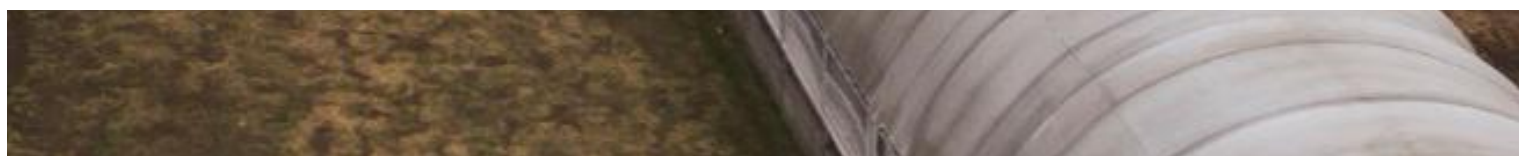


National Farm Biosecurity Manual for Pork Production

October 2021



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Cover image: Australian Pork Limited



ANIMAL HEALTH AUSTRALIA

AHA facilitates innovative partnerships between the Australian Government, state and territory governments, major livestock industries and other stakeholders. We work with our members and stakeholders to strengthen Australia's national animal health system and maximise confidence in the safety and quality of Australia's livestock products in domestic and overseas markets.



AUSTRALIAN PORK LIMITED

APL is a unique rural industry service body for the Australian pork industry. It is a producer-owned company delivering integrated services that enhance the viability of Australia's pig producers. The organisation aims to enhance opportunities for the sustainable growth of the Australian pork industry by delivering integrated marketing, innovation and policy services along the pork industry supply chain. APL pursues opportunities for the industry at both the domestic and international level.



FARM BIOSECURITY

The Farm Biosecurity program is a joint initiative of AHA and Plant Health Australia on behalf of their members. Its goal is to help producers reduce the risks posed by diseases, pests and weeds to crops and livestock. This national awareness campaign provides information about on-farm biosecurity measures which help prevent emergency animal disease outbreaks and exotic plant pest incursions. It encourages producers to identify risks to their livestock, crops and plant products, and to minimise those risks through good practices.

www.farmbiosecurity.com.au

Contents

National Farm Biosecurity Manual for Pork Production	1
Biosecurity on the farm	3
Potential biosecurity risks	5
Definitions of ‘production area’ and ‘property’	6
Levels of biosecurity overview	7
Level 1 – Principles of biosecurity	9
1.0 Manage farm inputs – stock, water, feed, bedding	9
2.0 Manage the movement of people, vehicles and equipment	13
3.0 Manage production practices	15
4.0 Manage feral animals, pests and vermin	17
5.0 Manage outgoing products	18
6.0 Train, plan and record	18
Level 2 – High-risk biosecurity procedures	22
1.0 Action plan for suspected emergency animal disease	22
2.0 Facilities	22
3.0 Personnel	23
4.0 Operational	23
5.0 Standard operating procedures (SOPs) for disease emergencies	24
Appendix I – Piggery Biosecurity Audit Checklist	25
Appendix II – Maximum Levels of the Major Water Quality Attributes for Pigs	29
Appendix III – Visitors’ Log Template	30
Appendix IV – Entry Conditions for Visitors to Piggeries	31
Appendix V – Carcass Management (Dead Pig Disposal)	32
Appendix VI – Pest Control Record	36
Appendix VII – Employee Biosecurity Declaration Template	37
Appendix VIII – Treatment Record	39
Appendix IX – Deaths Record	40

National Farm Biosecurity Manual for Pork Production

1

This manual is an important tool for meeting our shared responsibility for biosecurity. The manual outlines the minimum biosecurity requirements that producers should implement on-farm. Some producers, including those who are quality assured (e.g. APIQ✓^{®1}), may exceed these minimum requirements.

In support of this manual is a formal agreement known as the Emergency Animal Disease Response Agreement (EADRA). The EADRA binds the Commonwealth, the state and territory governments, and livestock industries together to deal with emergency animal disease (EAD) matters. It includes arrangements for joint funding when an industry is affected by an emergency disease outbreak.

The manual contains information and specific procedures for all pig

producers and owners of pigs to prepare for disease threats by reducing the risk of disease entry to the properties, and further spread of disease between livestock and farms. By implementing and recording these biosecurity practices as part of a farm biosecurity plan, pig producers can increase their ability to cope with a potential disease outbreak and minimise the cost of its control and eradication at the farm and industry level.

It is designed as a tool that all pig producers, particularly those with larger scale enterprises who employ significant numbers of staff and/or contractors, can use to translate biosecurity requirements into operating procedures and work instructions.





Biosecurity on the farm

3

The key strategic objectives of a farm biosecurity plan are to:

1. prevent the introduction of infectious disease or disease-causing agents to pigs (i.e. bio-exclusion or external biosecurity)
2. reduce the spread of disease among pigs on the premises already contaminated with a disease-causing agent (i.e. bio-management or internal biosecurity)
3. prevent the escape and spread of disease-causing agents already present on pig premises to other uninfected livestock populations (i.e. bio-containment)
4. minimise the incidence and spread of microorganisms of public health significance
5. ensure staff follow biosecurity procedures and are trained in emergency disease awareness
6. establish and implement pest control measures for wildlife, feral animals and vermin.

Biosecurity is about managing risks to meet the objectives stated above. It is important that an assessment be conducted for each enterprise to establish what level of risk exists in each phase of its operations, and to identify and implement appropriate control measures to these risks.

Biosecurity is an integral and proactive part of any successful pig production system. Biosecurity can have a preventative impact, which can enable producers to protect their livestock and assets.

Biosecurity refers to those measures taken to prevent and control the introduction and spread of infectious agents to and between farms. Such infectious agents, whether they cause clinical (obvious) or subclinical (hidden) disease, significantly reduce the productivity, profitability and long-term financial viability of a pig operation.

These measures cover areas of risk common to most pig farms. When undertaking the risk assessment to determine farm-specific biosecurity measures, it is important to consider all factors that may impact on the biosecurity of the production area.

These factors include the:

- location and layout of property and production area
- pig flow, live pig and semen movements
- source of water supply and feed
- disease status of the district
- proximity to other production areas with pigs or other livestock
- presence and type of wildlife, feral animals and vermin
- staff training and competency



- customer/supplier interactions² and customer requirements.

Customer requirements may affect the biosecurity measures needed. For example, a breeding herd supplying semen or genetic stock will have different biosecurity factors to consider compared with a farrow-to-finish operation, a weaner producer or a contract grow-out facility.

Supply chain partners may also have their own biosecurity requirements that their suppliers need to meet, typically as part of an overall quality assurance program.

Additional elements in managing the risk of introduction and spread of disease are the use of vaccination and medication policies. The procedures outlined here do not cover these aspects of risk management. However, the importance of an appropriate vaccination strategy is acknowledged and vaccination as a possible risk management measure should form part of the farm's herd health plan, which will in turn impact upon the farm's overall biosecurity risk assessment and strategy.

