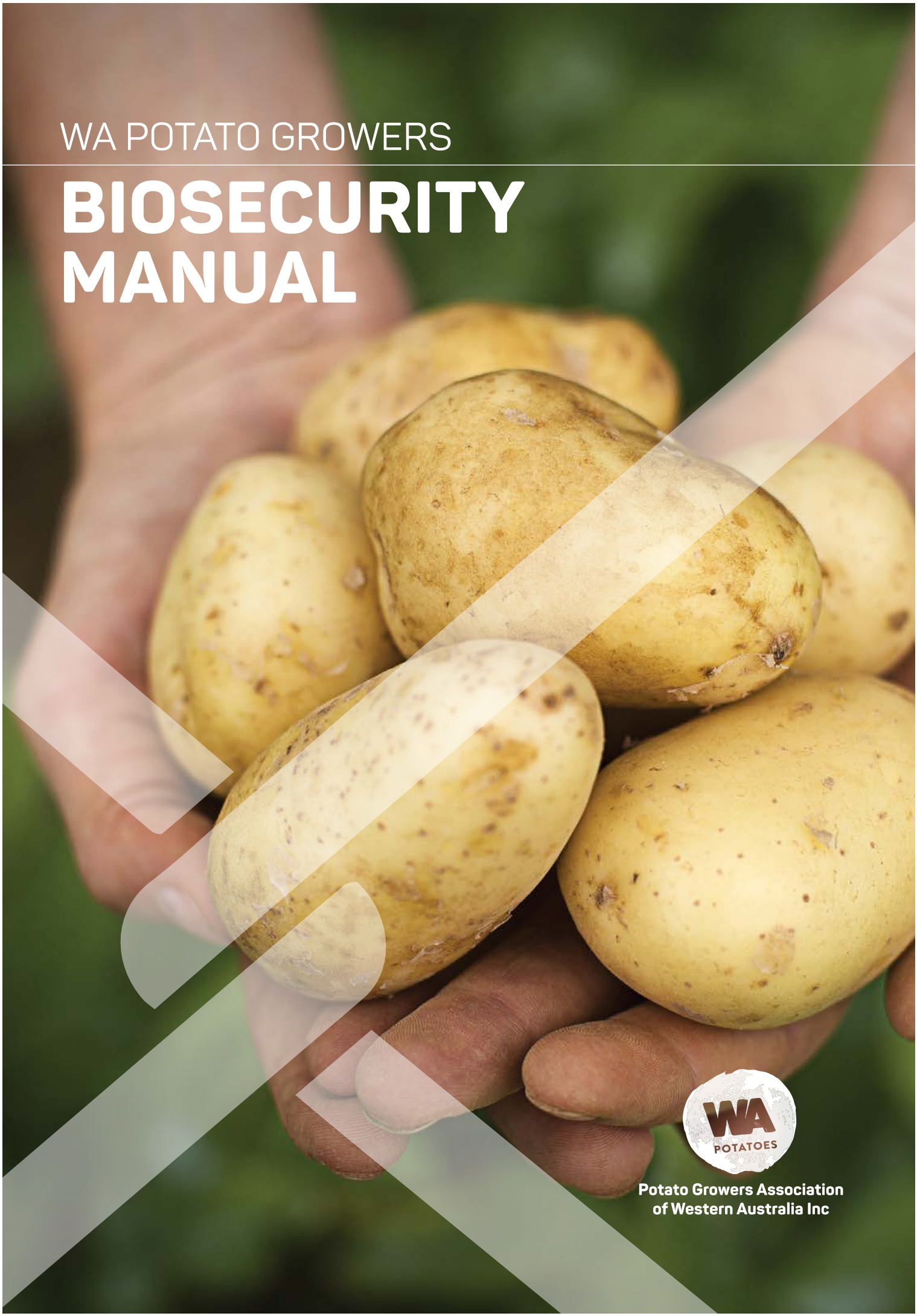
WA POTATO GROWERS

BIOSECURITY MANUAL



Potato Growers Association
of Western Australia Inc

Contents

Potato Growers Association of Western Australia Inc

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Introduction

Biosecurity is the management of the risk of animal and plant pests and diseases entering, emerging, establishing, or spreading in Western Australia, to protect our economy, environment and the community.

Managing biosecurity is essential to ensuring a prosperous future for the WA potato industry, which is currently valued at $54 million at the farmgate[1].

The Western Australian Certified seed potato scheme is an industry cooperative scheme that incorporates the Australian National Certified Seed Potato (ANCSP) Standards as a minimum and produces premium seed potatoes that are considered superior to other international standards[2].

The industry includes production of world-class certified seed, fresh potatoes, and processing potatoes for local and export markets. A rigorous approach to biosecurity will support industry to continue to develop markets and assist in preventing crop losses and damage due to pest and disease incursions.

Western Australia's defences against potentially devastating pests and diseases are managed under the *Biosecurity and Agriculture Management Act 2007* (BAM Act)[3].

Biosecurity is the responsibility of the entire industry and its stakeholders.

The following manual is a go-to guide for WA potato growers. The manual tells you what to do, who to call and why acting quickly is critical to protecting you and the industry from pests and diseases.

Each section is deliberately brief for quick reference, with QR codes throughout to link you to further key information should you need it.

ROLE OF DPIRD

- To protect Western Australian agricultural industries from pests the Department of Agriculture and Food, Western Australia:
- Works with stakeholders to identify and manage biosecurity risks.
- Develops legislation.
- Establishes import controls.
- Conducts inspections.
- Provides quarantine services as required.

