



Biosecurity Manual

Version 21.0 current as at October 2023

This publication has been compiled by <insert name/s> of <insert business group>, <insert department>.

© State of Queensland, 2023

The Department of Agriculture and Fisheries proudly acknowledges all First Nations peoples (Aboriginal peoples and Torres Strait Islanders) and the Traditional Owners and Custodians of the country on which we live and work. We acknowledge their continuing connection to land, waters and culture and commit to ongoing reconciliation. We pay our respect to their Elders past, present and emerging.

The Queensland Government supports and encourages the dissemination and exchange of its information. The copyright in this publication is licensed under a Creative Commons Attribution 4.0 International (CC BY 4.0) licence.



Under this licence you are free, without having to seek our permission, to use this publication in accordance with the licence terms.

You must keep intact the copyright notice and attribute the State of Queensland as the source of the publication.

For more information on this licence, visit creativecommons.org/licenses/by/4.0.

The information contained herein is subject to change without notice. The Queensland Government shall not be liable for technical or other errors or omissions contained herein. The reader/user accepts all risks and responsibility for losses, damages, costs and other consequences resulting directly or indirectly from using this information.

Revision Register

Revision No	Date of Change	Amendments			
		Section	Details	Approval Officer	Unit
1.0	1 July 2016	All	New Document	M. Cummins	PB&PI
2.0	7 September 2016	1, 7, 13, 16	Updates	M. Cummins	PB&PI
2.1	30 September 2016	1.5, 12A, 12C, 12D, 12E, 12G, 12H	Updates and deletions	R. Sapuppo	Panama TR4
2.2	27 February 2017	4A	Updates	S. Vitelli	PB&PI
3.0	18 April 2017	12, 12A, 12B, 12C, 12D, 12E, 12G, 13	Updates and deletions	S. Vitelli	PB&PI
4.0	12 July 2017	12, 12A, 12B, 12C, 12D, 12E, 12F	Updates and deletions	R. Evans	Panama TR4
5.0	23 September 2017	10A, 12, 12A, 12B, 12C, 12D, 12E 17D, 17E	Updates and deletions	R. Sapuppo	PB&PI
6.0	01 February 2018	4, 4A, 4B, 5, 5A, 6, 9C, 10, 11, 11A, 11B, 11C, 11D, 11E, 12, 12A, 12B, 12C, 12D, 17, 17E, 17F, 18A, 19, 19A, 20, 20A, 21, 21A-21J	Updates and deletions	S. Vitelli	PB&PI
7.0	28 March 2018	12E	Updates and deletions	G. Kent	PB&PI

Revision Register

Revision No	Date of Change	Amendments			
		Section	Details	Approval Officer	Unit
8.0	04 July 2018	16, 16B-F 19B	Updates and deletions	A. Crook G. Kent	AB&W PB&PI
9.0	November 2018	21, 21A-K	Updates and deletions; section renumbered	S Vitelli	PB&PI
10.0	March 2019	17, 17A-G, 22, Appendix 3.1.5 Table 11	Updates and deletions	G Kent	PB&PI
11.0	April 2019	12, 12A, 22A, 22B	Updates and deletions	G Kent	PB&PI
12.0	September 2019	21, 22A	Correction spelling s21 definitions and amended section 22A(1)	G Kent	PB&PI
13.0	January 2021	1, 1A, 12, 13, 18A schedule 3.1.2	Updates and deletions. Correction to 18A definitions	G Kent	PB&PI
14.0	April 2021	7, 12A	Updates and deletions, 12A. Correction to 7 definitions	S Porchun	PB&PI
15.0	June 2021	16	<p>New versions for Procedures:</p> <ul style="list-style-type: none"> • Manual inspection high-risk carriers free of adult tick • Manual inspection high risk tick carriers • Manual inspection low risk tick carriers • Use of chemical treatments on cattle tick carriers • Visual inspection of high-risk tick carriers <p>Delete Procedure for Identifying cattle tick</p> <p>Add non-chief executive guidelines as links in new version procedures:</p> <ul style="list-style-type: none"> • Identifying cattle tick • Manual inspection of high-risk carriers • Visual inspection of high-risk carriers • Use of chemical treatments on cattle tick carriers • Manual inspection of low-risk carriers 	F Thompson	ABW