The purpose of these measures is to establish a minimum set of biosecurity guidelines applicable to all pig producers through to the point of delivery at the processor or sale.

Commercial enterprises which raise pigs for the purposes of breeding also fall within the scope of these procedures.

The measures outlined are designed to be incorporated in farm operating manuals and have also been used in the design of the Biosecurity Standard Operating Procedures (SOPs) in APIQ[✓][®], the Australian Pork Industry Quality Assurance program (see www.apiq.com.au).

Individual producers and companies may wish to develop voluntary enhanced biosecurity manuals, which should nevertheless incorporate these minimum requirements in addition to any specific company requirements. Many farms are part of a larger integrated multi-site production system with common health status and biosecurity practices.

A biosecurity self-audit checklist for continuous improvement is attached as Appendix I. This document has also been designed to enable either second- or third-party audits where required.

Biosecurity is like any other insurance policy and, as such, is a prudent investment.

² Customer/supplier interactions include pick-ups and deliveries of livestock and feed, as well as interactions with service/trades personnel, industry personnel and contractors.

Potential biosecurity risks

5

Anything entering a property is a potential mechanism for spreading diseases or introducing pests.

Pigs

- Transfer of pigs from one production area or site to another
- Dead pig disposal

Semen

- Semen from commercial boar stations
- Within herd transmission of venereally transmitted diseases when using on-farm artificial insemination with own boars
- Semen imported from other sites

Other animals

- Wild birds and bats
- Feral and domestic animals (especially feral pigs), other livestock, predators and pets
- Insects
- Rodents e.g. rats/mice
- Domestic birds e.g. poultry

People

- Farm personnel and family members living on site
- Contractors, maintenance personnel, neighbours, service personnel and visitors
- Dirt/manure/contaminants carried on hands, boots, clothing and hair
- Insufficient quarantine time when returning from another farm or overseas
- Personnel health/hygiene

Vehicles and Equipment

- Dirt/manure/contaminants carried on cars, trucks, tractors, scales, tools, husbandry and veterinary equipment
- Animal health office supplies (notebooks, pens, etc.) and other items (e.g. camera, mobile devices)

Air

- Transmission as an aerosol or dust

Feed and Water

- Contamination with faeces/urine from contact with avian or other animal species
- Raw materials
- Post-production contamination or spoilage during transport and storage
- Feed and other storage bags
- Product that includes ingredients of animal origin e.g. processed meat. Kitchen waste or other food scraps should not be fed to pigs. This is 'prohibited pig feed' and is also known as swill³

3 Prohibited pig feed means material of mammalian origin, or any substance that has come in contact with this material, but does not include:

(i) Milk, milk products or milk by-products either of Australian provenance or legally imported for stockfeed use into Australia.

(ii) Material containing flesh, bones, blood, offal or mammal carcasses which is treated by an approved process.

(iii) A carcass or part of a domestic pig, born and raised on the property on which the pig or pigs that are administered the part are held, that is administered for therapeutic purposes in accordance with the written instructions of a veterinary practitioner.

(iv) Material used under an individual and defined-period permit issued by a jurisdiction for the purposes of research or baiting.

Definitions of 'production area' and 'property'

Shutterstock

6

In this document, the piggery production area refers to buildings, sheds, paddocks and other facilities used for pig production in both indoor and outdoor farming systems.

The production area also includes areas used for feed storage and handling and the area immediately surrounding the sheds and paddocks, including load-out areas.

The property is the land on which the production area is located, and which typically includes buildings and land not used for pig production. This may

include the facility manager's home and other farmland used for livestock or cultivation. The boundary of the production area and the boundary of the property may be the same.

Any reference to sheds is a reference to roofed buildings capable of and used for holding pigs securely within their perimeter.

Any reference to paddock is a reference to fenced pastures that are, or at times are, accessed by the pigs being farmed.



Australian Pork Limited

Levels of biosecurity overview

7

LEVEL 1 – Principles of biosecurity

The following six essential principles of biosecurity provide guidelines for the ongoing management practices for:

- farm inputs – stock, semen, water, feed, bedding
- the movement of people, vehicles and equipment
- production practices
- feral animals, pests and vermin
- outgoing products
- training, planning and recording.

These biosecurity principles can be achieved by implementing appropriate management practices on a daily basis. The adoption of such practices will minimise the risk that diseases and pathogens will be carried into pig production areas, and it will reduce the risk of transmission between production areas. These principles should be seen as a minimum requirement.

Action plan for suspected emergency animal disease

Each owner should establish and document clear guidelines regarding the circumstances when an EAD alert should be raised (e.g. an unusual increase in mortality or appearance of suspicious or unusual signs of illness in pigs) and who must be informed. The action plan should also clearly state that, if an alert is raised, movements on and off the production area and the property must be limited to the absolute minimum and special precautions must be taken as outlined in the section 'Level 2 – High-risk biosecurity procedures'.

The *AUSVETPLAN Enterprise Manual for Australian Piggeries* provides a key reference for the development of your on-farm emergency response plan. It can be found at www.animalhealthaustralia.com.au/ausvetplan.



LEVEL 2 – High-risk biosecurity procedures

In the event of an outbreak of an emergency disease or serious endemic disease, high-risk biosecurity procedures will be implemented.

In the case of an EAD and where applicable, SOPs will be implemented by government response personnel, in line with the relevant AUSVETPLAN disease strategy (see www.animalhealthaustralia.com.au/ausvetplan).

These procedures apply equally to pigs reared in indoor or outdoor production systems.

Outdoor production systems

It is recognised that outdoor pigs will have some exposure to wildlife. However, in these environments, documented measures should be taken to minimise the incursion of feral pigs, goats or other feral animals onto the production site as well as the congregation of wildlife, such as waterfowl and the impacts of wild birds generally.

A system should be implemented to monitor and control any potential hazardous organic material (such as untreated effluent or un-composted litter from deep litter housing) from entering outdoor areas where pigs are kept, and these measures should also be documented.

Good fencing is recommended around outdoor farms to prevent entry of feral animals.



**NOTICED
ANYTHING
UNUSUAL?**

**EMERGENCY ANIMAL
DISEASE WATCH HOTLINE
1800 675 888**

Level 1 – Principles of biosecurity

9

Note: For farms certified under APIQ✓®, these requirements will be met as part of the APIQ✓® program which is independently audited by a third party.

1.0 Manage farm inputs – stock, water, feed, bedding

PRINCIPLE 1.1: Pigs

Objective: To manage the introduction and movement of pigs and their products in a way that minimises the risk of introducing or spreading diseases, pests and weeds.

Standards

- S.1.1.1 Before commencing movement, drivers must complete the transporter's declaration on the valid movement document (preferably section D of the PigPass National Vendor Declaration [PPNVD]) accompanying the consignment. Drivers must provide a copy of the movement document with the signed transporter's declaration to the producer.⁴ Alternatively, producers and drivers may use the PigPass App to record movements.
- S.1.1.2 Copies of valid movement documents must be retained for the length of time specified in the respective state National Livestock Identification System (NLIS) legislation.⁵
- S.1.1.3 Pigs must be identified prior to transport according to the respective state NLIS legislation.⁶
- S.1.1.4 All introduced stock must be accompanied by a valid movement document, preferably a PPNVD which is retained for the period specified in state regulations.⁷
- S.1.1.5 After arrival on a property⁸ the owner/receiver must record the movement on the PigPass database within two working days or take active steps to ensure or confirm the movement has been recorded.
- S.1.1.6 All introduced livestock must be inspected for signs of disease on arrival.