Photos of pests, weeds and plant diseases can be sent via email to **padis@dpird.wa.gov.au**.

ROLE OF AUSVEG

AUSVEG undertakes a number of extension projects in the biosecurity and crop protection space. These projects aim to improve the management of pests and diseases across the vegetable industry and increase the quality and quantity of resources available to Australian vegetable growers.

Their core focuses include biosecurity, sustainable production, and integrated pest management solutions. AUSVEG also publishes 'The Front Line', a biosecurity bulletin to keep industry up to date with the latest biosecurity news, including upcoming workshops and events, research and development, and pest and disease alerts.

Stay updated on the latest biosecurity news, updates, pest alerts and events for free with AUVSEG's Frontline biosecurity e-bulletin and AUSVEG's dedicated biosecurity Twitter account @biosecurityveg.

Biosecurity News Sign Up

https://ausveg.com.au/biosecurity-agrichemical/biosecurity/

1 www.agric.wa.gov.au/crops/horticulture/vegetables/potatoes
2 www.agric.wa.gov.au/plant-biosecurity/potato-seed-certification
3 www.agric.wa.gov.au/bam/biosecurity-and-agriculture-management-act-2007

EARLY DETECTION

Early detection of 'unwanted pests' is critical to protect local food growers and production areas from damaging pests as well as to ensure the access of Western Australia's food produce to domestic and international markets.

Report pests or unknown organisms using the **MyPestGuide® Reporter app** so the department can respond to incursions of exotic pests and prevent further spread to WA agricultural production areas.

Report your observations!

MyPestGuide® Reporter
via app or online
mypestguide.agric.wa.gov.au

1. Prepare and plan

1. MAKE A BIOSECURITY ACTION PLAN FOR YOUR FARM

Implementing recommended measures in day-to-day operations you will improve your farm's biosecurity and that of your region, minimising crop losses and additional costs[4].

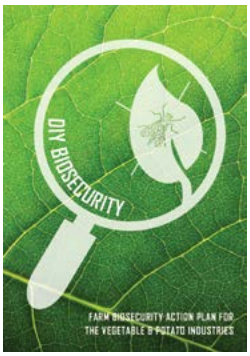
When thinking about implementing biosecurity measures on farm, the six biosecurity essentials are a good place to start[5].

They are:

- People, vehicles and equipment
- Farm inputs
- Production practices
- Farm outputs
- Feral animals and weeds
- Train, plan and record

Here are two great resources you can use to assist in creating your own Biosecurity Action Plan — following the links below:

- AUSVEG — ***Farm Biosecurity Action Plan for the Vegetable and Potato Industries***



https://ausveg.com.au/app/uploads/2017/05/Biosecurity-R-1.pdf

- Plant Health Australia Ltd (2018) — ***Potato Growers' Biosecurity Manual***

www.farmbiosecurity.com.au/wp-content/uploads/2019/06/Potato-Growers-Biosecurity-Manual.pdf

4 www.farmbiosecurity.com.au/wp-content/uploads/2019/06/Potato-Growers-Biosecurity-Manual.pdf
5 www.farmbiosecurity.com.au/wp-content/uploads/2019/06/Potato-Growers-Biosecurity-Manual.pdf

2. MONITOR YOUR CROPS AND HIGH-RISK AREAS REGULARLY

Check your crops

Commercial growers are urged to check for signs of pests and report any unusual detections to the department using the MyPestGuide Reporter app. Growers are advised not to treat specifically for the suspected pest until crops have been surveyed and appropriate chemicals for use have been identified.

MyPestGuide Reporter app is available from the Google Play Store and Apple App Store. This app is a photographic reporting tool which lets users take up to four photos, map pest observations and communicate directly with the department. If you don't have a mobile device you can add, view and report the pest via the department website **agric.wa.gov.au**.

www.agric.wa.gov.au/apps/mypestguide-reporter

3. LEARN ABOUT EXOTIC PESTS AND HOW TO IDENTIFY THEM

This document has collated a range of images, information, and links for the current biosecurity threats to the potato industry in Western Australia.

Review the pests and diseases on page 8 of this guide, as supplied and reviewed by the Biosecurity teams at DPIRD. The information is split into Declared Pests and Permitted categories and includes links to Fact Sheets and information.

4. STAY UP TO DATE WITH MOVEMENT RESTRICTIONS FOR PLANTS

Potatoes from interstate are currently permitted entry into the state under strict quarantine conditions for specific pests and diseases. These measures have been in place for many years and are being reviewed to ensure they provide an appropriate level of protection for Western Australia and comply with trading requirements.

Currently, washed ware potato tubers (*Solanum tuberosum* L.), except tubers produced in Tasmania or South Australia, may not be imported into:

1. the Shire of Gingin; or
2. that portion of the State comprising the area bounded by a line starting from a point on the sea coast situated west from the south-west corner of Mandurah town site and extending south-easterly to the south corner of Coolup townsite; thence south-southeasterly to the southernmost corner of Collie townsite; thence in a general south-easterly direction passing through the north-east corner of Dinninup at Cape Riche; thence south-westerly, westerly, north-westerly and northerly along the said sea coast to the starting point; excluding however, that portion of such area comprised within a radius of 16 km from the Collie Railway Station.

www.agric.wa.gov.au/plant-biosecurity/movement-restrictions-plants-within-western-australia

5. REPORT ANYTHING SUSPICIOUS TO THE EXOTIC PLANT PEST HOTLINE ON 1800 084 881

If you find a pest that you think might be exotic, take the following precautions to contain it and protect other parts of your farm:

- Mark the site where you saw the pest.
- Do not touch, move, or transport affected plant material.
- Take a photo of the pest or disease symptoms. Pests that move too quickly to be photographed can be captured in a well-sealed glass jar and frozen before taking a photo of them.
- Restrict the movement of people, animals and equipment near the affected area while waiting for identification.
- Wash your hands, clothes and footwear that have been in contact with affected plant material or soil.
- Without delay, call the Exotic Plant Pest Hotline on **1800 084 881** to report it to your state department of agriculture.

