National Farm Biosecurity Manual for the Ratite Industry

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Images: Animal Health Australia, Jeff Long, Michael Hastings and Berwyn Squire

Further information

The Manual is available in PDF format from Farm Biosecurity website www.farmbiosecurity.com.au/toolkit/plans-manuals

Animal Health Australia (AHA) is an innovative partnership involving the Australian Government, state and territory governments, major livestock industries and other stakeholders. AHA works with its 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.

www.animalhealthaustralia.com.au

AgriFutures Australia is a Research and Development Corporation (RDC) that services the Research, Development and Extension (RD&E) needs of 13 thriving rural industries (chicken meat, rice, honey bee and pollination, ginger, tea tree oil, pasture seeds, export fodder, thoroughbred horses, kangaroo, buffalo, deer, goat fibre and ratite), delivering research and innovation that aims to give our farmers and producers real returns, as well as prepare them to thrive into the future.

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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

Photo credit: Jeff Long

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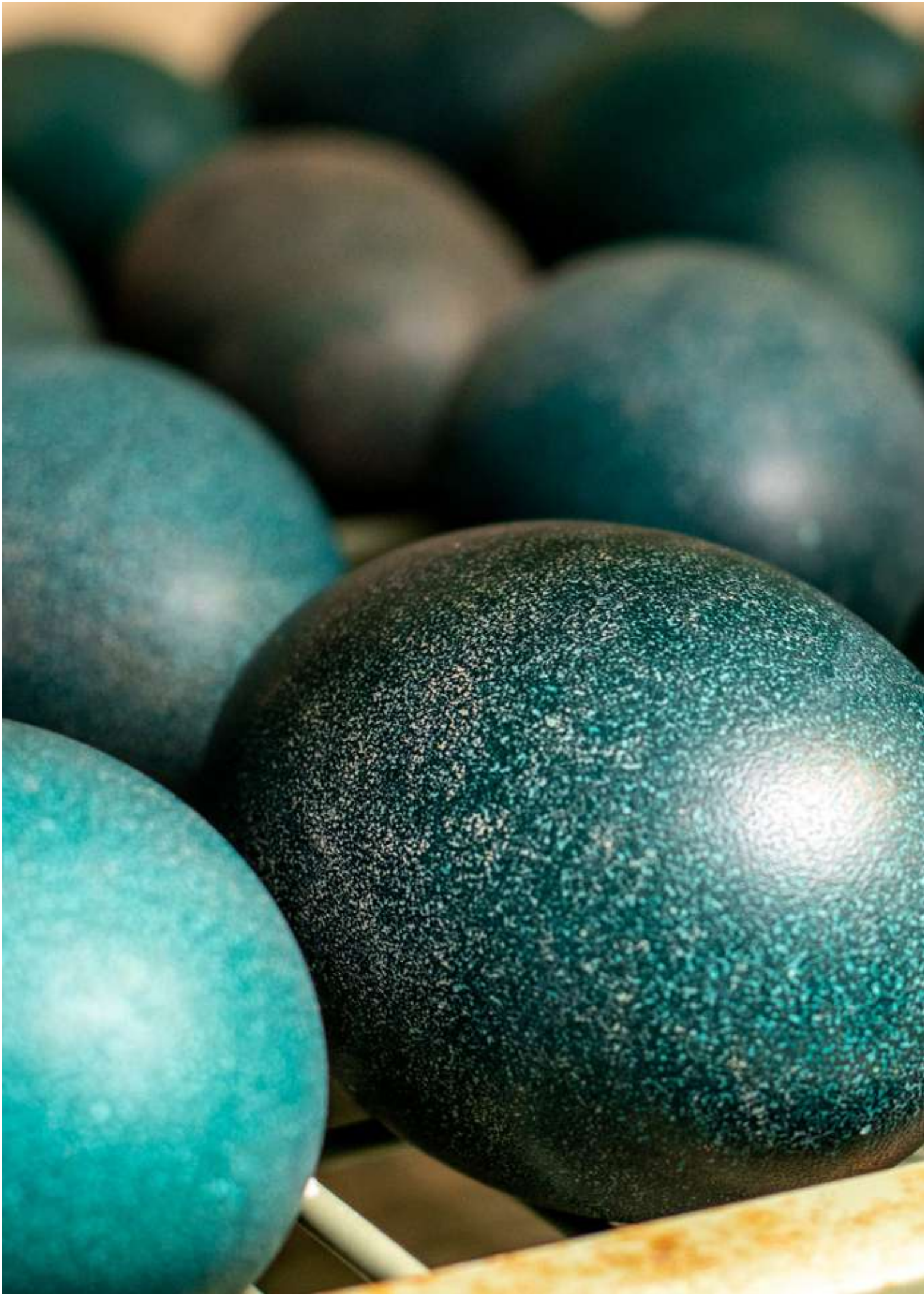

National Farm Biosecurity Manual for the Ratite Industry

Photo credit: Jeff Long

Purpose

The purpose of the manual is to establish a minimum set of biosecurity guidelines, applicable to all ratite producers. While the manual was produced with commercial producers in mind, the principles of good biosecurity apply to any ratite operation.

Individual producers and companies may wish to develop enhanced biosecurity manuals, which should nevertheless incorporate these minimum guidelines in addition to any specific company or industry sector requirements.

Definition of ratites

In the context of this manual, the following definition of ratites is adopted to define the following types of birds;

'Ratites' refers only to those ratites that are farmed within Australia, which is limited to emus and ostriches.