⁴ Note that drivers must provide a copy of the movement document with the signed transporter's declaration on delivery at the destination. They should also retain a copy for their records.

⁵ The length of time required to retain a valid movement document varies across states i.e. both APIQ✓® and NLIS Pig Standards require records to be kept for a minimum of three years, refer to www.pigpass.com.

⁶ Respective State NLIS legislation can be found at www.pigpass.com.au.

⁷ The length of time required to retain a valid movement document varies across states.

⁸ Except saleyard purchases



- S.1.1.7 All introduced stock must be isolated from other pigs and observed for signs of disease for a minimum of 30 days. This does not apply if there are documented biosecurity protocols approving movements between sites on multi-site operations that are owned and/or managed by the same owner/operators, connecting by contract grow-out arrangements and/or otherwise deemed to have a shared biosecurity status.
- S.1.1.8 All pigs exhibited at shows must be isolated and observed for signs of disease for a minimum of 30 days after returning to the farm of origin.

Recommended practices

- RP.1.1.1 Loadouts of pigs should be at the farm perimeter wherever possible. Where this is not possible, the on-farm biosecurity plan includes a load-out plan which is agreed with the herd veterinarian.
- RP.1.1.2 Semen should be sourced in accordance with farm biosecurity protocols authorised by the herd veterinarian.
- RP.1.1.3 Vehicles should be washed between consignments when moving pigs from properties with different biosecurity statuses in accordance with the on-farm biosecurity plan authorised by the herd veterinarian and are disinfected when required. After washing with disinfectant, vehicles are available for use. After washing without disinfectant, vehicles are left to dry before any pigs are loaded.
- RP.1.1.4 If cattle, sheep or goats are brought in to graze around the pig sheds or into the outdoor range areas, this should be done only for as limited time as necessary and with the awareness that it may pose a potential risk of disease transfer. Such stock should be retained on the property for a minimum period of two weeks after grazing within close proximity of pigs in order to allow any signs of viral infection to be seen before they are transferred off the property.
- RP.1.1.5 Commercial poultry operations should not be present on the same property or, if they are, should be functionally separated from the pig operation with an adequate biosecurity buffer zone.
- RP.1.1.6 Commercial cattle, sheep and goat operations should not be present on the same property or, if they are, they should be functionally separated from the pig operation with an adequate biosecurity buffer zone.

PRINCIPLE 1.2: Feed and water

Objective: To ensure the quality of stock feed and water is fit for purpose including:

- *pig stock feed is free from contaminants and prohibited pig feed (PPF)*
- *pigs have no access to feeds that contain PPF*
- *water and other farm inputs are managed to reduce risks of transmitting disease agents or weeds.*

Feed**Standard**

- S.1.2.1 PPF or any food scraps that contain meat, other matter from animals, or any other substance prohibited under state and territory legislation, must not be fed to pigs.

Recommended practices

- RP.1.2.1 All feed provided for pigs should be sourced from a FeedSafe-accredited manufacturer or accompanied by a commodity vendor declaration that includes a biosecurity component stating that it is fit-for-purpose.
- RP.1.2.2 Pig feed should be inspected on delivery for evidence of pests, vermin faeces and other contaminants.
- RP.1.2.3 Feed spills should be cleaned up as soon as practicable. Feed attracts birds and rodents to the production area.
- RP.1.2.4 Pig feed should be stored in a manner that prevents contamination by other feed types, livestock, vermin (including vermin faeces), insects, wildlife, and feral and domestic animals.

Water

The use of a suitable water supply is important for good biosecurity. If water treatment is required, in general, water with a high level of organic matter is unsuitable for chlorination alone. Ultraviolet treatment is also of little use for turbid water. It may be necessary to seek expert advice to ensure a safe water supply. Any water treatment process should be monitored regularly.

Standards

- S.1.2.2 Drinking water quality must be maintained at a suitable standard for pigs (see Appendix II).

Recommended practices

- RP.1.2.5 All surface water should be tested and if necessary, treated before being used as drinking water for pigs.
- RP.1.2.6 Expert advice should be sought on water treatment options if water testing shows the available water to be of unsuitable quality.
- RP.1.2.7 A treated water supply should be kept in a closed system from the point of treatment to the drinker.

PRINCIPLE 1.3: Bedding (when/where used)

Objective: To manage the introduction and movement of bedding in a way that minimises the risk of introducing or spreading diseases, pests and weeds.

Recommended practices

- RP.1.3.1 All bedding provided for pigs should be accompanied by a commodity vendor declaration that includes a biosecurity component stating that it is fit-for-purpose.
- RP.1.3.2 Bedding should be sourced from a pig-free production system.
- RP.1.3.3 During storage, bedding should be kept free from pests and vermin to prevent contamination.
- RP.1.3.4 All solid surfaces that pigs have access to should be made of materials that can be readily cleaned and disinfected.
- RP.1.3.5 In deep litter systems, litter should be replaced or refreshed at intervals to ensure good hygiene.
- RP.1.3.6 The litter used should be compatible with drainage, hygiene requirements and climatic conditions.

2.0 Manage the movement of people, vehicles and equipment

PRINCIPLE 2.1: People, equipment and vehicles

Objective: To minimise the potential for property contamination by the movement of people, equipment and vehicles.

Contractors, suppliers, other service personnel and visitors

Standards

- S.2.1.1 A visitor's log must be completed by all persons entering a production site (see Appendix III).
- S.2.1.2 Drivers and other transport personnel must not enter pig buildings, free-range areas or designated 'clean areas'⁹ unless they have complied with the on-farm biosecurity arrangements
- S.2.1.3 The on-farm biosecurity plan must specify procedures for people, vehicles, equipment, boots and outer clothing to be followed in order to gain authorised access to the piggery. The plan must be authorised by a herd veterinarian. A template for conditions is included as Appendix IV.
- S.2.1.4 Handwashing/sanitising facilities must be available at all production area entrances and must be used before entering and on leaving the production area.
- S.2.1.5 Boots and outer clothing must be provided to personnel prior to entering the production area. Boots and outer clothing that are worn in the production areas must not be worn or taken outside this area other than in accordance with the on-farm biosecurity plan.

Recommended practices

- RP.2.1.1 There is a written protocol that details piggery entry requirements for people who have recently been overseas. If there has been any contact with cloven-hoofed animals whilst outside Australia, international entries should have at least 48 hours of no animal contact before arriving on-farm.

⁹ a 'clean area' will be a part of the production site with access restricted to people, animals and equipment of assured biosecurity status and a 'dirty area' will be a part of the production site other than a designated 'clean area'.