Revision Register

Revision No	Date of Change	Amendments			
		Section	Details	Approval Officer	Unit
16.0	March 2022		Document reformatted & renumbered. Updates to section 12 Panama disease tropical race 4, update to medfly irradiation section no. 10.1.3 and other corrections.	S Porchun	PB&PI
17.0	September 2022	3, 3.1, 3.1.1, 3.1.2, 3.1.3.	Updates and corrections to section 3 bee louse carriers to include time limited movement of Queensland registered hives in the Sunraysia Control Area VIC, to be returned to Queensland.	S Porchun	PB&PI
18.0	February 2023	3, 22.1, 23, 26.	Updates to section 3 bee louse carriers to remove risk minimisation requirements, add bee louse notification requirement, add honey samples to 22.1 Risk minimisation requirements for diagnostic samples, section 23 correction to tomato/potato psyllid carriers, add section 26 Varroa mite carriers.	S Porchun	PB&PI
19.0	July 2023	12	Updates to section 12 Panama disease tropical race 4. Remove reference to section 58 "Notice of presence of Panama disease tropical race 4.	B Westlake	PB&PI
20.0	September 2023	8.0 and 27.0	Section 8 of the manual to include changes to the risk mitigation measures for Giant Pine Scale. Updates to include section 27 Risk Mitigation Measures for Polyphagous shot-hole borer. Updates to the appendices section 28.	R Evans	PB&PI
21.0	October 2023	17.0	Updates and change of numerical numbering for section 17 to correct errors in previous version.	J Mollinger	AB&W

Table of contents

Table of contents	4
1. Introduction	8
1.1 Permits	8
1.2 How to use this manual	8
1.3 Prohibited and restricted matter and carriers	8
1.4 Permits for movement of carriers	9
1.4.1 Biosecurity instrument permits	9
1.4.2 Biosecurity authorisations	9
1.5 Acceptable biosecurity certificate	10
1.6 Reference guide to prescribed requirements	10
Prescribed requirements for plants, bees, cattle tick and associated items	14
2 Banana pest carriers	14
2.1 Risk minimisation requirements for banana pest carriers	14
2.1.1 Banana plantlets	14
2.1.2 Soil or other growing mediums	15
3 Bee louse carriers	15
4 Bees and apiaries	16
4.1 Discharging your general biosecurity obligation.....	16
4.1.1 Distance between apiaries.....	16
4.1.2 Asian honey bee	16
Definitions	16
5 Branched broomrape carriers	16
5.1 Risk minimisation requirements for branched broomrape carriers	17
5.1.1 Soil and plants.....	17
6 Cucurbit virus carriers	18
6.1 Risk minimisation requirements for cucurbit virus carriers.....	18
6.1.1 Appliances.....	18
7 European house borer carriers	18
7.1 Risk minimisation requirements for European house borer carriers	19
7.1.1 Wood.....	19
8 Giant pine scale carriers	20
8.1 Risk minimisation requirements for giant pine scale carriers	20
8.1.1 Logs and timber	20
8.1.2 Pine bark	20
8.1.3 Plants	20
8.1.4 Appliances.....	21

9	Mango malformation disease carriers	22
10	Mediterranean fruit fly carriers	22
10.1	Risk minimisation requirements for Mediterranean fruit fly carriers	22
10.1.1	Fumigation with methyl bromide	22
10.1.2	Cold treatment.....	23
10.1.3	Irradiation	23
10.1.4	Mature green condition	24
10.1.5	Immature green condition	24
10.1.6	Hard condition of avocado	24
10.1.7	Unbroken skin	25
	Definitions.....	25
11	Pyriiform scale carriers	25
11.1	Risk minimisation requirements for pyriiform scale carriers	25
11.1.1	Potted plants	25
	Definitions.....	25
12	Panama disease tropical race 4.....	26
	Definitions.....	26
13	Potato pest carriers.....	26
13.1	Risk minimisation requirements for potato pest carriers	27
13.2	Seed potatoes	27
13.3	Ware and processing potatoes from linked land.....	27
13.4	Plants of the Solanaceae family	27
13.5	Appliances	28
	Definitions.....	28
14	Far northern biosecurity zones.....	29
14.1	Risk minimisation requirements for far northern pest carriers	30
14.1.1	Method of treating unmanaged banana plants	30
	Definitions.....	30
15	Red imported fire ant	30
16	Electric ant	30
17	Cattle tick	31
	Discharging the general biosecurity obligation	31
17.1	Procedures for eradicating cattle tick from infested land	31
17.2	Risk minimisation requirements for cattle tick carriers	32
17.2.1	Moving a high-risk tick carrier into or through the cattle tick free zone.....	32
17.2.2	Moving a high-risk tick carrier from infested land to the free zone or a prescribed facility	33
17.2.3	Moving a high-risk tick carrier from feedlot in cattle tick infested zone.....	34