Calls to the hotline will go to PaDIS:

- **Pest and Disease Information Service (PaDIS)**
  3 Baron-Hay Court
  South Perth WA 6151

The Pest and Disease Information Service (PaDIS) provides advisory and identification services on animal and plant pests, weeds and diseases that impact Western Australia's agriculture and food industries. This service plays an important frontline role for the detection and reporting of unfamiliar and potentially damaging pests, weeds and diseases of agricultural and quarantine concern.

Specimens can be submitted in person or posted to the South Perth Office. Please refer to our webpage on **Sending specimens for identification**, call or email for guidance.

The department has also developed a number of apps which can be used to report the presence of unfamiliar pests and diseases. Click on the links below to download an app, or to make an online report:

- **MyPestGuide** — allows you to identify pests and report your observations.
- **MyWeedWatcher** — identify and report declared plants and priority weeds within your community.
- **PestFax Reporter** — report observations of pests and diseases in your paddocks to the Western Australian PestFax newsletter editor.

Alternatively, photos of pests, weeds and plant diseases can be sent via email to **padis@dpird.wa.gov.au**

www.agric.wa.gov.au/biosecurity/pest-and-disease-information-service-padis

2. Biosecurity signage

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Biosecurity signage is available from AUSVEG free-of-charge (limits apply).

Farm hygiene is the first step to helping growers protect their own business and the wider horticulture industry, while minimising production losses and unnecessary costs associated with pest outbreaks.

Anyone coming onto a farm can be a biosecurity risk as many pests and diseases can hitchhike on clothing, hands, footwear and vehicles. If implemented correctly, farm hygiene practices have the potential to significantly reduce these risks. The first step to limiting the spread of pests and diseases on-farm is to install biosecurity signage at property entrance points.

Biosecurity signage is available to levy-paying Australian vegetable and potato growers from AUSVEG free-of-charge. Please send an email to **science@ausveg.com.au** or call **(03) 9882 0277** to request signs or for further information.

Biosecurity Signage

https://ausveg.com.au/biosecurity-agrichemical/biosecurity/factsheets-templates-webinars/#gate_signs

WARNING

FARM BIOSECURITY IN PLACE

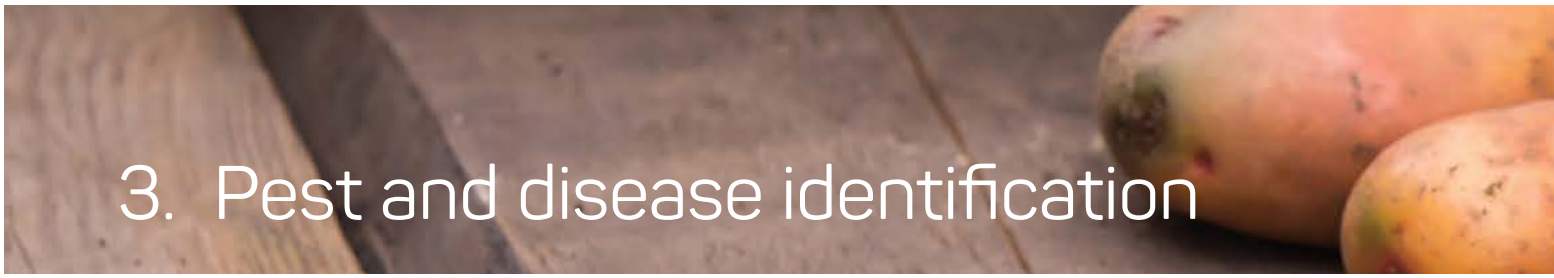
Please contact the office before entering.

_____ _____

Do not enter property without prior approval.
Keep to roadways and laneways.
Do not enter growing areas.

AUSVEG Plant Health Australia Hort Innovation

WA POTATOES



3. Pest and disease identification

Permitted — s11

Permitted organisms must satisfy any applicable import requirements when imported. They may be subject to an import permit if they are potential carriers of high-risk organisms.

Declared Pest, Prohibited — s12

Prohibited organisms are declared pests by virtue of section 22(1), and may only be imported and kept subject to permits. Permit conditions applicable to some species may only be appropriate or available to research organisations or similarly secure institutions.

Declared Pest — s22(2)

Declared pests must satisfy any applicable import requirements when imported, and may be subject to an import permit if they are potential carriers of high-risk organisms. They may also be subject to control and keeping requirements once within Western Australia.

The following reference guide aims to assist in quick identification of possible threats and the steps to follow to mitigate risk.

LEGAL STATUS: **DECLARED PESTS**

THREAT	MORE INFORMATION

TOMATO POTATO PSYLLID


PHOTO © DPIRD

Tomato potato psyllid (*Bactericera cockerelli*) is a tiny sap-sucking insect which feeds on tomato, potato, capsicum, chilli, goji berry, tamarillo, eggplant and sweet potato. The weeds nightshade, groundcherry and field bindweed are also hosts of the insect pest.