Production Personnel

Standards

- S.2.1.6 When leaving staff amenities areas, hands must be cleaned/sanitised before entering the production area and upon leaving the production area.
- S.2.1.7 Boots and outer clothing that are worn in the production area must not be worn or taken outside this area other than in accordance with the on-farm biosecurity plan.

Recommended practices

- RP.2.1.2 Production area personnel should wear laundered clean clothes each day at the commencement of their work.
- RP.2.1.3 Movement between production areas should be from youngest to oldest, and hands should be cleaned/sanitised between entering/exiting each area.

Equipment and Vehicles

Standard

- S.2.1.8 Vehicles are not allowed into 'clean areas' unless authorised.

Recommended practices

- RP.2.1.4 All equipment should be visibly clean and, where practical, the exterior disinfected after use, allowed to dry, and, where possible, between animals.
- RP.2.1.5 All visitors should park their vehicles outside the production area, unless it is essential the vehicle be taken on site, for example, some maintenance contractors.
- RP.2.1.6 All vehicles carting new or old bedding materials, feed and other supplies between properties, even if they are part of the same enterprise and equivalent biosecurity standards, are managed in accordance with the on-farm biosecurity plan authorised by the herd veterinarian i.e. all vehicles should be washed and potentially disinfected.
- RP.2.1.7 Transport, people, and other animal traffic within the production area should be on an as-needs basis, and with the intention of reducing the number of passes through the production area and in such a way as to minimise disturbance of soil, plants, and animals.

3.0 Manage production practices

PRINCIPLE 3.1: Animal health management

Objective: To manage the prevention and control of animal diseases on-farm by regularly monitoring livestock health.

Standards

- S.3.1.1 Inspect and maintain monitoring records of all pigs at least once daily for any signs of ill health and treatment(s) administered.
- S.3.1.2 Manage sick pigs as advised by the herd veterinarian, treat and if necessary isolate, in accordance with The Model Code of Practice¹⁰ for the Welfare of Pigs and other resources on managing sick pigs.¹¹

Recommended practices

- RP.3.1.1 The use of herd health programs as an effective method of reducing the build-up or effect of disease pathogens.

PRINCIPLE 3.2: Carcass, effluent and waste management

Objective: To minimise the spread of disease and manage the disposal of dead animals and waste in a manner appropriate for the production system.

Standards

- S.3.2.1 Faeces and urine must not be permitted to accumulate to the stage where there is no clean area for pigs to lie down.
- S.3.2.2 Dead pigs must be removed as soon as practical and disposed of according to recommended procedures (Appendix V).¹²

¹⁰ australianpork.com.au/sites/default/files/2021-06/Handbook_for_the_model_code_of_practice.pdf

¹¹ australianpork.com.au/pig-health-and-welfare

¹² Refer to the Carcass Management section of the APL National Environmental Guidelines for Piggeries, Third Edition (Revised) 2018 which can be found at www.australianpork.com.au/environmental-practices/environmental-guidelines

PRINCIPLE 3.3: Facility requirements

Objective: To design and maintain pig production areas (including sheds) that will assist in providing a biosecure area.

Standards

- S.3.3.1 All entry points must display signage that is compliant with jurisdictional regulations. In addition, signage must direct visitors to contact the producer before proceeding on to the premises, i.e. telephone number and/or enquire at house/office.
- S.3.3.2 A sketch, map, plan or photo of the layout of the property, showing the production area, sheds, paddocks, access roads and entry points should be created and kept up-to-date. Clean areas to which restricted access applies and dirty areas should be clearly shown. The feed silos and load-out area are generally considered dirty areas and parts of the production site where pigs are housed or handled should be designated as clean areas.

Recommended practices

- RP.3.3.1 Biosecurity protocols authorised by the herd veterinarian addressing facilities and procedures to minimise the spread of disease or disease-causing agents, including biosecurity buffer zones from existing piggeries, are recommended when establishing a new piggery.
- RP.3.3.2 The main entrance to the production area should be capable of being closed off to vehicle traffic (e.g. lockable gate that, where feasible, should be kept locked at all times).
- RP.3.3.3 There should be a parking area for vehicles not entering the production area.
- RP.3.3.4 There should be a change area separate from the production area, with clean protective outer clothing and boots provided.
- RP.3.3.5 All pig housing, bedding and feed sheds should be designed and maintained to limit access of vermin and entry of wild and domestic birds, feral animals and other pests as far as practical.
- RP.3.3.6 Trees, shrubs and vegetation should be selected and managed to deter wildlife including birds and bats. Vegetation buffers for environmental compliance should not be compromised.
- RP.3.3.7 Facilities should be available for the cleaning and disinfection of any equipment before entry to and upon exit from the production area.

PRINCIPLE 4.1: Feral animals/wildlife/weed control

Objective: To minimise the potential for wildlife and domestic or feral animals to introduce diseases to livestock.

Standards

- S.4.1.1 Control risks from rodents and other species accessing pigs, feed and bedding through an appropriate pest control program¹³ (See Appendix VI for Pest Control Record).
- S.4.1.2 Pest control products must not be accessible to pigs.
- S.4.1.3 Do not use first generation rodenticides within piggery sheds, and only use second generation rodenticides outside piggery sheds in commercial bait stations.
- S.4.1.4 The piggery must be maintained in a clean and tidy state. Repairs and maintenance need to be carried out in a timely manner. Accumulated rubbish, redundant equipment or scrap metal is kept in controlled areas separate from pigs, feed storage and public access. There should also be minimal build-up of weeds present.

Recommended practices

- RP.4.1.1 Pig farmers should practice regular pest and rodent control, with rodenticides or by keeping the surroundings of the pig unit clean.
- RP.4.1.2 Rodenticides must not be used where there are risks of pigs eating the bait, rodent faeces or the rodent carcasses. Potential refuges for rodents, such as garbage, dumps, bush or wasteland, must be systematically eliminated.
- RP.4.1.3 Bait stations or traps for rodents, cats, flies and other insects should be set as required and meet regulatory requirements for use where appropriate.
- RP.4.1.4 All non-production domestic animals should be kept out of production areas as far as is practically possible.
- RP 4.1.5 A risk assessment should be undertaken for feral pigs. Action should be taken to exclude access of feral pigs to the piggery production area.

¹³ The APL Rodenticide Stewardship Plan is available on request from APL www.australianpork.com.au/sites/default/files/2021-07/8-7-21Rodenticide-stewardship-plan_0.pdf.

5.0 Manage outgoing products

PRINCIPLE 5.1: Farm outputs

Objective: To manage the movement of livestock and animal products from a property in a way that minimises the risk of spreading diseases, pests and weeds.

Standards

- S.5.1.1 Only animals that are in a condition fit-to-load are selected to minimise potential disease and/or contamination spread through transport.¹⁴
- S.5.1.2 Ensure all livestock leaving the property are identified in accordance with the appropriate NLIS Standards, meeting government legislation and have accurate documentation i.e. a PPNVD, and where possible, an Animal Health Declaration.

