided into veterinary regions or divisions under the control of a government veterinary officer. Each region or division is further subdivided into either animal health districts or rural lands protection boards which are administered by inspectors who may be veterinarians or qualified animal technicians.

### Are all officers Veterinarians?

All officers of animal health services are not veterinarians. For technical staff breakdown refer Table 1, which gives figures reported to OIE, 1997.

Table 1: Number of veterinarians and other animal health personnel (1997)

<b>Veterinarians</b>		<b>Auxiliary personnel</b>	
government	569	animal health assistants (2yr trained)	2445
laboratories, universities etc	436	Auxiliary staff	292
private practitioners	5193	food hygiene and meat inspectors	1681
other veterinarians	522		
Total	6720	Total	4418

### Are any non veterinarians under the direct supervision of veterinary officers?

The officers listed as auxiliary personnel are generally under the supervision of veterinarians. Official veterinary services in Australia comprise officers from the Commonwealth, State and Territory Governments. A system of consultative committees ensures that these elements work together to serve the overall interest of Australia.

**What are the required procedures for specimen collection?**

On 4 May 1998, the Commonwealth, all States, Australian Capital Territory, the Northern Territory, the Australian Animal Health Council and the Cattle Council of Australia agreed to the conduct of the Tuberculosis Freedom Assurance Program (TFAP). A copy of the deed of agreement is attached (Attachment I). The TFAP deed is accompanied by Schedules A-M. These Schedules will be referred to by page number throughout these answers.

Sample collection and submission is outlined at page 57, Schedule L of the TFAP deed.

**What diagnostic procedures are routinely followed for each disease agent of concern?**

The required tissues and procedures for sampling are described at TFAP, Schedule L, pp 43-44.

**What laws, regulations and policies are in effect?**

The general rules are outlined at pages 41-48 of Schedule L. Each CVO implements these Rules under individual State/Territory legislation. The National Granuloma Submission Program (NGSP), is the program agreed by TFAP for submission from abattoirs of specified granulomatous lesions found in slaughtered cattle. The NGSP is described in TFAP, Schedule B, Part 1.

**What security measures are in place at ports of entry to control importation of materials that might carry disease agents of concern?**

Australia has satisfied requirements for freedom from bovine tuberculosis (Tb) detailed in chapter 3.2.3., article 3.2.3.1. of the OIE code (Attachment II). This status was declared to OIE by the Chief Veterinary Officer on 31 December, 1997. A brief summary of the bovine tuberculosis eradication program, "Australia's Cattle Industry Achieves TB Freedom" is given at Attachment III.

Quarantine procedures have been in place for some time to ensure that this status is not compromised by importation of infected animals or animal product. Australia's import policy relating to Tb is attached (Animal Quarantine Policy Memorandum 1997/23, Attachment IV).

**2. Disease status: is the restricted agent known to exist in the region? If "yes" at what prevalence? If "no" when was the most recent diagnosis?**

Since the declaration of freedom from Tb, one isolation of *M.bovis* has been recorded in the Northern Territory. This is one of approximately 3,000,000 cattle inspected at slaughter this year to date. Diagnosis of *M. bovis* on that property has resulted in destocking of 2500 in contact cattle and 9000 at risk cattle and in the testing of all other at risk cattle.

Isolations of *M. bovis* resulting from granuloma submissions at abattoirs is given in the following table.

YEAR	1995	1996	1997
No. of Isolations	7	10	5

**Is reporting the pest or disease agent required in the region?**

Tb is a notifiable disease in all States and Territories.

**If the pest or disease agent was present and subsequently eradicated, what methods were used for eradication?**

Tb was eradicated from Australia using a combination of test and slaughter and traceback methods. Destocking with compensation was used in later stages of the program to eliminate residual pockets of infection detected by abattoir surveillance and traceback.

**What geographic and environmental characteristics of the exporting region may influence the prevalence of the pest or disease agent?**

The prevalence of the disease agent is now considered to be zero. Geographic and environmental characteristics are thus not relevant. Prior to eradication, higher prevalences were noted in dairy cattle and intensively raised cattle. Other foci of infection were seen in areas where congregations of large numbers of cattle and buffalo occurred. Once recognised, these areas were targeted for eradication by destocking.

