

**AUSTRALIAN VETERINARY EMERGENCY PLAN**

# **AUSVETPLAN**

**Enterprise Manual**

**Wool industry**

**Version 3.0, 2015**

AUSVETPLAN is a series of technical response plans that describe the proposed Australian approach to an emergency animal disease incident. The documents provide guidance based on sound analysis, linking policy, strategies, implementation, coordination and emergency management plans.

**National Biosecurity Committee**

**This enterprise manual forms part of:**

**AUSVETPLAN Edition 3**

**This strategy will be reviewed regularly. Suggestions and recommendations for amendments should be forwarded to:**

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**DISEASE WATCH HOTLINE**

**1800 675 888**

The Disease Watch Hotline is a toll-free telephone number that connects callers to the relevant state or territory officer to report concerns about any potential emergency disease situation. Anyone suspecting an emergency disease outbreak should use this number to get immediate advice and assistance.

# Preface

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This enterprise manual for the wool industry constitutes part of the **Australian Veterinary Emergency Plan** or **AUSVETPLAN** (Edition 3). AUSVETPLAN is a coordinated national response plan for the management and, wherever possible, eradication of exotic disease incursions and outbreaks of certain emerging or endemic animal diseases. The term emergency animal disease (EAD) is used to collectively describe these disease categories.

Enterprise manuals, a component of AUSVETPLAN, are prepared for animal industries in which the risk of harm from an EAD and the impact of industry practices on EAD control is expected to be high. For example, the way in which stock or products are managed may result in a higher likelihood of rapid spread of a disease agent, and thus impact on the response to an outbreak (known as an EAD response) and its associated costs.

Enterprise manuals address the risks associated with so-called risk enterprises. These are defined as livestock or related enterprises that are a potential source of major infection for many other premises, and can thus increase the potential size of an outbreak and affect its nature.

The commercial product (or byproduct) of some animal industries may carry a disease agent. Transport of the product can occur quickly and across large distances, with a consequent risk of spreading the disease. The wool industry is one such industry.<sup>1</sup>

The greatest risks for the wool industry are:

- the speed with which wool can be transported across large distances to the point of sale in regional or metropolitan centres; during transport, the wool passes through areas with large sheep and other animal populations
- export of greasy wool.

For the purposes of this document, the wool industry (or wool enterprises) comprises individuals and entities in Australia involved in the harvesting (shearing), transport, handling, storage, processing and export of wool fibre (from 'shed to ship'). The scope of this document does not include:

- on-farm sheep production and wool growing
- related industries, such as sheep saleyards and transporters
- disease control measures applicable to these enterprises, such as sheep movement restrictions, vaccination and stamping out.

This manual is aimed at both government officers and wool industry personnel who may be involved in EAD preparedness. For government officers, the manual provides an overview of the wool industry, and the nature of operations associated with the exchange of ownership of wool in Australia (Section 2). The manual provides information on the EADs that are relevant to the wool industry (Appendix 7), and guidelines on preparing an EAD

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<sup>1</sup> Although this manual refers explicitly to the wool industry, it also applies in principal to the goat and alpaca fibre industries.

response plan (Section 5) for owners or managers of wool-growing enterprises, selling agents (wool brokers, private treaty wool merchants and other selling agents), wool buyers and exporters, wool processors, and transport companies involved in the transport of wool. Section 3, and Appendixes 2 and 3 detail the traceability and security of wool bales and wool samples at each stage of the wool production pipeline.

Publication of this manual follows widespread consultation within the wool industry and with government.

Detailed instructions for the field implementation of AUSVETPLAN are contained in the disease strategies, operational manuals, management manuals and wild animal manual. Industry-specific information is given in the relevant enterprise manuals. The full list of AUSVETPLAN manuals that may need to be accessed in an emergency is shown below.

## **AUSVETPLAN manuals<sup>2</sup>**

### **Disease strategies**

Individual strategies for most of the diseases listed in the EADRA  
 Bee diseases and pests  
 Response policy briefs (for diseases not covered by individual manuals)

### **Operational procedures manuals**

Decontamination  
 Destruction of animals  
 Disposal  
 Livestock welfare and management  
 Public relations  
 Valuation and compensation

### **Enterprise manuals**

Artificial breeding centres  
 Feedlots  
 Meat processing  
 Saleyards and transport  
 Pig industry  
 Poultry industry (chickens, ducks and turkeys)  
 Zoos

### **Management manuals**

Control centres management (Parts 1 and 2)  
 Laboratory preparedness

### **Wild animal response strategy**

### **Summary document**

EADRA = Government and Livestock Industry Cost Sharing Deed in Respect of Emergency Animal Diseases

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<sup>2</sup> The complete series of AUSVETPLAN documents is available at [www.animalhealthaustralia.com.au/programs/emergency-animal-disease-preparedness/ausvetplan](http://www.animalhealthaustralia.com.au/programs/emergency-animal-disease-preparedness/ausvetplan).

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# 1 Disease management and emergency animal disease preparedness

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## 1.1 Australia's animal health services

In Australia, each state and territory has operational responsibility for the control and eradication of animal diseases within its borders. Animal health authorities located within the relevant department of primary industries administer legislation relating to responses to emergency animal diseases (EADs), including movement controls, treatment, slaughter, disposal, decontamination and compensation. Inspectors have wide powers, including the ability to enter premises, examine records, order livestock musters, control livestock movements, request that animals or products be submitted for testing, and isolate and destroy diseased or suspected diseased livestock. The Australian Government advises on and coordinates national animal health policy, and is responsible for quarantine and international animal health matters, including export certification and trade negotiation, and disease reporting to the World Organisation for Animal Health (OIE).

## 1.2 The risk of an emergency animal disease entering Australia

Currently, importation of live sheep into Australia is permitted from New Zealand, under strict quarantine conditions. Importation of live sheep from other countries is not permitted. Importation of frozen semen and embryos is permitted under strict quarantine conditions. The biosecurity measures applied to the importation of live sheep and genetic material ensure an adequate level of protection from the risk of introduction of an EAD into the Australian sheep flock.

Importation of greasy wool for processing is allowed only from New Zealand and some Pacific island nations, and is subject to risk management and control measures, such as inspection and storage in premises that must be approved by the Australian Government Department of Agriculture. These measures ensure protection for the Australian wool industry.

However, people returning from overseas who have had contact with sheep or other farm animals could transfer a disease agent to Australian sheep flocks via their footwear or clothing.

Another livestock species may be the primary source of infection for a disease that is then transferred to sheep. Therefore, the risk factors for other industries are also relevant.

The likelihood of an outbreak originating from any of these livestock or fibre sources is low. However, the consequences of an EAD outbreak to the Australian wool industry are potentially high, making the maintenance of strict biosecurity a pre-eminent concern for all wool-growing properties.

### 1.3 Principles of emergency animal disease management

In Australia, the traditional role of Australian, and state and territory governments in managing animal health is complemented by a close association between government and the livestock industries. National animal health priorities are determined in consultation with the livestock industries, which participate in policy development, support targeted activities and contribute to emergency responses.

As part of their preparedness arrangements, state and territory animal health authorities develop operational plans for managing EADs that are consistent with AUSVETPLAN and their own legislative framework. These plans are made in conjunction with the state or territory emergency management organisation and support agencies, and contain considerable detail on the various procedures described in this manual.

EAD responses are planned and implemented at three levels – national, state or territory, and local. In the event of an EAD outbreak, relevant state or territory animal health officers manage all aspects of its control and eradication according to a nationally agreed plan. They work with personnel in livestock industry liaison functions at state and local operational centres, and the owners and managers of at-risk or infected premises to resolve the outbreak and return enterprises to normal operations.

The chief veterinary officer (CVO) of the state or territory in which an EAD outbreak occurs is responsible for implementing the disease control measures. The CVO works with the Consultative Committee on Emergency Animal Diseases (CCEAD), which is chaired by the Australian Chief Veterinary Officer and provides the link between the Australian Government, the state and territory governments, and the relevant livestock industry(ies) for technical and veterinary decision making during EAD outbreaks.

The CCEAD advises a high-level national management group (NMG) on response policy. The NMG determines whether a disease is eradicable, and whether the direct costs of a response should be shared between Australia's governments and the relevant livestock industry(ies) under the Emergency Animal Disease Response Agreement (EADRA; see Section 1.4). The NMG manages national policy and resourcing of the response. Both the CCEAD and the NMG base their decisions on current information provided by the affected state or territory, and on guidance provided in AUSVETPLAN.

The sheep/wool industry has representation on both committees, coordinated through WoolProducers Australia. These representatives receive education in EAD management and their roles through the National EAD Training Program.

### 1.4 Emergency Animal Disease Response Agreement

The EADRA<sup>3</sup> provides a framework for the Australian Government, the state and territory governments, and the major livestock industries to manage EAD outbreaks cooperatively. It describes the funding of EAD responses, and the sharing of the costs between government and the affected livestock industries.

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<sup>3</sup> The full title of the agreement is the *Government and Livestock Industry Cost Sharing Deed in Respect of Emergency Animal Disease Responses*. For more information, see [www.animalhealthaustralia.com.au/programs/emergency-animal-disease-preparedness/ead-response-agreement](http://www.animalhealthaustralia.com.au/programs/emergency-animal-disease-preparedness/ead-response-agreement).

Four categories of diseases are used to determine the liability for costs. These categories have been developed according to the benefits of controlling the disease, as assessed by the likely impact of the specific EAD on human health, socioeconomics, the environment and livestock production.

The NMG makes decisions about activation and use of cost-sharing arrangements during an EAD response.

The EADRA also contains many other important instructions that provide the basis for a coordinated national EAD response. In particular, it refers to using existing plans, such as AUSVETPLAN; sets standards for accounting, auditing and training personnel; and provides the incentive for developing and maintaining government and industry biosecurity measures.

Table 1.1 describes the four disease categories and their respective shared-cost arrangements for a sample of emergency animal diseases that affect sheep.

**Table 1.1 Disease categories and shared-cost arrangements**

Category	Sheep-specific EAD	Shared-cost arrangement <sup>a</sup>
1	There are no Category 1 sheep-specific EADs	100% government
2	Foot-and-mouth disease Sheep pox Rift Valley fever	80% government 20% sheep industry
3	Anthrax (major outbreaks) Bluetongue Scrapie	50% government 50% sheep industry
4	Aujesky's disease	20% government 80% sheep industry

EAD = emergency animal disease

<sup>a</sup> Where other livestock industries are affected by an EAD, they also contribute to the industry portion of the costs.

## 1.5 AUSVETPLAN

AUSVETPLAN is the national contingency planning framework for the management of EAD incidents in Australia. The plan ensures coherent operations and procedures in the management of an EAD incident among national, state and territory animal health authorities and emergency management organisations.

Animal Health Australia, the custodian of AUSVETPLAN, works closely with Australian, state and territory governments, and livestock industries to determine priorities and regularly review AUSVETPLAN to ensure that it is current and appropriate. Finalised manuals that deal with response policy are endorsed by government.

Everyone involved in the EAD preparedness of the wool industry should understand the nature and structure of AUSVETPLAN. Enterprise manuals do not stand alone and must be read in association with other AUSVETPLAN documents.<sup>4</sup>

<sup>4</sup> [www.animalhealthaustralia.com.au/programs/emergency-animal-disease-preparedness/ausvetplan](http://www.animalhealthaustralia.com.au/programs/emergency-animal-disease-preparedness/ausvetplan)

Readers should also be aware of:

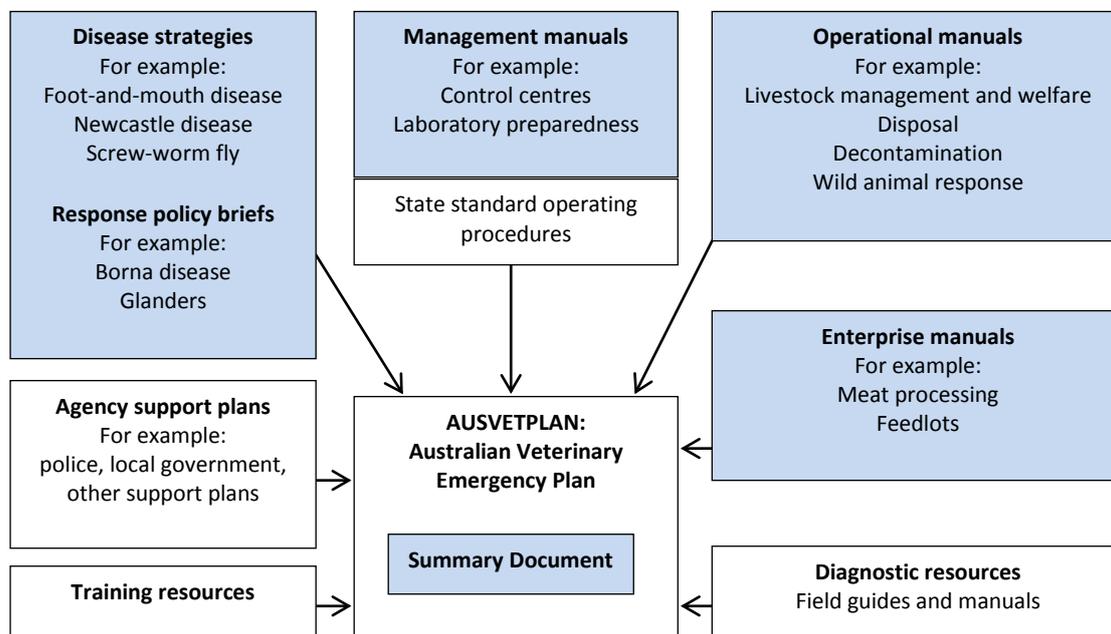
- the standard operating procedures that are prepared by the appropriate jurisdiction and support AUSVETPLAN
- plans involving other areas of state and territory emergency management arrangements (eg police, local government)
- diagnostic resources
- training materials.

A series of individual AUSVETPLAN manuals cover all the elements of EAD preparedness and management:

- **Summary Document.** This describes the components of AUSVETPLAN and outlines their functional relationships.
- **Disease strategies.** These are authoritative references to the Australian control and eradication policies for many significant diseases. They provide information about the nature of the disease; the principles of its control and eradication; and control policies, strategies and recommendations. Sufficient information is included to allow authorities to make informed decisions about controlling an EAD outbreak. The available wool-related disease strategies are:
  - anthrax
  - foot-and-mouth disease
  - peste de petits ruminants
  - Rift Valley fever
  - scrapie
  - sheep pox and goat pox.
- **Response policy briefs.** These provide brief information on additional EADs that are subject to cost sharing, but are not covered by full disease strategies as they have a low likelihood of entry to Australia, and any consequences are likely to be less severe. The sheep disease sheep scab is covered by a response policy brief.
- **Operational manuals.** These describe in detail the recommended procedures for different aspects of an EAD response, such as animal destruction, disposal, decontamination of infected sites, livestock welfare management and wild animal response.
- **Management manuals.** These provide detailed information on specific components of the response. For example, the **Control Centres Management Manual (Parts 1 and 2)** provides details of the management structure, and functions and responsibilities at the national, state or territory, and local levels. The other management manual is the manual for **Laboratory Preparedness**.
- **Enterprise manuals.** These cover specific risk enterprises – such as abattoirs, artificial-breeding centres, beef-cattle feedlots and piggeries – that pose special economic or disease eradication problems, or are important in the epidemiology or impact of the disease. They provide information and guidance to two target groups:
  - government personnel involved in EAD preparedness who may be unfamiliar with the operations of the industry of which the enterprise is part

- industry personnel and veterinarians who need information on strategies that may be adopted to improve preparedness, and guidance on the operational procedures that may be applied to exclude, contain or eradicate an EAD.

This complex web of plans is illustrated in Figure 1.1.



**Figure 1.1 Available AUSVETPLAN manuals that cover all aspects of emergency animal diseases**

## 1.6 Controlling an emergency animal disease outbreak

Control of an EAD outbreak is a complex operation, requiring rapid mobilisation of resources and coordination of a diverse team of people. An EAD response may require input from all tiers of government and from a range of portfolios, as it may need to address not only animal health issues, but also financial, social, economic, human, trade and recovery issues.

The fundamental aim of national EAD control policy is to eradicate an EAD if this is reasonably feasible. Key factors taken into account are those related to the disease and affected population. For example, the principal option used for many EADs is movement controls and eradication by stamping out where this is applicable to the EAD in question and is considered to be cost-effective. This may involve:

- quarantine of premises, and/or movement controls on live animals and animal products
- valuation and compensation
- destruction and disposal of infected and exposed susceptible animals, and contaminated animal products and materials
- decontamination of infected premises
- surveillance of susceptible animals
- tracing of animals and products

- restriction of the activities of certain enterprises
- an industry and public information program.

Other measures that may be used where necessary include:

- vaccination
- vector or wild animal control
- treatment of affected animals
- treatment of affected products, such as wool or dairy products
- use of sentinel animals.

In some circumstances, a modified stamping-out approach may be used – for example, allowing the slaughter of animals at an accredited abattoir to produce a marketable product.

For some diseases in some circumstances, eradication may not be considered feasible because the outbreak is already widespread when diagnosed or is considered likely to spread further despite the application of stamping out. In these cases, other control measures may be selected, such as vaccination, with a view to possible containment and eventual eradication; or a state or territory and/or industry-based control program to manage a disease that is likely to become endemic in the population. Where the NMG has reason to believe that eradication is not possible and the disease can only be contained, or in any situation where the cost of an EAD response plan will exceed an agreed limit on funding, the NMG may decide to stop cost sharing.

Many disease control field activities have significant implications for the wool industry. Disease control activities are managed from a local control centre (LCC), usually established in the vicinity of the outbreak. The LCC is responsible for all activities within the restricted area, including investigations of reports of disease outbreaks; consultation with livestock producers; specimen collection; property quarantine; valuation of livestock and property; livestock slaughter and disposal; wool tracing, treatment and/or disposal; and property decontamination.

Information on the structure, functions and responsibilities of the state or territory control centres (SCCs) and LCCs is contained in the **Control Centres Management Manual, Part 1**. Detailed descriptions of functions and associated activities in an EAD response are contained in **Control Centres Management Manual, Part 2**.

Personnel to perform the industry liaison functions from the wool industry are trained and accredited to undertake prescribed AUSVETPLAN roles in both SCCs and LCCs. They are a point of contact for local producers and a source of advice to the LCC managers.

The response to an outbreak of an EAD agent that can live on wool fibres, either on the sheep or after shearing, will be determined by the epidemiology of the outbreak, including:

- how early the outbreak is detected
- the extent of the outbreak
- the location of affected wool
- the means of exposure (before shearing or after baling)

- whether other species of livestock are affected
- the characteristics of the disease agent involved.

### 1.6.1 Wool movement restrictions

Controlling the movement of wool shorn from sheep that are exposed to an EAD is an essential component of livestock disease control.

However, such regulatory controls have significant potential to adversely affect commercial operations along the wool industry pipeline, from the farm to fabric and garment makers, especially if they are maintained for an extended period. Movement restrictions imposed for wool during an outbreak will depend on the disease and the location of the wool in relation to the outbreak. More details are provided in Section 1.6.3.

### 1.6.2 National livestock standstill

For the most serious EADs, such as foot-and-mouth disease (FMD), a national standstill on the movement of all livestock may be declared by the state and territory authorities, with immediate effect from the time of strong suspicion or diagnosis. The standstill will apply for at least 3 days. This means that no sheep may be moved from their current location, and sheep undergoing transport at the time of declaration are required to stop moving as soon as possible. However, they may complete their journey if this is approved. Guidelines for managing sheep that are in transit at the time of the declaration will be provided by the disease response authorities. A national standstill on the movement of sheep potentially reduces the spread of a disease, and provides time for the EAD response to trace animals, carry out surveillance to determine the outbreak size and develop a management plan.

The application of a national standstill for major EADs (eg FMD), is not automatic for livestock products, such as wool. Product standstills will be determined on a case-by-case basis by relevant authorities. Immediate movement restrictions for declared areas will apply to livestock products, as described in the relevant **Disease Strategy**.

### 1.6.3 Declared areas

A declared area is a defined tract of land that is subjected to disease control restrictions under EAD legislation. There are two types of legally declared areas: restricted area (RA) and control area (CA). Declared areas are risk based, with several areas or premises of higher risk nested within areas of lower risk.

An RA is a relatively small legally declared area around infected premises (IPs) and dangerous contact premises (DCPs) that is subject to disease controls, including intense surveillance and movement controls. The initial RA will be drawn with at least 'x' km radius<sup>5</sup> around all IPs and DCPs, and including as many suspect premises (SPs), trace premises (TPs) and dangerous contact processing facilities (DCPFs) as practicable. The purpose of the RA is to minimise the spread of the EAD. The RA does not need to be circular but can have an irregular perimeter, provided that the boundary is initially an appropriate distance from the nearest IP, DCP, DCPF, SP or TP. Multiple RAs may exist within one CA.

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<sup>5</sup> For specific details, refer to the relevant AUSVETPLAN disease strategy ([www.animalhealthaustralia.com.au/programs/emergency-animal-disease-preparedness/ausvetplan](http://www.animalhealthaustralia.com.au/programs/emergency-animal-disease-preparedness/ausvetplan)).

The boundaries will be modified as new information becomes available, including from an official surveillance program. The actual distance in any one direction will be determined by factors such as terrain, the pattern of livestock movements, livestock concentrations, the weather (including prevailing winds), the distribution and movements of relevant wild (including feral) animals, and known characteristics of the disease agent. In practice, major geographic features and landmarks, such as rivers, mountains, highways and roads, are frequently used to demarcate the boundaries of the RA. Although it would be convenient to declare the RA on the basis of local government areas, this may not be practical, as such areas can be larger than the particular circumstances require. Guidelines for establishing an RA are provided in the relevant **Disease Strategy** for the EAD.

A CA is a legally declared area where the disease controls, including surveillance and movement controls, applied are of lesser intensity than those in an RA (the limits of a CA and the conditions applying to it can be varied during an incident according to need). A CA is a disease-free buffer between the RA and the outside area. Specific movement controls and surveillance strategies will be applied within the CA to maintain its disease-free status and prevent spread of the disease into the outside area.

An additional purpose of the CA is to control movement of susceptible livestock for as long as is necessary to complete tracing and epidemiological studies, to identify risk factors and forward and backward risk(s).