Scope

This manual refers to the commercial production of ratite products, including skins, meat, feathers, oil, and eggs. The biosecurity measures outlined throughout apply to commercial practices from the time of hatching or the placement of day-old chicks, until pick-up, slaughter or disposal of dead birds.

This manual also specifies the minimum biosecurity measures for Emergency Animal Diseases (EADs) on ratite farms. Producers in this industry may be required to make further enhancements to these minimum guidelines for the prevention of endemic diseases. This may include the use of medication programs to manage these diseases.

For the purpose of this manual, an emu enterprise can be clearly deemed commercial by the producer holding a class of license applicable to emu farming. This should be irrespective of scale.

An ostrich enterprise is deemed as commercial when it is actively producing birds to process for its products.

4 Manual adopted for the commercial ratite industry

This manual has been adopted from the National Farm Biosecurity Manual Poultry Production to better reflect the requirements of ratite enterprises. Content has been changed to describe ratite operations and references to sector-specific practices that have been amended to capture the characteristics of this unique industry.

Background

The National Farm Biosecurity Manual Poultry Production was developed by a Biosecurity Consultative Group in 2008 and was a product of the 2007 Government-Industry Avian Influenza Forum held over 2007 and 2008. This was achieved with significant industry consultation, which comprised the following membership:

- Commonwealth Department of Agriculture, Fisheries and Forestry
- Animal Health Australia
- Australian Chicken Meat Federation Inc.
- Australian Chicken Growers' Council
- Australian Egg Corporation Limited
- Australasian Turkey Federation
- Free Range Egg and Poultry Australia
- Australian Duck Meat Association
- Emu Industry Federation of Australia
- Australian Ostrich Association
- Game Bird Industry
- New South Wales Department of Primary Industries
- Queensland Department of Primary Industries and Fisheries

This generic farm biosecurity manual filled a crucial gap within the poultry industries at the time and was intended as a base document upon which sector-specific manuals could be developed. The Manual's purpose was to provide a set of minimum biosecurity standards that would be applicable to all poultry producers, including ratites. However, ratites are substantially different from other poultry species due to factors such as their size and unique production practices. Therefore, the generic manual has been adopted as a sector-specific document for the ratite industry to reflect these differences.

Photo credit: Berwyn Squire

This National Farm Biosecurity Manual for the Ratite Industry has been produced with significant consultation and input from the Emu Industry Federation of Australia and the Australian Ostrich Association.

Implementation

Biosecurity requirements in this sector are largely mandated by the requirements of its export markets. Ratites are not covered by the poultry Primary Production and Processing (PPP) Standards.

Ratite production biosecurity

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Objectives

- To prevent the introduction of infectious disease agents to ratites
- To prevent the spread of disease agents from an infected area to an uninfected area
- To minimise the incidence and spread of microorganisms of public health significance

Biosecurity and quarantine are integral parts of any successful ratite operation. Biosecurity refers to those measures taken to prevent or control the introduction and spread of infectious agents to a flock or mob. Such infectious agents, whether they cause clinical or subclinical disease, significantly reduce the productivity, profitability, and long-term financial viability of a ratite operation.

Biosecurity is about managing risk to meet the objectives stated above. A risk assessment should be conducted for each enterprise to establish what level of risk exists in each phase of its operations and to identify and implement control measures appropriate to these levels of risk.

This manual identifies areas of risk common to most ratite operations and appropriate measures to minimise these risks. When undertaking the risk assessment underpinning the farm-specific biosecurity measures, it is important to consider all factors that may impact the biosecurity of the production area. These factors should include the species of bird being produced, location and layout of property and production area, source of water supply, disease status of the district, proximity to other production areas with avian species, presence and type of wildlife, and interface with the organisations and/or individual clients that are being supplied. These interactions include bird pick-ups, servicemen, industry personnel, contractors, and deliveries of feed.

An additional element in the prevention of the introduction and spread of disease is the use of vaccination. The manual does not cover this aspect, but the importance of an appropriate vaccination strategy is acknowledged, and vaccination as a possible risk management measure may form part of the overall biosecurity assessment and strategy.

The purpose of the manual is to establish a minimum set of biosecurity guidelines, applicable to all ratite producers from hatcheries to the point of delivery at the processor.

Photo credit: Jeff Long

Photo credit: Michael Hastings

Individual producers and companies may wish to develop enhanced biosecurity manuals, which should nevertheless incorporate these guidelines in addition to any specific company or industry sector requirements.

A biosecurity self-audit/auditable checklist for continuous improvement is attached as Appendix 7. This document may also form the basis for either second or third party audits where this is required.

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

Major routes for disease and pathogen transmission

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Ratites

- Introduction of new ratites onto the property
- Transfer of ratites from production area to production area
- Dead bird disposal

Other animals

- Wild birds
- Feral and domestic animals, including other livestock and pets
- Insects
- Rodents—rats/mice
- Domestic birds

People

- Farm personnel and family members living on site
- Contractors, maintenance personnel, neighbours, serviceperson, visitors
- Disease can be transmitted by, for example, hands, boots, clothing, dirty hair

Vehicles

- Stock transporters visiting various farms
- Contaminants and infectious agents can be carried by trucks, cars, and tractors. The risk is increased when vehicles have recently been to other farms.

Air

- Transmission as an aerosol or dust from nearby farms.

Water supply

- Water supplies including dams may become contaminated with faeces from contact with waterfowl or other animal species.
- Consider the contamination of water run-off from sheds and other surfaces.