LOOK OUT FOR:

- The tomato potato pysllid on the underside of leaves.
- The more mature adults are darker in colour. Nymphs are 2mm long, oval shaped, flattened and scale-like in appearance.
- Psyllid eggs are less than 1mm long and are white when first laid, then turn yellow to orange after a few hours.


PHOTO © DPIRD

FACT SHEETS:

DPIRD Info

Source:
www.agric.wa.gov.au/tpp/about-tpp-and-what-look

DPIRD Fact Sheet

www.agric.wa.gov.au/sites/gateway/files/DPIRD%20TPP%20factsheet%20%28WA%29_HR%20%28no%20bleed%29.pdf

AUSVEG Fact Sheet

https://ausveg.com.au/app/uploads/2017/11/Fact-Sheet-Tomato-Potato-Psyllid.pdf

YouTube Video

How to check for TPP video:
www.youtube.com/watch?v=2GHEi_F40CU&feature=youtu.be

PHA Fact Sheet

www.planthealthaustralia.com.au/wp-content/uploads/2018/07/Tomato-potato-psyllid-FS-Potatoes.pdf

10 LEGAL STATUS: **DECLARED PESTS**

THREAT	MORE INFORMATION
THRIPS	

PHOTO © SHUTTERSTOCK

PHOTO © DPIRD

Thrips are a relatively minor pest of potato crops in both Indonesia and Western Australia.

LOOK OUT FOR:

- Thrips are small, cigar-shaped insects up to 2mm long that feed on potato leaves and flowers by sucking/scraping. Adult thrips vary from grey to yellow, brown to black. Adults have a pair of thin wings held over their backs. Nymphs are pale-white to yellow and do not have wings.
- Thrips feed on both leaf surfaces, but are more common on the underside. They are so small they are usually found only after the effects of their feeding is noticed on leaves — distorted or silvery grey leaves. A 10x magnifier is needed to see the insects clearly.

FACT SHEETS

DPIRD Fact Sheet

Source: **www.agric.wa.gov.au/potatoes/thrips-potato-pest-indonesia-and-western-australia**

PHA Fact Sheet

www.planthealthaustralia.com.au/wp-content/uploads/2013/01/Melon-thrips-FS.pdf

LEGAL STATUS: **DECLARED PESTS**

THREAT	MORE INFORMATION

AMERICAN SERPENTINE LEAF MINER

PHOTO © DPIRD

American serpentine leafminer (*Liriomyza trifolii*) is a tiny fly whose larvae damages plants by tunnelling (mining) through leaf tissue.

Damage is caused primarily by larvae feeding under the surface of leaves, and tunnelling (mining) within the leaf tissue. Leaf damage also occurs through puncture wounds from the adult feeding and depositing eggs.

LOOK OUT FOR:

- Trails or 'mines' — light green to white squiggles — on leaf surfaces.

PHOTO © DPIRD

PHOTO © DPIRD

FACT SHEETS

DPIRD Fact Sheet

Source: **www.agric.wa.gov.au/plant-biosecurity/biosecurity-alert-american-serpentine-leafminer**

PHA Fact Sheet

www.planthealthaustralia.com.au/wp-content/uploads/2018/07/American-serpentine-leaf-miner-FS-Potatoes.pdf

12 LEGAL STATUS: **DECLARED DISEASES**

THREAT	MORE INFORMATION
LATE BLIGHT	

PHOTO © SHUTTERSTOCK

PHOTO © DPIRD

Late blight (*Phytophthora infestans*) is considered the most devastating disease of potatoes worldwide and caused the Irish potato famine in the 1840s.

LOOK OUT FOR:

- Large, pale green areas form on potato or tomato leaves which become watersoaked and dark.
- Lesions expand rapidly and the whole leaf can die.
- When conditions are wet and humid late blight produces spores which are easily seen on the underside of the lesion as a white fluffy "down".
- Lesions and sporulation can also occur on the stems of plants.
- Potato tubers can be affected with a tan-brown, reddish or purplish rot that penetrates about 1.5cm into the tuber.

FACT SHEETS

DPIRD Fact Sheet

Source: **www.agric.wa.gov.au/plant-biosecurity/late-blight-potato-and-tomato-declared-pest**

PHA Fact Sheet

www.planthealthaustralia.com.au/wp-content/uploads/2018/07/Late-blight-FS.pdf

LEGAL STATUS: **DECLARED DISEASES**

THREAT	MORE INFORMATION
BACTERIAL WILT	

PHOTO © SHUTTERSTOCK

PHOTO © DPIRD

Bacterial wilt (*Ralstonia solanacearum*) is a serious disease of potatoes that can cause crop losses of more than 90%.

LOOK OUT FOR:

- Bacterial wilt of potatoes appears as sudden wilting of one or more stems of the potato plant. This symptom can be mistaken for water stress. Plants may also look stunted and begin to yellow.
- Brown discolouration is visible in the vascular tissues of the stem and tubers. When stems or tubers are cut and slight pressure applied, creamy bacterial slime comes from the infected vascular elements.
- Bacterial slime oozes from the eyes of tubers and soil sticks to the tubers where the slime has emerged.
- Secondary infection can cause decay of the whole tuber.
- External symptoms and internal browning are not always visible in infected plants, and potato tubers can be infected without any visible symptoms.