**3. The status of adjacent regions with respect to the pest or disease agent.**

There are no contiguous land masses adjacent to the Australian continent. Papua New Guinea is the closest noncontiguous land mass, separated by the Torres Straits, a distance of some 120 kilometres. There are no movements of cattle across the Torres Straits.

**4. The extent of an active disease control program, if any, if the agent is known to exist in the region.**

**What is the extent of an active disease control program, if any, if the pest or disease agent is known to exist in the region, or recently existed in the region?**

Recent declaration of freedom has not altered activity directed at disease detection. The Brucellosis and Tuberculosis Eradication Campaign (BTEC) was terminated by the achievement of eradication, but the TFAP assures continuity of activity directed at assurance of freedom from bovine tuberculosis. This program covers all activity directed at detection of disease and subsequent tracing of suspected stock and identification and elimination of infection.

**What epidemiologic investigations are done to trace the source of the infection?**

Known previously infected herds are targeted for retesting according to the requirements of TFAP Schedule L, p42. The NGSP ensures that all granulomas submitted from abattoir inspection are examined by both histopathology and culture techniques. Any suspicion of bovine tuberculosis is subject to traceback to property of origin and from there, all contact cattle are traced. Procedures are outlined at Schedule L, pp48-50.

**Are infected or exposed animals or premises quarantined?**

Movement restrictions immediately apply, should a positive diagnosis occur. Premise status is reassessed according to definitions in Schedule L, p48. Movement of cattle is subject to control and supervision by the Chief Veterinary Officer (CVO).

**What tests are performed prior to releasing the quarantine?**

Testing requirements are applicable as at Schedule L, p 42 of the TFAP. Such testing requires a minimum of five whole herd tests showing no evidence of infection over a period of eight years, after the first herd test free of bovine tuberculosis.

**What procedures are used to clean up the premises?**

As stated above, infected herds and close contacts are destocked. Cattle are isolated and disposed of under the ultimate supervision of the CVO. Procedures are at Schedule L, p43. Restocking of affected areas is at the discretion of the State CVO, but a minimum period of one month is required following removal of the last animal.

**What treatment regimes are followed?**

Treatment of cattle for tuberculosis is not permitted in Australia.

**What breeding practices are followed?**

Natural mating, artificial insemination and embryo transfer are accepted breeding practices in Australia.

**If depopulation practices are used, how are carcasses disposed of (are they salvaged at abattoirs)?**

Carcasses may be disposed of by burning, deep burial or abattoir slaughter at the discretion and under the supervision of the State CVO.

**Is indemnity paid on destroyed animals?**

Yes. Provisions for indemnity are at Schedule C, p11. All cattle ordered to be slaughtered as part of tuberculosis eradication procedures are eligible for compensation. (Schedule L, p45)

**Have premises, thought to have been cleaned up, later found to be still affected?**

In the early stages of the eradication campaign, residual infection of properties occasionally occurred. In most cases, this was due to incomplete depopulation or illegal movement of infected stock. These practices ceased as States and Territories neared eradication. *Mycobacterium bovis* is not considered an environmental pathogen but consideration is given to short term survival in water and fodder.

**5. The vaccination status of the region. When was the last vaccination? What is the extent of vaccination if it is currently used and what vaccine is being used?**

Vaccination is not considered an effective method of eradication for bovine tuberculosis and has not been used in Australia.

**Is the ownership and use of vaccination allowed?**

No

**When was the last vaccination?**

N/A.

**What is the extent of vaccination if it is currently used?**

N/A.

**What types of vaccine (live, modified live, killed) are used?**

N/A.

**Who may vaccinate (herd owners, veterinarians, etc)?**

N/A.

**Are records kept of the use of vaccine?**

N/A.

**Who produces the vaccine?**

N/A.

**Is the administration of serum permitted? If so, by whom and under what conditions?**

N/A.

**6. The degree to which the region is separated from adjacent regions of higher risk through physical or other barriers.**

Australia is an island continent. The nearest infected region is the island of PNG-Irian Jaya, separated by sea from Australia by the Torres Strait, a distance of some 120 kilometres.