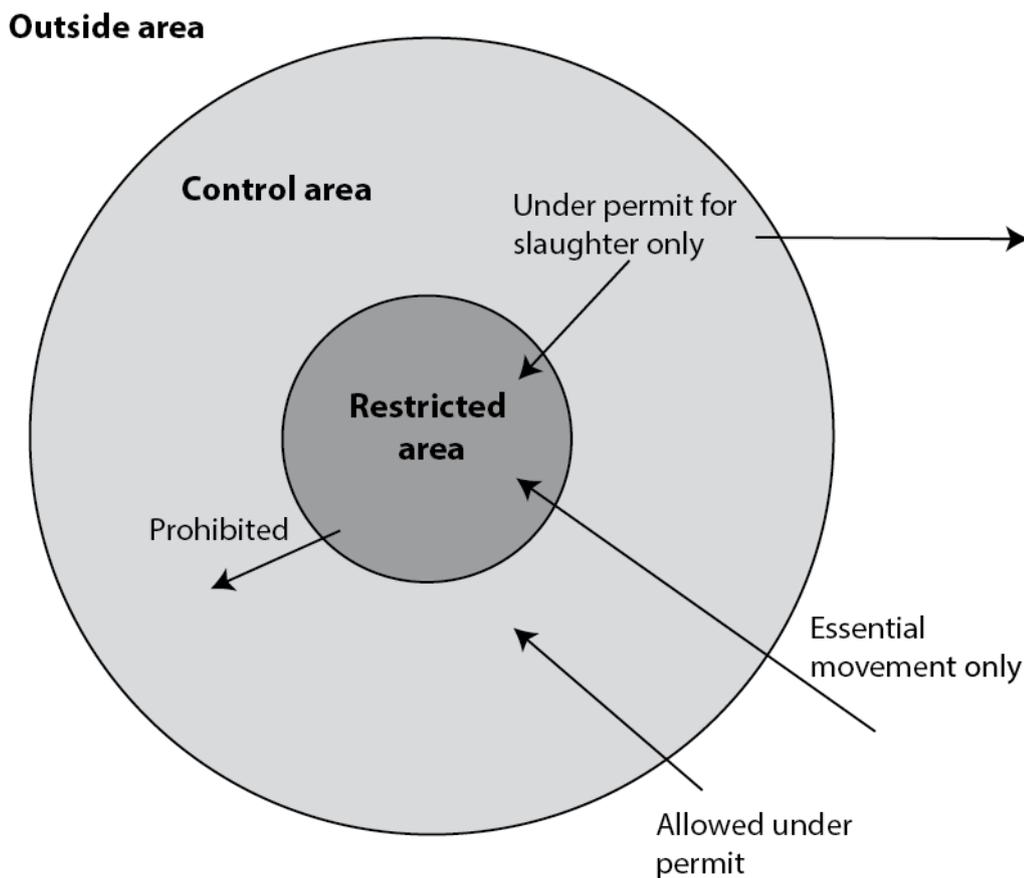
The CA will be a larger declared area around the RA(s) – initially, possibly as large as the state or territory in which the incident occurs – where restrictions will reduce the risk of disease spreading from the RA(s). The CA will have a minimum radius of ‘y’ kilometres,<sup>6</sup> encompassing the RA(s). It may be defined according to geography, climate and the distribution of relevant wild (including feral) animals. The boundary will be adjusted as confidence about the extent and distribution of the incident increases.

As for RAs, animal movements out of a CA will usually be prohibited. Vehicles and specified products will only be allowed out of a CA into the outside area by official permit. The actual movement conditions will depend on the disease and will be determined by the lead state or territory animal health authority. Information on movement conditions will be available through official channels, such as government authority websites, as well as media outlets. Usually, permits will be made available for specific movements to continue where the risk is low.

Figure 1.2 illustrates how controls over the movement of livestock may affect access to declared areas. Similar principles may apply to animal products, such as wool, and to people and equipment.

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<sup>6</sup> For specific details, refer to the relevant AUSVETPLAN disease strategy ([www.animalhealthaustralia.com.au/programs/emergency-animal-disease-preparedness/ausvetplan](http://www.animalhealthaustralia.com.au/programs/emergency-animal-disease-preparedness/ausvetplan)).



**Figure 1.2 Schematic illustration of standard movement controls**

It is important to recognise that the designation of declared areas can change during an EAD response as authorities learn more about the nature and distribution of the disease. These changes create uncertainties that make forward planning for the resumption of movements of livestock and livestock products difficult.

#### 1.6.4 Premises classifications

Premises classifications in an EAD response are as follows:

- **Infected premises (IP):** A defined area (which may be all or part of a property) on which animals meeting the case definition are or were present, or the causative agent of the EAD is present, or there is a reasonable suspicion that either is present, and that the relevant chief veterinary officer or their delegate has declared to be an IP.
- **Dangerous contact premises (DCP):** A premises, apart from an abattoir, knackery or milk processing plant (or other such facility) that, after investigation and based on a risk assessment, is considered to contain a susceptible animal(s) not showing clinical signs, but considered highly likely to contain an infected animal(s) and/or contaminated animal products, wastes or things that present an unacceptable risk to the response if the risk is not addressed, and that therefore requires action to address the risk.
- **Dangerous contact processing facility (DCPF):** An abattoir, knackery, milk processing plant or other such facility that, based on a risk assessment, appears highly likely to

have received infected animals, or contaminated animal products, wastes or things, and that requires action to address the risk.

- **Approved processing facility (APF):** An abattoir, knackery, milk processing plant or other such facility that maintains increased biosecurity standards. Such a facility could have animals or animal products introduced from lower-risk premises under a permit for processing to an approved standard.
- **Suspect premises (SP):** Temporary classification of a premises that contains a susceptible animal(s) not known to have been exposed to the disease agent but showing clinical signs similar to the case definition, and that therefore requires investigation(s).
- **Trace premises (TP):** Temporary classification of a premises that contains susceptible animal(s) that tracing indicates may have been exposed to the disease agent, or contains contaminated animal products, wastes or things, and that requires investigation(s).
- **At-risk premises (ARP):** A premises in an RA that contains a live susceptible animal(s) but is not considered at the time of classification to be an IP, DCP, DCPF, SP or TP.
- **Premises of relevance (POR):** A premises in a CA that contains a live susceptible animal(s) but is not considered at the time of designation to be an IP, SP, TP, DCP or DCPF. Animal(s) in a POR are subject to procedures applicable in the CA, such as heightened surveillance and movement restrictions.
- **Resolved premises (RP):** An IP, DCP or DCPF that has completed the required control measures, and is subject to the procedures and restrictions appropriate to the area in which it is located.
- **Unknown status premises (UP):** A premises within a declared area where the current presence of susceptible animals and/or risk products, wastes or things is unknown.
- **Zero susceptible species premises (ZP):** A premises that does not contain any susceptible animals or risk products, wastes or things.
- **Assessed negative (AN):** A qualifier that may be applied to ARPs, PORs and premises previously defined as SPs, TPs, DCPs or DCPFs that have undergone an epidemiological and/or laboratory assessment and have been cleared of suspicion at the time of classification, and can progress to another status. (Note: AN is a qualifier to document progress in the response and in the proof-of-freedom phase. It is not to be used at the same level as the other premises classifications.)
- **Vaccinated (VN):** A qualifier that can be used to identify premises that contain susceptible animals that have been vaccinated against the EAD in question.

Although these designations seem complex, it is important to understand that a property shall fit into only one classification at any given time. In addition, not all of these classifications may be needed in a particular EAD response. Based on the disease risk, the highest priorities for investigation by the disease control authority are IPs, DCPs, SPs and TPs.

On an IP, SP, DCP or TP, quarantine and movement controls will apply. On an SP, DCP or TP, other disease control actions will follow only if the premises (shearing shed or warehouse where wool is held after leaving the farm<sup>7</sup>) is reclassified as an IP. On an IP,

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<sup>7</sup> Wool warehouses contain wool from many farms. They are located in capital cities and in regional towns in all Australian states (see Appendix 4). Some wool warehouses also contain other materials that are not of animal origin (eg cotton and building materials).

wool bales may be quarantined as part of a stamping-out strategy, or other disease control actions may be compulsorily applied by the authorities. It is unlikely that it will be necessary to destroy any wool.

Classification of properties according to the above criteria is an important part of EAD control and eradication. Any restrictions that apply to a classified property will be fully explained by the disease control authority at the time of classification.

A shearing shed and the parts (or all) of a farm where infected sheep have run, or are currently running, will be classified as an IP once an EAD outbreak has been identified or is believed to have occurred.

Wool warehouses contain all or some of the following:

- bales from sheep on farms where no sheep are infected
- bales from infected sheep that left the farm before the infection was identified
- bales from sheep that were identified as infected before the wool left the farm; movement of these bales will be subject to the granting of an official permit.

Wool warehouses that contain an infectious agent may require movement and disinfection controls to be applied, in which case they would be classified as DCPFs.

Wool bales do not come in contact with sheep after they have left the farm, and the surface of the bales can be disinfected. However, wool in the bales may carry live disease agents for a period of time, or until the wool is scoured. The wool will therefore be subject to quarantine until the virus is inactivated by the passage of time or by scouring the wool.<sup>8</sup> Other treatments may be authorised by state or territory animal health authorities (eg in the past, irradiation was used to inactivate anthrax spores on imported bales of carpet wool).

## 1.7 Training in emergency animal disease preparedness

The National EAD Training Program,<sup>9</sup> managed by Animal Health Australia, provides training for livestock producers, veterinarians, other government personnel and representatives of the Australian livestock industries. The program's purpose is to prepare people for functions they may undertake in an EAD response. Each livestock industry ensures that there is a pool of skilled people trained to work in livestock industry liaison functions at state and local operational centres. It is a requirement of the EADRA that, where possible, jurisdictions use accredited, trained staff to combat an EAD.

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<sup>8</sup> The OIE Terrestrial Code states that industrial scouring with a water-soluble detergent at 60–70 °C inactivates foot-and-mouth disease virus that may be present on wool fibres.

<sup>9</sup> [www.animalhealthaustralia.com.au/training-centre/emergency-animal-disease-training-program](http://www.animalhealthaustralia.com.au/training-centre/emergency-animal-disease-training-program)

## 2 The Australian wool industry

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### 2.1 Significant issues for the Australian wool industry in the event of an EAD outbreak

#### 2.1.1 Broad issues

As at June 2014, more than 95% of Australia's wool production was exported. Most (85–90%) of these exports were as greasy wool; the remaining 10–15% was scoured, or scoured and carbonised, before export.

As an export-oriented industry, the Australian wool industry is vulnerable to the risk of an emergency animal disease (EAD) outbreak in the Australian sheep population, which is likely to disrupt international trade.

Some EAD causative agents, such as those for foot-and-mouth disease (FMD), can survive on greasy wool for a period of time and can spread through fleece-to-fleece contact.

Australia's customer countries all have veterinary requirements that would prevent importation of Australian greasy wool for some period after the identification of an outbreak of an EAD (for which wool is a risk) in Australia. The diseases of greatest concern are FMD, sheep pox, rinderpest<sup>10</sup> and Rift Valley fever.

The time taken to resume trade with customer countries will vary. The United Kingdom was not able to export wool to China (which is the destination for approximately 75% of Australia's wool exports) for 18 months after it was declared free of FMD following the 2001 outbreak. South African wool exports to China were suspended for more than 12 months after an outbreak of Rift Valley fever in 2010. This was further complicated by an FMD outbreak in South Africa's free zone that was detected in 2011.

When they leave the farm, wool bales are transported quickly across distances that range from less than 50 km to more than 500 km. This is almost invariably to warehouses of the selling agent, which may be local or a long way from the farm of origin. From there, they may be stored or transported to other centres, including capital cities. Transport is mostly by road, but may include rail (from Western Australia to the eastern states).

Large numbers of wool bales traditionally cross state borders for sale, processing or export. This may involve crossing more than one border – for example, from Queensland to Victoria.

Movement controls that would be imposed in Australia, such as those relating to movement from a restricted area or a control area, may restrict the short- to medium-term movement

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<sup>10</sup> The world was declared officially free from rinderpest infection at the OIE General Session in May 2011, following an eradication campaign conducted by the FAO/OIE Global Rinderpest Eradication Programme. However, freedom from rinderpest is a requirement for the export of greasy wool to a number of Australia's customer countries, including China and India. Consequently, this manual refers to rinderpest in Section 4 (Importing country requirements for wool of Australian origin), but not in Appendix 7 (Emergency animal diseases of importance to the wool industry).

of greasy wool from farms to an Australian early-stage wool-processing facility for scouring, or to a selling agent's warehouse.

Some wool may have left the farm before the occurrence of an EAD outbreak has been confirmed. Ease of traceability of this wool will be influenced by the time since the wool has left the farm and by the retention, or otherwise, of the identifiers applied to the wool before it leaves the farm.

Wool samples (and wool testing) are a normal part of the wool industry. Samples are taken:

- from wool bales as part of the wool-selling system
- from individual sheep for testing to assist in the selection of superior animals for breeding purposes.

Wool samples can also be transported quickly and across large distances (see Section 2.6).

### **2.1.2 Commercial implications**

Commercial implications of an EAD outbreak affecting the wool industry include the following:

- Loss of income for people and companies that take ownership of wool along the wool pipeline, including wool growers, intermediaries (such as private treaty wool merchants), wool exporters and wool processors.
- Loss of income for companies that provide services to the Australian wool industry, such as:
  - suppliers of miscellaneous farm services; transport companies; wool brokers and other selling agents; wool warehousing businesses; wool testing companies; wool processing, dumping and packing facilities; shipping companies; and the Australian Wool Exchange
  - shearers (and others who work in shearing teams), as it is unlikely that shearing of infected, or suspect infected, sheep will be permitted
  - industry associations that provide services to the Australian wool industry (whose income is a levy based on the number of bales traded or handled).
- Loss of income for Australian Wool Innovation (AWI), which is highly dependent on levies deducted from the wool growers' proceeds when wool is sold.
- Wool processors in customer countries and others in the global wool pipeline will be partially insulated because of access to stocks of Australian wool that were exported from Australia before the EAD outbreak and to wool from other countries. However, the fine wool apparel industry could suffer, as Australia's merino wool industry provides around 80% of the global supply for this sector.
- Loss of supply may result in wool processors substituting wool with other fibres. This may reduce longer-term demand for wool if there is not a 100% return to Australian wool when Australia is able to resume wool exports.

### **2.1.3 Nature of the incurred losses**

Losses will most likely be incurred by deferment of payment, the risk of a depreciation in market value and market substitution, rather than a total loss, because wool is nonperishable and the infective agent will be inactivated over time, or by scouring or other treatments. Nevertheless, an EAD outbreak will create:

- financing issues (and associated interest charges) for recurrent costs incurred in continuing to operate a business in the absence of all, or part, of the business's cash flow
- increased costs relating to improved storage and traceability systems, or decontamination to meet permit requirements for re-establishing movement of, and trade in, wool – both domestically and internationally
- additional costs for any remedial treatment and/or monitoring
- potential losses due to depreciation of market value
- job losses as businesses respond to the reduced ability to maintain their normal business operations
- likely company closures.

Compensation may become an issue for wool growers (see the **Valuation and Compensation Manual**).

#### **2.1.4 Possible longer-term implications**

If the loss of access to Australian wool in customer countries leads to fibre substitution in the long term, this may lead to a reduction in demand for wool and a loss of export income, a reduced reliance on wool from Australian farms, and job losses in the industries that service the Australian wool industry.

## **2.2 Wool production**

Wool is produced under a range of environmental conditions in Australia, from semi-arid pastoral country to high-rainfall areas. Wool-growing enterprises in the drier areas either comprise all sheep or include some beef cattle. Those in the more favourable rainfall areas invariably are mixed enterprises that may also include sheepmeat production, grain growing, horticulture or beef production.

Historically, all Australian sheep have been grown for wool production, or for meat and wool production. However, low wool prices during the 1990s and 2000s led some wool producers to introduce meat sheep breeds that either have minimal or nil fleece cover or shed their fleece (to avoid the cost of shearing). The fleeces from shedding animals remain in the paddock and are of low commercial value.

Currently, Australia is the largest wool-producing nation in the world; in particular, it is the largest producer of fine merino wool for the apparel market.

#### **2.2.1 Number and distribution of wool-producing enterprises**

The number of sheep on Australian wool-growing enterprises varies from fewer than 200 to more than 20 000. The exact number of wool-growing enterprises is not known; nor is the distribution of wool-growing enterprises according to the number of sheep or to the amount of wool produced.

However, some information on the distribution of wool production can be gained from two sources:

- Statistics can be derived from collection of the 2% wool levy for research and development and promotion, which is paid by all wool-producing enterprises to AWI on the gross proceeds of their wool sales. AWI advises that there are approximately

55 000 levy payers, of whom 39 000 paid more than \$100 in wool levies in each year of 2011–13. Although nothing can be gleaned about the distribution of sizes of these 39 000 enterprises, it can be assumed that the 21 000 enterprises that did not pay this amount would have fewer than 200 sheep, and produce five bales (or less) of wool. Some of these would be hobby farms.

- Each state is divided into areas known as ‘wool statistical areas’ (WSAs). The WSA is recorded for each ‘lot’ of wool that is sold at auction. Analysis of these data would provide an indication of the distribution of wool bales within each state. The Australian Wool Testing Authority (AWTA) has maps that show the volume of wool coming from each WSA.<sup>11</sup> These data could be aggregated for larger regions to show the origin of the larger volumes of wool in Australia; this information may be useful to authorities in disease outbreak planning and management.

### 2.2.2 Current wool production

Wool production is a major industry in all Australian states and territories other than the Northern Territory, where there are no commercial sheep flocks. The National Wool Production Forecasting Committee expects Australian wool production to be approximately 334 million kilograms of greasy wool in 2014–15, with the distribution between the states shown in Table 2.1.

**Table 2.1 Forecast Australian wool production 2014–15<sup>a</sup>**

State	Greasy wool (million kg)	Share of total (%)
New South Wales and Australian Capital Territory	125.1	37.5
Victoria	69.3	20.8
Western Australia	68.9	20.6
South Australia	53.0	15.9
Tasmania	10.1	3.0
Queensland	7.4	2.3
Total	333.8	100.0

<sup>a</sup> Current wool production forecast data are available from Australian Wool Innovation at [www.wool.com/market-intelligence/wool-production-forecasts](http://www.wool.com/market-intelligence/wool-production-forecasts).

### 2.2.3 Historical levels of wool production

Wool production has progressively dropped from its peak (and record level) of 1050 million kilograms in 1989 to its current level. The increase in production in the 1980s was stimulated by strong demand, particularly from eastern Europe and China, and the support of a reserve price scheme. The reserve price scheme had been in place since 1973 and was managed by the former Australian Wool Corporation.

Global demand for wool declined in the late 1980s. The impact of the decline in demand was exacerbated by:

- the volume of production, which was at its highest level ever

<sup>11</sup> WSAs were originally drawn by the Australian Bureau of Statistics and are widely used in the wool trade to define the general source of wool. WSAs can be viewed at [www.awex.com.au/market-information/wool-statistical-areas-wsa/](http://www.awex.com.au/market-information/wool-statistical-areas-wsa/)

- a total collapse in demand from eastern Europe and China, following the collapse of communism in eastern Europe in 1989 and the unrest in China the same year.

More than one year's production was bought and stockpiled by the former Australian Wool Corporation under the reserve price scheme. The reserve price scheme ultimately became unsustainable and was withdrawn in 1991.

Prices remained depressed during the 1990s because of the oversupply of available wool (that was inflated by the stockpile) and falling demand. Many wool-producing enterprises reduced their dependence on wool by moving into, or expanding, other farming enterprises. This caused a falling trend in wool production, which continued until 2011 when better prices and seasons following the prolonged drought led to some stabilisation of wool production.

Nevertheless, Australia continues to be the largest wool-producing country in the world and supplies wool to approximately 80% of the world's fine wool apparel industry.

## **2.3 Wool exports**

More than 95% of Australia's wool is exported, of which 85% or more is exported as greasy wool.

The customer base has changed during the past 50 years, moving from domination by the United Kingdom and western Europe to Japan, then to eastern Europe (the former Soviet Union, in particular) and, since the mid-1990s, China. China has taken 73–78% of Australia's wool exports since 2008–09, up from 23% in 1996–97 and 42% in 2001–02.

Australia exported wool to 30 countries in 2012–13, as shown in Table 2.2.

**Table 2.2 Australia's wool export destinations 2013–14**

<b>Country</b>	<b>Weight (million kg)</b>	<b>Share of total (%)</b>
China	234.1	74.9
India	25.0	8.0
Czech Republic	14.8	4.7
Italy	14.1	4.8
Republic of Korea	6.0	1.9
Malaysia	5.2	1.7
Egypt	3.3	1.0
Taiwan	2.5	0.8
United Kingdom	1.2	0.4
Thailand	1.0	0.3
Subtotal	307.2	98.2
Other destinations (20)	5.5	1.8
<b>Total</b>	<b>312.8</b>	<b>100.0</b>

Note: Updated export data are collated monthly by the Australian Wool Industries Secretariat.  
Source: Australian Bureau of Statistics

## 2.4 Wool supply chain and exchange of ownership

Knowledge of how wool passes along the supply chain is fundamental to the development of biosecurity strategies for the wool industry, given that it is likely that some wool will have left the farm before the confirmation of an EAD outbreak. As well, this knowledge can enable a strategy of meeting export certification requirements involving storage time at a particular temperature or disinfection, so that market access can be regained more rapidly.

The wool supply chain runs from shearing on farm (see Appendix 1) to the sale of fabrics and garments in a retail store or online. The following sections address the supply chain from shearing to the first stages in processing (scouring and carbonising), since the EADs of importance to the Australian sheep and wool industry (with the possible exception of scrapie; see Appendix 7) are inactivated by scouring or other treatments.

Each bale is identified as it is pressed with the farm identifier (the farm brand), a standardised quality description of the wool and a sequential bale number. The movement of wool bales from farm to be sold and then scoured, and access to these and other identifiers that can be used to trace movement of the wool bales are addressed in detail in Section 3, and Appendixes 2 and 3. The process is illustrated in Appendix 5, and examples of typical associated forms are provided in Appendix 6.

### 2.4.1 Auction

Auction is the most common form of exchange of ownership for wool growers.

Following shearing, wool is typically transported by road to a wool broker's warehouse, where it is prepared for sale by auction. Most wool is ready for auction within 6 weeks of shearing, although it may be stored beyond this time if a grower decides to withhold their wool from the market. The wool is bought by a wool buyer/exporter or a wool processor for sale to an international wool trader or wool processor, or for their own use.

Before sale, the broker allocates individual bales to 'sale lots' according to a number of criteria of commercial importance to wool buyers, and the similarity of these criteria with those of other bales in the sale lot. The criteria include the origin of the wool (eg from the body of the sheep or from the belly), and its 'style', estimated yield, fibre diameter, strength and fibre length. Sale lots average around 5.8 bales in size.

The broker uses data prepared and recorded on the 'classers' specification'<sup>12</sup> (see Appendix 6) when creating the sale lots. The classers' specification also includes the date of shearing.

Once wool is allocated to a sale lot, the sale lot is sampled for testing in a wool test house (see Section 2.5). The test results and basic descriptive data – such as farm brand, wool type/description, number of bales and net weight – are collated in the wool broker's database. This information is included in a sale catalogue, which is made available to buyers in both an electronic form and as a printed document.

The broker also provides a sample (the display sample) of the wool from the sale lot for buyers to inspect before the auction. For elite superfine wool, the bales themselves are made available for inspection by the buyers. Such wool is usually sold in sale lots of one bale.

Some sale lots of low commercial value may be sold without testing. In these cases, one or more bales from each sale lot are also made available for inspection by buyers.

Wool exporters and processors take delivery of the wool they have bought once it has been paid for. The normal 'prompt' date for payment is the Friday of the week following the auction.