FACT SHEETS

DPIRD Info

Source: **www.agric.wa.gov.au/plant-biosecurity/bacterial-wilt-potato-declared-pest**

AUSVEG Fact Sheet

AUSVEG: **https://ausveg.com.au/biosecurity-agrichemical/crop-protection/overview-pests-diseases-disorders/bacterial-diseases/#management%20bacterial%20diseases**

14 LEGAL STATUS: **DECLARED DISEASES**

THREAT	MORE INFORMATION
POTATO VIRUS Y TUBER NECROSIS	


PHOTO © DPIRD


PHOTO © DPIRD

Potato virus Y tuber necrosis strain (PVY^{NTN}) causes a serious disease of potatoes called potato tuber necrotic ringspot disease which results in dark unsightly rings on tubers. PVY^{NTN} is a genetic recombinant strain of Potato Virus Y.

LOOK OUT FOR:

- Infected potato leaves normally have only mild symptoms. There may be mild yellow mottling (mosaic), but leaf symptoms are subtle or absent in most potato varieties.
- Irregular rings appear on the surface of tubers close to harvest. The rings are pinkish-coloured at first then extend into the flesh, becoming dark, necrotic and sunken.
- Above-ground symptoms caused by PVY^{NTN} on tomato are similar to potato. Plants may be stunted with leaf mosaic symptoms.
- Symptoms on petunias include leaf mosaic, yellow mottling, vein clearing and distortion of leaves and stems. Flowers may be affected by colour breaking (irregular patches of lighter colour) and plants are stunted.

FACT SHEET

DPIRD Info

Source: **www.agric.wa.gov.au/plant-biosecurity/potato-virus-y-tuber-necrosis-strain-declared-pest**

LEGAL STATUS: **DECLARED DISEASES**

THREAT	MORE INFORMATION

CANDIDATUS LIBERIBACTER-SOLANACEARUM (ZEBRA CHIP)

PHOTO © MPI NZ

***Candidatus* Liberibacter solanacearum is a bacterial plant pathogen that is exotic to Australia. Currently five haplotypes have been described: haplotypes A and B from solanaceous crops such as capsicum, eggplant, potato and tomato; haplotype C from carrots; and haplotypes D and E mostly from carrots and celery.**

LOOK OUT FOR:

Characteristic above-ground plant symptoms of *Candidatus* Liberibacter solanacearum infection in potato, tomato and other solanaceous species include:

- Stunting.
- Erectness of new foliage.
- Chlorosis and purpling of foliage, with basal cupping of leaves.
- Upward rolling of leaves throughout the plant.
- Shortened and thickened terminal internodes resulting in plant rosetting.
- Enlarged nodes, axillary branches or aerial tubers.
- Leaf scorching.
- Disruption of fruit set, and the production of numerous, small, misshapen and poor quality fruits.

FACT SHEETS

DPIRD Info

Sources: **www.agric.wa.gov.au/plant-biosecurity/candidatus-liberibacter-solanacearum**

DPIRD Data Sheet

www.agric.wa.gov.au/plant-biosecurity/candidatus-liberibacter-solanacearum-pest-data-sheet

AUSVEG Fact Sheet

https://ausveg.com.au/app/uploads/2017/05/TPP-and-Zebra-Chip-Information-Sheet.pdf

PHA Fact Sheet

www.planthealthaustralia.com.au/wp-content/uploads/2018/07/Zebra-chip-FS-Potatoes.pdf

16 LEGAL STATUS: **DECLARED DISEASES**

THREAT	MORE INFORMATION

DICKEYA DIANTHICOLA

***Dickeya dianthicola* is a serious bacterium that can cause tuber soft rot and blackleg in potatoes, and can also affect some ornamental varieties, chicory and artichoke.**

LOOK OUT FOR:

- Poor emergence due to rotting potato seed tubers.
- Slimy, wet, black stems extending upwards from the rotting tuber.
- Tubers are macerated and have a tapioca-like appearance.
- Rapid wilting and blanking (missing plants).
- Can be present without causing symptoms.
- Symptoms develop after hot weather, when plants are stressed.
- Overseas data has indicated significant yield losses in potato crops.
- A number of hosts may be asymptomatic. Therefore we strongly urge all growers to put in place, or maintain, strict on-farm biosecurity measures. This will help to restrict the spread and impact of this bacteria.

FACT SHEETS

DPIRD Fact Sheet

www.agric.wa.gov.au/sites/gateway/files/Dickeya%20dianthicola%20fact%20sheet%20170823%20PDF.pdf

DPIRD Fact Sheet

Destruction and disposal guidelines: **www.agric.wa.gov.au/sites/gateway/files/dickeya%20destruction%20and%20disposal%20information%20sheet%20170823.pdf**

DPIRD Fact Sheet

www.agric.wa.gov.au/plant-biosecurity/biosecurity-alert-dickeya-dianthicola

LEGAL STATUS: **DECLARED DISEASES**

THREAT	MORE INFORMATION

POTATO CYST NEMATODES

***Globodera rostochiensis*, golden or potato cyst nematode (PCN) and *G. pallida*, pale or white potato cyst nematode, pose a threat to the Western Australian potato industry. Cysts are spread by infested soil adhering to machinery, shoes, plant roots, bulbs, tubers or root vegetables.**

LOOK OUT FOR:

- Potato cyst nematodes are endoparasitic, which means they feed within roots.
- As females mature, they swell and become almost spherical, bursting through the root wall. Only the head remains imbedded in the root. The swollen females are shiny, spherical, less than 1mm in diameter and may look like little beads attached to the roots.
- They are initially white or creamy coloured, becoming darker when the female dies, hardens and becomes a reddish brown mature cyst.
- The presence of nematodes is most easily confirmed in the field by the appearance of cysts on the roots of infested plants from the time of flowering.
- Cysts can be seen with the naked eye but are best viewed with a hand lens. They are easily dislodged, so roots must be lifted and handled with care.
- Above-ground symptoms may be difficult to detect until PCN infestation is high.
- Plants show yellowing and wilting, typical of many soil-borne root pathogens, water stress or nutrient deficiencies. The plants are usually patchy within a field due to uneven distribution of the nematodes.
- In heavily infested soils, plants may be stunted and root systems may be shortened and excessively branched. The reduced root system can lead to the development of nutrient deficiencies.