6.0 Train, plan and record

PRINCIPLE 6.1: Biosecurity planning and staff instruction

Objective: To ensure all staff and contractors understand the importance of the biosecurity requirements for the operation in which they work and can implement the agreed practices for which they are responsible.

Standards

- S.6.1.1 A farm biosecurity plan must be in place, which includes:
 - a. verifiable procedures for people, vehicles, equipment, boots and outer clothing to be followed in order to gain authorised access to the piggery
 - b. a sketch, map, plan or photo of the layout of the property, showing the production area, sheds, paddocks, access roads and entry points. Clean areas to which restricted access applies and dirty areas must be clearly shown
 - c. a controlled entrance to the piggery through which visitors, animals and transport movements are admitted
 - d. a record of all visitors, animal and transport movements

¹⁴ australianpork.com.au/sites/default/files/2021-06/2016_APL_Is_it_fit_for_the_intended_journey.pdf

- e. hand washing and/or shower facilities for all personnel including employees, visitors and contractors prior to entering the piggery
- f. boots and outer clothing are provided to all authorised personnel, including employees, visitors and contractors prior to entering the piggery
- g. an employee Biosecurity Declaration¹⁵ signed by all staff confirming their adherence to the farm biosecurity procedures.

S.6.1.2 The farm biosecurity plan must, wherever possible, also include the following:

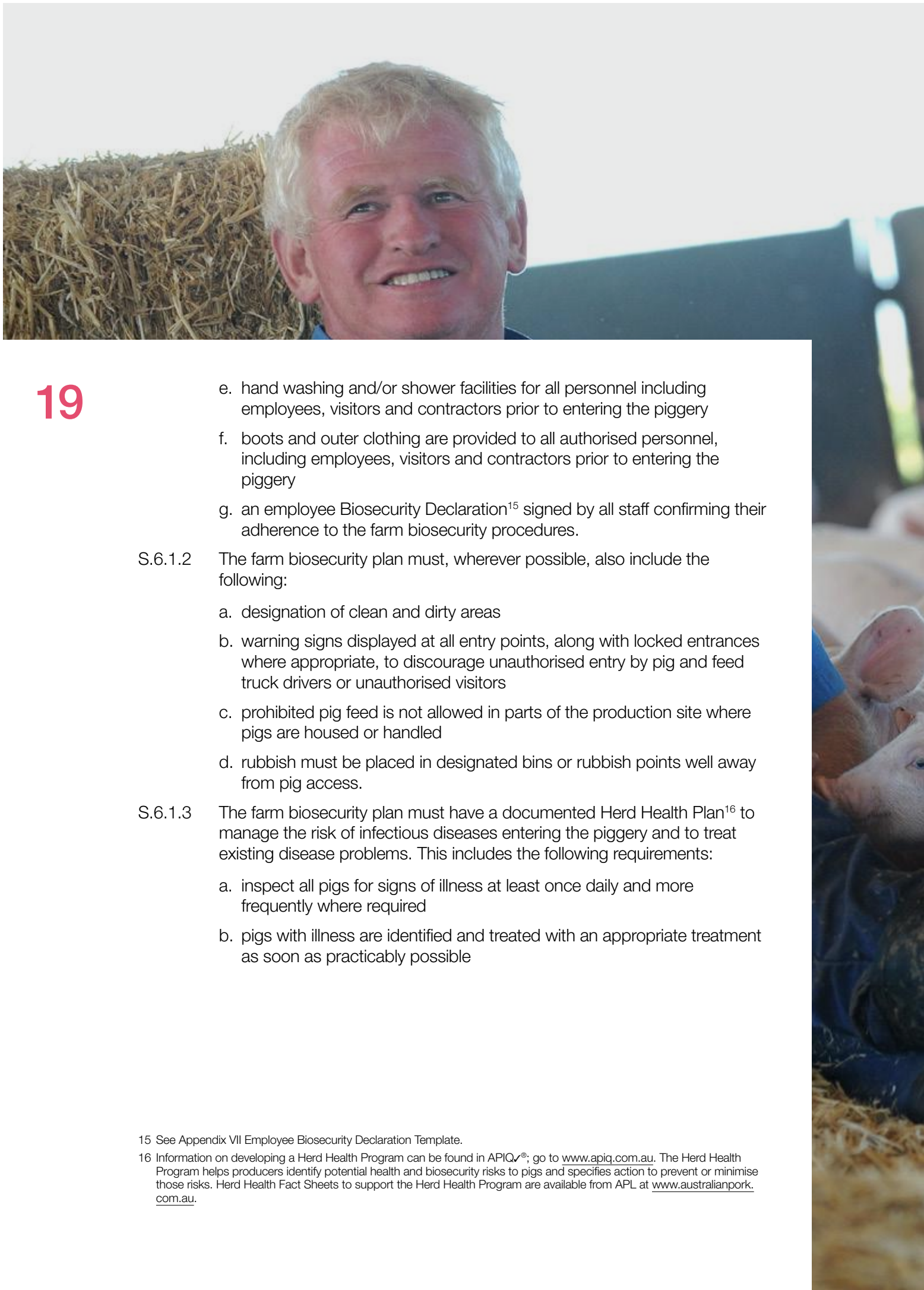
- a. designation of clean and dirty areas
- b. warning signs displayed at all entry points, along with locked entrances where appropriate, to discourage unauthorised entry by pig and feed truck drivers or unauthorised visitors
- c. prohibited pig feed is not allowed in parts of the production site where pigs are housed or handled
- d. rubbish must be placed in designated bins or rubbish points well away from pig access.

S.6.1.3 The farm biosecurity plan must have a documented Herd Health Plan¹⁶ to manage the risk of infectious diseases entering the piggery and to treat existing disease problems. This includes the following requirements:

- a. inspect all pigs for signs of illness at least once daily and more frequently where required
- b. pigs with illness are identified and treated with an appropriate treatment as soon as practicably possible

¹⁵ See Appendix VII Employee Biosecurity Declaration Template.

¹⁶ Information on developing a Herd Health Program can be found in APIQ[®]; go to www.apiq.com.au. The Herd Health Program helps producers identify potential health and biosecurity risks to pigs and specifies action to prevent or minimise those risks. Herd Health Fact Sheets to support the Herd Health Program are available from APL at www.australianpork.com.au.