Feed

- Feed may be contaminated by the raw materials used, post-production and during transport, or by exposure to rodents and birds on the property. Bacteria and mould in poor quality or damaged feed may also be a concern and can be indicative of improper storage practices.

Definition of the concept of production area and property

Photo credit: Jeff Long

In this document, **the production area** includes the hatcheries, bird rearing and housing sheds, the ranges, and paddocks used for free-range production, the areas used for feed storage and handling, and the area immediately surrounding the sheds, including pick-up areas.

The property is the land on which the production area is located and typically includes the facility manager's home and may include other farmland used for livestock or cultivation. In some situations, the hatcheries and processing facilities may also be located on the property. 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 ratites securely within the perimeter. A **high-risk** production area refers to sheds that house young ratites or those at a higher risk of contracting diseases such as hatcheries and rearing sheds. Any reference to **range or paddock** is a reference to fenced pastures that are, or at times are, accessed by the ratites being farmed. This includes ratites that are farmed in an extensive, broad-acre production system.

Photo credit: Michael Hastings

Levels of biosecurity

Level 1 – routine biosecurity procedures

These procedures should be implemented and followed on a daily basis. They give a high degree of assurance that diseases and pathogens will not be carried into ratite production areas and will reduce the risk of transmission between production areas. These should be seen as a minimum requirement.

Action plan for suspected emergency animal disease

Each owner must establish and document clear guidelines regarding the circumstances when an emergency animal disease alert should be raised (e.g., an unusual increase in mortality or drop in production), and who must be informed. The action plan must 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.

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 emergency animal disease and where applicable, standard operating procedures (SOPs) will be implemented in line with the relevant AUSVETPLAN disease strategy (see www.animalhealthaustralia.com.au).

Paddock production operations

Photo credit: Jeff Long

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Photo credit: Michael Hastings

It is recognised that ratites with access to paddocks will have some exposure to wild birds. However, in these environments, measures should be taken to minimise the congregation of waterfowl and the impacts of wild birds generally, and these measures should be documented.

While footbaths are not appropriate for a paddock, a system should be implemented to monitor and prevent any potentially hazardous organic material or litter from entering paddocks and these measures should be documented.

Good fencing is required around ratite paddocks to prevent the entry of animals such as dogs, foxes, and cats. In many situations, however, fencing alone is insufficient to stop such intrusions; therefore, some enterprises keep specially trained dogs with the ratites, as protection against other animals and herding birds. Dogs such as these are not regarded as a biosecurity risk.

Level 1 Routine biosecurity procedures

1. Documentation and training

***Objective**: to ensure awareness by and training of all production area employees in all relevant biosecurity requirements*

1.1 Each production facility must keep a copy of the National Farm Biosecurity Manual for the Ratite Industry (the manual), or a more detailed document that encompasses the manual, that is readily accessible to staff.

1.2 Staff must be provided with training in the relevant parts of the manual and such training is to be recorded.

2. Facility standards

***Objective**: to limit and control access to ratite production areas by people and prevent as much as possible access by livestock, wild birds, and other animals (including rodents)*

2.1 The production area must have a perimeter fence or otherwise well-defined boundary (e.g., creek, vegetation) establishing a clearly defined biosecurity zone.

2.2 A sketch or map of the layout of the property, showing the production area, sheds, ranges, access roads and gates must be created and kept up to date.

2.3 The main entrance to the production area must be capable of being closed to vehicle traffic (e.g., a lockable gate which, where feasible, should be kept locked at all times) and must display appropriate signage including *Biosecure Area No Entry Unless Authorised* or similar wording. In addition, signage must direct visitors to contact the producer before proceeding, i.e., telephone number and/or enquire at the house.

Photo credit: Jeff Long

2.4 There must be a parking area for vehicles not entering the production area. There must be a changing area away from sheds with clean protective clothing and boots provided.

2.5 Entry to sheds must only be made through entrances with a footbath containing a suitable disinfectant used in accordance with the company or manufacturer's instructions and changed on a regular basis. There must be provision for scraping the soles of boots before dipping to ensure the sanitiser makes contact with the soles of the boots. An alternative more reliable system is using separate footwear designated to each production area or shed. Facilities for hand sanitation must also be placed at the entry to each shed.

2.6 Have an appropriate dead bird disposal method in place, e.g., composting as per Appendix 6. This may need to conform to applicable environmental compliance requirements.

2.7 If more than one commercially produced avian species is kept in the production area, the species should be housed and managed separately, with suitable biosecurity arrangements for each species. Shared equipment should be cleaned and disinfected between use. Despite this general requirement, emus and ostriches may be farmed together.

2.8 Feeding systems must wherever possible be closed to ensure that feed in silos and feed delivery systems are protected from access and contamination by wild birds and rodents. Feed spills should be cleaned up without delay to prevent the congregation of wild birds.

2.9 Where bird weighing is practiced, it must be carried out using the production area's own weighing frames and scales. Company service personnel can use their own scales provided they are cleaned and disinfected when moved between production areas.

3. Personnel standards and procedures

***Objective**: to minimise the risk of introducing or spreading a disease or contaminant through people's movement, including;*

- *staff (including production personnel and company service personnel)*
- *contractors, suppliers, and other service personnel*
- *visitors and family members*

and to document such movements to facilitate tracing in case of a concern.