FACT SHEET

DPIRD Fact Sheet

Source: **www.agric.wa.gov.au/potatoes/potato-cyst-nematode-western-australia?page=0%2C1**

18 LEGAL STATUS: **DECLARED DISEASES**

THREAT	MORE INFORMATION
POTATO SPINDLE TUBER VIROID	

Potato spindle tuber viroid (PSTVd) is a serious plant disease that affects the growth of plants, mainly tomatoes, potatoes, ornamentals and solanaceous weeds. PSTVd is generally symptomless in ornamentals and weeds.

LOOK OUT FOR:

- Foliage symptoms are often difficult to recognise and are rarely distinguishable before maturing.
- Stems are upright with internodes longer and more slender than normal.
- Leaflets are twisted, wrinkled and slightly smaller than normal with fluted margins.
- Leaves near ground level are held in an upright position in contrast to leaves of healthy plants that often rest on the ground.
- Tubers are elongated with pointy ends. Eyes are deep and more prominent; surface cracking may occur.
- Tubers of some cultivars develop knobs and swellings and are severely misshapen.

FACT SHEETS

DPIRD Info

Source: **www.agric.wa.gov.au/plant-biosecurity/potato-spindle-tuber-viroid-declared-pest**

PHA Fact Sheet

www.planthealthaustralia.com.au/wp-content/uploads/2015/08/Potato-spindle-tuber-viroid-FS.pdf

LEGAL STATUS: **PERMITTED**

THREAT	MORE INFORMATION
BLACK CUTWORM	

PHOTO © BUGWOOD.ORG

Black cutworm is a relatively minor pest of potatoes and cabbages in Indonesia and Western Australia. They are attracted to weedy or vegetated areas and lay hundreds of eggs near the soil surface on living plants or organic matter.

LOOK OUT FOR:

- The best strategy is early recognition of black cutworm infestation by investigating the cause of damaged transplants, and damaged stems and tubers in potato crops.
- Larvae are most active at night. During the day, they burrow into soil and can be found near the bases of damaged plants.

PHOTO © BUGWOOD.ORG

PHOTO © BUGWOOD.ORG

FACT SHEET

DPIRD Info

Source: **www.agric.wa.gov.au/cabbage/black-cutworm-potato-and-cabbage-pest-indonesia-and-western-australia?page=0%2C1**

20 LEGAL STATUS: **PERMITTED**

THREAT	MORE INFORMATION
FALL ARMY WORM	

PHOTO © SHUTTERSTOCK

PHOTO © DPIRD

The fall armyworm (FAW; *Spodoptera frugiperda*) is a destructive pest that attacks more than 350 plant species overseas.

Damage is caused by FAW larvae (caterpillars) consuming foliage and attacking leaves, stems, shoots, flowers and fruit. Damage includes pinholes or windows, leaf tattering or complete defoliation

LOOK OUT FOR:

- FAW larvae look similar to other armyworms present in Australia.
- There are two main distinguishing features of FAW larvae:
  - Four dark spots at the end of their body arranged in a square.
  - Dark head with an upside down, pale Y- shaped marking.

FACT SHEET

AUSVEG Fact Sheet

Source: **https://ausveg.com.au/app/uploads/2021/12/Final-pdf-standard-faw-guide_compressed.pdf**

LEGAL STATUS: **PERMITTED**

THREAT	MORE INFORMATION
POTATO TUBER MOTH	


PHOTO © DPIRD

Potato tuber moth is an important pest of potato crops in both Indonesia and Western Australia.

Potato tuber moth adults are about 8mm long with dark flecks on their wings. They can invade crops from early stages through to harvest. They also invade and infest stored tubers or stored seed potatoes. Adults lay eggs on leaves or exposed tubers.

LOOK OUT FOR:

- Potato tuber moth adults are about 8mm long with dark flecks on their wings. They can invade crops from early stages through to harvest. They also invade and infest stored tubers or stored seed potatoes. Adults lay eggs on leaves or exposed tubers.
- Eggs hatch into larvae which feed within burrows they make in stems, leaves and tubers. Larvae have a black head and a pinkish area on the body just behind the head. Larvae wriggle quickly when removed from the leaf mine.


PHOTO © DPIRD


PHOTO © DPIRD

FACT SHEET

DPIRD Info

Source: **www.agric.wa.gov.au/potatoes/potato-tuber-moth-potato-pest-indonesia-and-western-australia**

22 LEGAL STATUS: **PERMITTED**

THREAT	MORE INFORMATION
TWO-SPOTTED MITE	

PHOTO © SHUTTERSTOCK

PHOTO © DPIRD

Two-spotted mite is a minor pest of potatoes in both Indonesia and Western Australia. Mites are most likely to be present in hot weather and can increase in number rapidly.