- c. maintain detailed health and treatment records
 - d. have recorded and easily accessible contact details of authorities (e.g. state primary industries or biosecurity authority) to be advised of notifiable disease outbreaks; and have the National Emergency Animal Disease Watch Hotline on 1800 675 888 recorded and easily accessible
 - e. have a pest control program that minimises rodents, cats and other species accessing feed, bedding and storage areas for feed and bedding materials
 - f. undertake a risk assessment for feral pigs. Take action to exclude access of feral pigs to the piggery production area by perimeter fencing or other suitable means.
- S.6.1.4 Policies and procedures are put in place to ensure that all introduced livestock and semen is sourced in accordance with farm biosecurity protocols authorised by the herd veterinarian and supported by a vendor declaration.
- S.6.1.5 Staff must be trained in emergency disease awareness and follow biosecurity procedures, including these requirements¹⁷:
- a. staff are aware of the biosecurity procedures for the property
 - b. staff are aware of important exotic and endemic diseases, can recognise the signs of ill health in pigs and are aware of the procedures to follow when such signs are seen.
- S.6.1.6 Record pig movements, including for sale, slaughter or between properties:
- a. all pigs moving from their Property Identification Code (PIC) of residence to any location outside their PIC of residence, i.e. for sale or slaughter, must be clearly identified according to the relevant state legislation and accompanied by a PPNVD (or other valid movement document) except where ownership does not change and the property has an approved QA program (such as APIQ✓[®]) and these movements are reported to the PigPass database within two working days
 - b. all pig movements must be reported to the PigPass database
 - c. PPNVDs must be retained for the length of time specified in the respective state or territory government NLIS or biosecurity legislation.

¹⁷ australianpork.com.au/sites/default/files/2021-06/EADS-2019-update.pdf

Recommended practices

- RP.6.1.1 Any additional biosecurity practices that are required by the farm should be added to the farm biosecurity plan.
- RP.6.1.2 The farm biosecurity plan should be authorised by the herd veterinarian and procedures able to be verified.
- RP.6.1.3 Consider including a farm policy for staff and visitors that are at higher-than-reasonable risk of carrying zoonotic pathogens that can be transferred from humans to pigs, pigs to humans or humans to humans e.g. influenza, foodborne illness, Hepatitis E, Methicillin-resistant *Staphylococcus aureus* (MRSA) in the farm biosecurity plan:
- establish, implement and enforce strict sick leave policies for on-farm workers with gastrointestinal or influenza-like illness
 - recommend that all workers on-farm (and family members who live on-site on piggeries) are vaccinated against the seasonal influenza virus every year
 - ensure workers maintain a high level of personal disinfection and cleaning practices such as hand washing between tasks and upon entry to and exit from production facilities and amenities
 - limit visitors to farms and follow other generally accepted biosecurity practices
 - staff returning from overseas travel should adhere to a written farm protocol detailing the piggery entry requirements for people who have recently travelled overseas. Clothing and footwear worn outside Australia should not be worn on-farm.
- RP.6.1.4 A register should be maintained recording training of farm personnel in biosecurity requirements.
- RP.6.1.5 All pig mortalities and cases of disease must be recorded to assist monitoring for any unusual animal health problems potentially indicating a biosecurity breach.

Level 2 – High-risk biosecurity procedures

Objective: To protect the property, as much as possible, from the increased threat of pathogens being introduced from the outside during a suspected outbreak of an emergency or serious endemic disease.

1.0 Action plan for suspected emergency animal disease

Recommended practices

- RP.1.1 Each producer should establish and document clear guidelines regarding the circumstances when an EAD alert should be raised (e.g. a significant increase in mortality) and who must be informed. The action plan should also clearly state that, if a National Livestock Stand Still alert is raised:
- movement of pigs must cease immediately, including in transit
 - other movements (motor vehicles, trucks, plant and equipment etc) on and off the production area and the property must be limited to the absolute minimum
 - special precautions must be taken as outlined in this section.
- RP.1.2 The *AUSVETPLAN Enterprise Manual for Australian Piggeries* provides guidelines for development of an on-farm emergency response plan for animal disease alerts and can be found at www.animalhealthaustralia.com.au/ausvetplan.

2.0 Facilities

Standards

- S.2.1 Gates must be kept locked where possible.
- S.2.2 Facilities for the cleaning and disinfection of equipment coming on and off the production area must be in place.¹⁸
- S.2.3 Shed doors must be locked when the site is unattended where possible and reasonable.

¹⁸ These facilities will be provided in an EAD Response by the relevant authorities in accordance with the AUSVETPLAN. For more information go to www.animalhealthaustralia.com.au.

3.0 Personnel

Standards

- S.3.1 No non-essential visitors to enter the production areas.
- S.3.2 Repairs and maintenance – no routine work, only emergency work to be carried out.

4.0 Operational

Standards

- S.4.1 Any vehicle entering the property must be managed in accordance with the on-farm biosecurity plan authorised by the herd veterinarian, including washing and disinfecting when required. After washing with disinfectant, vehicles are available for use. After washing without disinfectant, vehicles are left to dry before next use. Vehicle driver cabins must also be cleaned and sanitised inside when required (e.g. a household spray type disinfectant).
- S.4.2 No pigs, litter or manure to be moved on or off properties until the disease status of the property is clarified.
- S.4.3 If a major outbreak should occur, further measures will be stipulated by the state's Chief Veterinary Officer.
- S.4.4 Essential visits – Handwashing and/or showering, and a change of boots and outer clothing is required. Used protective outer clothing, boots and all used personal protection equipment must remain on the property.





Clint Scholz

5.0 Standard operating procedures (SOPs) for disease emergencies

24

Standards

- S.5.1 SOPs will be available for any outbreak of an EAD from AHA and APL in accordance with AUSVETPLAN and the Pig Enterprise Manual; see www.animalhealthaustralia.com.au.
- S.5.2 If the premises becomes infected (or suspected of being infected), all movement of vehicles onto and off the property will be subject to regulatory oversight.



Australian Pork Limited

Appendix I – Piggery Biosecurity Audit Checklist

Australian Pork Industry Biosecurity Code

Piggery Audit Checklist

Audit date:	Audit done by:	Property name/PIC number:
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How to complete the Checklist:

This column lists the biosecurity standard being checked and asks questions that relate to each standard, which you must answer		Answer the questions by selecting the answer in these columns		In this column: <ul style="list-style-type: none"> list the supporting documents and records you keep and where they are located in your system to substantiate that you met the standard; AND, all corrective actions (dated) that you have taken to meet the standard.
1.0	MANAGE FARM INPUTS – STOCK, WATER, FEED BEDDING	YES	NO	CORRECTIVE ACTION(S) (are reactive – something has gone wrong and these are the actions taken to deal with and eliminate the problem to ensure it will not happen again)
1.1	Pigs			
	Do you ensure that drivers complete the transporter's declaration on a valid movement document (preferably Section D of the PigPass National Vendor Declaration [PPNVD]), or the PigPass App prior to commencing movement?			
	Do you keep copies of valid movement documents, including records of pig movements between properties, for a minimum of three years?			
	Are all introduced stock accompanied by a valid movement document (preferably a PPNVD)?			
	Do you inspect all introduced livestock for signs of disease on arrival?			