3.1 Production personnel

***Objective**: to minimise the risk of introduction of disease or contaminants by production personnel in high-risk areas*

3.1.1 Production area personnel or any person residing on the property must declare all contact with any other ratites, poultry, cage birds, racing pigeons, or pigs within the last 48 hours to their employer. Appropriate measures may need to be taken such as having a complete head-to-toe shower and changing into new protective footwear and clothing prior to entering the production area (see Appendix 1 Personnel Quarantine Declaration).

3.1.2 Production area personnel must wear laundered clean clothes each day at the commencement of their work. Personnel must ensure that they do not become contaminated by contact with avian species or pigs on their way to work. It is critical that boots worn in sheds are not worn or taken outside the production area. They are the most likely method for disease introduction and spread by personnel.

Photo credit: Michael Hastings

3.2 Company service personnel

***Objective**: to minimise the risk of introduction of disease or contaminants by company service personnel*

3.2.1 Company service personnel by necessity make multiple production area visits on a single day. Protective clothing and footwear, as approved by the production facility manager, should be worn in the production area. Hands must be sanitised before entering sheds.

3.2.2 Visits should always be made from 'clean' areas i.e. home, younger or healthy production areas. In an emergency, visits may be made from production areas with lower standards of biosecurity after a shower and complete change of clothing.

3.3 Repair and maintenance

***Objective**: to minimise the risk of introduction of disease or contaminants by contractors carrying out maintenance and repair work in high-risk areas such as hatcheries and rearing sheds.*

3.3.1 Repair and maintenance contractors who have had contact with ratites or other birds that day or keep birds at their home must not enter high-risk production areas such as hatcheries or rearing sheds unless (a) it is an emergency and (b) they have showered from head-to-toe and changed clothes and boots and wear a hair covering.

3.3.2 Routine maintenance should be conducted, where possible, between batches prior to final disinfection where a batch system is practiced.

3.3.3 Tools taken into the production area must be cleaned before entry into sheds and must be free of dust and organic matter.

3.4 Contractors, suppliers, other service personnel and visitors

***Objective**: to minimise the risk of introduction of disease or contaminants by contractors, suppliers, service personnel and visitors*

3.4.1 Conditions of entry to ratite sheds and paddocks—all personnel (other than those farm personnel covered by the Personnel Quarantine Declaration (Appendix 1)) must agree to comply with the entry conditions as stipulated in Appendix 2A or 2B (which must be displayed prominently near the visitors' log) by signing the visitors' log and such visits must be approved by the manager before visitors may enter sheds and paddocks.

3.4.2 Visitors' log—a record must be kept of all visitors (non-production area staff) to production areas including company personnel (see Appendix 2C regarding details to be recorded and a possible format).

3.4.3 Any authorised visitor, including neighbours, friends, other producers, or equipment suppliers, likely to have been exposed that day to ratites, other birds, or pigs must not enter the high-risk areas unless they have had a head-to-toe shower and changed into clean or designated clothing and boots suitable to that production area, or must limit their visit to the property's residence while wearing clean clothes.

3.4.4 When entering a paddock or range area, visitors must take steps to disinfect their footwear or alternatively, change into boots that are designated for that specific production area.

3.4.5 All visitors should park their vehicles outside the production area unless it is essential that the vehicle be taken on-site, e.g. some maintenance contractors. Visitors entering sheds or paddocks must complete and sign the visitors' log (see Appendix 2C).

Photo credit: Jeff Long

3.5 Requirements for specific movements

***Objective**: to minimise the risk of introduction of disease or contaminants by contractors, suppliers, service personnel and visitors*

3.5.1 Ratite transport contractors or staff moving ratites should work from youngest to oldest or all young birds or all old birds on a shift basis in accordance with the specific enterprises' pick-up biosecurity procedures or regulations.

3.5.2 Vehicles and transport equipment must be cleaned and disinfected between properties not owned/operated by the same entity when moving ratites. Drivers must sanitise their hands and boots before and after each delivery to a production area.

***Objective**: to minimise the risk of introduction of disease or contaminants by other types of deliveries*

3.5.3 Litter delivery and collection of used litter and manure—trucks carrying new or old litter and/or manure must be cleaned and disinfected between production areas.

3.5.4 All other deliveries (e.g. gas and feed) into the production area must be logged. It is recommended that delivery points for farm supplies on the property remain outside the production area.

3.6 Entry procedures for high-risk areas and ranges

***Objective**: to prevent the introduction of disease agents and contaminants into high-risk areas and ranges through people's movements*

Any person entering sheds must sanitise hands and use footbaths (unless separate shed boots are being used) before entering each shed.

3.6.1 Soles of boots must be scraped before disinfecting in the footbaths.

3.6.2 A hand sanitiser must be available at all shed entrances and must be used before entering.

3.6.3 Facilities should be available for the cleaning and disinfection of equipment before entry.

3.6.4 Footwear or appropriate protective boot covers should be provided for specific production areas where footbaths are not applicable, such as ranges and paddocks.

Photo credit: Michael Hastings


Photo credit: Jan Long

4. Operational standards

4.1 Water supply sheds

***Objective**: to ensure that water used in high-risk production areas for drinking, cooling, and cleaning, is of a standard suitable for livestock*

The use of a suitably treated water supply is critical to achieving good biosecurity. In general, water with a high level of organic matter is unsuitable for chlorination alone, while ultraviolet treatment is of little use for turbid water. It may be necessary to seek expert advice to ensure a safe water supply. Effective treatment of surface water to reduce contamination is essential but complex. The water treatment process should be monitored regularly.