### **Auction selling centres**

Auction sales are held in Sydney, Melbourne and Fremantle (as at January 2015). Auctions are held in one or more of these locations in 45 weeks of the year.<sup>13</sup>

#### **2.4.2 Private treaty trading**

The second most common form of exchange of ownership is by direct sale from the wool grower to a private treaty wool merchant. The main difference from selling via auction is that the private treaty merchant takes ownership of the wool on receipt in their warehouse from the grower, for an agreed price. The agreed price may be subject to variation, depending on test results.

The private treaty merchant may retain the wool for their company's use (eg if it has a processing facility as part of its operating structure). Alternatively, the wool, or wool that is surplus to requirements, may be sold directly to a wool exporter or offered for sale at auction.

Wool sampling and testing are also an integral part of private treaty wool trading.

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<sup>12</sup> The classers' specification is a series of documents filled in by the wool classer during shearing. It lists each 'classed line' of wool and the bale numbers of each bale allocated to each line.

<sup>13</sup> Further information about auction selling centres and sales can be obtained from the Australian Wool Exchange ([www.awex.com.au](http://www.awex.com.au); phone 02 9248 6100).

### **2.4.3 Other forms of exchange of ownership**

Some wool growers choose to sell their wool directly to a wool processor, either as the output from their farm or amalgamated with wool from other farms.

Such arrangements are usually managed by a third party who is experienced in the exchange of ownership of wool (eg a wool exporter, a private treaty merchant or some other person with the requisite knowledge and skills).

Ownership may transfer to the processor when the wool is passed to the processor, or the grower may retain ownership until the wool is further processed. In some cases, ownership may be retained through to fabric or garment manufacture. These arrangements are known as 'supply chains' in the wool industry.

As with sale at auction, wool sampling and testing are an integral part of supply chain trading.

### **2.4.4 Post-sale processes**

Once wool is bought by an exporter or processor, or possession is passed to a third party who is arranging the export of the wool, the wool is either:

- exported directly as greasy wool, or
- sent to a local early-stage processing plant<sup>14</sup> for scouring, or scouring and carbonising, after which it may be sold to an Australian domestic customer or an overseas customer.

In the case of export, all Australian greasy or early-stage processed wool is packed into containers for overseas shipment. Wool bales may be compressed ('dumped') under hydraulic pressure before being packed into containers. Bales may be dumped alone, in units of two bales (double dumped) or in units of three bales (triple dumped).

Dumping occurs at specialised facilities that are located close to the port of departure. These facilities are known in the wool industry as 'wool dumps'. The dumping service includes packing bales into containers and transferring them to the port for shipment.

In the case of bales that are packed into containers without being dumped, the packing may occur at a dumping facility or at another facility that provides these services.

Containers are transferred to the port by rail in Sydney, and by road or rail in other locations.

## **2.5 Bulk classing and interlotting**

Most wool is sold in the name of the farm where it was produced and in the bales that it was pressed into in the shearing shed.

Wool that is not considered suitable for selling as described above is usually treated in one of two ways when being prepared for sale in the selling agent's warehouse:

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<sup>14</sup> Australia has three early-stage wool-processing facilities – in Laverton (suburban Melbourne), Geelong and Salisbury (suburban Adelaide).

- the wool is removed from the bales and is 'bulk classed' together with wool from other farms, re-pressed into bales and offered for sale in the name of the bulk-classing facility, or
- the entire bales are 'interlotted' with wool bales from other farms, and the wool is offered for sale as a composite lot, known as an interlot.

## **2.6 Wool sampling and testing**

Wool sampling and testing are an integral part of the exchange of ownership of Australian wool. Almost all Australian wool is sampled and tested before it is sold. The logistics of the wool industry allow bales to be sampled in a variety of locations throughout Australia and for the samples to be sent to centralised selling locations, where the wool can be sold without the bales needing to be present.

AWTA is the only supplier of the certified sampling and testing services used in the exchange of wool ownership in Australia. AWTA has one wool-testing laboratory in Melbourne and another in Fremantle, and takes wool samples in a number of locations across Australia (see Appendix 4).

Three main types of samples are taken: 'grab' samples, 'core' samples and 'tuft' samples.

### **2.6.1 Grab and display samples**

Grab samples are taken by a grab machine, which penetrates the sides of individual wool bales with a hydraulically powered mechanical claw (see Appendix 5). Each bale in a sale lot is sampled, and the grab samples are amalgamated into a single 'display' sample. The display sample is made available to wool buyers for inspection before sale.

Grab samples normally average around 150–200 g. Display samples can vary from around 3 kg to more than 5 kg, depending on the number of bales in the sale lot.

### **2.6.2 Tuft samples**

Tuft samples are taken by a 'tufting' machine, which plucks small tufts of a few 'staples' from the display samples. The tufts are amalgamated to create a composite tuft sample for each sale lot and are wound onto a reel for transport (see Appendix 5).

AWTA staff pluck a single staple from each tuft and conduct certified tests for staple length and staple strength on the composite set of staples from each sale lot.

### **2.6.3 Core samples**

Core samples are taken by a 'coring' machine, which penetrates the length of individual bales in a sale lot with a set of core tubes  $\frac{7}{8}$  inch (about 22 mm) in diameter (see Appendix 5).

AWTA conducts a series of tests on core samples for certified measurement of the yield of clean fibre and the amount of vegetable matter (seeds, burrs, sticks, etc) in the greasy wool, and the average fibre diameter and coefficient of variation of fibre diameter.

A small number of bales may be sampled manually using a hand-held coring device if a mechanical coring machine is not available.

## **2.7 Wool industry organisations**

Wool industry organisations that represent wool growers, sheep breeders and service providers will be a valuable source of information because of their knowledge of the wool industry, and wool or sheep movements. They will also be efficient distributors of information to their members in the event of an EAD outbreak.

Appendix 8 lists the names and contact details of these organisations.

## 3 Wool storage and security of wool during transport

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### 3.1 Wool storage

#### 3.1.1 Wool bales

Wool is a nonperishable product that is securely packed into wool bales and identified before it leaves the shearing shed. Wool bales can therefore be stored (and treated, if necessary – for example, by disinfection of the bale surfaces, as required in the case of an outbreak of foot-and-mouth disease) until the causative agent of an emergency animal disease has been inactivated.

Wool bales are normally transported from the shearing shed to the warehouse of a broker, private treaty merchant, other selling agent or early-stage wool processor during or immediately after shearing.

In other situations, the wool grower may retain the wool in the shearing shed or some other storage location on the farm, if it is intended to offer the wool for sale at a later date (eg because of dissatisfaction with current wool prices).

The time that wool bales spend in the warehouse of a broker, private treaty merchant, other selling agent or early-stage wool processor depends on the time taken for the wool to be sold or processed. Wool to be offered for auction is usually sampled and sold within 4–6 weeks of shearing. However, the bales may remain in the broker's warehouse for longer periods (months) if the wool is not sold when first offered for sale or the wool grower decides to wait until a later date to offer the wool for sale (eg because of dissatisfaction with current wool prices). Privately purchased wool is usually sold as soon as possible.

Once the wool is sold, the buyer or exporter usually takes delivery of the wool by the end of the following week and sends it to a wool-dumping/packing facility, a local scouring facility or another warehouse.

Storage time at the dump is usually less than 2 weeks.

#### 3.1.2 Wool samples

Display samples are retained by the broker or private treaty merchant until the wool they came from is sold. The display samples are then bulk classed together with other display samples and offered for sale over the next few weeks.

Tuft samples are retained at the Australian Wool Testing Authority (AWTA) until the wool is tested. Core samples are destroyed during the testing. Any residual untested core sample material is retained until the wool is expected to be sold, in case a client requests a retest before the wool is sold.

### 3.2 Security of wool bales during transport

Almost all wool is transported from farms in new, secure, nylon wool packs. Wool packs are manufactured according to standards defined and maintained by the Australian Wool

Exchange. They are manufactured offshore and are subject to quality assurance testing for compliance with the manufacturing standards set by the Australian Wool Exchange.

Each wool pack has four overlapping flaps that are closed over the top of the wool when pressing is completed. The flaps are held in place by a total of nine bale fasteners. No wool protrudes from a newly pressed wool bale, either in the shearing shed or during transport.

Wool bales are always stacked on trucks or trailers with the top of each bale facing the centre of the truck, or the front of the truck (see Appendix 5). The top of the bale never faces the outside of the truck.

Transport may be on open trucks and trailers, but this is progressively changing to trucks and trailers with a covered top and sides.

Small loads of wool (eg 4-5 bales) may be transported on a tray-top utility from a farm to a private treaty wool merchant's warehouse in a nearby town.

Wool is never transported as loose fibre (as happens with cotton, for example).

Wool bales that have been transported to a wool warehouse are further transported to either another warehouse, to a wool dumping/packing facility or to an early-stage processing facility.

A consignment note ('cart note') accompanies each truck or rail load of wool. It is dated and includes details of each bale: the brand, wool description and bale number.

### **3.3 Security of wool butts and bags during transport**

Small amounts of wool are transported in butts or bags. Wool butts and bags are relatively loosely filled, but are securely fastened at the top to ensure that there is no loss of fibre, for commercial reasons.

Wool butts and bags are normally transported across short distances (eg from a farm to a private treaty wool merchant's warehouse) in a utility or similar small commercial vehicle.

This is a less formal process than occurs with wool bales, and is unlikely to involve the use of a cart note.

### **3.4 Security of wool samples during transport**

#### **3.4.1 Wool samples used in the exchange of ownership of wool**

##### **Display samples**

Individual display samples are packed in a durable, airtight plastic bag. The top of the display sample bag is normally folded over if the sample's movements are within the one warehouse.

Individual display samples that travel from one warehouse to another (either within the same city or town, or between cities and towns) are normally folded over at the top ('goose-necked') and sealed with an elastic band. The individual sample bags are packed into wool packs and sealed for transport by road or air.

A 'weight note' is included in each sample; this contains the date of sampling, the farm brand, the wool description, and individual bale numbers and weights (see Appendix 6).

A cart note also accompanies each consignment of wool samples.

### **Tuft samples**

Tuft samples taken from display samples for staple length and strength testing are placed on a mesh belt, which is wound onto a reel (see Appendix 5) by the tuft-sampling machine. Individual reels are packed in custom-made containers for transport to AWTA.

The samples are transported by AWTA staff or by a cartage contractor. A cart note accompanies each consignment that travels via cartage contractor.

### **Core samples**

Individual core samples are collected in durable, airtight plastic bags, which are folded at the top and goose-necked at the sampling line. Each sample bag is then placed in a second plastic bag, which is goose-necked and sealed with an elastic band (see Appendix 5). The use of two plastic bags is for technical reasons – it ensures that the core sample does not lose or gain any moisture before testing.

Individual samples are packed in a custom-made durable and sealable bag for transport to AWTA. Each of the bags contains a 'sample summary', which records the identification number of the individual samples.

A weight note is included in each sample, and a cart note accompanies each consignment of wool samples that travels via cartage contractor.

#### **3.4.2 Wool samples taken on a farm**

Samples taken from individual sheep for performance testing (fleece measurement samples) are placed in small plastic bags and sealed with an elastic band (see Appendix 5). The individual sample bags are packed in a secure container of some form (eg large plastic bag, wool pack, cardboard box). The containers are securely sealed for transport.

Miscellaneous samples may be taken from wool bales or wool bins in the shearing shed during shearing. They are packed in a securely sealed durable plastic bag for transport.

The security of such samples depends on the method of transport to the laboratory. Samples that are sent via a cartage contractor will be accompanied by a cart note. Samples that are delivered by the wool grower or by a friend are unlikely to have any detailed accompanying documentation.

## 4 Importing country requirements for wool of Australian origin

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The majority of Australia's customer countries minimise their risk of receiving wool that may be carrying the causative agent of an emergency animal disease (EAD) by requiring certified endorsement regarding the disease status of the sheep from which the wool was shorn and/or of the regions where the wool was grown.

This endorsement is reported on a government export certificate supplied by the Australian Government Department of Agriculture. Such a certificate is known as a Health Certificate by Australian wool exporters (see Appendix 6). Health Certificates are requested by Australian wool exporters for each export consignment and become part of the documentation supplied by exporters to their international customers.

If a correctly completed Health Certificate cannot be presented for consignments of greasy wool, or the claims made on it are no longer accurate (eg if Australia's disease status changed), it is unlikely that customs and quarantine officers in the customer country would allow entry of the wool. The options then available to the wool exporter are:

- to return the wool to Australia; this is generally only possible if official seals that guarantee the product's integrity have not been compromised
- to redirect the wool to an alternative customer country that is prepared to accept the consignment; this is unlikely to be possible if the reason for refusal is perceived EAD risk
- to have the wool destroyed under official control.

Australia's principal customer countries do not require a government export certificate for scoured and carbonised wool.

The importing requirements of Australia's principal customer countries and regions are described in Table 4.1. The data in Table 4.1 are up to date as at 1 June 2015. Updates to these requirements can be monitored on the MICoR (Manual of Importing Country Requirements) website of the Australian Government Department of Agriculture.<sup>15</sup> (Registration with the Department of Agriculture is needed to obtain a user code and password to access this website.)

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<sup>15</sup> [www.agriculture.gov.au/micor/meat](http://www.agriculture.gov.au/micor/meat)

**Table 4.1 Current importing country requirements for wool of Australian origin**

<b>Country/region</b>	<b>Requirements (endorsement included on Department of Agriculture export certificates)</b>
China	<p>The sheep are of Australian origin, or have been raised in Australia for more than 3 months</p> <p>The wool was produced solely within Australia</p> <p>FMD and rinderpest do not exist in Australia</p> <p>Anthrax is not prevalent in the district where the wool was grown</p> <p>Bluetongue and other enzootic diseases are not present in the area where the wool was grown</p>
Egypt	<p>The sheep are of Australian origin, or have been raised in Australia for more than 3 months</p> <p>The wool was produced solely within Australia</p> <p>FMD and rinderpest do not exist in Australia</p> <p>Anthrax is not prevalent in the district where the wool was grown</p> <p>The wool has not come from an area or animals that were under quarantine for anthrax, or from animals that were vaccinated against anthrax</p>
European Union	<p>FMD and sheep pox have not been identified in Australia for the previous 12 months, and sheep have not been vaccinated for these diseases in the past 12 months</p> <p>The wool was shorn at least 21 days before entry into the EU; this must be declared on an Importers' Declaration, used when importing wool into the EU</p>
India	<p>The sheep are of Australian origin, or have been raised in Australia for more than 3 months</p> <p>The wool was produced solely within Australia</p> <p>FMD and rinderpest do not exist in Australia</p> <p>Anthrax is not prevalent in the district where the wool was grown</p>
Japan	<p>The sheep are of Australian origin, or have been raised in Australia for more than 3 months</p> <p>The wool was produced solely within Australia</p> <p>FMD and rinderpest do not exist in Australia</p> <p>Anthrax is not prevalent in the district where the wool was grown</p> <p>The wool is free from any evidence of disseminating causative agents of any animal communicable disease</p>
Malaysia	As for India
Republic of Korea	<p>The sheep are of Australian origin or have been raised in Australia for more than 3 months</p> <p>The products were treated solely within Australia</p> <p>Australia has been free from:</p> <ul style="list-style-type: none"> <li>• FMD for the past year</li> <li>• vesicular stomatitis, rinderpest, Aujeszky's disease, maedi–visna and enzootic abortion of ewes for the past 2 years</li> <li>• peste des petits ruminants and sheep pox for the past 3 years</li> <li>• Rift Valley fever for the past 4 years</li> <li>• scrapie for the past 5 years</li> </ul> <p>Australia does not vaccinate against the above diseases or bluetongue</p> <p>The method of transport prevents contamination by any communicable disease pathogens</p>
Taiwan	As for India
Thailand	<p>The sheep are of Australian origin, or have been raised in Australia for more than 3 months</p> <p>The wool was produced solely within Australia</p>

Country/region	Requirements (endorsement included on Department of Agriculture export certificates)
	<p>FMD and rinderpest do not exist in Australia</p> <p>Anthrax is not prevalent in the district where the wool was grown</p> <p>The wool has been produced in an area in which no disease listed by the OIE has occurred that infects the particular species for a radius of 15 km</p> <p>The wool has not come from animals or from properties quarantined because of a case of anthrax</p>

EU = European Union; FMD = foot-and-mouth disease; OIE = World Organisation for Animal Health

## 5 Wool industry EAD response planning

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### 5.1 Aims and requirements for wool industry response planning

Emergency animal disease (EAD) response planning is a critical part of the wool industry's preparedness should there be an outbreak, or suspicion of an outbreak, of an EAD in Australia. Response planning will assist wool growers and others in the wool and transport industries to work with biosecurity officers to manage an EAD outbreak with the highest degree of mutual understanding and efficiency.

Wool industry EAD response planning will be complementary to EAD response planning for the sheep industry; it is likely that there will be some overlap between the two so that each industry's response plans have stand-alone status.

A wool industry EAD response plan has two related objectives, covering the role that relevant wool enterprises can play in:

- managing, controlling and eradicating an EAD outbreak
- implementing protocols to help minimise time out of export markets, particularly in working with relevant authorities to certify EAD-specific conditions for wool export (see Appendix 7).

Of fundamental importance is that all wool enterprises observe the following basic tenets relating to quarantine, movement control and traceability:

- Do not receive any wool from any declared areas.
- Hold and do not release wool until it is certain that the movement is deemed safe – that is, your enterprise is not within a declared area and has not received wool from a declared area, or the wool has otherwise been classified as safe (via permit, where necessary) because it meets treatment and/or time-at-temperature requirements.
- Keep records relating to identifying and tracing wool on your enterprise readily accessible, comprehensive and complete, and include the origin, transit points and destinations, and all relevant dates.

The following sections provide further details of the issues and policies that specific wool enterprises should become familiar with as part of their EAD response planning for wool (this does not cover sheep on farm). Further details are disease specific and can be found in the relevant **Disease Strategy or Response Policy Brief**.

A wool industry EAD response plan will document all procedures for the management, control and eradication of an EAD outbreak, to be undertaken in collaboration with jurisdictional authorities, including the issues listed below.

#### 5.1.1 On the farm

- Movement controls for wool bales, people and vehicles.
- The need for permits or otherwise.

- Tracing procedures for wool that has left an infected premises (IP) or suspect premises (SP), including information required (eg that provided in the 'wool book'<sup>16</sup> and classers' specification, details of transport company(ies) used to transport wool, relevant dates and the destination of the wool).
- Decontamination procedures for wool bales, premises and vehicles.
- Requirements for inactivation of the EAD agent (eg time and temperature requirements, or other mechanisms).
- Methods of spread of the EADs of significance to the wool industry.
- Provisions and procedures for compensation.

### **5.1.2 Transport industries**

- Maintaining security of transported wool in relation to risk of disease spread (eg adequacy of baling, secure covering to minimise airborne wool loss from trucks).
- Standstill requirements. A national livestock standstill will be implemented for at least the first 72 hours in response to a confirmed major EAD outbreak such as foot-and-mouth disease. The standstill applies to livestock and does not automatically apply to the transport of livestock products, such as wool. However, authorities may have discretion to extend the standstill if deemed appropriate via a risk analysis.
- Decontamination procedures.
- Movement controls for wool, vehicles and people.
- Requirement for permits if crossing declared area boundaries.

### **5.1.3 Selling agent's warehouse or wool-processing facility in Australia**

- Records required for tracing wool from IPs or SPs, including relevant dates.
- Quarantine requirements for wool.
- Decontamination procedures for wool bales, premises and transport.
- Requirements for inactivation of the EAD (eg time and temperature requirements, or other mechanisms).
- Records required for tracing samples that have been taken from wool bales from IPs or SPs.

### **5.1.4 Wool-testing laboratory**

- Records required for tracing wool samples from IPs or SPs, including dates.
- Management procedures for any untested samples or residual sample material.

### **5.1.5 Wool exporters**

- Records required for tracing wool from IPs or SPs, including dates.

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<sup>16</sup> The wool book is a book in which the wool presser records the bale number, bale weight and wool description for each bale as it is pressed.

### **5.1.6 Wool-dumping and/or packing facility**

- Records required for tracing wool from IPs or SPs, including dates.
- Isolation requirements for wool.
- Decontamination procedures for wool bales, containers, premises and transport.
- The requirements for inactivation of the EAD (eg time and temperature requirements, or other mechanisms).

### **5.1.7 Shipping companies**

- Records required for tracing containers that contain bales of wool from IPs or SPs, including dates.

## **5.2 Maintenance of the wool industry response plan**

Because the likelihood of an EAD outbreak is considered to be very low by most Australian wool growers and those involved in the wool supply chain, it will be necessary to ensure that:

- the network of trained industry liaison personnel is well established and extended to the post-farm industry – the response plan will need to include procedures to ensure that these personnel are kept up to date, and that any changes to the list of relevant industry contacts are quickly incorporated and disseminated to relevant people and organisations; there will be a need to provide additional wool industry-specific training to industry liaison personnel relating to meeting export certification requirements
- wool growers have quick and easy access to the response plan
- the response plan is written in a clear and unambiguous manner that is easily understood by biosecurity officers, industry liaison personnel, wool growers, those in the wool supply chain, and key people at the wool industry associations and organisations that provide services to wool growers.

There are approximately 55 000 Australian rural enterprises producing varying amounts of wool, from hobby farms to extensive sheep-grazing enterprises. This broad and diverse nature of the wool industry creates problems in communication, both in developing effective preparedness for an EAD outbreak and in creating an awareness of the implications and requirements in the event of an outbreak.

Given these circumstances in Australia, it is important that the response plan recognises the role that can be played by organisations that provide services to wool growers. In particular, the role of growers' wool-selling brokers, private treaty merchants or other selling agents will be of key importance, because these people have both a commercial and a personal relationship with their wool grower clients.

Organisations such as the National Council of Wool Selling Brokers of Australia, the Inland Woolbrokers Association and the Private Treaty Wool Merchants of Australia have direct links to these service providers.

### **5.3 Tracing wool that has left the farm**

It is highly probable that some wool will have left the farm before an EAD is confirmed. Ease of traceability of these bales will be essential for implementation of movement controls required by Australian legislation and customer countries.

Section 3, and Appendixes 2 and 3 contain details about the movement, identification, traceability and security in transit of wool bales and wool samples that can assist in:

- tracing wool bales that have left the farm
- developing response strategies for the wool industry to an EAD.

## Appendix 1 Shearing and wool classing

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Shearing is the starting point in the harvesting, identification and movement of wool along the pipeline. Sheep are shorn in mobs (or groups) that are likely to have generally similar fleece characteristics. Mobs are likely to be of similar breed, gender and age, and to have been run together during the period since the last shearing, or for a substantial period before shearing.

This provides an orderly movement of wool through the shearing shed. It also maximises the opportunity for the wool classer to class (aggregate) individual fleeces into 'lines' of fleeces that have similar commercially important characteristics.