1.1 Pigs (Continued)

	Do you quarantine incoming stock for a minimum of 30 days? This does not apply if there are documented biosecurity protocols, approved by the herd veterinarian, authorising movements between sites on multi-site operations that are owned and/or managed by the same owner/operators, connecting by contract grow-out arrangements and/or otherwise deemed to have a shared biosecurity status			
	Do you observe them for signs of disease or sickness while in quarantine?			
	Are all pigs exhibited at shows isolated and observed for signs of disease for a minimum of 30 days after returning to the farm of origin?			
	Do you wash, and disinfect or wash and dry trucks between consignments after transporting pigs anywhere off the property or between sites? this includes to saleyards and/or abattoirs.			
1.2/1.3	Feed, bedding and pests threats			
	Is prohibited feed (swill) or any food scraps that contain or had contact with meat, or other matter from mammalian animals, or any other substance prohibited under state and territory legislation, fed to pigs?			
	Do you have Commodity Vendor Declarations (CVD) that includes a biosecurity component for all feed ingredients and bedding materials, or is your feed sourced from a FeedSafe-accredited (or equivalent i.e. suppliers/manufacturers holding current accreditation in FIAA Code of Practice or FAMIgs) manufacturer?			
	Do you have an appropriate pest control program in place to prevent feral pigs (where identified as an active threat), rodents and other pests accessing pigs, feed stores and bedding?			
	Are pest control products secure and not accessible to pigs?			
COMMENTS:				

2.0	MANAGE MOVEMENTS OF PEOPLE, VEHICLES AND EQUIPMENT	YES	NO	CORRECTIVE ACTION
	Is a visitor's log completed by all persons entering a production site?			
	Do you permit drivers and other transport personnel to enter pig buildings or free-range areas or designated 'clean areas'?			
COMMENTS:				

6.0	TRAIN, PLAN AND RECORD	YES	NO	CORRECTIVE ACTION
6.1	Biosecurity planning and staff instruction			
	Do you have a documented farm biosecurity plan?			
	Is access of visitors, animals and transport movements to the production area controlled?			
	Do you provide handwashing and/or shower facilities, and/or are boots and outer clothing provided to all authorised visitors prior to contact with pigs?			
	Do all your staff sign an employee Biosecurity Declaration confirming their adherence to the farm biosecurity procedures?			
	Do you ensure all equipment used with pigs or brought into pig housing is cleaned? And is it disinfected?			
	Are the 'clean' and 'dirty' areas of your piggery clearly identified?			
	Are biosecurity warning signs displayed at entry points, along with locked entrances <i>where appropriate</i> , to discourage unauthorised entry by drivers or unauthorised visitors?			
	Does the piggery have a documented <i>Herd Health Plan</i> to manage the risk of infectious diseases entering the piggery and to treat existing disease problems?			
	Do you inspect all pigs at least once daily and more frequently when needed?			

6.1 Biosecurity planning and staff instruction *(Continued)*

	Are pigs with illness identified and treated with an appropriate treatment as soon as practicably possible?			
	Do you maintain detailed health and treatment records, including mortalities and cases of disease?			
	Are domestic pigs functionally separated from feral pigs, domestic poultry and other animals of risk with an adequate biosecurity buffer zone?			
	Have policies and procedures been put in place to ensure that all introduced semen is sourced in accordance with farm biosecurity protocols authorised by the herd veterinarian?			
	Are the people who work with your pigs aware of exotic and endemic diseases?			
	Are they able to recognise ill health in pigs?			
	Do they know what to do when health problems arise?			
	Are the contact details of those authorities that must be advised if there is a notifiable disease outbreak (e.g. state primary industries or biosecurity authority) recorded and easily accessible? Is the National Emergency Animal Disease Watch Hotline on 1800 675 888 recorded and easily accessible?			
	Do you maintain a register recording the training of farm personnel in biosecurity requirements?			
	Have any additional biosecurity practices that are required by the farm been added to the farm biosecurity plan? Please list below			
COMMENTS:				

Appendix II – Maximum Levels of the Major Water Quality Attributes for Pigs

The recommended maximum levels of the major water quality attributes are:

29

Drinking Water Standards

Chemical/ Microbiological Analysis – Maximum Permissible Levels

Attribute	Maximum Permissible Level
Total Dissolved Solids	3000 ppm
Calcium	1000 ppm
Sulphates	1000 ppm
Magnesium	400 ppm
Coliforms	10,000/ Litre
pH	6.5 – 8.5
Hardness	120 ppm

Source: King, R. (1999).

Appendix III – Visitors’ Log Template

Use this form or create your own

By signing this Visitors’ Log, you agree to comply with the visitor biosecurity conditions as detailed in the accompanying entry conditions. All visitors entering pig sheds or ranges must sign this log.

Date	Name	Company	Pig/ poultry contact in last 12 hours	Reason for visit	Vehicle registration	Time in	Sign in	Time out	Sign out

Appendix IV – Entry Conditions for Visitors to Piggeries

Use this form or create your own – it can be appended to Visitors' Log

31

All visitors must agree to comply with these entry conditions, which must be prominently displayed near the Visitors' Log

	Visitors must not have been in contact with any other pigs or poultry , including hunted feral pigs, pig abattoirs, show pigs, zoo pigs, or animal laboratories, in the prescribed period of time [insert required period here].
<input checked="" type="checkbox"/>	Visitors must first report to the piggery office .
<input checked="" type="checkbox"/>	Visitors must complete the visitors' log and sign biosecurity declaration .
<input checked="" type="checkbox"/>	Visitors must wear protective outer clothing and boots provided.
<input checked="" type="checkbox"/>	Visitors must clean/ sanitise hands before entering sheds.

Appendix V – Carcass Management (Dead Pig Disposal)

APL National Environmental Guidelines for Piggeries, Third Edition (Revised) 2018

Objective: By following these guidelines, pig producers will eliminate, as much as possible, infection or contamination spreading on-farm or off-farm due to dead pig disposal.

From an environmental perspective, rendering and composting are the preferred methods for carcass disposal (including disposal of stillborn piglets and afterbirth).

Suitable alternatives may include incineration and burial. Irrespective of the method chosen, dead pigs should be immediately removed from the access by other pigs and disposed of within 24 hours of death.

Poor carcass management practices may contaminate groundwater and surface water, cause odour, spread infectious diseases, and attract vermin. Further details on all carcass management methods are provided in AUSVETPLAN (2020)¹⁹.

Environmental Outcome: Carcass management practices that prevent groundwater and surface water contamination, odour nuisance, spread of infectious diseases and Vermin breeding.

15.1 Carcass Composting

Well-managed carcass composting is an environmentally acceptable method and has the advantage of producing a soil amendment.

Carcass composting should be undertaken within bunded areas with a base and with a design permeability of 1×10^{-9} m/s for a depth of 300 mm comprising two 150 mm deep layers. For guidance and technical direction regarding earth pad preparation requirements see www.daf.qld.gov.au/business-priorities/agriculture/animals/pigs/managing-environmental-impacts/earth-pad-preparation. The depth to the water table from base ground level should exceed 2m at all times. Any leachate or stormwater run-off caught within the composting area should be directed into the effluent treatment ponds or other collection ponds. For guidance and technical direction regarding effluent pond construction see www.daf.qld.gov.au/business-priorities/agriculture/animals/pigs/managing-environmental-impacts/constructing-effluent-ponds.

Carcasses are generally composted in a series of bays, although windrows can be used. The bays can be excavated into the ground (similar to silage bunks) or formed using large hay bales on a prepared pad.