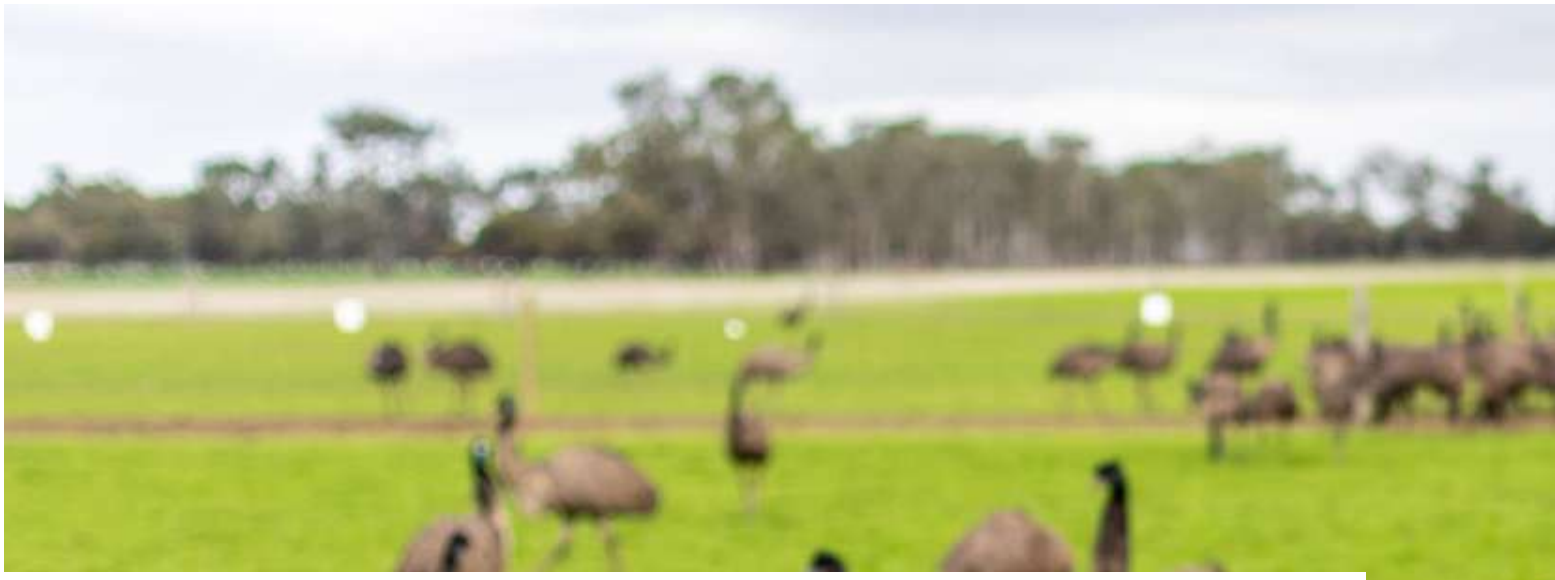
4.1.1 For a chlorinated water supply, the treatment must achieve a level of 1.0–2.0 parts per million (ppm) free available chlorine (FAC) at the point of use.

4.1.2 When chlorinating water, there must be a minimum of 2 hours of contact time between chlorine and water prior to use.

4.1.3 Guidelines regarding the treatment of surface water are available in Appendix 3.

4.1.4 Routine testing must be conducted and recorded to ensure the system is operating correctly (see Appendix 4) with a maintenance program in place.

4.1.5 The effectiveness of water treatment systems, including alternative systems (e.g. ultraviolet), must be validated before use and treatment systems require a program of maintenance and monitoring to ensure effectiveness. Production area records that are able to demonstrate the effectiveness of water treatment must be kept. Microbiological validation of the efficacy of the treatment system should be carried out as and when required (such as stock health concerns), or at least annually.



***Objective**: to ensure that drinking water used in paddocks and ranges is of a suitable standard for livestock*

4.1.6 Drinking water quality must be maintained at a standard suitable for use in livestock.

4.1.7 The accumulation and stagnation of water, likely to attract waterfowl, should be minimised where possible.

4.2 Vermin baiting

***Objective**: to minimise the potential for introduction of infectious agents and pathogens by vermin, in particular rodents, through their presence in the production area*

4.2.1 A record should be kept of each inspection and vermin activity noted (see Appendix 5 for rodent activity record).

4.2.2 An appropriate vermin control plan must be developed and implemented, including rodents, foxes, wild dogs, and cats.

4.2.3 A baiting program for rodents must be implemented where a risk assessment deems this necessary (e.g. live rodents, droppings, nests). Such a baiting program must include the following features:

- bait stations should be numbered and a map kept of their location.
- bait stations must be placed at regular intervals around the sheds. The number of bait stations should be increased in areas where there are signs of increased rodent activity.
- bait stations must be designed to minimise the opportunity for other mammals and birds to access the bait.
- bait stations must be checked weekly and fresh baits laid as required.

Photo credit: Jeff Long

4.3 Cleaning and ground maintenance

***Objective**: to hinder the introduction of disease agents and contaminants into sheds and ranges and reduce the attraction of rodents and birds to production areas*

4.3.1 Feed spills must be cleaned up as soon as practicable. Feed attracts birds and rodents to the production area.

4.3.2 Grass on and around the high-risk production areas should be kept cut—long grass attracts rodents and favours the survival of viruses and bacteria.

4.3.3 Footbaths where used must be inspected daily (e.g., for excessive organic matter) and the contents replaced as required to achieve an adequate concentration of suitable disinfectant according to the company or manufacturer's recommendations.