Fleeces do not remain intact. Some parts that are of a lesser commercial value are removed and allocated to different lines. This includes:

- wool from the belly, which is normally stained and less stylish; such wool may be partially entangled and will have some grass seed contamination
- wool from around the lower parts of the body and the breech, which have more contact with the ground when sheep lie down; such wool is generally more contaminated with grass seeds and dirt, and may be partially stained
- wool from the neck region, which usually contains higher concentrations of grass seeds and may be more entangled.

These less valuable components may comprise about 20% of the original shorn fleece and are classed separately.

Wool from each line is progressively pressed into bales of around 175 kg, on average.

Bales of 'fleece' wool may contain the wool from 20–40 sheep (or more), depending on the weight of the individual fleeces. Bales of wool from the less commercially valuable parts removed during classing contain wool from many more sheep.

### Identification of individual sheep at shearing

Individual sheep are not normally identified at shearing. However, some farms identify some, or all, individual sheep using numbered ear tags. This is done to record the performance of individual animals (eg to identify potential replacement breeding stock).

## Appendix 2 Wool bale movement, identification and traceability

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### Wool bale movement

Wool bale movement starts at the farm and finishes when the wool is emptied from the bales for scouring at an early-stage processing facility in Australia or another country.

Most wool bales go direct from the farm to a warehouse where the wool is stored before sale and subsequent export. A small number of bales go directly from the farm to an Australian early-stage processing facility, where the wool is scoured and may also be carbonised.

#### Farm to warehouse or Australian early-stage wool-processing facility

Most greasy wool is taken to a city-based or regionally based warehouse for preparation for sale, or for aggregation for export. This applies to wool that is being offered for sale at auction, wool that is being sold in a private treaty trade or wool that is being sold as part of a supply chain transaction.

Table A2.1 shows characteristics of movement of wool bales from farms to warehouses.

**Table A2.1 Wool bale movement: farm to warehouse**

From/to	Method of transport	Distance travelled
<b>From:</b> Farm <b>To:</b> City-located warehouse (eg Melbourne or Brisbane)	Road	Varies greatly. It will be >150 km in most instances and will often be >500 km Large numbers of bales cross state borders
<b>From:</b> Farm <b>To:</b> Regionally located warehouse (eg Dubbo)	Road	Can range from <50 km to >500 km Some bales cross state borders

Table A2.2 shows characteristics of movement of wool bales from farms to early-stage processing plants.

**Table A2.2 Wool bale movement: farm to an Australian early-stage wool-processing facility**

From/to	Method of transport	Distance travelled
<b>From:</b> Farm <b>To:</b> Centrally located early-stage wool-processing facility (eg Melbourne)	Road	Ranges from <100 km to >500 km Some bales cross state borders

#### After sale

When wool is sold, it is either exported directly as greasy wool or is sent to an Australian early-stage processing plant for scouring, or scouring and carbonising.

Wool that is being exported directly as greasy wool is sent to a wool-dumping facility (or other packing facility) to be packed into containers before shipment. Wool-dumping/packing facilities are located in close proximity to the port of departure.

Table A2.3 shows characteristics of movement of wool bales from warehouses to wool-dumping/packing facilities.

**Table A2.3 Wool bale movement: warehouse to wool-dumping/packing facility**

From/to	Method of transport	Distance travelled
<b>From:</b> City-based warehouse (eg Melbourne) <b>To:</b> City-based wool dumping facility or other packing facility (eg Melbourne)	Road or forklift, if the wool-dumping facility and the source warehouse are located in the same warehouse	<50 km in most cases
<b>From:</b> Regionally based warehouse (eg Dubbo) <b>To:</b> City-based wool-dumping facility or other packing facility (eg Sydney)	Road	Varies greatly. It will be >150 km in most instances and will often be >500 km Large numbers of bales cross state borders

Table A2.4 shows characteristics of movement of wool that is to be scoured, or scoured and carbonised, in Australia.

**Table A2.4 Wool bale movement: warehouse to an Australian early-stage wool-processing facility**

From/to	Method of transport	Distance travelled
<b>From:</b> City-based warehouse (eg Melbourne) <b>To:</b> Centrally located early-stage wool-processing facility in the same city, or wool-processing facility in another city	Road; possibly rail, if moving from Fremantle to eastern states	Varies greatly. It will be <50 km if in the same city, but can be >500 km if in another city Large numbers of bales cross state borders
<b>From:</b> Regionally based warehouse (eg Dubbo) <b>To:</b> Centrally located early-stage wool-processing facility	Road	Varies greatly. It will be >150 km in most instances and will often be >500 km Large numbers of bales cross state borders

### After scouring, or scouring and carbonising

Scoured and carbonised wool may be packed into:

- ‘high-density’ bales, which are packed into containers on-site and transported by road and/or rail directly to the port for shipment
- ‘conventional’ wool bales and sent to a wool-dumping facility for dumping and/or packing into containers, and transfer to the nearby port, or
- conventional wool bales and sent to a local manufacturing facility where it will undergo further processing (eg the manufacture of bedding material).

Scoured and carbonised wool is not considered to be a risk should there be an emergency animal disease (EAD) outbreak in Australia – scouring is one of the treatments for inactivating the causative agent of most EADs of importance to the wool industry.

Table A2.5 shows characteristics of movement of wool from an early-stage wool-processing facility.

**Table A2.5 Wool bale movement: early-stage wool-processing facility to port or dumping facility**

From/to	Method of transport	Distance travelled
<b>From:</b> Early-stage wool-processing facility <b>To:</b> Port	Road or rail (eg containers may be railed from Adelaide to Melbourne for shipment)	Varies from <100 km, if in the same city, to >500 km, if the port is in a different city Some containers cross state borders
<b>From:</b> Early-stage wool-processing facility <b>To:</b> Wool-dumping or other packing facility	Road	Mostly <50 km, if the wool-processing facility is in the same city; otherwise, it will be >150 km and may be >500 km
<b>From:</b> Early-stage wool-processing facility <b>To:</b> Another Australian city-based, or regionally based processing/manufacturing facility	Road	<50 km if the other manufacturing facility is in the same city; otherwise it will be >150 km and may be >500 km Some bales may cross state borders

Table A2.6 shows characteristics of movement of wool from a wool-dumping or packing facility to the port.

**Table A2.6 Wool bale movement: wool-dumping/packing facility to a port**

From/to	Method of transport	Distance travelled
<b>From:</b> Centrally located wool-dumping facility or other packing facility (eg Melbourne) <b>To:</b> Port	Road or rail (Sydney only) The wool bales travel in containers for shipping	<50 km in most cases; can be as short as 1 km May be >500 km if the dumping/packing facility is remote from the port (eg dumped and packed in Adelaide, but shipped from Melbourne)

## Wool bale identification along the pipeline

Wool bales can be transported across long distances in a relatively short time. They may cross state borders and are usually ultimately shipped overseas. The integrity of the identification processes from shearing until the wool reaches an early-stage wool-processing facility is fundamental to the development of response strategies to an EAD incident affecting the wool industry.

The integrity of the identification processes beyond scouring is less important from an EAD perspective, since scouring inactivates the causative agents of most EADs.

The identification process commences in the shearing shed, immediately after each wool bale is pressed. Other identifiers are progressively added as the wool bales are amalgamated into 'lots' for sale and further amalgamated into wool exporters' 'consignments' for export or for processing in Australia.

Most, but not all, bales retain the identifiers created in the shearing shed through to when the bales reach an early-stage wool-processing facility.

The creation and integrity of wool bale identifiers along the pipeline follows one of the paths described in the following sections and tables.

### **Wool bale and associated identifiers**

Individual wool bales are physically identified in the shearing shed (see Appendix 5) by:

- the farm wool brand/identification (eg 'LAC', as seen in the example bale in Appendix 5)
- the wool description/wool type (eg 'AAA FX', which indicates good-quality fine crossbred fleece wool)
- a sequential bale number, commencing at 1, that indicates the order of pressing
- the wool classer's stencil and registration number, if the wool classer is registered with the Australian Wool Exchange.

Wool bale identifiers are written or stencilled on one side of the bale, known as the face, and on a bale label, which is pre-fastened to the top of the wool bale. This information is also manually recorded in a wool book<sup>17</sup> (see Appendix 6) as each bale is pressed and identified. The bale detail information is later re-sorted and recorded on a document known as the classers' specification (see Appendix 6), which is designed to assist the wool grower's selling agent in preparing the wool for sale.

The shearing date is not recorded on the wool bale, but is recorded in the wool book and on the classers' specification.

The bales are prepared for sale and amalgamated into sale lots by the wool broker after they are received in the warehouse of the wool broker, private treaty merchant or other selling agent. Each sale lot is identified by a unique inhouse 'weight note number' (sometimes called a folio number). Each lot that is offered for sale at auction is also identified by an inhouse sale and lot number.

Wool selling seasons run from July to June. Each sale is identified by the sequential week number within the selling season (ie sale numbers run from 1 in the first week of July to 52 or 53 in the last week of June of the following year). Lot numbers restart at 1 for each new sale.

The farm identifiers, weight note/folio number, and sale and lot number are recorded in the database of the broker, private treaty merchant or other selling agent. This information is also recorded in the Australian Wool Testing Authority's (AWTA's) database when each lot is sampled and tested. AWTA also records the test certificate number. This number and the test results are electronically transferred to the selling agent for inclusion in their database.

Wool buyers or exporters receive the above information for the wool they buy and allocate to consignments for export or for processing in Australia. The wool exporter also instructs the wool-dumping/packing facility to further identify the individual bales with 'countermarks' that are unique to each export consignment.

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<sup>17</sup> The Australian Wool Exchange is developing an electronic wool book for recording wool bale and shearing details on the farm, and for transmitting this information to the wool grower's selling agent.

The initial individual bale identifiers are usually, but not always, retained until the bales are emptied immediately before scouring.

After the wool has left the farm, all information is passed on electronically. The electronic data formats and data transmission protocols are defined, developed and maintained by the Wool Industry EDP Users Group.<sup>18</sup>

#### **Retention, until scouring, of wool bale identifiers created in the shearing shed**

There are four situations in which the identifiers created in the shearing shed are retained until emptying of the bales immediately before scouring in an international or Australian early-stage processing facility:

- The wool bales go directly to the warehouse of a wool broker, private treaty merchant or other selling agent for sale under the farm brand. Once sold, the wool bales are prepared for export and shipped to an overseas customer, who may:
  - scour the wool shortly after receipt
  - hold it to scour at a later date, or
  - resell it, either shortly after receipt or at a later date.
- The wool bales go directly to the warehouse of a wool broker, private treaty merchant or other selling agent for sale under the farm brand. Once sold, the wool bales are sent to an Australian early-stage processing facility, where the wool may be either:
  - scoured shortly after receipt, or
  - held for scouring at a later date, if the wool has been bought by the owner of the early-stage processing facility.
- The wool bales go directly from the farm to an Australian early-stage processing facility, where the wool may be either:
  - scoured shortly after receipt, or
  - held for scouring at a later date, if the wool has been bought by the owner of the early-stage processing facility.
- The wool is not classed on the farm. Rather, it is pressed, identified with source farm identifiers and sent to a 'rehandling' facility, where the wool is classed, pressed and identified by the source farm brand, wool description and bale number. Reclassed wool then goes forward for sale as in the points above. Rehandling facilities are normally an integral part of warehouses.

#### **Nonretention, until scouring, of wool bale identifiers created in the shearing shed**

There are three situations in which the identifiers created in the shearing shed are not retained through to emptying of the bales immediately before scouring:

- The wool is not classed on the farm. This may occur if the volume of wool is not large enough to class into commercially acceptable sale lots. Rather, it is pressed, identified with source farm identifiers and sent to a rehandling facility. This can apply to all, or

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<sup>18</sup> Details about Wool Industry EDP Users Group or the data formats and transmission protocols can be obtained from the Australian Wool Exchange ([www.awex.com.au](http://www.awex.com.au); phone: 02 9248 6100.)

some, of the wool produced on a farm. At the rehandling facility, the wool is classed together with wool from other farms, pressed and identified by the rehandling facility brand, the wool description and a sequential bale number. This process is known as 'bulk classing'. Bulk-classed wool goes forward for sale at auction, or may be sold directly to a wool exporter or processor.

The bale identifiers created in the rehandling facility are normally retained until the bales are opened immediately before scouring. Although the farm bale identifiers are lost during this process, the rehandling facility keeps records that allow the wool from each farm to be traced.

Rehandling facilities are required to account for each kilogram of each wool grower's bulk-class wool to ensure that the wool growers receive appropriate payment when the wool is sold. The rehandling facility achieves this by recording the weight of each grower's fleeces and which 'lines' they are allocated to during bulk classing.

- The wool is reclassified after sale. Once sold at auction or via private treaty transaction, wool bales may also go to a rehandling facility where the wool is reclassified, or blended with wool from other farms, pressed and identified with the rehandling facility brand, wool description and bale numbers. Such wool may be reoffered for sale, or be sent to an Australian or international early-stage processing facility.

The bales normally lose their links to the source farms, since the person or company for whom the bulk classing or blending is done owns the wool and has no commercial relationship with the source farms. However, the bales normally retain the identifiers created in the rehandling facility until they are emptied immediately before scouring.

- Small amounts of wool are sold to private treaty merchants.
  - On occasions, amounts of wool left at the end of shearing are too small to be pressed into wool bales. This wool is invariably packed into wool packs, without pressing (these wool packs are known as 'butts'), or are packed into other bags, and sold to a nearby private treaty merchant. Such wool is always bulk classed without reference to the source farms.
  - There are occasions other than shearing when wool is removed from sheep – for example, the removal of wool from the breech region between shearings ('crutching'). Crutching removes urine- and 'dag'-stained wool from the breech area, and is done to reduce the susceptibility of sheep to blowfly strike and/or to make the sheep easier to shear. The wool may be pressed in bales, or packed in bales or bags, depending on the quantity of wool.

The wool may be sent to auction, but is often purchased and collected by a private treaty merchant or a representative from an Australian early-stage processing facility at the shearing shed, or is delivered to a private treaty merchant's warehouse by the wool grower. The butts and bags are not normally marked with identifiers linking the wool to the source farm.

Such wool is bulk classed without reference to the source farms if it is purchased by a private treaty merchant. If the wool is purchased by an early-stage processing facility, the wool is amalgamated with similar wool from other farms and scoured.

Tables A2.7–A2.12 summarise the creation of wool bale identifiers and supplementary identifiers added as wool bales pass along the pipeline, and the integrity of these identifiers.

**Table A2.7 Movement and identification of wool bales when they leave the farm**

	<b>From/to</b>	<b>Bale location</b>	<b>Function</b>	<b>Identification unit</b>	<b>Number of bales per unit</b>	<b>Identifiers lost, retained or added</b>
Wool industry (Version 3.0)	From	Farm shearing shed	Shearing Wool classing Pressing individual bales	Individual bales	1	<b>Added:</b> <ul style="list-style-type: none"> <li>• Farm brand (eg LAC)</li> <li>• Wool description (eg AAA FX)</li> <li>• Bale number (eg 1)</li> </ul>
	To	Warehouse (broker, private treaty merchant, other selling agent)	Preparation for sale	Sale lot	1 to >20 (average of 6)	<b>Lost:</b> None <b>Retained:</b> Source farm identifiers <b>Added:</b> <ul style="list-style-type: none"> <li>• Wool broker, private treaty merchant or other selling agent's 'weight note number' (or 'folio number'). The weight note includes the farm brand, wool description, and individual bale numbers and weights for all bales in a sale lot. It has a unique number</li> <li>• AWTA test numbers (if tested)</li> </ul>
	To	Presale rehandling facility	Individual bales are emptied, and the wool is classed with other wool from the same farm only  Individual bales are emptied, and the wool is bulk classed with wool from other farms	Individual bales	1	<b>Lost:</b> Source farm bale identifiers <b>Retained:</b> Source farm identification <b>Added:</b> <ul style="list-style-type: none"> <li>• Farm brand (eg LAC)</li> <li>• Wool description (eg AAA FX)</li> <li>• Bale number (eg 1)</li> </ul>
47	To	Australian early-stage processing facility	Wool is emptied from bales and mixed with wool from other bales for scouring	Processing consignment		<b>Lost:</b> All identifiers; not significant, since EAD agents are inactivated during scouring

AWTA = Australian Wool Testing Authority; EAD = emergency animal disease

Table A2.8 Movement and identification of wool butts and bags when they leave the farm

From/to	Bale location	Function	Identification unit	Number of butts or bags per unit	Identifiers lost, retained or added
From	Farm shearing shed	Shearing Wool classing Pressing individual bales	Individual bales	1	<b>Added:</b> The butts and bags may, or may not, be identified with the source farm brand
To	Private treaty merchant's warehouse, which includes a presale rehandling facility	Individual butts and bags are emptied, and the wool is bulk classed with wool from other farms	Individual butts and bags	1	<b>Lost:</b> Any source farm identifiers <b>Retained:</b> None <b>Added:</b> <ul style="list-style-type: none"> <li>• Classing house brand (eg WOODSTOCK)</li> <li>• Wool description (eg AAAM)</li> <li>• Bale number (eg 45)</li> <li>• AWTA test numbers (if tested)</li> </ul>

AWTA = Australian Wool Testing Authority

**Table A2.9 Movement and identification of wool bales from a presale rehandling facility**

Wool industry (Version 3.0)

From/to	Bale location	Function	Identification unit	Number of bales per unit	Identifiers lost, retained or added
From	Presale rehandling facility: bales that were reclassified with wool from the same farm and retain their source farm identifiers	Individual bales have been emptied, and the wool classed with other wool from the same farm only	Individual bales	1	<p><b>Lost:</b> Source farm bale identifiers</p> <p><b>Retained:</b> Source farm identification</p> <p><b>Added:</b></p> <ul style="list-style-type: none"> <li>• Farm brand (eg LAC)</li> <li>• Wool description (eg AAA FX)</li> <li>• Bale number (eg 1)</li> </ul>
To	Warehouse (broker, private treaty merchant, other selling agent)	Preparation for sale	Sale lots	1 to >20 (average of 6)	<p><b>Lost:</b> None</p> <p><b>Retained:</b> All</p> <p><b>Added:</b></p> <ul style="list-style-type: none"> <li>• Wool broker, private treaty merchant or other selling agent's 'weight note number' (or 'folio number')</li> <li>• AWTA test numbers (if tested)</li> </ul>
From	Presale rehandling facility: bales that were bulk classed with wool from other farms and lose their source farm identifiers; may include wool that left the farm in butts and bags	Individual bales, butts and bags have been emptied, and the wool bulk classed with wool from other farms	Individual bales	1	<p><b>Lost:</b> Source farm bale identifiers</p> <p><b>Retained:</b> Source farm identifiers</p> <p><b>Added:</b></p> <ul style="list-style-type: none"> <li>• Farm brand (eg LAC)</li> <li>• Wool description (eg AAA FX)</li> <li>• Bale number (eg 1)</li> </ul>
To	Warehouse (broker, private treaty merchant, other selling agent)	Preparation for sale	Sale lots	1 to >20 (average of 6)	<p><b>Lost:</b> None</p> <p><b>Retained:</b> All rehandling facility identifiers</p> <p><b>Added:</b></p> <ul style="list-style-type: none"> <li>• Wool broker, private treaty merchant or other selling agent's 'weight note number' (or 'folio number')</li> <li>• AWTA test numbers (if tested)</li> </ul>

AWTA = Australian Wool Testing Authority

Table A2.10 Movements of wool bales after they are sold at auction or in a private treaty transaction

From/to	Bale location	Function	Identification unit	Number of bales per unit	Identifiers lost, retained or added
From	Warehouse (broker, private treaty merchant, other selling agent)	Wool has been prepared for sale and is sold	Sale lot	1 to >20 (average of 6)	<b>Retained:</b> <ul style="list-style-type: none"> <li>• Source farm or rehandling facility identifiers</li> <li>• Wool broker, private treaty merchant or other selling agent's 'weight note number' (or 'folio number')</li> <li>• AWTA test numbers (if tested)</li> </ul>
To	Wool-dumping/packing facility	<p>Wool has been sold for direct export</p> <p>The wool is transferred to a dumping/packing facility for dumping and/or packing into containers</p> <p>(Not all bales are dumped before packing into a container)</p>	Exporter's processing consignment	<p>Variable</p> <p>Normally a multiple of a container's capacity, which usually ranges from 108 to 120 bales</p>	<b>Lost:</b> None <b>Retained:</b> <ul style="list-style-type: none"> <li>• Source farm or rehandling facility identifiers</li> <li>• Wool broker, private treaty merchant or other selling agent's 'weight note number' (or 'folio number')</li> <li>• AWTA test numbers (if tested)</li> </ul> <b>Added:</b> <ul style="list-style-type: none"> <li>• Exporter's consignment identifier and individual bale countermarks</li> <li>• Department of Agriculture Health Certificate number</li> <li>• Container number(s) and container seal number(s)</li> </ul>
To	Australian early-stage processing facility	<p>Wool has been sold for processing</p> <p>Wool is emptied from bales in sale lots and mixed with wool from other sale lots for scouring</p>	Processing consignment	Variable	<b>Lost:</b> All identifiers; not significant, since EAD agents are inactivated during scouring
To	Post-sale rehandling facility	<p>After sale, the wool from individual sale lots is either:</p> <ul style="list-style-type: none"> <li>• reclassified with wool from bales in the same sale lot, or</li> <li>• blended with wool from other sale lots</li> </ul> <p>The wool is re-pressed into bales, which are identified according to the wool buyer's requirements</p>	Single or multiple sale lots	Variable	<b>Lost:</b> All source farm and sale identifiers are normally lost <b>Retained:</b> Normally, none <b>Added:</b> <ul style="list-style-type: none"> <li>• Wool buyer's bale identifiers — brand, wool description and bale numbers</li> <li>• AWTA test numbers (if tested)</li> </ul>

AWTA = Australian Wool Testing Authority; EAD = emergency animal disease

**Table A2.11 Movements of wool bales from a post-sale rehandling facility**

	<b>From/to</b>	<b>Bale location</b>	<b>Function</b>	<b>Identification unit</b>	<b>Number of bales per unit</b>	<b>Identifiers lost, retained or added</b>
<b>Wool industry (Version 3.0)</b>	From	Post-sale rehandling facility	The wool has been reclassified (or has been blended) and re-pressed, and is identified according to the wool buyer's requirements	Single or multiple sale lots	Variable	<p><b>Lost:</b> Normally, all source farm and sale identifiers</p> <p><b>Retained:</b></p> <ul style="list-style-type: none"> <li>• Wool buyer's bale identifiers — brand, wool description and bale numbers</li> <li>• AWTA test numbers (if tested)</li> </ul>
	To	Wool-dumping/packing facility	<p>The wool is either:</p> <ul style="list-style-type: none"> <li>• exported directly, or</li> <li>• sold to another buyer for direct export.</li> </ul> <p>The wool is transferred to a dumping/packing facility for dumping and/or packing into containers</p> <p>(Not all bales are dumped before packing into a container)</p>	Exporter's processing consignment	<p>Variable</p> <p>Normally a multiple of a container's capacity, which usually ranges from 108 to 120 bales</p>	<p><b>Lost:</b> None</p> <p><b>Retained:</b></p> <ul style="list-style-type: none"> <li>• Identifiers created in the rehandling facility</li> <li>• AWTA test numbers (if tested)</li> </ul> <p><b>Added:</b></p> <ul style="list-style-type: none"> <li>• Exporter's consignment identifier and individual bale countermarks</li> <li>• Department of Agriculture Health Certificate number</li> <li>• Container number(s) and container seal number(s)</li> </ul>
	To	Australian early-stage processing facility	<p>The wool has been sold for processing</p> <p>Wool is emptied from bales in sale lots and mixed with wool from other sale lots for scouring</p>	Processing consignment	Variable	<p><b>Lost:</b> All identifiers. This is not significant, since EAD agents are inactivated during scouring</p>

AWTA = Australian Wool Testing Authority; EAD = emergency animal disease

**Table A2.12 Movement of wool bales from an Australian dumping/packing facility to an international customer**

From/to	Bale location	Function	Identification unit	Number of bales per unit	Identifiers lost, retained or added
From	Wool-dumping/packing facility	The wool has been dumped and/or packed into sealed containers (Not all bales are dumped before they are packed into a container)	Exporter's processing consignment	Variable; normally a multiple of a container's capacity, which usually ranges from 108 to 120 bales	<b>Lost:</b> None (source farm identifiers may be lost for some bales) <b>Retained:</b> All identifiers supplied to, and created at, the dumping/packing facility
To	Port of loading	Loading containers on the nominated ship(s)	Exporter's processing consignment	Variable; normally a multiple of a container's capacity, which usually ranges from 108 to 120 bales	<b>Added:</b> <ul style="list-style-type: none"> <li>• Shipping company identifiers</li> </ul> The wool exporter supplies a copy of the following documents to their customer: <ul style="list-style-type: none"> <li>• bale identifiers</li> <li>• AWTA test certificates (if requested)</li> <li>• Department of Agriculture Health Certificate</li> <li>• bill of lading</li> <li>• container identifiers</li> </ul>
To	Port of unloading	Unloading containers Some containers may be opened for inspection by local customs and quarantine officers	Exporter's processing consignment	Variable; normally a multiple of a container's capacity, which usually ranges from 108 to 120 bales	<b>Lost:</b> None <b>Retained:</b> All identifiers accompanying the export consignment <b>Added:</b> None
To	International early-stage processing facility	The wool has been sold for processing Wool is emptied from bales in sale lots and mixed with wool from other sale lots for scouring	Exporter's processing consignment	Variable	<b>Lost:</b> All identifiers; not significant, since EAD agents are inactivated during scouring
To	Warehouse in customer country	The wool is held for later use or to be on-sold	Individual bales within the export consignment	Variable	

AWTA = Australian Wool Testing Authority; EAD = emergency animal disease

## Traceability of wool bales from individual farms

Ability to trace wool bales is a key part of the development of response strategies to an EAD event for the wool industry, because:

- wool bales usually leave the farm during, or shortly after, shearing
- in the event of an outbreak of an EAD, it is highly probable that bales will have left the farm before the presence of an EAD is either suspected or confirmed
- it will be necessary to locate such bales as quickly as possible to enable implementation of movement controls required by Australian legislation and customer countries.