LOOK OUT FOR:

- Actively feeding two-spotted mites are yellow to green with a prominent dark band on each side of the body. Adults are small — about 0.5mm long. Use a 10 times magnifier when looking for them. They usually occur on the lower side of leaves but as an infestation develops, they will feed on both sides of a leaf.
- Eggs are spherical with a pearly lustre. Red eyespots are visible through the egg just prior to hatching.
- If not controlled, mite infestation can be severe. The mites produce webbing and eventually kill the leaves, which turn brown. This leaf loss reduces crop vigour and yield.

FACT SHEET

DPIRD Info

Source: **www.agric.wa.gov.au/potatoes/two-spotted-mite-potato-pest-indonesia-and-western-australia?page=0%2C0**

4. Seed Certification Scheme

DDLS Seed Testing and Certification administers seed potato production schemes in WA and enforces agreed production and marketing guidelines. The testing program has practically eliminated virus diseases within the industry and WA seed potatoes have the lowest virus levels in Australia.

Experienced inspectors use visual inspections, virus testing capability and product traceability systems to ensure high quality seed for local, interstate and international markets.

DDLS Seed Testing and Certification provide a quality inspection service directly to growers. This includes a minimum of two visual crop inspections, inspection of tubers, disease testing, and labelling. DDLS Seed Testing and Certification provides training and advice to producers and seed works and certifies product that meets quality standards outlined in relevant scheme rules.

DECLARATIONS OF QUALITY

All seed potatoes produced under Western Australian seed potato schemes must be accompanied by documentation defining the seed lot details including any disease and defects. The documentation also carries declarations by the producer and grader of the seed lot. This provides assurance to buyers that WA seed potatoes meet the relevant standards and satisfy their individual quality needs.

Find out more and download relevant forms:
www.agric.wa.gov.au/plant-biosecurity/potato-seed-certification

5. Grower rights and responsibilities

24 The following provides a summary of some key information extracted from the BAM Act 2007. The full document can be found at the QR Code below. Any challenges to directions or notices are dealt with by the State Administrative Tribunal.

Please note that a Ministerial review of the operation and effectiveness of the BAM Act is underway as relevant to the statutory requirement under Section 194 of the Act. The review and any changes to the legislation will ensure the BAM Act continues to provide a fit-for-purpose framework that can support an effective and resilient biosecurity and agriculture management into the future.

BAM Act 2007

www.legislation.wa.gov.au/legislation/prod/filestore.nsf/FileURL/mrdoc_44356.pdf/$FILE/Biosecurity%20and%20Agriculture%20Management%20Act%202007%20-%20%5B02-d0-00%5D.pdf?OpenElement

BAM Act Review 2022

www.agric.wa.gov.au/biosecurity-quarantine/2022-statutory-review-biosecurity-and-agriculture-management-act-2007

DUTY TO REPORT

First and foremost, if you find or suspect that you have found a declared pest, you must report it **as soon as practicable**. A report can be made in writing or on the phone. The penalty for not reporting is a fine of $20,000 or if the declared pest is high risk, $100,000 and imprisonment for 12 months.

Report anything suspicious to the Exotic Plant Pest Hotline on 1800 084 881 or email via the QR Code below:

Email PaDIS

padis@dpird.wa.gov.au

WHEN CAN AN INSPECTOR ACCESS YOUR PROPERTY?

An officer of the department or an inspector may at any time carry out operational work on or in relation to any place without cost to the owner or occupier of the place. This includes actions necessary for or conducive to the control in an area of an organism that is a declared pest for the area. An officer of the department or an inspector may enter any place for the purpose of exercising these powers under the BAM Act 2007. However, this does not include accessing a dwelling on the property without a proper warrant.

POWER TO SEIZE, TREAT OR DESTROY

An inspector may seize and detain an organism or potential carrier until it can be determined whether it is a declared pest; or is infected or infested with a declared pest or is contaminated; or is treated, destroyed, disposed of or otherwise dealt with. This includes seizing and detaining an agricultural product, animal feed, fertiliser, chemical product or other substance or thing until it can be determined whether it is infected or infested with a declared pest or is contaminated.

DEALING WITH A DECLARED PEST

You may be issued with a written a pest exclusion notice to direct you to comply with a code of practice, or to take the measures for the purpose of keeping the place or agricultural product free from the declared pest. Conditions set out in the notice must be complied with or you may face a penalty of $20,000.

Alternatively, you may receive a pest control notice if a declared pest has been found in the vicinity of your property, or there are reasonable grounds for suspecting that the declared pest is on or in the vicinity of your property. A copy of this notice may also be given to a management committee or others who may be affected by the incursion. Conditions set out in the pest exclusion notice must be complied with or you may face a penalty of $50,000.

WHAT NOT TO DO

You may not keep, breed, cultivate or release into the environment any declared pest. You also may not intentionally infect or infest or expose to infection or infestation a plant, animal or other thing. The penalty is a fine of $50,000 or if the declared pest is high risk, $100,000 and imprisonment for 12 months.

You also must not move a declared pest, or an animal, plant or other thing that is infected or infested with the declared pest, from the place where it is found. The penalty is a fine of $20,000 or if the declared pest is high risk, $100,000 and imprisonment for 12 months.

IMPORT RESTRICTIONS

A person must not import, supply, receive or possess a prohibited organism, the progeny of an organism, or prescribed potential carrier except in accordance with an import permit and the regulations.

Penalties include a fine of $20,000 or $50,000, or if the organism, the progeny of an organism, or a potential carrier is considered high impact, a fine of $100,000 and imprisonment for 12 months.