**7. The extent to which movement of animals and animal products is controlled from regions of higher risk, and the level of biosecurity regarding such movements.**

Movement from regions of higher risk into Australia is under the the strict control of the Australian Quarantine Inspection Service. Scientifically supportable import standards are

applied to maintain an appropriate level of protection to ensure Australia's freedom from bovine tuberculosis

**From what countries or regions does the requesting region import products that could potentially carry pest or disease agents of concern?**

The United States, Member States of the European Union, New Zealand, Republic of South Africa, Canada, Switzerland and Norway are the only countries which export potentially infected material to Australia.

**To what extent is the movement of such products controlled from regions of higher risk, and what is the level of biosecurity regarding such movements?**

Commonwealth control over imported livestock is achieved under the *Quarantine Act 1908*. Strict pre entry requirements for importation of live animals are specified. An example of import requirements (Animal Quarantine Policy Memorandum 1997/23) relating to bovine tuberculosis is attached (Attachment IV). This outlines certification and testing requirements.

**8. Livestock demographics and marketing practices in the region.**

**How many herds, flocks, etc. of each relevant species are in the region?**

Recent information from the Australian Bureau of Agriculture and Resource Economics (ABARE) indicates that Australia has about 21 000 specialist beef enterprises, another 10 000 mixed operations producing beef and about 13 600 dairy enterprises. This information includes only enterprises with estimated value of agricultural operations over AUD22 500. There are approximately 145 000 herds of cattle in Australia. Herds are defined for disease traceback purposes so there may be more than one herd on a property, and smaller herds, though not considered an agricultural enterprise, are appropriately identified. Each herd has an assigned tailtag which is required by law to be attached in an approved manner to the tail of all cattle consigned to abattoirs or via saleyards to abattoirs. A chart showing tailtags used during and after eradication is attached (Attachment V).

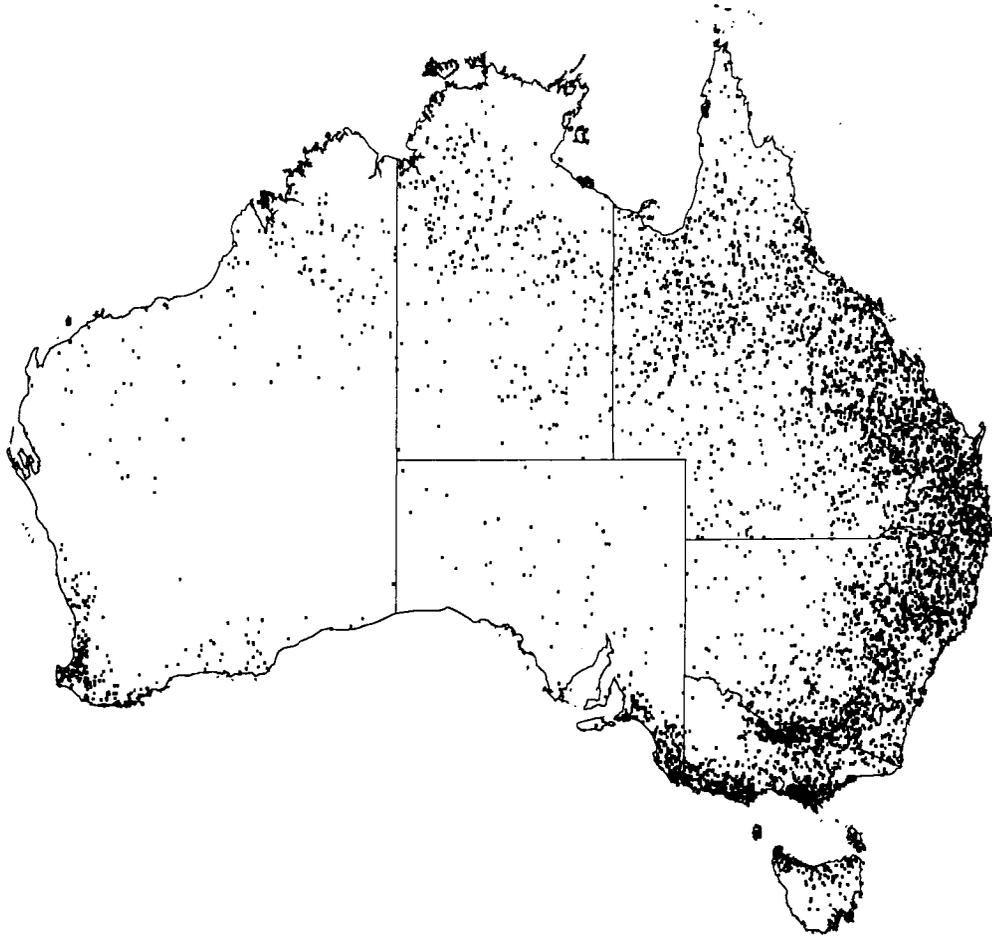
**How are they distributed (e.g. herd density etc.)**