The bales may be either:

- in transit within, or beyond, Australia, or
- at one or more locations along the wool industry pipeline from the shearing shed to scouring.

Traceability is influenced by:

- the time between shearing and confirmation of the EAD outbreak
- ease of access to reliable data sources
- the number of potential locations of wool bales from individual farms.

These factors are determined by:

- the number of farms that produce wool – industry estimates indicate that there are approximately 55 000 wool-growing enterprises, of which about 21 000 produce five or fewer bales
- the number of locations that individual wool growers send their wool to
- the number of wool exporters and processors who buy sale lots from each farm (this will rarely be just one exporter or processor) – the greater the number of bales sold by a farm, the greater the likely number of exporters and processors who buy wool from that farm
- the stage in the wool pipeline of the wool bales – the further the bales are along the pipeline, the wider the likely spread of locations where bales from individual farms are stored.

Table A2.13 summarises the various identifiers applied from the farm to an early-stage processing facility, and the locations at which these identifiers are available or added.

**Table A2.13 Availability of individual wool bale identification data**

<b>Identifier</b>	<b>Data source and recording format (manual or electronic)</b>		<b>Where recorded</b>	<b>Approximate number of source locations</b>
Farm brand, wool description and bale number	On farm	M	On single bales Wool books Classers' specification	55 000
	Selling agents/selling agents' warehouses	E	Sale lots	60
	AWTA	E	Tested sale lot	2
	Wool exporter's office	E	Export consignments, each containing multiple sale lots	60
	Wool-dumping/packing facilities	E	Export consignments	8
	Australian early-stage processing facility	E	Processing consignments	3
	International early-stage processing facility	E	Processing consignments	Not known
Weight note/folio number	Selling agents/selling agents' warehouses	E	Sale lots	60
	AWTA	E	Tested sale lot	2
	Wool exporter's office	E	Export consignments, each containing multiple sale lots	60
	Wool-dumping/packing facilities	E	Export consignments	8
	Australian early-stage processing facility	E	Processing consignments	3
	International early-stage processing facility	E	Processing consignments	Not known
Test certificate number	AWTA	E	Tested sale lot	1
	Selling agents/selling agents' warehouses	E	Tested sale lots	60
	Wool exporter's office	E	Export consignments, each containing multiple sale lots	60
	Australian early-stage processing facility	E	Processing consignments	3
	International early-stage processing facility	E	Processing consignments	Not known
Wool exporter's consignment identifier	Wool exporter's office	E	Export consignments, each containing multiple sale lots	60
	Wool-dumping/packing facilities	E	Export consignments	8
	Australian early-stage processing facility	E	Processing consignments	3
	International early-stage processing facility	E	Processing consignments	Not known
Wool dumping/packing facilities' internal reference	Wool-dumping/packing facilities	E	Export consignments	3

Identifier	Data source and recording format (manual or electronic)	Where recorded	Approximate number of source locations
Early-stage processing facility inhouse reference	Australian early-stage processing facility E	Processing consignments	3
International early-stage processing facility inhouse reference	International early-stage processing facility E	Processing consignments	Not known

AWTA = Australian Wool Testing Authority; E = electronic; M = manual

The following sections outline the relative ease of tracing the location of bales along points in the wool pipeline.

### Traceability on farm

Some wool bales are present on farm if:

- they have been recently pressed during shearing and have not yet left the farm
- the owner wishes to withhold the wool from sale because of current market conditions.

Tracing the location of the bales is simple in these instances.

### Traceability when wool is in transit

If the bales have left the farm, the farm owner or manager can provide the details of where the bales have been sent, and the details of the associated transport companies. Wool growers may send the wool to more than one location – for example, if the wool grower chooses to use more than one selling agent.

The carriage of wool bales is almost entirely by road. The only exception is the use of rail for transporting some wool from Western Australia to the eastern states. The individual wool bale identifiers (brand and bale numbers) are recorded by the transport companies, with a copy held by the consignor.

Traceability of wool bales in transit is influenced by:

- access to the consignment details of the individual wool bales
- knowledge of whether the bales are still in transit or have arrived at their destination.

This information is readily available in most circumstances.

### Traceability in an Australian early-stage wool-processing facility when wool is sent there from a farm

Tracing wool that has been sent to an Australian early-stage wool processing facility from the farm is a relatively straightforward process, since the wool bales are still intact and retain their farm identifiers until the wool is emptied from the bales into the scour.<sup>19</sup>

<sup>19</sup> Loss of identification at scouring is unlikely to be an issue, as scouring deactivates the EAD agents of importance to the wool industry.

### **Traceability in the warehouse of a broker, private treaty merchant or other selling agent before sale**

Tracing wool in the warehouse of a broker, private treaty merchant or other selling agent before sale is relatively straightforward when the wool bales retain their farm identifiers (ie the wool has not been bulk classed). It is less straightforward if the wool has been bulk classed and the bales carry the rehandling facility's identifiers.

The warehouse database includes the inhouse client code, the farm name and address, individual bale identifiers for all wool sent to it, and the weight note or folio number once the wool is allocated to a sale lot. The warehouse database also includes the storage location within its warehouse(s) for each bale. Bales may be moved from one storage location to another, and the warehouse database is updated for each movement.

The test house test certificate number(s) and test results for each sale lot are added to the warehouse database when the test results become available. The test house also records the individual farm or rehandling facility brand, the wool description, bale numbers and weights, the weight note or folio number, the wool broker/private treaty merchant/other selling agent client code, and the location where the wool was sampled. This information is necessary for full identification of each test certificate and the bales tested, and for the calculation of certified weights included in the test results.

The test house database does not include the storage location within a warehouse(s).

### **Traceability in a rehandling facility when the wool is sent there from a farm before sale**

Tracing wool that has been sent to a rehandling facility from a farm before sale is relatively straightforward when:

- the wool has been bulk classed, pressed and identified as coming from the source farm
- the bulk classing has not yet started, or
- the wool remains in its source bales and is amalgamated ('interlotted') with bales of similar wool from other farms for sale.

Tracing is less straightforward for wool that has been reclassified, because it is now mixed with wool from other farms and becomes part of the contents of bulk-class lots of wool. The wool does not make up entire bales and becomes more widely dispersed.

Rehandling facilities have procedures in place to determine each grower's equity in the various bulk-class lots or interlots when they are sold. These procedures can be used to trace farm wool (but not wool bales for bulk-classed wool) within the rehandling facility and further along the wool industry pipeline.

The rehandling facility:

- records the weight of each grower's wool that is allocated to each of the various bulk-class lines of wool and interlots
- carries this information forward when the wool in each bulk-class line is pressed and weighed, becomes a sale lot and is sold. The bulk-class bales are identified with the rehandling facility's brand, the wool description and bale numbers. These bale identifiers are normally retained until the wool is emptied from the bales immediately before scouring.

### **Traceability of wool that is offered for sale at auction, but is not sold**

The wool grower may decide to withdraw the wool before the auction begins, or the wool may be offered for sale and passed in. In either case, the decision not to sell is invariably due to dissatisfaction with the current wool market.

In these cases, the original bale identifiers generated on the farm, the sale lot weight note/folio number and the test certificate numbers are unchanged. The only change is the replacement of the original sale and lot number with a new sale, and lot number when the wool is reoffered for sale.

Wool can be withdrawn or passed in on multiple occasions. In each instance, only the sale and lot number change. The wool remains in the broker's store between wool sales.

On rare occasions, the wool grower may remove the wool from the selling agent's warehouse. This could be to move it to a new selling agent's warehouse or to an Australian early-stage wool processing facility.

### **Traceability after the wool is sold and is still in the warehouse of a broker, private treaty merchant or other selling agent**

The warehouse retains all of the individual bale identifiers, sale lot details and Australian Wool Testing Authority test numbers. It adds the wool buyer identification to the sale lot information in its database.

On rare occasions, the buyer may choose to replace one or more of the original bale identifiers with new ones. Traceability is not affected, provided that the warehouse records link the new identifiers to the former ones.

### **Traceability in a rehandling facility when the wool is sent there after sale**

When the wool is sent to a rehandling facility after (rather than before) sale, ownership has transferred from the wool grower to a wool buyer, who owns all the wool to be rehandled. There is now one, rather than many, owners of the wool included in each bulk-class line of wool, and there is no commercial requirement to trace the flow of the wool from the individual sale lots.

The wool may be either blended with wool from other sale lots or reclassified for resale:

- For wool that is blended with wool from other farms, it will be possible to locate wool from the source farm(s) if:
  - no wool is removed during blending
  - the buyer's and or rehandling facility's records include the source farm identifiers of the wool included in the blend.
- For reclassified wool, it will be possible to locate most of the wool from the sources farm(s) if the source farm identifiers are retained. It may not be possible to trace the source farms for small amounts of wool removed during reclassing.

### **Traceability of wool that is transferred or resold after the initial purchase**

Wool may be resold after the initial purchase in one of two ways:

- The original buyer transfers ownership of the wool to another buyer at the close of auction selling for the day. In this case, the selling agent or warehouse adjusts their

database to reflect the new buyer. The wool bale and sale lot identifiers remain unchanged and traceable. Either the wool remains in the selling agent's warehouse (as in the section 'Traceability after the wool is sold and is still in the warehouse of a broker, private treaty merchant or other selling agent'), or the new buyer sends the wool to another warehouse or rehandling facility (as in the section 'Traceability in a rehandling facility when the wool is sent there after sale', with similar traceability issues).

- The buyer decides that the wool is surplus to requirements or is unsuitable. If the wool has been bought at auction, the usual process is to leave the wool in the broker's warehouse and offer it for resale in a later sale. In this case, the original bale identifiers generated on the farm, the sale lot weight note/folio number and the test certificate numbers are unchanged. The only change to the identifiers is the replacement of the original sale and lot number with a new sale and lot number. This is identical to the process for wool that is offered for auction but is withdrawn before sale or passed in at auction.

#### **Traceability in an Australian early-stage wool processing facility after the wool is sold**

If the wool is to be exported, the exporter adds an inhouse reference to the various sale lots and individual bales that comprise each consignment.

Traceability in an Australian early-stage wool processing facility is relatively straightforward because:

- all bales in the processing consignment are stored in one location in the processing facility before scouring
- all the bale and sale lot identifiers are unchanged from when the bales were sold to the wool buyer.

#### **Traceability in a dumping/packing facility after the wool has been sold**

If the wool is to be exported, the exporter adds an inhouse reference to the various sale lots and individual bales that comprise each consignment. The wool is then sent to a dumping/packing facility, which adds its own inhouse identifier to the information supplied by the exporter.

The following points are relevant to traceability:

- The wool exporter (and/or the exporter's shipping agent) knows which dumping/packing facility the individual bales within their consignment(s) have been sent to.
- The dumping/packing facility has a copy of details of individual sale lots and wool bales included in each exporter's consignment.
- The dumping/packing facility requests delivery of the bales from the warehouse of the broker, private treaty merchant or other selling agent. The dumping/packing facility therefore knows where the bales for the various consignments are once it has received orders to dump and/or pack the wool. They will be:
  - packed in a sealed container whose identity and location are known
  - in the process of being dumped and/or packed into a container at the dumping/packing facility, or
  - still in a warehouse (broker, private treaty merchant or other selling agent) before dispatch to the dumping/packing facility.

### **Traceability in a container**

Tracing wool in a container at the port or on the water is relatively straightforward, as all containers are numbered and have a unique seal number each time they are used. The dumping/packing facility's database has a record of the container and seal numbers, and when each container was sent to the port.

Traceability is straightforward with regard to the location of individual containers, but may run into logistical and cost issues if container stacks have to be broken down, or ships have to be unloaded to retrieve bales.

### **Traceability of wool that has left Australia**

Tracing wool that has left Australia is relatively straightforward in terms of identifying the name of the ship, its sailing details and the identification of containers. However, the wool will be under the jurisdiction of the country of the port of intended disembarkation.

If an EAD outbreak is confirmed in Australia, it is most likely that, if the wool has not already arrived at its destination, the containers will not be allowed to be unloaded and will be sent back to Australia.

Tracing containers that have been unloaded and are en route to an early-stage processing facility will be straightforward. This situation is considered to be of very low probability, as it is expected that any confirmation of an EAD outbreak would occur before the wool reached the destination port.

## Appendix 3 Wool sample movement, identification and traceability

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Wool samples are used in two ways in the wool industry:

- As an integral part of the exchange of ownership of Australian wool, samples are taken from wool bales for inspection by wool buyers and for testing; the test results are included in the information made available to wool buyers before sale.
- ‘Mid-side’ samples, of around 50 g or less, are taken from individual sheep to measure and record characteristics of the fleece, such as fibre diameter and fleece weight. These may be tested on farm or sent to a laboratory for testing.

Identification and traceability of wool samples will be important during an EAD incident, because samples may have been taken from suspect sheep (in the case of mid-side samples) or from wool bales that contain wool from suspect sheep.

### Display samples used in exchange of ownership

Display samples<sup>20</sup> are identified at the sampling line by a weight note/request for testing that is included with the sample in the sample bag. The date of sampling is included on the weight note.

The display samples are taken to a show floor, where they are placed in sample boxes (see Appendix 5) and are available for inspection by wool buyers/exporters.

The movement of display samples is determined by whether staple length and strength measurements are required, and by the distance between the sampling line location and where appropriate AWTA tuft sampling is done.

#### If the wool is not to be tested for staple length and strength

If the wool is not to be tested for staple length and strength, the display sample is still taken to a storage location within the warehouse, where it is held until the wool from which it was taken is about to be sold. The display samples are then taken to the show floor where they are placed in a sample box for inspection by wool buyers (see Appendix 5). They retain their identifiers created at the sampling line.

The show floor may be:

- in the same warehouse as the sampling line
- in another warehouse in the same city or town
- in another city, if the sampling location is remote from the selling centre.

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<sup>20</sup> Display samples may not be necessary in non-auction sales – for example, in a one-to-one trading arrangement where no sample is required, by agreement between the buyer and the seller. However, a display sample will be required if staple length and staple strength test results are required.

Once the wool is sold, the display samples are normally sent for bulk classing, when they lose their identifiers, and for subsequent sale. If the wool is not sold, the sample is retained in inhouse storage, with its identifiers.

### If the wool is to be tested for staple length and strength

If the wool is to be tested for staple length and strength, the display samples are sent for tuft sampling before going to temporary storage or to a show floor.

The possible sample movements are described in Table A3.1.

**Table A3.1 Movement of display samples to be tested for staple length and strength**

From/to	Method of transport	Distance travelled
<b>From:</b> Grab sampling location <b>To:</b> AWTA tuft sampling location in the same warehouse	Forklift, trolley or some other form of light transport	Negligible; samples do not leave the warehouse
<b>From:</b> Grab sampling location <b>To:</b> AWTA tuft sampling location in another warehouse in the same city/town	Road	<5 km
<b>From:</b> Grab sampling location <b>To:</b> AWTA tuft sampling location in another warehouse in another city/town	Road	Varies greatly. It will be >150 km in most instances and will often be >500 km Large numbers of samples cross state borders
<b>From:</b> AWTA tuft sampling location <b>To:</b> Warehouse/show floor in the same city/town	Forklift, trolley or some other form of light transport; or road	Negligible, if in the same warehouse Otherwise, <5 km
<b>From:</b> Show floor <b>To:</b> Bulk-classing facility, invariably in the same city/town and possibly in the warehouse	Forklift, trolley or some other form of light transport; or road	Negligible, if in the same warehouse Otherwise, <50 km Identifiers linking the sample to the bales in the sale lot are lost in this process

AWTA = Australian Wool Testing Authority

### Staple length and strength testing

The composite tuft samples taken from the display sample are transferred to the AWTA laboratory in Melbourne or Fremantle, and tested for staple length and strength. The warehouse identifiers are retained, and AWTA adds a temporary inhouse reference.

Tuft sampling machines may be located:

- in the same warehouse where the grab and display samples were taken
- at an AWTA tuft-sampling location in the same city or town
- at an AWTA location in the city or town where the wool will be sold.

Core and tuft samples may be received from:

- within the same locality as the wool-testing laboratory
- regional locations within the same state
- interstate.

Tuft samples may be transported by road or by air.

Test certificates are issued at the end of the process (see Appendix 6). These include a test certificate number, and all the individual bale and sale lot identifiers provided at the time of sampling.

## Core samples used in exchange of ownership

Almost all Australian wool is core sampled.

Core samples are identified at the sampling line by a copy of the weight note/request used with the grab sample.

Each bale in a sale lot is sequentially grab sampled, weighed and core sampled as it passes through the sampling line (Appendix 5). The core samples for each sale lot are progressively collected in a plastic bag, to which is added a copy of the warehouse weight note/request for testing when the last bale in the sale lot is sampled. AWTA adds a unique temporary inhouse identifier to the identifiers provided at the sampling line.

Grab sampling machines and core sampling machines are normally linked together as part of a 'sampling line' in a warehouse where wool is sampled (see Appendix 5).

The possible sample movements are described in Table A3.2.

**Table A3.2 Movement of core samples to be tested for yield, vegetable matter and fibre diameter**

From/to	Method of transport	Distance travelled
<b>From:</b> Centrally located warehouse (eg Melbourne) <b>To:</b> AWTA laboratory in the same town/city	Road	<50 km in most cases
<b>From:</b> Regionally located warehouse (eg Dubbo) <b>To:</b> AWTA laboratory in another city/town (eg Melbourne)	Road or air (for urgent samples)	Varies greatly. It will be >150 km in most instances and will often be >500 km Large numbers of samples cross state borders

AWTA = Australian Wool Testing Authority

Test certificates are issued at the end of the process. These include a test certificate number, and all the individual bale and sale lot identifiers provided at the time of sampling.

Any core sample material surplus to testing requirements is retained as discrete samples, with the identifiers that link it to the sale lot from which the core samples were taken. This is done in case:

- AWTA has to test additional core sample material to meet the precision requirements of the test method
- the client requests a retest.

Any remaining sample material is later mixed with the wool from other core samples, pressed into bales and retained for sale. The sample identifiers are lost in this process.

## Other wool samples

Two other forms of wool sampling are part of normal wool industry operations: mid-side or 'hand' samples, and miscellaneous core or hand samples.

### Mid-side samples

Mid-side samples may be taken directly from the fleece after each sheep has been shorn, or from unshorn sheep while they are held in some form of constraining device (eg a sheep race).

Such samples – known as 'fleece measurement' samples – are identified by the farm name and the individual sheep identification number. They are sent to a fleece measurement laboratory for testing the fibre diameter; they may also be tested for yield. The test processes are less rigorous (and less costly) than those used for testing associated with the change of ownership of wool bales. The information is used to help select superior rams and ewes for replacement breeding stock.

The date when fleece measurement samples are taken may not be recorded on the farm unless it is recorded in a farm diary. However, the date of receipt of the samples at a laboratory is normally recorded by the laboratory.

AWTA also provides fleece measurement services.

Table A3.3 shows movements of fleece measurement samples.

**Table A3.3 Movement of fleece measurement samples**

From/to	Method of transport	Distance travelled
<b>From:</b> Farm <b>To:</b> Fleece measurement laboratory	Road	Varies greatly. It could be <50 km if the laboratory is in a nearby town, or up to 500 km (or more) if the laboratory is city based  Some samples may cross state borders

### Miscellaneous core or hand samples

Some miscellaneous core samples are taken from wool bales while they are in the shearing shed and sent to a laboratory to obtain an estimate of the wool yield and diameter. Small hand samples may also be taken from shorn fleeces, aggregated into composite samples and sent to a laboratory to obtain an estimate of yield and diameter. This helps to determine the potential commercial value of the wool.

The sample identifiers do not normally include a link to specific wool bales.

Such samples are usually, but not necessarily, sent to AWTA. If not, they are sent to a fleece measurement laboratory.

Table A3.4 shows movements of miscellaneous core and hand samples.

**Table A3.4 Movement of miscellaneous core and hand samples**

<b>From/to</b>	<b>Method of transport</b>	<b>Distance travelled</b>
<b>From:</b> Farm <b>To:</b> AWTA or fleece measurement laboratory	Road	Varies greatly. It will be >150 km in most instances and will often be >500 km Some samples will cross state borders

AWTA = Australian Wool Testing Authority

## Disposal of surplus sample material

Surplus core sample material is retained at AWTA with its identifiers for a period of time, in case retesting is needed, after which it is mixed with wool from other core samples, pressed into wool bales and held for sale.