4.4 Record keeping

***Objective**: to assist early detection of animal health issues and the response to any biosecurity breach*

4.4.1 Bird mortality must be recorded regularly to assist in monitoring for any unusual animal health problems potentially indicating a biosecurity breach.

4.4.2 A record of bird movements must be maintained to facilitate tracing in case of an animal health or food safety concern.

Level 2 High-risk biosecurity procedures

***Objective**: to increase biosecurity protection by minimising movements on and off the property, and to protect the property from the increased threat of a disease being introduced in a suspected outbreak of an emergency disease or a serious endemic disease*

5. Action plan for suspected emergency animal disease

5.1 Each owner must establish and document clear guidelines regarding the circumstances when an emergency animal disease alert should be raised (e.g., an unusual increase in mortality or drop in production), and who must be informed. The action plan must also clearly state that, if an alert is raised, the movement of birds must cease immediately, other 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 this section Level 2—high-risk biosecurity procedures.

6. Facilities

6.1 Gates must be kept locked.

6.2 Shed doors must be locked at night.

6.3 Facilities for the cleaning and disinfection of equipment coming on and off the production area must be in place.

7. Personnel

7.1 No visitors are to enter the production area unless absolutely essential. Company personnel will discontinue routine visits except on suspicion of problems.

7.2 Repairs and maintenance—no routine work, only emergency work to be carried out.

8. Operational

8.1 Essential visits—head-to-toe shower before and after a visit. A complete change of clothes, footwear, hair covering, and breathing protection is required. Used clothing and all used personal protection equipment must remain on the property.

8.2 Any vehicle which must enter the property must be washed and disinfected at the wash pad before and after going onto the property (e.g., feed trucks, gas). Vehicle driver cabins must also be sanitised inside.

8.3 If a major outbreak should occur, further measures will be stipulated by the processor and/or the state's Chief Veterinary Officer.

9. Standard Operating Procedures (SOPs)

Standard operating procedures will be available for any specific outbreak of an emergency animal disease from Animal Health Australia in accordance with AUSVETPLAN (see www.animalhealthaustralia.com.au).

Appendix 1 – Personnel quarantine declaration

(Production Area Employee)

I,.....hereby agree to abide by **MY EMPLOYER'S BIOSECURITY** rules and standards.

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

1. I must declare any pigs, poultry, or other avian species that are kept at my place of residence to my employer.
2. All contact with pigs, poultry, or other avian species within 48 hrs of entry to the production area needs to be declared to my employer prior to entry and appropriate biosecurity or quarantine measures must be taken in relation to this contact.
3. Any overseas travel is to be declared with the employer, including whether contact with any poultry, pigs, or other avian species was made while traveling.
4. I will advise my employer if I am experiencing flu-like or gastrointestinal symptoms.

Signature ..... Date..... Residential Address.....

Appendix 2A – Entry conditions for visitors to ratite sheds / hatcheries or other high-risk production areas

Entry is subject to the following conditions:

✓	**Visitors must declare any ratites, poultry, caged birds or pigs kept at their home or place of residence.**
✓	**Visitors must declare any contact with any avian species, pigs, or untreated manure within 48 hours of seeking entry to the production area unless a full head-toe shower and a change of protective clothing have been carried out.**
✓	**Visitors must wear clean laundered clothing or protective clothing provided.**
✓	**Visitors must wear the footwear or protective boot covers provided for the specific production area.**
✓	**Visitors must sanitize boots or footwear in the footbath provided on entering any high-risk production area/shed, or change into a separate pair of boots specific to that production area.**
✓	**Visitors must sanitize their hands before entering the production areas.**

Appendix 2B – Entry conditions for visitors to ratite paddocks or ranges and extensively managed production areas

Entry is subject to the following conditions:

✓	**Visitors must declare any ratites, poultry, caged birds, or pigs kept at their home or place of residence.**
✓	**Visitors must declare any contact with any avian species, pigs, or untreated manure within 48 hours of seeking entry to the production area unless a full head-toe shower and a change of protective clothing have been carried out.**
✓	**Visitors must wear clean or sanitized footwear or protective boot covers provided for the specific production area.**
✓	**Visitors must sanitize their hands before entering the production areas.**

Appendix 2C – Visitors' log

By signing this visitors' log, you agree to comply with the conditions as detailed in the accompanying list of conditions of entry. All visitors entering ratite sheds or ranges must sign this log.

Date	Name	Company	Ratite, poultry and/or pig contact in the last 48 hours	Reason for visit	Time in	Signature	Time out	Signature

Appendix 3 – Surface water treatment

***Objective**: to eliminate or reduce contamination of water supplied to ratites, especially contamination by faeces from wild water birds*

Water treatment checklist

All surface water that comes from sources other than town mains (e.g. from dams, rivers) should be treated on the farm before being used for ratites.

Chlorination

Chlorination is an excellent way to effectively treat your farm water. However, chlorination will only be effective if the water is already relatively free of organic matter and solids. Filtration of the water supply prior to chlorination will nearly always be necessary.

There are a number of different chlorination systems available to ratite farmers. These can be obtained from a range of specialist water treatment companies, pumping companies, or swimming pool suppliers. Assistance with the installation, operation, and maintenance of these systems is usually offered by the supplier, as are kits for monitoring chlorination levels.

To effectively treat a water supply, the water must contain chlorine at a concentration of 1-2 ppm (or equivalent) while held for a minimum of 1 to 2 hours in a holding tank. This may require the use of a two-tank system, where water is consumed by birds from one tank, while the other tank is refilled and stored with freshly chlorinated water until the required contact time of 1 to 2 hours has elapsed. Chlorine is more effective if the pH of the water is between 6 and 7 i.e. slightly acidic.