Beef cattle numbers ('000) by State/Territory, 1994–1997

Year	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Aus
1994	6127	2604	9656	1056	1683	507	1434	13	23080
1995	5867	2659	9689	1064	1773	507	1419	13	22991
1996	6019	2714	9928	1069	1803	521	1502	13	23569
1997	6038	2519	10071	1049	1859	536	1204	11	23287

Dairy cattle numbers ('000) by State/Territory, 1994–1997

Year	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Aus
1994	364	1585	286	147	123	172	1	0	2678
1995	370	1621	285	152	126	185	1	0	2740
1996	371	1682	286	150	121	197	1	0	2808
1997	397	1849	302	164	128	226	1	0	3057



**Where are the major livestock marketing centres?**

Marketing centres are situated in major rural towns and adjacent to capital cities within the region. These are usually auction centres (described below).

**What are the patterns of livestock movement within the region?**

Livestock movements usually occur as a result of sale. The following methods of sale and stock transfer are in operation in Australia:

- |               |  |
|---------------|--|
| Auction       | Used at district saleyards and occasionally on farm, on a dollar/head or cents/kilogram liveweight, for stud, store and slaughter cattle |
| Over scales   | cents/kg liveweight. Used for slaughter cattle   |
| Over hooks    | cents/kg dressed weight. For slaughter cattle  |
| Paddock sales | Price negotiated after on property inspection. For stud, store, slaughter, and export feeder and slaughter cattle.                       |
| Other methods | includes computer or video aided methods. For slaughter and store cattle.  |

**How are the animals transported and handled during market transactions?**

Cattle are normally transported by truck or train before and/or after market transactions, though some methods of sale reduce transport requirements to a minimum. Cattle presented to slaughter markets or abattoirs are required in all states to be identified to the herd of origin by a certified tailtag. A register of tailtags is kept by the responsible authority in each state.

**9. The type and extent of disease surveillance in the region -- eg is it passive and/or active; what is the quantity and quality of sampling and testing?**

Surveillance for Tb is specified under Schedule B. The NGSP is the basis for tuberculosis surveillance for cattle sent to slaughter. Appropriate traceback and traceforward systems are in place. Alternatively, Approved Tuberculosis Surveillance systems are specified at p56, Schedule L.

**Are serum surveys conducted, and if so, how frequently, what sample sizes are used, and what has been found?**

Serum surveys are not routinely conducted, however the bovine  $\gamma$ -interferon test, using whole blood, has been used in conjunction with tuberculin testing in identification of infected animals. It is not considered that serum surveys would add substantially to surveillance effectiveness for bovine tuberculosis in Australia.

**Is reporting of sick animals mandatory, and if so, what is the procedure (by whom and to whom) and what penalties are involved for failure to report?**

Tb is a notifiable disease. Reporting of sick animals is the responsibility of the owner. A veterinarian attending an animal and suspecting an exotic or notifiable disease is required by law to report the incident to the local or State authority, usually a Rural Lands Protection Board or State Department of Agriculture. Penalties for non reporting of such incidents are at the discretion of the Veterinary Surgeons Board of each State; veterinarians may be deregistered for such offences.