Surplus tuft samples from different tests are mixed together after testing and immediately lose their individual identities. The same applies to fleece measurement samples and miscellaneous samples.

## Traceability of wool samples

The opportunity to trace wool sample material will be influenced by:

- the reason the sample was taken (eg for use in exchange of ownership, or for use in recording the fleece characteristics of individual sheep)
- the time between when the wool bales were pressed in the shearing shed and sample disposal (for samples used in exchange of ownership), or the time between when the sample was taken and sample disposal (for fleece measurement samples). This period can be as short as 2 weeks for samples used in exchange of ownership, but is likely to be longer; there may be time to trace individual display, tuft and core samples once a wool-growing farm is identified as infected, or is declared as suspect. For fleece measurement samples, the period is usually shorter; it may not be possible to trace the samples if testing occurs shortly after the sample arrives at the fleece measurement laboratory.

### Display samples

Display samples can be linked to the bales from which the sample was taken until immediately after the wool is sold. Traceability is lost after this, because the samples from sold lots are bulk classed with other display samples. Since the selling agent has taken ownership of the display samples, there is no need to record the subsequent bulk-classing history of each display sample.

### Core sample material

Core sample material can be linked to wool bales from which the sample was taken up to the point of sample disposal. It is reasonably straightforward to identify the location of particular core samples from AWTA's centralised database, provided the samples have not been disposed of.

Core samples cannot be traced once they are disposed of and mixed with wool from other core samples.

**Tuft sample material**

Tuft sample material can be traced to the bales from which the sample was taken up to the point of testing.

**Fleece measurement sample material**

Fleece measurement sample material can be traced to the animals from which the samples were taken up to the point of testing.

Fleece measurement laboratories are located in a number of locations in several states. The exact number of laboratories and their locations are not recorded in a central database.

It will be necessary to ask the wool grower whose sheep are infected, or suspect, if fleece measurement samples were taken and to which laboratory they were sent.

Any residual material from these samples may or may not be traceable, depending on the procedures used in the laboratory to which the samples were sent.

**Miscellaneous sample material**

As with fleece measurement samples, it will be necessary to ask the wool grower whose sheep are infected, or suspect, if miscellaneous core or hand samples were taken, and where they were sent.

Any residual material from these samples may or may not be traceable, depending on the procedures used in the laboratory to which the samples were sent.

## Appendix 4 Locations of AWTA sampling centres

Table A4.1 gives the locations of AWTA sampling centres, as at 15 February 2015.

**Table A4.1 AWTA sampling centres, June 2013**

<b>Queensland</b>	<b>New South Wales</b>	<b>Victoria</b>	<b>Tasmania</b>	<b>South Australia</b>	<b>Western Australia</b>
Brisbane	Albury	Ararat	Launceston	Port Adelaide	Fremantle
	Bathurst	Echuca			Katanning
	Canowindra	Geelong			
	Condobolin	Hamilton			
	Cooma	Melbourne			
	Cowra	Mildura			
	Crookwell	Portland			
	Dubbo	Winchelsea			
	Forbes	Yarrawonga			
	Goulburn				
	Grenfell				
	Griffith				
	Gunning				
	Inverell				
	Newcastle				
	Parkes				
	Sydney				
	Tamworth				
	Temora				
	Wagga Wagga				
	Yass				

Sampling locations can change at short notice.

Any queries regarding greater detail or changes to this list should be directed to:

Australian Wool Testing Authority  
 24 Robertson Street  
 Kensington VIC 3031  
 Phone: 03 9371 2100  
[www.awta.com.au](http://www.awta.com.au)

## Appendix 5 Key stages along the wool industry pipeline

---

Pressed wool bale in a shearing shed



### Wool in transit



### Grab and core sampling line

Each bale:

- comes in from the right
- is grab sampled (where the man is standing in front of the grab sampling machine)
- is weighed
- is core sampled in the core machine at the left-hand end of the sampling line, and ejected.



**Sealed core sample and container used for transport**



**Tuft sample reel and container used for transport**



**Sealed fleece measurement sample from a single sheep**



**Wool sample boxes on a show floor**



# Appendix 6 Examples of forms and certificates used in the wool industry

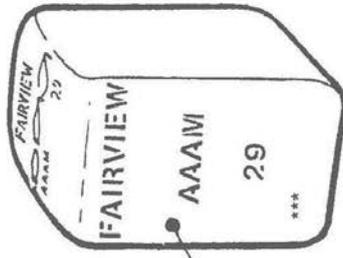
Page from a wool book used in shearing sheds

### Branding of Bales

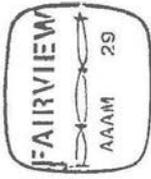
Doubt frequently arises in the wool shed as to the correct method of branding bales.

This illustration shows the correct position on bales and the required branding as follows:-

- Owner's Brand
- Description of wool
- Bale Number
- Current Registered Classifier's Number
- Broker's Stencil (Bottom Left)



### Head Brand



It is an industry requirement growers head brand bale on top in addition to side of bales as shown. Head brand with owner's brand, description and bale number.

### Watch your bale weights

**MAXIMUM WEIGHT**  
Bales of wool all descriptions 204 kg (450 lbs).

Bales received into store over the maximum weight must be adjusted By the Broker. Each bale opened incurs a charge which is debited to The Grower.

**MINIMUM WEIGHT**  
Bales of wool all descriptions 110 kg (243 lbs).  
We recommend 190 kg (419 lbs).

**BRAND**

No. ON LOADING BALES CHECK	DESCRIPTION ON BALE	W/E/F	WEIGHT	BIN No	REMARKS AND DESCRIPTION OF SHEEP
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Wool classers' specification

Yennora / Bathurst/Adelaide/Melbourne Fax:(02) 9892 1357 Goulburn/Wagga Fax:(02) 4822 4244 Newcastle Fax:(02) 4962 3230 Brisbane Fax: (07) 3275 1377



BRAND:

SPECIAL INSTRUCTIONS:

OFFICE USE ONLY

SALE

Classer's Name: \_\_\_\_\_

Phone No.: \_\_\_\_\_

Postal Address: \_\_\_\_\_

Postcode: \_\_\_\_\_

Registered No \_\_\_\_\_

CLASSER (Signature) \_\_\_\_\_

Stud Rams Used \_\_\_\_\_

PROCEEDS DIRECT TO BANK

A/C Name \_\_\_\_\_

Bank \_\_\_\_\_ Branch \_\_\_\_\_

BSB: \_\_\_\_\_ A/C No \_\_\_\_\_

CHEQUE BY POST \_\_\_\_\_ YES / NO

INVEST PROCEEDS AT CALL \_\_\_\_\_ YES / NO

A.B.N. \_\_\_\_\_

GST REGISTERED YES/NO \_\_\_\_\_

Trading Name: \_\_\_\_\_

Postal Address: \_\_\_\_\_

Postcode: \_\_\_\_\_

Phone No.: \_\_\_\_\_

Mobile: \_\_\_\_\_

Fax: \_\_\_\_\_

Email: \_\_\_\_\_

1. Is this shearing complete? Yes  No  2. Woolpack type New  Used

3. Total this shearing \_\_\_\_\_ bales 4. Date shearing completed \_\_\_\_\_

CLIP TYPE

MERINO  CBK  XB

Lot / Sale	AM	No. of Bales	Bale Description	Bale Numbers												Bin Code	Classer's Comments
				1	2	3	4	5	6	7	8	9	10	11	12		
TOTAL BALES																	

The NATIONAL WOOL DECLARATION(NWD) for Mulesing Status and Merino Dark & Medulated Fibre Risk for Sheep Mobs. See Instructions, Definitions & Codes.

For the NWD to be valid, this section must be completed & signed by the Owner/Manager.

Has Mulesing 'Ceased' (CM) on this property? YES or NO

CM\*: Wool from sheep where the property has ceased mulesing. No lamb born on this property in the last 12 months has been mulesed, and there must be no intention to mules in the future.

NM\*: All sheep in this mob have not been mulesed

PR\*: All sheep in this mob were mulesed with Prati Ruffet.

Mob No.	Mob Breaks From - To	Age Code	Sex Code	Breed Code	Wool Growth (mins)	Average Length (mm)	Wool Quality			VM Quantity			Contact* with Shedding Breeds* (Y/N)	Mob Crunched (Y/N)	Crunched prior to shearing (Y/N)	Mulesing* Status Code (if applicable)
							Fine	Med	Strong	Light	Med.	Heavy				

By signing this declaration, I warrant that (A) I am authorised to complete this declaration and I confirm that all details contained in it are true and correct, having made all reasonable enquiries and (B) I submit to integrity program comprising random desk audits and on farm inspections.

PIC \_\_\_\_\_

Owner/Manager Name: \_\_\_\_\_

Owner/Manager Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**Selling agent's weight note/request for testing**

Note the unique weight note number, 171357. The '.7' at the end of the number is a check digit that is used in data entry to ensure that the weight note number is recorded correctly.

V9.28	WGM Wool		09/05/2013																																
** ANTA CORE TEST REQUEST **																																			
GROWER : TESTPC	ACCOUNT : P7961	Laserscan, VM, yield cert Length & strength cert																																	
STORED : Sydney - 21 PINE RD																																			
STOWAGE :																																			
TYPE :																																			
CLASSER STENCIL NO : 123456																																			
*CLIENT CODE : 052330																																			
*SALE NO : S23 /12		TOTAL BALES :	12																																
*BROKER LOT NO : 2001		WOOL PREPARATION CATEGORY:	CLP																																
CAT GROUP : MFLC		P-Classed grower lot																																	
SEQUENCE NO : 1																																			
*REF :	171357 . 7																																		
BRAND: ABC/DEF	DESC:AAAAM																																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>BALE-</th> <th>KG -TARE</th> <th>BALE-</th> <th>KG -TARE</th> <th>BALE-</th> <th>KG -TARE</th> <th>BALE-</th> <th>KG -TARE</th> </tr> </thead> <tbody> <tr> <td>1-</td> <td>- 2</td> <td>2-</td> <td>- 2</td> <td>3-</td> <td>- 2</td> <td>4-</td> <td>- 2</td> </tr> <tr> <td>5-</td> <td>- 2</td> <td>6-</td> <td>- 2</td> <td>7-</td> <td>- 2</td> <td>8-</td> <td>- 2</td> </tr> <tr> <td>9-</td> <td>- 2</td> <td>15-</td> <td>- 2</td> <td>16-</td> <td>- 2</td> <td>17-</td> <td>- 2</td> </tr> </tbody> </table>				BALE-	KG -TARE	1-	- 2	2-	- 2	3-	- 2	4-	- 2	5-	- 2	6-	- 2	7-	- 2	8-	- 2	9-	- 2	15-	- 2	16-	- 2	17-	- 2						
BALE-	KG -TARE	BALE-	KG -TARE	BALE-	KG -TARE	BALE-	KG -TARE																												
1-	- 2	2-	- 2	3-	- 2	4-	- 2																												
5-	- 2	6-	- 2	7-	- 2	8-	- 2																												
9-	- 2	15-	- 2	16-	- 2	17-	- 2																												
GRABS/BALE : .....	CORES/BALE : .....	SMP KG: .....	LOC: .....																																
GROSS KG : 0	TARE : 24	NET KG: -24																																	
DATE SAMPLED: _____	CHARGE CODE: .....	SAMPLER : _____																																	
INTERNAL LOT COMMENT:																																			
WPLOTPR7, V9.37																																			

AWTA test certificates

**AUSTRALIAN WOOL TESTING AUTHORITY LTD**  
 Reg'd Office: 70 Robertson Street, Kempston, Victoria 3001 P.O. Box 240, North Melbourne 3051 Tel: (03) 9371 4100 Fax: (03) 9371 4191

ORIGINAL

IWTO TEST CERTIFICATE

A.B.N. 43 006 014 106

TEST METHODS IWTO-19,12 PAGE 1

\*CLASSED GROWER LOT  
 AUSTRALIAN WOOL NETWORK PTY LTD HEMCASTLE 6 BALES

REF. \*AAAM BALE NO. GROSS \*TARE NETT BALE NO. GROSS \*TARE NETT

19	203	2	201	23	204	2	202
20	199	2	197	24	200	2	198
22	195	2	193	26	187	2	185

TOTAL BALE WEIGHTS:

TEST HOUSE GROSS 1 199 KG TARE 12 KG NETT 1 176 KG

TEST RESULTS:

- WOOL BASE - 2 SUBSAMPLES 58.80 %
- MEAN FIBRE DIAMETER - 4 SPECIMENS 19.4 MICRONS
- COEFFICIENT OF VARIATION OF DIAMETER 20.6 %
- VEGETABLE MATTER-BASE INCLUDING 0.1 % HARD HEADS-TWIGS 2.1 %

CALCULATED COMMERCIAL YIELDS & CLEAN MASSES:

- IWTO SCLAM DRY TEN YIELD (1.0T/10M) 67.5 % 794 KG
- IWTO SCOURD YIELD AT 17% REGAIN 73.0 % 850 KG
- JAPANESE CLEAN SCOURD YIELD 69.3 % 815 KG
- AUSTRALIAN CARBONISING YIELD 65.7 % 773 KG

ADDITIONAL INFORMATION:

- MEAN FIBRE CURVATURE 66 DEG/MM
- COMFORT FACTOR 98.6 %
- VEGETABLE MATTER COMPOSITION (8) 1.3 (9) 0.7 (H) 0.1

DECLARED INFORMATION:

- \*DARK & MEDULATED FIBRE RISK ND
- \*MULESING STATUS ND

CHARGE: \$ 387.40 GST @ 10% = \$ 38.74 TOTAL CHARGE: \$ 425.14

SECURITY CODE:

CONTINUED ON NEXT PAGE  
 TEST CONDUCTED AT HELICOBIAC LABORATORY  
 BALE SAMPLED AT ON  
 AWTA LTD SERVICE TIME 4.2 DAYS  
 ISSUED ON PRINTED ON AMRI 1

Accreditation No. 2659  
 This document is issued in accordance with AWTA's accreditation requirements

**IWTO** MEMBER

**NATA**

AWTA LTD

The ORIGINAL and an OFFICIAL COPY of this Certificate are issued in accordance with the above Test Methods and any directly associated regulations. By submitting the application of an AWTA Test Method, the test results are within the precision limits of the Test Method declared. As far as is permitted by law, no other test results are to be used for the purpose of this Certificate. On receipt of this Certificate, the test results to any bona fide buyer or transporter of these goods are not to be used for any other purpose. THIS CERTIFICATE SHALL BE RENDERED VOID IF AMENDED OR ALTERED.

\*DECLARED: AWTA Ltd does not certify or provide any warranty whatsoever in regard to its claimed information.  
 © AUSTRALIAN WOOL TESTING AUTHORITY LTD  
 03/2010

For and on behalf of Australian Wool Testing Authority Ltd

TESTING AUTHORITY LTD  
 AUSTRALIAN WOOL TESTING AUTHORITY

CLIENT USE ONLY


**AUSTRALIAN WOOL TESTING AUTHORITY LTD**  
 Reg'd Office: 70 Robertson Street, Kensington, Victoria 3031 P.O. Box 240, North Melbourne 3051 Tel: (03) 9371 4100 Fax: (03) 9371 4181

A.B.N. 43 008 014 108 ORIGINAL  
**IWTO STAPLE TEST CERTIFICATE**

AWTA Ltd REF.	MELBOURNE 10 BALES	*MTRA *AAAFPLC	TEST METHODS IWTO-7,10 PAGE 1	*MTRA *AAAFPLC
TOTAL BALE WEIGHTS: TEST HOUSE GROSS 1 600 KG TARE 20 KG NETT 1 580 KG				
TEST RESULTS: 1. MEAN STAPLE LENGTH - 61 STAPLES 85 MM 2. COEFFICIENT OF VARIATION OF STAPLE LENGTH 20 % 3. MEAN STAPLE STRENGTH - 54 STAPLES 30 NEWTONS/TEXT 4. DISTRIBUTION OF POSITION OF BREAK: BROKE IN THE TIP REGION 34 % BROKE IN THE MIDDLE REGION 41 % BROKE IN THE BASE REGION 25 %				
ADDITIONAL INFORMATION: CHARGE: \$      GST @ 10% : \$      TOTAL CHARGE: \$				
NO FURTHER PAGES TEST CONDUCTED AT MELBOURNE LABORATORY REGISTER ON      PRINTED ON      AWTA				



Accreditation No. 2109  
 This document is issued in accordance with NATA's accreditation requirements

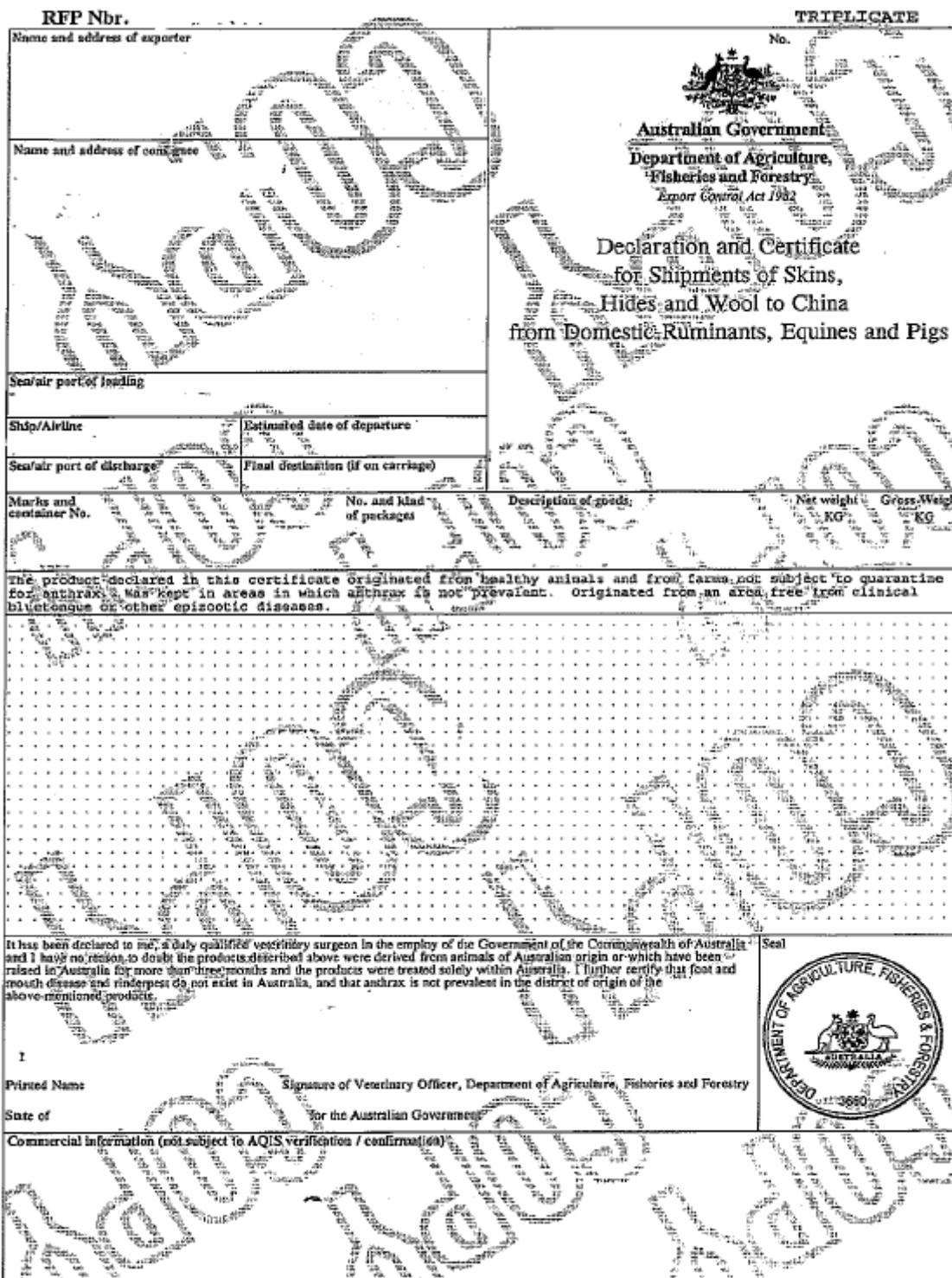


For and on behalf of Australian Wool Testing Authority Ltd  
 SECURITY CODE:

The ORIGINAL and any OFFICIAL COPY of this Certificate are issued in accordance with the stated Test Methods and any directly associated Regulations. By authorising the application of the AWTA Ltd Seal, the test results are within the precision limits of the Test Method declared. As far as is permissible by law, no other test results are to be used. On receipt of this Certificate, AWTA Ltd will make available sampling, weighing and/or loading details in any form, subject to the terms and conditions of the Certificate. THIS CERTIFICATE SHALL BE RENEWED YEARLY AND IS NOT RECALIBRATED.  
 \*DECLARED: AWTA Ltd does not certify or provide any warranty whatsoever in regard to declared information.  
 © AUSTRALIAN WOOL TESTING AUTHORITY LTD  
 0155886

CLIENT USE ONLY

Australian Government Department of Agriculture Health Certificate

<b>RFP Nbr.</b>		<b>TRIPLICATE</b>	
Name and address of exporter		No. <span style="float: right;">1000</span>	
Name and address of consignee		 <b>Australian Government</b> Department of Agriculture, Fisheries and Forestry Export Control Act 1982	
<b>Declaration and Certificate</b> for Shipments of Skins, Hides and Wool to China from Domestic Ruminants, Equines and Pigs			
Sea/air port of loading			
Ship/Airline	Estimated date of departure		
Sea/air port of discharge	Final destination (if on carriage)		
Marks and container No.	No. and kind of packages	Description of goods	Net weight KG      Gross Weight KG
The product declared in this certificate originated from healthy animals and from faxes not subject to quarantine for anthrax. Was kept in areas in which anthrax is not prevalent. Originated from an area free from clinical bluetongue or other epizootic diseases.			
			
It has been declared to me, a duly qualified veterinary surgeon in the employ of the Government of the Commonwealth of Australia, and I have no reason to doubt the products described above were derived from animals of Australian origin or which have been raised in Australia for more than three months and the products were treated solely within Australia. I further certify that foot and mouth disease and rinderpest do not exist in Australia, and that anthrax is not prevalent in the district of origin of the above-mentioned products.		Seal 	
I Printed Name: _____ State of _____ for the Australian Government		Signature of Veterinary Officer, Department of Agriculture, Fisheries and Forestry _____	
Commercial information (not subject to AQIS verification / confirmation)			

2510 - 08/05

## Appendix 7 Emergency animal diseases of importance to the wool industry

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AUSVETPLAN **Disease Strategy** manuals are in place for the EADs of importance to the Australian wool industry. Relevant parts of those manuals have been extracted for inclusion in this enterprise manual.