The chlorine concentration at the drinker must be between 1 and 2 ppm (or equivalent) to ensure any contamination that might have occurred in the lines between the holding tank and the drinker has been effectively treated.

As a guide:

1. Fill the test tube with water from watering points in the shed.
2. Insert the test strip (provided in the test kit) into the test tube.
3. Compare the colour of the chlorine square on the test strip with the chlorine colour squares on the standard colour chart (provided).
4. Record the concentration level of the colour on the standard colour chart with that which most closely matches the test strip colour.
5. If the chlorine concentration is less than 1 ppm[1] or greater than 5 ppm the concentration should be rechecked in one hour. If the concentration remains outside these limits, the unit should be adjusted and the concentrations checked again in 1 hour.

Alternative chlorination monitoring systems are available from companies that supply chlorination equipment.

UV treatment

Ultraviolet (UV) treatment is an alternative method of treating farm water. However, UV will only be effective on clean, filtered water (not turbid water). It should only be considered on farms where the lines from the storage tank to the drinkers and the drinkers themselves are clean, in good repair, and well maintained, to minimise contamination after UV treatment. UV treatment units and water filtering systems are available from specialist water treatment or pumping companies.

More information on the treatment of water

A detailed document on water biosecurity for poultry farms can be found at the following websites:

National Water Biosecurity Manual - Poultry Production - DAFF (agriculture.gov.au) and www.farmbiosecurity.com.au/toolkit/plans-manuals

1 ppm – parts per million

Appendix 4 – Water sanitation record

Date	Time	Test result (e.g. ppm of free available chlorine)	Corrective action	Name or initials

Test method: .....

Appendix 5 – Rodent control record

Date	Time	Bait station No.	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 were observed (e.g. droppings/bait eaten).

Appendix 6 – Dead bird composting

***Objective**: to eliminate as much as possible infection or contamination from entering production areas due to dead bird disposal*

Composting is the aerobic microbial breakdown of organic matter, usually incorporating a thermophilic phase.[2] The adoption of composting systems for poultry waste has received attention due to its ability to reduce litter volume, dispose of carcasses, stabilise nutrients and trace elements, and reduce pathogens.

1. Rodents, cats, dogs, feral animals, scavenging birds, and flies must be kept away from composting carcasses.
2. Composting areas must be away from sheds and boundary fences.
3. Composting areas must be kept neat and clean at all times.
4. Cleaning and disinfection of equipment such as bins, buckets, and wheelbarrows must be done before returning them to the production areas and when moving between sheds.
5. Adequate instructions/guidelines for safe composting must be available.

2 Thermophilic phase—a phase during which there is a temperature rise in the compost sufficient to inactivate pathogenic micro-organisms

Appendix 7 – Production area audit checklist

Audit date:	
Auditor's Name:	**Auditee's Name:**
Auditor's Signature	**Auditee's Signature**

Notes:

1.0	Documentation and training	Part 1 paragraph ref.	Yes	No	N/A	Corrective action
1.1	Is a copy of the current National Biosecurity Manual held in the production area and readily available?	1.1				
1.2	Have the staff been instructed in the relevant parts of the Manual?	1.2				
1.3	Is a record kept of all relevant training received by employees?	1.2				
1.4	Is a bird mortality register being maintained?	4.4.1				
1.5	Is an appropriate bird movement register being maintained?	4.4.2				

Notes:

2.0	Facility Standards	Part 1 paragraph ref.	Yes	No	N/A	Corrective action
2.1	Does the production area have a perimeter fence and can access routes be closed off to prevent vehicle entry?	2.1 2.4				
2.2	Is there a sketch or map clearly defining the production area and the property, including all access roads and gates?	2.2				
2.3	Is there adequate signage to inform visitors of the Biosecure Area and what action they should take?	2.3				
2.4	Is there a designated parking area for visitors?	2.4				
2.5	Are footbaths available and used at all entrances allowing personnel access to sheds?	2.5				
2.6	Are the footbaths inspected daily and replenished as required?	4.3.3				
2.7	Alternative to 2.5 and 2.6: Is a separate pair of boots available and used for each ratite enclosure?	2.5				
2.8	Is the area around the sheds neat and tidy? E.g. mown grass.	4.3.2				
2.4	Is there a designated foot area for visitors?	2.4				
2.5	Are footbaths available and used at all entrances allowing personnel access to sheds?	2.5				

Notes:

3.0	Personnel standards	Part 1 paragraph ref.	Yes	No	N/A	Corrective action
3.1	Is there a signed Personnel Quarantine Declaration for each employee?	3.1.1				
3.2	Is there a visitors' log and are all production area visitors required to complete their details in the book?	3.4				
3.3	Are the conditions of entry to the production area prominently displayed near the visitors' log?	3.4.1				

Notes:

4.0	Water treatment	Part 1 paragraph ref.	Yes	No	N/A	Corrective action
4.1	Is there a water sanitising system or management plan in place for the production area?	4.1				
4.2	If chlorination is used, is the level routinely tested and recorded?	4.1.4				
4.3	If another sanitising system is used, is there a system in place to ensure that the water is being sanitised effectively?	4.1.5				

Notes:

5.0	Vermin control program and rodent baiting program	Part 1 paragraph ref.	Yes	No	N/A	Corrective action
5.1	Is an appropriate vermin control strategy documented?	4.2.1 4.2.2				
5.2	Is there a rodent baiting program in place in the production area?	4.2.3				
5.3	Is there a plan showing the location of bait stations?	4.2.3				
5.4	Are the baits regularly checked for activity and replaced; and is there a record of this process?	4.2.3				

Notes:

6.0	Cleaning and ground maintenance	Part 1 paragraph ref.	Yes	No	N/A	Corrective action
6.1	Has spilt feed been cleaned up around silos?	2.8 4.3				
6.2	Are there measures taken to protect feed from contamination by rodents and wild birds?	2.8				
6.3	Are footbaths inspected daily (e.g. for excessive organic matter) and the contents replaced as required?	4.3.3				

Notes:

7.0	Dead bird disposal	Part 1 paragraph ref.	Yes	No	N/A	Corrective action
7.1	Is there an appropriate procedure in place for the disposal of dead birds?	2.6				
7.2	Is the procedure both environmentally sound and biosecure?	2.6				

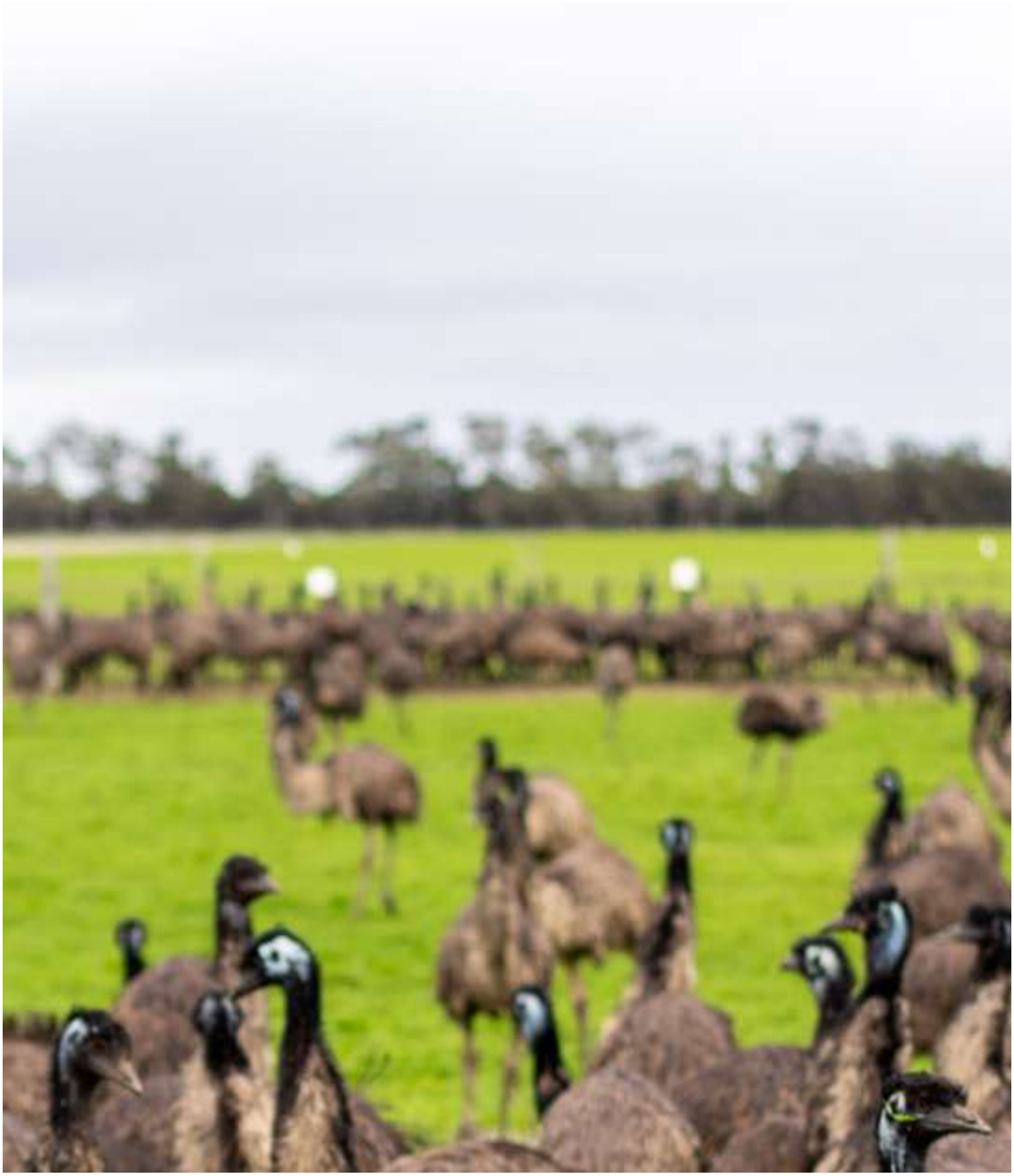
Notes:

Appendix 8 – Ratite transport between production areas and to the processing plant

An issue that deserves special mention is biosecurity during ratite movement and transport to a processing plant. During that procedure, the aim of appropriate biosecurity measures is to prevent the spread of any disease or microbial contamination from one farm or production area to another. This can happen readily through the movement of people, vehicles, and equipment, for example, transport crates and trucks, and measures have to be taken by all those involved in this operation to minimise the likelihood of such exposure.

It is important that staff and personnel put in place measures to minimise risks such as separate footwear for loading and unloading stock, truck cleanouts between different biosecurity status production areas, or processing works.

Notes



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