**Are laboratory tests run on suspicious animals? If so, what procedures and to what extent (eg what proportion of suspicious cases are evaluated using each of the specific laboratory procedures?)**

Suspicious cases and all in contact or traced herds may be subject to laboratory testing (bovine  $\gamma$ -interferon test). Evidence of Tb in cattle is subject to procedures defined in Schedule L, pp48-56. Any suspicion of Tb, for whatever reason, is subjected to thorough epidemiological investigation; this may not always require laboratory testing.

**Are quarantines imposed on premises with suspicious cases, pending final diagnosis? What other procedures are followed regarding suspicious cases?**

Quarantine is imposed on suspect herds. Evidence of tuberculosis in cattle is subject to procedures defined in TFAP, Schedule L, pp48-56.

## 10. Diagnostic laboratory capabilities?

### What diagnostic laboratory capabilities are there?

State Veterinary Laboratories offer histopathology, culture and isolation services on bovine tissue. Diagnostic Techniques required are outlined in the Australian Standard Diagnostic Techniques (ASDT, Attachment VI).

The Australian National Quality Assurance Program (ANQAP) conducts annual QA testing for veterinary diagnostic procedures in Australia and New Zealand. A copy of the ANQAP summary and mycobacteria culture and identification results is attached (Attachment VII).

### Are there laboratories approved for agent isolation, identification and typing?

The following laboratories are approved for agent isolation by each state CVO:

Elizabeth Macarthur Agricultural Institute (New South Wales)  
Regional Veterinary Laboratory, Orange (New South Wales)  
Regional Veterinary Laboratory, Wollongbar (New South Wales)  
Berrimah Agricultural Research Centre (Northern Territory)  
Yeerongpilly Veterinary Laboratory (Victoria)  
Toowoomba Veterinary Laboratory (Victoria)  
Oononba Veterinary Laboratory (Victoria)  
Veterinary Pathology Services (South Australia)  
Mt Pleasant Laboratories (Tasmania)  
Institute of Animal Science (Victoria)  
Animal Health Laboratories (Western Australia)

The Western Australian Tuberculosis Laboratory was designated as the Australian Reference Laboratory for Bovine Tuberculosis (ARLBTB) in 1992 and as an OIE International Reference Laboratory in June 1993. All isolates identified in Approved Laboratories must be submitted to the ARLBTB for:

1. Confirmation of identification
2. Long term storage of isolates in the National Culture Collection.
3. DNA fingerprinting

### If not, where specifically is such isolation, identification and typing performed?

The above laboratories offer these services within the region.

### What security measures are in place in the region to prevent the escape of biological agents?

Normal laboratory procedures for prevention of zoonotic disease are in place. Provision of adequate occupational health and safety procedures for laboratory personnel are considered sufficient to prevent reintroduction of the pathogen into cattle.

**What kind of training have the diagnostic personnel had regarding the specific disease agents of concern?**

State laboratories in Australia require minimum qualifications of tertiary diploma or bachelors degree for scientific supervisory personnel. All diagnostic work requires such supervision. The ARLBTB has responsibility for continuing education of laboratory staff.

**11. Policies and infrastructure for animal disease control in the region --i.e, emergency response capacity.**

**What policies and infrastructure exist for emergency response to outbreak situations?**

Bovine tuberculosis freedom was declared on 31 December, 1997, after OIE guidelines for freedom were met.

Procedures used in the successful eradication of bovine tuberculosis are still in place, thus a disease incursion or breakdown is treated as directed in the TFAP. The TFAP is a continuing program "to enable eradication activities to occur and to take such other action as is necessary to eradicate any cases of bovine tuberculosis, so as to maintain a state of freedom from bovine tuberculosis in Australia".

**Attachments:**

- I. Deed of Agreement: Tuberculosis Freedom Assurance Program
- II. OIE Code Bovine Tuberculosis chap. 3.2.3.
- III. "Australia's Cattle Industry Achieves Freedom"
- IV. Animal Quarantine Policy Memorandum 1997/23
- V. Australian Cattle Identification Tailtags
- VI. Australian Standard Diagnostic Techniques: Bovine tuberculosis
- VII. Australian National Quality Assurance Program