Further details can be obtained from the **Disease Strategies** and associated manuals, which are available on the Animal Health Australia website.<sup>21</sup> See also a report prepared for the Federation of Australian Wool Organisations (Williams 2012).

The diseases are described below under the following criteria:

- general description of the disease
- risk of introduction to Australia
- mode(s) of transmission
- survival
- principal customer country requirements for importing greasy wool.

### **Foot-and-mouth disease**

FMD is an acute, highly contagious viral disease of domestic and wild cloven-hoofed animals (ungulates). The disease is clinically characterised by the formation of vesicles (fluid-filled blisters) and erosions in the mouth and nostrils, on the teats, and on the skin between and above the hoofs. FMD can cause serious production losses and is a major constraint to international trade in livestock and livestock products.

FMD virus remains viable on wool and can be spread from fleece to fleece. Wool shorn from infected, or suspect infected, sheep is subject to movement controls, and permits are required for movement.

### **Risk of introduction to Australia**

The most significant risk of entry of FMD into Australia is through illegal entry of meat and dairy products. The risk of FMD virus-contaminated animal products being imported illegally has been acknowledged for some time, most recently in the Matthews review (2011). The virus can survive for long periods in a variety of fresh, partly cooked, cured and smoked meat products, and dairy products that are inadequately heat treated.

### **Modes of transmission**

FMD is one of the most contagious animal diseases.

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<sup>21</sup> [www.animalhealthaustralia.com.au/programs/emergency-animal-disease-preparedness/ausvetplan](http://www.animalhealthaustralia.com.au/programs/emergency-animal-disease-preparedness/ausvetplan)

Animals are infected via inhalation, ingestion, and artificial or natural breeding. The primary route of infection of ruminants is inhalation of contaminated aerosols, whereas pigs are mainly infected through ingesting contaminated feedstuff.

The virus is excreted in large quantities in expired air, in all secretions and excretions (including milk and semen), and from ruptured vesicles.

Because of the persistence of the virus on untreated wool, skins and hides, it would be possible for FMD to be transmitted to susceptible animals coming into contact with these products.

### **Survival**

FMD virus can remain infective in the environment for several weeks and possibly longer in the presence of organic matter, such as soil, manure and dried animal secretions, or on chemically inert materials, such as straw, wool fibres, hair and leather.

Survival time on wool is influenced by both temperature and the storage period. McColl et al (1995) found the following approximate survival times of FMD virus in wool, hides and skin:

- 2 days at 37 °C storage
- 2 weeks at 18 °C storage
- 7 weeks at 4 °C storage.

The World Organisation for Animal Health (OIE)<sup>22</sup> has established the following storage requirements for inactivation of FMD virus on greasy wool, based on the research by McColl and colleagues (1995):

- 8 days at 37 °C, or
- 4 weeks at 18 °C, or
- 4 months at 4 °C.

### **Principal customer country requirements for importing greasy wool**

Table A7.1 shows the current requirements relating to FMD for importation of greasy wool into Australia's principal customer countries.

---

<sup>22</sup> [www.oie.int/index.php?id=169&L=0&htmfile=chapitre\\_1.8.5.htm](http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_1.8.5.htm)

**Table A7.1 Current principal customer country requirements relating to FMD for importation of greasy wool**

Country/region	Requirements
China	FMD does not exist in Australia The sheep are of Australian origin, or have been raised in Australia for >3 months The wool was produced solely within Australia
Egypt	FMD does not exist in Australia
European Union	FMD has not been identified in the previous 12 months Sheep have not been vaccinated against FMD in the previous 12 months The wool was shorn at least 21 days before entry into the EU, and this must be declared on an Importers' Declaration used when importing wool into the EU
India	FMD does not exist in Australia The sheep are of Australian origin, or have been raised in Australia for >3 months The wool was produced solely within Australia
Japan	FMD does not exist in Australia The wool is free from any evidence of disseminating causative agents of any animal communicable disease The sheep are of Australian origin, or have been raised in Australia for >3 months The wool was produced solely within Australia
Malaysia	As for India
Republic of Korea	Australia has been free from FMD for the past year Australia does not vaccinate against FMD The method of transport prevents contamination by any communicable disease pathogens The sheep are of Australian origin or have been raised in Australia for >3 months The products were treated solely within Australia
Taiwan	As for India
Thailand	FMD does not exist in Australia The wool has been produced in an area in which no disease listed by the OIE has occurred that infects the particular species for a radius of 15 km The sheep are of Australian origin, or have been raised in Australia for more than three months The wool was produced solely within Australia

EU = European Union; FMD = foot-and-mouth disease; OIE = World Organisation for Animal Health

## Sheep pox

Sheep pox and goat pox are highly contagious diseases of sheep and goats characterised by papules and pustules (rarely vesicles) on exposed body surfaces, and by fever, lacrimation, salivation and nasal discharge. Typical pox lesions appear on the skin, and on the respiratory and gastrointestinal mucosa. There is high mortality in susceptible populations.

### Risk of introduction to Australia

Movement of infected animals is the main means by which sheep pox is spread to new premises or new areas. There is little risk of sheep pox, or the related diseases goat pox and lumpy skin disease, entering Australia in this way, because imports of live sheep, cattle or goats, or their semen or embryos, are not permitted from countries in which these diseases are endemic.

There is considerable risk of introduction of sheep pox to Australia on fomites (inanimate objects such as boots, clothing, equipment, instruments, vehicles, crates, packaging and unprocessed wool products) brought in by people from endemic areas, such as the Middle East.

### **Modes of transmission**

Most transmission is by direct contact via the respiratory system through short-distance aerosol transmission from nasal secretions and saliva when sheep and goats are congregated.

However, mechanical transmission can also occur by insects across short distances, and by transmission on fomites that can carry an infectious disease agent (Kitching and Taylor 1985).

### **Survival**

Sheep pox virus is very resistant to inactivation both on and off the host.

It can persist for up to 3 months in wool and hair from infected animals, for up to 6 months in the environment (including on fomites such as clothing and equipment), and for many years in dried scabs at ambient temperatures. There is no evidence that the virus persists in meat from infected animals.

The OIE *Terrestrial Animal Health Code*<sup>23</sup> states that a country cannot claim freedom from sheep pox or goat pox until it can be demonstrated that the disease has not been present for at least 6 months after the slaughter of the last affected animal (for countries in which a stamping-out policy is practised, with or without vaccination). All at-risk properties must therefore be kept under close surveillance for 6 months.

### **Principal customer country requirements for importing greasy wool**

Table A7.2 shows the current requirements relating to sheep pox for importation of greasy wool into Australia's principal customer countries.

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<sup>23</sup> [www.oie.int/index.php?id=169&L=0&htmfile=chapitre\\_1.14.10.htm](http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_1.14.10.htm)

**Table A7.2 Current principal customer country requirements relating to sheep pox for importation of greasy wool**

Country/region	Requirements
China	The sheep are of Australian origin, or have been raised in Australia for >3 months The wool was produced solely within Australia
Egypt	No specific restriction
European Union	Sheep pox has not been identified in the previous 12 months Sheep have not been vaccinated against sheep pox in the previous 12 months The wool was shorn at least 21 days before entry into the EU, and this must be declared on an Importers' Declaration used when importing wool into the EU
India	The sheep are of Australian origin, or have been raised in Australia for >3 months The wool was produced solely within Australia
Japan	The wool is free from any evidence of disseminating causative agents of any animal communicable disease The sheep are of Australian origin, or have been raised in Australia for >3 months The wool was produced solely within Australia
Malaysia	As for India
Republic of Korea	Australia has been free from sheep pox for 3 years Australia does not vaccinate against sheep pox The method of transport prevents contamination by any communicable disease pathogens The sheep are of Australian origin or have been raised in Australia for >3 months The products were treated solely within Australia
Taiwan	As for India
Thailand	The wool has been produced in an area in which no disease listed by the OIE has occurred that infects the particular species for a radius of 15 km The sheep are of Australian origin, or have been raised in Australia for >3 months The wool was produced solely within Australia

EU = European Union; OIE = World Organisation for Animal Health

## Anthrax

Anthrax is an infectious bacterial disease that can affect humans and a wide range of domestic and wild animals.

Anthrax usually causes death within a few hours in sheep, goats and cattle, and infected animals are often found dead before any signs of illness are observed (except perhaps in dairy animals that are under continuous and careful observation).

### Risk of introduction to Australia

Anthrax is present in parts of Australia.

### Modes of transmission

Anthrax is unusual among animal diseases in that it is not contagious – that is, spread from animal to animal is insignificant. It is spread by release of bacterial spores from the carcass of an animal that has died from the disease and the subsequent ingestion of these spores by other animals.

## Survival

The anthrax bacterium does not survive in dead animals and is readily inactivated by disinfectants or exposure to moderate temperatures. However, on exposure to air, it either dies or forms highly resistant spores that can remain viable for many years in some soils. The spores are much more temperature resistant than the bacterial cells.

## Principal customer country requirements for importing greasy wool

Table A7.3 shows the current requirements relating to anthrax for importation of greasy wool into Australia's principal customer countries.

**Table A7.3 Current principal customer country requirements relating to anthrax for importation of greasy wool**

Country/region	Requirements
China	<p>Anthrax is not prevalent in the district where the wool was grown</p> <p>The sheep are of Australian origin, or have been raised in Australia for &gt;3 months</p> <p>The wool was produced solely within Australia</p>
Egypt	<p>Anthrax is not prevalent in the district where the wool was grown</p>
European Union	<p>The wool was shorn at least 21 days before entry into the EU, and this must be declared on an Importers' Declaration used when importing wool into the EU</p>
India	<p>Anthrax is not prevalent in the district where the wool was grown</p> <p>The sheep are of Australian origin, or have been raised in Australia for &gt;3 months</p> <p>The wool was produced solely within Australia</p>
Japan	<p>Anthrax is not prevalent in the district where the wool was grown</p> <p>The wool is free from any evidence of disseminating causative agents of any animal communicable disease</p> <p>The sheep are of Australian origin, or have been raised in Australia for &gt;3 months</p> <p>The wool was produced solely within Australia</p>
Malaysia	<p>As for India</p>
Republic of Korea	<p>The method of transport prevents contamination by any communicable disease pathogens</p> <p>The sheep are of Australian origin or have been raised in Australia for &gt;3 months</p> <p>The products were treated solely within Australia</p>
Taiwan	<p>As for India</p>
Thailand	<p>Anthrax is not prevalent in the district where the wool was grown</p> <p>The wool has been produced in an area in which no disease listed by the OIE has occurred that infects the particular species for a radius of 15 km</p> <p>The sheep are of Australian origin, or have been raised in Australia for &gt;3 months</p> <p>The wool was produced solely within Australia</p>

EU = European Union; FMD = foot-and-mouth disease; OIE = World Organisation for Animal Health

## Rift Valley fever

Rift Valley fever (RVF) is an acute arthropod-borne viral disease, mainly affecting ruminants, camels and humans. RVF infection in ruminants causes abortion in pregnant animals and high mortality in young animals. RVF was first identified in Kenya's Great Rift Valley in 1930.

RVF has never occurred in Australia.

### **Risk of introduction to Australia**

The greatest risk of RVF entering Australia is through the importation of infected vectors or hosts, including humans.

### **Modes of transmission**

RVF is predominantly a vector-borne disease. The major vectors are certain species of mosquitoes, although ticks and biting midges have been implicated in some studies.

It is not known what role wool, other fibres or skins may play in transmission.

### **Survival**

Little is known about the persistence of the virus in wool, other fibres and skins. However, since wool, skin and bones may contain blood, some virus may persist in these products.

It is not known how long the virus would survive on wool after it is pressed into bales. Fibrous products can be decontaminated by scouring and carbonisation.

### **Principal customer country requirements for importing greasy wool**

Table A7.4 shows the current requirements relating to RVF for importation of greasy wool into Australia's principal customer countries.

**Table A7.4 Current principal customer country requirements relating to Rift Valley fever for importation of greasy wool**

Country/region	Requirements
China	The sheep are of Australian origin, or have been raised in Australia for >3 months The wool was produced solely within Australia <sup>a</sup>
Egypt	No specific requirement
European Union	The wool was shorn at least 21 days before entry into the EU, and this must be declared on an Importers' Declaration used when importing wool into the EU
India	The sheep are of Australian origin, or have been raised in Australia for >3 months The wool was produced solely within Australia
Japan	The wool is free from any evidence of disseminating causative agents of any animal communicable disease The sheep are of Australian origin, or have been raised in Australia for >3 months The wool was produced solely within Australia
Malaysia	As for India
Republic of Korea	Australia has been free of RVF for 4 years Australia does not vaccinate against RVF The method of transport prevents contamination by any communicable disease pathogens The sheep are of Australian origin, or have been raised in Australia for >3 months The products were treated solely within Australia
Taiwan	As for India
Thailand	The wool has been produced in an area in which no disease listed by the OIE has occurred that infects the particular species for a radius of 15 km The sheep are of Australian origin, or have been raised in Australia for >3 months The wool was produced solely within Australia

EU = European Union; OIE = World Organisation for Animal Health; RVF = Rift Valley fever

<sup>a</sup> Although there is no certification requirement for wool entering China, greasy wool shipments from South Africa to China were suspended for approximately 18 months after an outbreak of Rift Valley fever.

## Scrapie

Scrapie is a progressive neurodegenerative disease of adult sheep and goats.

The occurrence of scrapie can be sporadic (a random occurrence with no known genetic or environmental cause).

### Risk of introduction to Australia

Any occurrence of scrapie in Australia would be expected to be an isolated event associated with imported livestock.

### Modes of transmission

Transmission of scrapie primarily occurs from an infected ewe (or doe) to her progeny and other lambs or kids that are in close association around the time of birth.

### Survival

The scrapie agent (prion) is very resistant and can survive for several years in the environment and in animal products.

High-temperature and high-pressure rendering or incineration is required to inactivate the agent. Most common disinfectants are ineffective. It is not known if scouring inactivates the scrapie agent.

### Principal customer country requirements for importing greasy wool

Table A7.5 shows the current requirements relating to scrapie for importation of greasy wool into Australia's principal customer countries.

**Table A7.5 Current principal customer country requirements relating to scrapie for importation of greasy wool**

Country/region	Requirements
China	The sheep are of Australian origin, or have been raised in Australia for >3 months The wool was produced solely within Australia
Egypt	No specific requirement
European Union	The wool was shorn at least 21 days before entry into the EU, and this must be declared on an Importers' Declaration used when importing wool into the EU
India	The sheep are of Australian origin, or have been raised in Australia for >3 months The wool was produced solely within Australia
Japan	The wool is free from any evidence of disseminating causative agents of any animal communicable disease The sheep are of Australian origin, or have been raised in Australia for >3 months The wool was produced solely within Australia
Malaysia	As for India
Republic of Korea	Australia has been free from scrapie for 5 years The method of transport prevents contamination by any communicable disease pathogens The sheep are of Australian origin, or have been raised in Australia for >3 months The products were treated solely within Australia
Taiwan	As for India
Thailand	The wool has been produced in an area in which no disease listed by the OIE has occurred that infects the particular species for a radius of 15 km The sheep are of Australian origin, or have been raised in Australia for >3 months The wool was produced solely within Australia

EU = European Union; OIE = World Organisation for Animal Health

## Bluetongue

Bluetongue is an arthropod-borne viral disease of ruminants of variable clinical severity. It is characterised by inflammation of mucous membranes, widespread haemorrhages and oedema. It is primarily a disease of sheep.

Livestock are subject to movement controls, but animal products such as wool, meat and milk may be moved without restriction, because there is no risk of disease transmission via these products.

### **Risk of introduction to Australia**

Some bluetongue virus serotypes have been identified in parts of northern and northeastern Australia (in parts of Western Australia, the Northern Territory, Queensland and New South Wales). The National Arbovirus Monitoring Program (NAMP)<sup>24</sup> monitors the distribution of economically important insect-borne viruses of livestock and their vectors. NAMP produces and regularly updates the interactive bluetongue zone map, which shows the limits of bluetongue virus transmission in Australia.

The most likely route of entry of new bluetongue virus serotypes into Australia is via infected midges blown on the annual northwest monsoons from Indonesia to the 'Top End' of the Northern Territory.

### **Modes of transmission**

Bluetongue virus is not transmitted by direct contact or indirect means between animals in the absence of competent insect vectors. The virus may spread by movement of infected ruminants into areas where competent insect vectors are present, or by wind dispersal of infected vectors into areas where susceptible ruminants are present.

### **Survival**

Bluetongue virus can be detected in the blood of cattle under experimental conditions for several months and in sheep for several weeks. However, bluetongue virus does not survive outside the vector species or susceptible hosts. The virus does not persist in animal carcasses or animal products, such as meat and wool, nor does it persist on equipment or personnel.

### **Principal customer country requirements for importing greasy wool**

Table A7.6 shows the current requirements relating to bluetongue for importation of greasy wool into Australia's principal customer countries.

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<sup>24</sup> Further information on NAMP is available at the Animal Health Australia website: [www.animalhealthaustralia.com.au/programs/disease-surveillance/national-arbovirus-monitoring-program](http://www.animalhealthaustralia.com.au/programs/disease-surveillance/national-arbovirus-monitoring-program).

**Table A7.6 Current principal customer country requirements relating to bluetongue for importation of greasy wool**

<b>Country/region</b>	<b>Requirements</b>
China	Bluetongue is not present in the area where the wool was grown The sheep are of Australian origin, or have been raised in Australia for >3 months The wool was produced solely within Australia
Egypt	Bluetongue is not prevalent in the district where the wool was grown
European Union	The wool was shorn at least 21 days before entry into the EU, and this must be declared on an Importers' Declaration used when importing wool into the EU
India	The sheep are of Australian origin, or have been raised in Australia for >3 months The wool was produced solely within Australia
Japan	The wool is free from any evidence of disseminating causative agents of any animal communicable disease The sheep are of Australian origin, or have been raised in Australia for >3 months The wool was produced solely within Australia
Malaysia	As for India
Republic of Korea	Australia does not vaccinate against bluetongue The method of transport prevents contamination by any communicable disease pathogens The sheep are of Australian origin or have been raised in Australia for >3 months The products were treated solely within Australia
Taiwan	As for India
Thailand	The wool has been produced in an area in which no disease listed by the OIE has occurred that infects the particular species for a radius of 15 km The sheep are of Australian origin, or have been raised in Australia for >3 months The wool was produced solely within Australia

EU = European Union; OIE = World Organisation for Animal Health

## Appendix 8 Key wool industry organisations

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### Wool grower industry organisations

The principal, but not the only, source of industry representation for Australian wool growers is the wool or livestock committee of their state farming organisation. Committee members normally represent a district or region within their state and are elected by individual wool growers from that district or region.

The state wool or livestock committees represent wool growers on state issues, liaising with state ministers and departments, and other state-based organisations. Representation on national issues is normally the role of a national wool grower organisation, which has close links to the wool and livestock committees of the state farming organisations.

The following organisations and committees are recognised as industry representatives by the state and Australian governments.

#### WoolProducers Australia

[www.woolproducers.com.au](http://www.woolproducers.com.au)

WoolProducers Australia is the national wool grower organisation. It has direct links to the state farming organisations, which comprise 50% of its membership. Individual wool growers may also become members of WoolProducers Australia.

WoolProducers Australia, which is based in Canberra, represents wool growers on Australian Government committees relating to animal health, welfare and biosecurity.

#### Australian Wool Growers Association

[www.australianwoolgrowers.com.au](http://www.australianwoolgrowers.com.au)

The Australian Wool Growers Association is an independent national wool grower body. It has no formal relationship with the wool or livestock committees of state farming organisations or with WoolProducers Australia.

#### Australian Superfine Wool Growers' Association

[www.aswga.com](http://www.aswga.com)

The Australian Superfine Wool Growers' Association represents the interests of wool growers who produce wool of 19.5 microns and finer on matters that are of particular relevance to that part of the wool industry. They work closely with other industry organisations and service suppliers.

### Wool or livestock committees of state farming organisations

#### New South Wales

NSW Farmers Association Wool Committee; [www.nswfarmers.org.au](http://www.nswfarmers.org.au)

### **Queensland**

Agforce Queensland Wool Committee; [www.agforceqld.org.au](http://www.agforceqld.org.au)

### **South Australia**

Primary Producers SA (formerly South Australian Farmers Federation Livestock Committee); [www.ppsa.org.au](http://www.ppsa.org.au)

### **Tasmania**

Tasmanian Farmers & Graziers Association Wool Council; [www.tfga.com.au](http://www.tfga.com.au)

### **Victoria**

Victorian Farmers Federation Livestock Committee; [www.vff.org.au](http://www.vff.org.au)

### **Western Australia**

Pastoralists and Graziers Association of Western Australia Livestock Committee; [www.pgaofwa.org.au](http://www.pgaofwa.org.au)

WAFarmers Wool Council; [www.wafarmers.org.au/wool](http://www.wafarmers.org.au/wool)

## **Stud merino sheep breeding organisations**

The stud merino breeding industry is a major component of the Australian wool-growing industry. Individual merino stud breeders' issues are handled at the national level and at the state level by the following organisations:

- national – Australian Association of Stud Merino Breeders
- Queensland – Queensland Merino Stud Sheepbreeders' Association Inc
- New South Wales – NSW Stud Merino Breeders' Association Ltd
- Victoria – Victoria Stud Merino Sheep Breeders Association Inc
- Tasmania – Stud Merino Breeders' Association of Tasmania
- South Australia – South Australian Stud Merino Sheepbreeder's Association
- Western Australia – Stud Merino Breeders Association of Western Australia.

## **Other stud sheep breeding organisations**

Australian Stud Sheep Breeders Association; [www.assba.com.au](http://www.assba.com.au)

The Australian Stud Sheep Breeders Association maintains the stud flock books for a number of non-merino breeds of sheep. Numbers of these sheep are much smaller than numbers of merino sheep.

## **Post-farm industry organisations**

Each of the post-farm industry sectors is represented by a national organisation.

### **Wool brokers**

National Council of Wool Selling Brokers of Australia; [www.ncwsba.org](http://www.ncwsba.org)

Inland Wool Brokers Association; Yennora Distribution Centre, Dennistoun Avenue, Guildford NSW 2161

### **Private treaty wool buyers**

Private Treaty Wool Merchants of Australia Inc; [www.woolindustries.org](http://www.woolindustries.org)

### **Wool buyers, exporters and processors**

Australian Council of Wool Exporters and Processors Inc; [www.woolindustries.org](http://www.woolindustries.org)

### **Peak industry organisation**

Federation of Australian Wool Organisations; [www.woolindustries.org](http://www.woolindustries.org)

## **Australian Wool Exchange**

[www.awex.com.au](http://www.awex.com.au)

The Australian Wool Exchange (AWEX) provides a range of auction sale management services; wool market reporting; and industry quality assurance in relation to wool pack standards, wool classing, and the preparation of wool for sale and export. The latter includes the registration of Australian wool classers, preparation of the AWEX Code of Practice (which defines wool-classing standards and provides general advice on wool classing and related matters), and setting and maintaining wool pack standards.