32

¹⁹ AUSVETPLAN Operational manual - Disposal 2015
www.animalhealthaustralia.com.au/ausvetplan

Sawdust is generally the best medium for composting carcasses, as it produces the ideal carbon to nitrogen ratio. However, used litter is also suitable. Before adding carcasses, at least 300 mm of sawdust (or alternative carbon source) should be spread over base of the bay to ensure that the first layer of carcasses is surrounded by high-carbon material and to absorb leachate. Carcasses should then be layered over the floor of the bay, with 300mm of sawdust covering each layer. Good sawdust coverage assists composting by adding a carbon source, and is essential for controlling odours, avoiding attracting pest insects and deterring feral animals from disturbing the pile. Large carcasses need slitting before placing them in the compost pile to reduce the gasses that cause bloating, thus preventing bloated carcasses rising out of the pit.

When a carcass bay is full, a new one should be started. The carcasses in the full bay are then allowed to decompose for around three months.

When the compost is used as a fertiliser, it should be spread evenly onto land at environmentally sustainable rates. To minimise the risk of grazing livestock contracting botulism, salmonellosis or mastitis, they should be excluded from these areas for at least three weeks after the compost is spread. Providing the compost is used sensibly, there is an insignificant risk of BSE transmission to grazing stock in Australia.

For further information, see McGahan et al (2007) and the Australian Pork Limited (2007b) factsheet 'Composting for By-Product Management – Carcass Composting for Mortality Management'.²⁰

15.2 Rendering

Rendering is an excellent carcass management method because there is little risk of adverse environmental impacts. Rendered carcasses can also provide saleable meat and bone meal. However, this method is only economically viable if there is a nearby rendering plant willing to receive the carcasses.

A bunded area with a low permeability floor must be provided for storing carcasses before dispatch. The floor may be concrete or soil compacted for a design permeability of 1×10^{-9} m/s for a minimum depth of 300mm, comprising two layers each 150mm thick.

Guidance regarding earth pad preparation requirements can be obtained from www.daf.qld.gov.au/business-priorities/agriculture/animals/pigs/managing-environmental-impacts/earth-pad-preparation. This area needs to be well separated from live pigs.

An agreement with the receiving company is needed to ensure regular (preferably daily) receipt of carcasses. Similarly, a contingency plan is needed

²⁰ australianpork.com.au/sites/default/files/2021-08/FACT-SHEET-Carcass-Composting-for-Mortality-Management.pdf

in the event of a failure to dispatch carcasses.

15.3 Burial

Burial is a common method of disposing carcasses. However, it should only be used where rendering or composting is not feasible. Burial is not the preferred method because:

- the carcasses decompose slowly and need covering to avoid odour problems and scavenging by feral animals
- burial pits fill quickly and continually need replacement
- nutrients and bacteria can leach into and contaminate groundwater, particularly if:
 - » there is shallow groundwater and inappropriate sealing of the bottom of the pits
 - » stormwater run-off from pits can contaminate surface water
 - » land can become contaminated.

To avoid these problems:

- large carcasses should be split to minimise bloating
- the pit bases should be at least 2m above the water table at all times
- pits should be situated on low permeability soils and/or low-risk sites
- carcasses need to be well covered with soil, or other suitable material, each day to avoid scavenging by feral animals and to prevent odour

- further clay should be compacted over filled pits
- earth should be mounded over filled pits to promote shedding of stormwater.

The mounds should be grassed over, but trees should not be planted at the site as the roots allow water to move through the pit.

An alternative to an earthen pit is an enclosed burial pit, constructed from concrete or high-density polyethylene or fibreglass and fitted with a watertight lid.

Some state government agencies only allow burial under specific conditions, for example, disease outbreaks or mass mortalities.

15.4 Burning or Incineration

While biologically the safest carcass management method, incineration is generally not ideal because:

- it needs to be performed efficiently and effectively to ensure that it is complete
- needs to avoid complaints about odour and particulates (smoke)
- it is not energy efficient and generates greenhouse gases
- it is expensive
- regulations of some state and territory government departments responsible for environmental protection and local council by-laws do not permit it.

Generally, the requirements are similar to those for clinical waste. The incinerators are either complex multi-chamber units or pyrolysis process types. They typically have a final chamber that operates at 1000°C with a residence time of at least one second to incinerate the odorous gases that may result from the ignition of the carcass. The fuel and operating practices needed to ensure that combustion does not result in offensive odour, which means that this is a specialised activity.

Burning of carcasses in open fires is unacceptable, as it creates smoke and odour and is unlikely to maintain a sufficiently high temperature consistently. It is also a biosecurity hazard due to the potential for thermal updraughts to dispersal of biological matter. Correct burning or incineration is rarely feasible on-farm.

15.5 Mass Carcass Disposal

Effective responses to emergency disease outbreaks require efficient planning.

The options available for disposal of mass mortalities depend on the cause of death, logistical resource and environmental considerations including soil type and depth to groundwater. All piggery operators should have a contingency plan for managing the

potential for mass disposal that may occur as part of a disease outbreak or response.

Relevant state government departments and local authorities should be consulted regarding selection of a disposal method and site.

AUSVETPLAN (2020)²¹ provides information for managing disposal of a large number of carcasses that may assist the development of a mass disposal plan.



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21 AUSVETPLAN Operational manual - Disposal 2015
www.animalhealthaustralia.com.au/ausvetplan

Appendix VI – Pest Control Record

Date	Time	Bait Station Number/Location	Chemical /Method	Activity Level	Corrective Action	Name or Initials

Note: For activity level record 'N' for no signs of rodent activity and 'Y' where signs of rodent activity have been observed (e.g. droppings/bait eaten).

Appendix VII – Employee Biosecurity Declaration Template

37

All staff must sign an Employee Biosecurity Declaration. Use this form or create your own.

PERSONNEL BIOSECURITY DECLARATION

I, _____ hereby agree to abide by **my employer's biosecurity** rules and standards.

I **understand** that the following biosecurity rules/standards apply at all times:

1. No pigs or poultry are to be kept at my place of residence.
2. If any exemptions to 1 are approved by the employer, I must shower and change clothes before entering the production area.
3. No untreated pig or poultry manure from other properties is to be used at my place of residence.
4. No member of my household is to work in any area where contact can be made with pigs or poultry. For example, on other piggeries, properties with pigs or poultry farms, unless I shower and change clothes before commencing work.
5. I will not visit pig abattoirs, commercial piggeries, properties with pigs, poultry farms or shows exhibiting pigs or poultry unless approved by my employer and appropriate biosecurity measures are taken.

Signature _____ Date _____

Residential Address _____

Appendix VIII – Treatment Record

[illegible]

39

[illegible]

[illegible]

Notes

41

[illegible]



Animal Health Australia
Level 2, 95 Northbourne Ave, Turner, ACT 2612
PO Box 5116, Braddon, ACT 2612

Phone (02) 6232 5522
www.animalhealthaustralia.com.au

farmbiosecurity 

www.farmbiosecurity.com.au