A person also must not import an unlisted organism except in accordance with an import permit and the regulations. The penalty is a fine of $20,000.

COMMERCIAL TRANSPORT OBLIGATIONS

There are a range of penalties for commercial passenger carriers (a person who provides transport for individuals, or transports freight, for fee or reward) of up to $20,000 for bringing in potential threats to biosecurity.

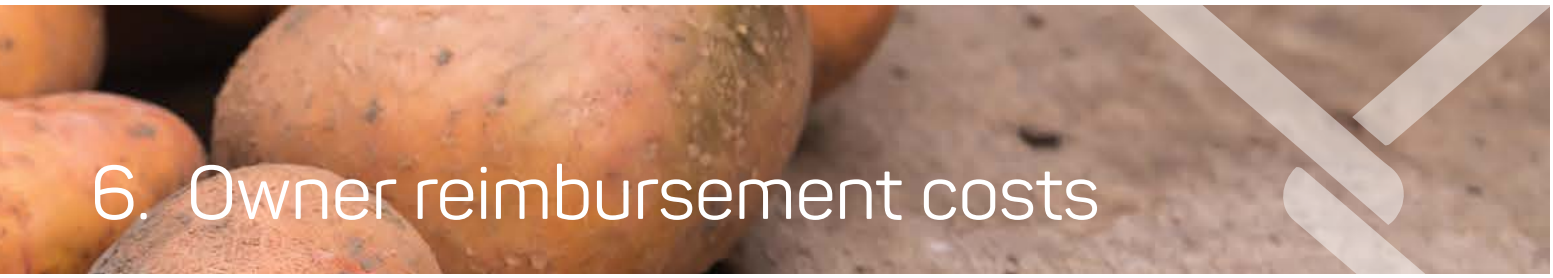
REPORTING AND PRESENTING IMPORTS

A person who proposes to import an organism or prescribed potential carrier must give notice of the time and place of entry into the State. If you import an organism or prescribed potential carrier and fail to report, it is considered an offence with a penalty of $100,000.

If an import permit has been issued, you must present the organism or prescribed potential carrier to an inspector and give the inspector any relevant information the inspector requires about the organism or prescribed potential carrier. The penalty is $20,000.

A person who imports an organism or prescribed potential carrier must, give an inspector a declaration in accordance with the regulations. The penalty is a fine of $20,000.

Import Permit Application:
www.agric.wa.gov.au/sites/gateway/files/Application%20for%20import%20permit%20%286%29.pdf



6. Owner reimbursement costs

The Australian government and state governments share the costs of eradicating exotic plant pests. Growers who are impacted by losses when an Emergency Plant Pest Response Plan (EPPRP) is activated on their property, are entitled to claim Owner Reimbursement Costs[6] (ORC).

Is a pest is considered established in Australia (e.g. *Thrips palmi*)—then any incident response would not be managed or funded under Australia's national cost-sharing arrangements. That is, there is no arrangement for owner reimbursement costs (ORC) for affected parties.

For emergency plant pests considered under the EPPRD and the potential for ORCs for growers, then either a response plan needs to be in place for ORC to apply or the National Management Group can determine 'ORCs in the absence of a Response Plan' for growers affected by emergency containment activities in response to a detection.

The main objective in providing ORC is to provide incentives for growers to report suspicious pests or pathogens under the basic principle of no one being worse off or better off as a result of reporting a suspected exotic pest incursion. A companion objective is to provide social justice to those growers who, through no fault of their own, are seriously affected by a Response Plan to eradicate an exotic pest.

Costs considered in the calculation of ORCs include:

- direct eradication costs incurred by the owner
- any other costs that are additional to ordinary operating costs resulting from the response plan implementation
- the estimated farm gate value of a crop that is destroyed or the economic value of which is destroyed as a consequence of the implementation of a response plan
- the loss of the estimated farm gate value of crops foregone, less production costs, resulting from a requirement under a response plan that, for a specified period, land be left fallow.

www.planthealthaustralia.com.au/biosecurity/incursion-management/owner-reimbursement-costs

6 www.planthealthaustralia.com.au/biosecurity/incursion-management/owner-reimbursement-costs

7. Key contacts

Potato Growers Association of WA: **(08) 9481 0834**
Exotic Plant Pest Hotline: **1800 084 881**
Pest and Disease Information Service (PaDIS): **(08) 9368 3080**
DDLS Seed Testing and Certification: **(08) 9368 3721**
DPIRD — Biosecurity Council (regarding BAM Act 2007): **(08) 9690 2171**

8. Resources

INCURSION MANAGEMENT

www.planthealthaustralia.com.au/biosecurity/incursion-management

NEW RESEARCH

https://ausveg.com.au/biosecurity-agrichemical/biosecurity/mt20005/

WEBSITES

Plant Health Australia
www.planthealthaustralia.com.au/industries/potatoes

AUSVEG Webinars and Info
https://ausveg.com.au/biosecurity-agrichemical/biosecurity/factsheets-templates-webinars/

Farm Biosecurity
www.farmbiosecurity.com.au

AUSPICA
www.auspica.org.au

DPIRD Potato Industry Info
www.agric.wa.gov.au/crops/horticulture/vegetables/potatoes

Potato Link
https://potatolink.com.au

Farm Biosecurity Action Plan
https://ausveg.com.au/app/uploads/2021/03/Industry-Biosecurity-Plan-for-the-Potato-Industry_V3.2.pdf

AUSVEG iMapPESTS
https://ausveg.com.au/biosecurity-agrichemical/biosecurity/imappests/

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