## **Australian Wool Testing Authority**

[www.awta.com.au](http://www.awta.com.au)

The Australian Wool Testing Authority (AWTA) provides a range of testing services to the Australian wool industry. It is the sole supplier of testing services used in the exchange of ownership of Australian wool.

AWTA has a number of other divisions, which provides services to:

- the New Zealand wool and textile industry through AWTA's ownership of the New Zealand Wool Testing Authority
- the Australian textile industry and other industries through textile and general materials testing by the AWTA Product Testing division
- the Chinese textile industry through its 50% ownership of JinAo Testing Company in Nanjing, China
- the Australian food, grain and fodder industries through its wholly owned divisions Agrifood Technology and FeedTest.

## **Wool-dumping and packing facilities**

Wool-dumping and packing facilities dump (compress) bales and pack them into containers. The wool bales may be compressed into units of one, two or three bales before they are packed into containers. Some bales are packed into containers without being dumped.

The dumping and packing facilities, as of January 2015, are listed below.

### **Queensland**

Australian Wool Handlers; [www.awh.com.au](http://www.awh.com.au)

### **New South Wales**

Australian Wool Handlers; [www.awh.com.au](http://www.awh.com.au)

QUBE Logistics; [www.qube.com.au/logistics/facilities/new-south-wales](http://www.qube.com.au/logistics/facilities/new-south-wales)

### **Victoria**

Australian Wool Handlers; [www.awh.com.au](http://www.awh.com.au)

Pack-Tainers; [www.pack-tainers.com.au](http://www.pack-tainers.com.au)

Winnipeg Textiles

### **South Australia**

Australian Wool Handlers; [www.awh.com.au](http://www.awh.com.au)

### **Western Australia**

Independent Wool Dumpers; [www.iwd.com.au](http://www.iwd.com.au)

## **Australian Wool Innovation**

[www.wool.com](http://www.wool.com)

Australian Wool Innovation (AWI) is the wool grower-funded research and development (R&D), and promotion and marketing organisation. It is primarily funded by a compulsory levy of 2% of the gross proceeds of all wool sold. Its R&D functions are also partly funded by the Australian Government.

AWI's R&D funding supports a range of projects, ranging from on-farm to post-farm activities. Research areas include genetics, pasture management and utilisation, animal health and welfare, wool industry planning for EADs, sustainability and market intelligence.

The organisation's promotion and marketing activities are designed around the global promotion and selling of Australian wool, particularly at the high end of fashion.

AWI is based in Sydney and has offices in key customer countries that support its promotion and marketing activities.

## **Research organisations**

### **Sheep CRC**

[www.sheepcrc.org.au](http://www.sheepcrc.org.au)

The Cooperative Research Centre for Sheep Industry Innovation (Sheep CRC) is Australia's principal sheep and wool industry R&D organisation. It is supported by cash and in-kind contributions from 40 organisations. The CRC is co-funded under the Australian Government's Cooperative Research Centres Program.

The Sheep CRC is based in Armidale, New South Wales.

### **Other R&D organisations**

State departments of agriculture, CSIRO, universities and AWTA research aspects of the sheep and wool industry. Some research is collaborative between the institutions, or with the Sheep CRC.

AWEX also conducts research projects related to aspects of its work requirements or areas of responsibility.

## Glossary

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Agriculture Ministers' Forum	The forum of Australian national, state and territory and New Zealand ministers of agriculture that sets Australian and New Zealand agricultural policy (formerly the Standing Council on Primary Industries). <i>See also</i> Animal Health Committee
Animal byproducts	Products of animal origin that are not for consumption but are destined for industrial use (eg hides and skins, fur, wool, hair, feathers, hoofs, bones, fertiliser).
Animal Health Committee	A committee whose members are the Australian and state and territory CVOs, the Director of the CSIRO Australian Animal Health Laboratory, and the Director of Environmental Biosecurity in the Australian Government Department of the Environment. The committee provides advice to the Agriculture Ministers' Forum on animal health matters, focusing on technical issues and regulatory policy (formerly called the Veterinary Committee). <i>See also</i> Agriculture Ministers' Forum
Animal products	Meat, meat products and other products of animal origin (eg eggs, milk) for human consumption or for use in animal feedstuff.
Approved processing facility (APF)	An abattoir, knackery, milk processing plant or other such facility that maintains increased biosecurity standards. Such a facility could have animals or animal products introduced from lower risk premises under a permit for processing to an approved standard.
At-risk premises (ARP)	A premises in a restricted area that contains a live susceptible animal(s) but is not considered at the time of classification to be an infected premises, dangerous contact premises, dangerous contact processing facility, suspect premises or trace premises.
Auction	The most common form of exchange of ownership for Australian wool. Auction sales are held in Sydney, Melbourne and Fremantle. They are normally held in 45 weeks of the year, with breaks at Christmas/New Year, Easter and mid-year.
Australian Chief Veterinary Officer	The nominated senior veterinarian in the Australian Government Department of Agriculture who manages international animal health commitments and the Australian Government's response to an animal disease outbreak. <i>See also</i> Chief veterinary officer
Australian Wool Exchange (AWEX)	AWEX ( <a href="http://www.awex.com.au">www.awex.com.au</a> ) has responsibility for managing aspects of quality assurance and a number of standards in the wool industry, including the preparation of wool for sale and wool pack standards.
Australian Wool Innovation (AWI)	The wool grower-funded research and development and promotion organisation for the Australian wool industry ( <a href="http://www.wool.com">www.wool.com</a> ).

Australian Wool Testing Authority (AWTA)	The sole supplier of certified testing services for sale lots and other commercial parcels of wool ( <a href="http://www.awta.com.au">www.awta.com.au</a> ).
AUSVETPLAN	<i>Australian Veterinary Emergency Plan</i> . A series of technical response plans that describe the proposed Australian approach to an emergency animal disease incident. The documents provide guidance based on sound analysis, linking policy, strategies, implementation, coordination and emergency management plans.
Bulk classing	The classing of individual fleeces in a rehandling facility together with fleeces of similar commercial value from other farms. Bulk classing leads to the creation of sale lots that include wool from a number of farms, rather than from a single farm.
Carbonising	The removal of vegetable matter from scoured wool by treating the scoured wool with sulfuric acid, baking and shaking.
Chief veterinary officer (CVO)	The senior veterinarian of the animal health authority in each jurisdiction (national, state or territory) who has responsibility for animal disease control in that jurisdiction. <i>See also</i> Australian Chief Veterinary Officer
Classers' specification	A series of documents filled in by the wool classer during shearing. It lists each 'classed line' of wool and the bale numbers of each bale allocated to each line. A copy is kept by the farm owner or manager, and another copy is sent to the wool selling agent to assist them in preparing the wool for sale.
Coefficient of variation	A standard statistical expression (shown as a percentage) that describes the relative variation in any parameter. It is used to describe variation in fibre diameter, staple length and staple strength.
Compensation	The sum of money paid by government to an owner for livestock or property that are destroyed for the purpose of eradication or prevention of the spread of an emergency animal disease, and livestock that have died of the emergency animal disease. <i>See also</i> Cost-sharing arrangements, Emergency Animal Disease Response Agreement
Consultative Committee on Emergency Animal Diseases (CCEAD)	The key technical coordinating body for animal health emergencies. Members are state and territory CVOs, representatives of CSIRO-AAHL and the relevant industries, and the Australian CVO as chair.
Control area (CA)	A legally declared area where the disease controls, including surveillance and movement controls, applied are of lesser intensity than those in a restricted area (the limits of a control area and the conditions applying to it can be varied during an incident according to need).
Core sample	A sample of wool taken from wool bales by a hydraulically powered core tube. Core tubes are 7/8 inch in diameter. At least 12 or 20 core samples are taken from each sale lot, depending on the number of bales in the lot. The individual cores samples are amalgamated to form a composite sample for testing for yield, vegetable matter content and fibre diameter.

Cost-sharing arrangements	Arrangements agreed between governments (national and states/territories) and livestock industries for sharing the costs of emergency animal disease responses. See also Compensation, Emergency Animal Disease Response Agreement
Dangerous contact animal	A susceptible animal that has been designated as being exposed to other infected animals or potentially infectious products following tracing and epidemiological investigation.
Dangerous contact premises (DCP)	A premises, apart from an abattoir, knackery or milk processing plant (or other such facility) that, after investigation and based on a risk assessment, is considered to contain a susceptible animal(s) not showing clinical signs, but considered highly likely to contain an infected animal(s) and/or contaminated animal products, wastes or things that present an unacceptable risk to the response if the risk is not addressed, and that therefore requires action to address the risk.
Dangerous contact processing facility (DCPF)	An abattoir, knackery, milk processing plant or other such facility that, based on a risk assessment, appears highly likely to have received infected animals, or contaminated animal products, wastes or things, and that requires action to address the risk.
Declared area	A defined tract of land that is subjected to disease control restrictions under emergency animal disease legislation. There are two types of declared areas: restricted area and control area.
Decontamination	Includes all stages of cleaning and disinfection.
Depopulation	The removal of a host population from a particular area to control or prevent the spread of disease.
Destroy (animals)	To kill animals humanely.
Disease agent	A general term for a transmissible organism or other factor that causes an infectious disease.
Disease Watch Hotline	24-hour freecall service for reporting suspected incidences of exotic diseases – 1800 675 888.
Disinfectant	A chemical used to destroy disease agents outside a living animal.
Disinfection	The application, after thorough cleansing, of procedures intended to destroy the infectious or parasitic agents of animal diseases, including zoonoses; applies to premises, vehicles and different objects that may have been directly or indirectly contaminated.
Display sample	The composite grab samples taken from individual wool bales in each sale lot. Display samples are made available to wool buyers as part of the valuing process before the wool is offered for sale. Display samples vary in weight, but are usually 3–6 kg.
Disposal	Sanitary removal of animal carcasses, animal products, materials and wastes by burial, burning or some other process so as to prevent the spread of disease.

Early-stage processing facility	A processing facility where scouring, and possibly carbonising, are conducted.
Emergency animal disease	A disease that is (a) exotic to Australia or (b) a variant of an endemic disease or (c) a serious infectious disease of unknown or uncertain cause or (d) a severe outbreak of a known endemic disease, and that is considered to be of national significance with serious social or trade implications. <i>See also</i> Endemic animal disease, Exotic animal disease
Emergency Animal Disease Response Agreement	Agreement between the Australian and state/territory governments and livestock industries on the management of emergency animal disease responses. Provisions include participatory decision making, risk management, cost sharing, the use of appropriately trained personnel and existing standards such as AUSVETPLAN. <i>See also</i> Compensation, Cost-sharing arrangements
Endemic animal disease	A disease affecting animals (which may include humans) that is known to occur in Australia. <i>See also</i> Emergency animal disease
Enterprise	<i>See</i> Risk enterprise
Epidemiological investigation	An investigation to identify and qualify the risk factors associated with the disease. <i>See also</i> Veterinary investigation
Exotic animal disease	A disease affecting animals (which may include humans) that does not normally occur in Australia. <i>See also</i> Emergency animal disease, Endemic animal disease
Exotic fauna/feral animals	<i>See</i> Wild animals
Fibre diameter	The average diameter of wool fibres, measured in microns (micrometres).
Fleece	The wool grown on an individual sheep.
Fleece measurement sample	A sample of greasy wool taken from individual sheep for performance recording purposes (eg for the measurement of fibre diameter and clean fleece weight). Fleece measurement samples usually weigh about 50 g.
Grab sample	A sample of full-length greasy wool drawn from wool bales by a hydraulically powered set of jaws. Grab samples vary in weight, but average about 150–200 g. Individual grab samples are amalgamated to form the display sample for a sale lot. At least 12 or 20 grab samples are taken from each sale, depending on the number of bales in the lot.
Greasy wool	Wool as it occurs on sheep, and from shearing until it is scoured. Greasy wool contains wool fibres, naturally exuded grease and suint (sweat), together with dust, dirt and vegetable matter picked up in the paddock.

Health Certificate	A document produced by the Australian Government Department of Agriculture that certifies the health status of the sheep from which wool was shorn. Wool exporters obtain a Health Certificate from the Department of Agriculture for each consignment of wool exported to an overseas customer. The Health Certificate forms part of the documentation sent by wool exporters to their overseas customers.
High-density bale	A bale of scoured or carbonised wool that is packed to a higher density than can be achieved with a conventional wool press.
In-contact animals	Animals that have had close contact with infected animals, such as noninfected animals in the same group as infected animals.
Incubation period	The period that elapses between the introduction of the pathogen into the animal and the first clinical signs of the disease.
Index case	The first case of the disease to be diagnosed in a disease outbreak. <i>See also</i> Index property
Index property	The property on which the index case is found. <i>See also</i> Index case
Infected premises (IP)	A defined area (which may be all or part of a property) on which animals meeting the case definition are or were present, or the causative agent of the emergency animal disease is present, or there is a reasonable suspicion that either is present, and that the relevant chief veterinary officer or their delegate has declared to be an infected premises.
Interlot	A group of entire bales of similar commercial properties from different farms that form a sale lot. It may also include bales of bulk-classed wool. An interlot differs from a bulk-classed sale lot in that the wool bales are grouped together, rather than individual fleeces.
Job card	A written list of tasks to be carried out by an individual or group as part of an emergency response.
Local control centre (LCC)	An emergency operations centre responsible for the command and control of field operations in a defined area.
Mid-side sample	<i>See</i> Fleece measurement sample
Monitoring	Routine collection of data for assessing the health status of a population. <i>See also</i> Surveillance
Movement control	Restrictions placed on the movement of animals, people and other things to prevent the spread of disease.
National management group (NMG)	A group established to approve (or not approve) the invoking of cost sharing under the Emergency Animal Disease Response Agreement. NMG members are the Secretary of the Australian Government Department of Agriculture as chair, the chief executive officers of the state and territory government parties, and the president (or analogous officer) of each of the relevant industry parties.

Native wildlife	See Wild animals
OIE Terrestrial Code	OIE <i>Terrestrial Animal Health Code</i> . Describes standards for safe international trade in animals and animal products. Revised annually and published on the internet at: <a href="http://www.oie.int/international-standard-setting/terrestrial-code/access-online">www.oie.int/international-standard-setting/terrestrial-code/access-online</a>
OIE Terrestrial Manual	OIE <i>Manual of Diagnostic Tests and Vaccines for Terrestrial Animals</i> . Describes standards for laboratory diagnostic tests and the production and control of biological products (principally vaccines). The current edition is published on the internet at: <a href="http://www.oie.int/international-standard-setting/terrestrial-manual/access-online">www.oie.int/international-standard-setting/terrestrial-manual/access-online</a>
Operational procedures	Detailed instructions for carrying out specific disease control activities, such as disposal, destruction, decontamination and valuation.
Outside area (OA)	The area of Australia outside the declared (control and restricted) areas.
Owner	Person responsible for a premises (includes an agent of the owner, such as a manager or other controlling officer).
Premises	A tract of land including its buildings, or a separate farm or facility that is maintained by a single set of services and personnel.
Premises of relevance (POR)	A premises in a control area that contains a live susceptible animal(s) but is not considered at the time of classification to be an infected premises, suspect premises, trace premises, dangerous contact premises or dangerous contact processing facility.
Prevalence	The proportion (or percentage) of animals in a particular population affected by a particular disease (or infection or positive antibody titre) at a given point in time.
Prompt/prompt date	The nominal date on which wool is paid for after purchase. For wool sold at auction, the prompt date is normally the Friday following the week in which the wool is sold. Wool sold at auction is not delivered to the buyer until it is paid for. Wool may be paid for before the prompt date if the wool buyer wishes to take earlier delivery of the wool.
Quarantine	Legal restrictions imposed on a place or a tract of land by the serving of a notice limiting access or egress of specified animals, persons or things.
Reclassing	The classing of individual fleeces from a single farm in a rehandling facility. Reclassing leads to the creation of sale lots from the source farm only. Reclassed lots are sold under the farm brand. Reclassing differs from bulk classing in which fleeces from different farms are classed together to form sale lots.
Rehandling facility	A facility where wool from a farm is sent to be either classed into sale lots that contain wool from the source farm only, or classed into sale lots that contain wool from a number of farms.

Resolved premises (RP)	An infected premises, dangerous contact premises or dangerous contact processing facility that has completed the required control measures and is subject to the procedures and restrictions appropriate to the area in which it is located.
Restricted area (RA)	A relatively small legally declared area around infected premises and dangerous contact premises that is subject to disease controls, including intense surveillance and movement controls.
Risk enterprise	A defined livestock or related enterprise that is potentially a major source of infection for many other premises. Includes intensive piggeries, feedlots, abattoirs, knackeries, saleyards, calf scales, milk factories, tanneries, skin sheds, game meat establishments, cold stores, artificial insemination centres, veterinary laboratories and hospitals, road and rail freight depots, showgrounds, field days, weighbridges and garbage depots.
Sale catalogue	Sale catalogues include the key descriptive, weight and test data for each sale lot offered for sale. They are prepared in both printed and electronic formats.
Sale lot	A group of bales of similar commercial properties that are amalgamated for sale. A sale lot may comprise bales from one farm only or from multiple farms. The number of bales in a sale varies from 1 to more than 20, and averages around 6.
Salvage	Recovery of some (but not full) market value by treatment and use of products, according to disease circumstances.
Sampling line	A collection of equipment used to take core and grab samples in a wool warehouse. A sampling line comprises a grab-sampling machine, a set of weighing scales and a core-sampling machine.
Scouring	The first stage in wool processing. Greasy wool is passed through a series of baths containing an aqueous detergent solution, followed by rinsing and drying. Scouring removes grease and dirt, but does not remove vegetable matter.
Sensitivity	The proportion of truly positive units that are correctly identified as positive by a test. <i>See also</i> Specificity
Sentinel animal	Animal of known health status that is monitored to detect the presence of a specific disease agent.
Serotype	A subgroup of microorganisms identified by the antigens carried (as determined by a serology test).
Show floor	A location in a wool warehouse where display samples are made available to wool buyers for inspection before sale. There are normally multiple show floors in each wool-selling centre.
Specificity	The proportion of truly negative units that are correctly identified as negative by a test. <i>See also</i> Sensitivity

Stamping out	Disease eradication strategy based on the quarantine and slaughter of all susceptible animals that are infected or exposed to the disease.
Staple	A collection of wool fibres that are loosely attached to each other in greasy wool and form the basic building blocks of a greasy wool fleece. Staples are usually around 1.5 mm in diameter.
Staple length	The average length of individual staples of greasy wool, measured in millimetres.
Staple strength	The average strength of individual staples of greasy wool, measured in newtons/kilotex.
State or territory control centre (SCC)	The emergency operations centre that directs the disease control operations to be undertaken in that state or territory.
Surveillance	A systematic program of investigation designed to establish the presence, extent or absence of a disease, or of infection or contamination with the causative organism. It includes the examination of animals for clinical signs, antibodies or the causative organism.
Susceptible animals	Animals that can be infected with a particular disease.
Suspect animal	An animal that may have been exposed to an emergency disease such that its quarantine and intensive surveillance, but not pre-emptive slaughter, is warranted. or An animal not known to have been exposed to a disease agent but showing clinical signs requiring differential diagnosis.
Suspect premises (SP)	Temporary classification of a premises that contains a susceptible animal(s) not known to have been exposed to the disease agent but showing clinical signs similar to the case definition, and that therefore requires investigation(s).
Trace premises (TP)	Temporary classification of a premises that contains susceptible animal(s) that tracing indicates may have been exposed to the disease agent, or contains contaminated animal products, wastes or things, and that requires investigation(s).
Tracing	The process of locating animals, persons or other items that may be implicated in the spread of disease, so that appropriate action can be taken.
Tuft sample	A small sample of full-length greasy wool drawn mechanically from a display sample. Approximately 66 tuft samples are taken from each display sample for measurement of staple length and staple strength.
Unknown status premises (UP)	A premises within a declared area where the current presence of susceptible animals and/or risk products, wastes or things is unknown.
Vaccination	Inoculation of individuals with a vaccine to provide active immunity.

Vaccine	A substance used to stimulate immunity against one or several disease-causing agents to provide protection or to reduce the effects of the disease. A vaccine is prepared from the causative agent of a disease, its products, or a synthetic substitute, which is treated to act as an antigen without inducing the disease.
Vector	A living organism (frequently an arthropod) that transmits an infectious agent from one host to another. A biological vector is one in which the infectious agent must develop or multiply before becoming infective to a recipient host. A mechanical vector is one that transmits an infectious agent from one host to another but is not essential to the lifecycle of the agent.
Vegetable matter content	The amount of grass seeds, burrs, sticks and other forms of vegetable matter in wool. It is expressed as a percentage of the weight of wool.
Veterinary investigation	An investigation of the diagnosis, pathology and epidemiology of the disease. <i>See also</i> Epidemiological investigation
Weight note	A document that includes the farm (or rehandling facility) brand, wool description, and individual numbers and weights for each bale in a sale lot. It is generated in the broker's/private treaty merchant's/other selling agent's warehouse and is identified by a unique inhouse weight note, or folio, number.
Wild animals	
- native wildlife	Animals that are indigenous to Australia and may be susceptible to emergency animal diseases (eg bats, dingoes, marsupials).
- feral animals	Animals of domestic species that are not confined or under control (eg cats, horses, pigs).
- exotic fauna	Nondomestic animal species that are not indigenous to Australia (eg foxes).
Wool book	A book in which the wool presser records the bale number and wool description of each bale as it is pressed.
Wool dumping	The hydraulic compression of wool bales to create smaller units before shipping. Wool bales are most commonly dumped in units of two or three bales that are held in place by steel bands.
Wool-dumping facility	A facility where wool bales are dumped, packed into containers for shipping and delivered to the port.
Wool packing	Packing undumped wool bales into containers before shipping.
Wool statistical area (WSA)	Regional areas defined by the Australian Bureau of Statistics within each state. The WSA is recorded for all lots of wool offered for sale at auction.

Yield	The proportion of clean wool in greasy wool. It includes known allowances for amounts of moisture, small amounts of residual grease and suint (sweat), dirt and any lubricants added during processing. The yield depends on the values allocated to the allowances and on the stage along the wool pipeline at which yield is to be determined.
Zero susceptible species premises (ZP)	A premises that does not contain any susceptible animals or risk products, wastes or things.
Zoning	The process of defining, implementing and maintaining a disease-free or infected area in accordance with OIE guidelines, based on geopolitical and/or physical boundaries and surveillance, in order to facilitate disease control and/or trade.
Zoonosis	A disease of animals that can be transmitted to humans.

## Abbreviations

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AUSVETPLAN	Australian Veterinary Emergency Plan
AWEX	Australian Wool Exchange
AWI	Australian Wool Innovation
AWTA	Australian Wool Testing Authority
CA	control area
CCEAD	Consultative Committee on Emergency Animal Diseases
CVO	chief veterinary officer
DCP	dangerous contact premises
EAD	emergency animal disease
EADRA	<i>Government and Livestock Industry Cost Sharing Deed in Respect of Emergency Animal Disease Responses (EAD Response Agreement)</i>
FMD	foot-and-mouth disease
IP	infected premises
LCC	local control centre
NMG	National Management Group
OIE	World Organisation for Animal Health
RA	restricted area
SP	suspect premises
TP	trace premises

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