17.2.4	Moving a high-risk tick carrier from clearing facility in cattle tick free zone	35
17.2.5	Moving a low-risk tick carrier from infested land or infested zone	35
18	Phylloxera carriers	38
18.1	Risk minimisation requirements for phylloxera carriers	38
18.1.1	Table grapes	38
18.1.2	Wine grapes	39
18.1.3	Unfiltered juice or must	40
18.1.4	Marc	40
18.1.5	A biosecurity certificate may be obtained from an inspector, or from an accredited certifier	40
18.1.6	Diagnostic samples	42
18.1.7	Appliances.....	42
19	Papaya ringspot biosecurity zone.....	44
19.1	Risk minimisation requirements for papaya ringspot carriers	45
19.1.1	Plants of the genus <i>Carica</i>	45
20	Sugar cane pest carriers	45
20.1	Risk minimisation requirements for sugar cane pest carriers	46
20.1.1	Plants	46
20.1.2	Appliances.....	46
	Definitions.....	46
21	Diagnostic samples.....	46
21.1	Risk minimisation requirements for diagnostic samples	47
21.1.1	Diagnostic samples	47
22	Tomato/potato psyllid Carriers	48
22.1	Risk minimisation requirements for tomato/potato psyllid carriers.....	49
22.1.1	Solanaceous fruit	49
22.1.2	Convolvulaceae's tubers.....	50
22.1.3	Solanaceous tubers	50
22.1.4	Field packed fruits and vegetables	51
22.1.5	Field packed leafy vegetables.....	51
22.1.6	Packing shed packed fruit and vegetables that have vegetative material attached. ..	51
22.1.7	Nursery stock other than dormant plants.....	52
22.1.8	Dormant nursery stock.....	52
22.1.9	Cut flowers	53
22.1.10	Strawberry fruit.....	53
22.1.11	Machinery and equipment used in the production of plants or plant material	53
23	Citrus canker carriers	55
23.1	Risk Minimisation Requirements for citrus canker carriers	55

23.1.1	Citrus fruit.....	55
24	Kaffir lime leaves.....	56
25	Varroa mite carriers	57
27	Polyphagous shot-hole borer carriers.....	59
27.1	Risk minimisation requirements for polyphagous shot-hole borer carriers	61
27.1.1	Appliances.....	61
27.1.2	Methyl bromide fumigation.....	61
27.1.3	Heat treatment	62
27.1.4	Carrier Plants	63
28	Appendices	64
28.1.1	Biosecurity Zone Maps	64
28.1.2	Schedule of approved facilities	64
28.1.3	Banana cultivars that are considered resistant to black Sigatoka disease.....	67
28.1.4	Mediterranean fruit fly carriers	69
28.1.5	Citrus Canker Carriers	73
28.1.6	Polyphagous shot-hole borer carrier plant host list.....	76
29	Glossary	89

Introduction

The Queensland *Biosecurity Act 2014* (the Act) and the Biosecurity Regulation 2016 (the Regulation) provide protection for Queensland's profitable industries, unique environment, and community from biosecurity threats.

This manual provides risk minimisation requirements for plants, bees, cattle tick, and associated risk items in compliance with the Regulation.

1.1 Permits

The chemicals mentioned in this publication are approved under permits issued by the Australian Pesticides and Veterinary Medicines Authority (APVMA) and were in force at the time of publication.

If you wish to use a chemical in a manner approved under permit, obtain a copy of the relevant permit from the APVMA and ensure that the permit is valid. Read all the details, conditions and limitations relevant to that permit, and must comply with the details, conditions and limitations relevant to that permit, and comply with relevant requirements.

Warning

ALWAYS READ THE LABEL

Users of agricultural (or veterinary) chemical products must always read the label and any permit, before using the product, and strictly comply with the directions on the label and the conditions of any permit. Users are not absolved from compliance with the directions on the label or the conditions of the permit by reason of any statement made or omitted to be made in this publication.

1.2 How to use this manual

This manual provides the Prescribed Requirements for managing biosecurity risks in Queensland. The manual is designed to simplify the process of determining what must be done to bring carriers into and move carriers around Queensland.

Each prescribed requirement (2-24) summarises the requirements found in the Regulation and provides the risk minimisation requirements that must be followed when dealing with a carrier.

It is an offence under the Regulation not to comply with the Risk Minimisation Requirements in this manual. Penalties of up to 3000 penalty units or 3 years imprisonment apply.

1.3 Prohibited and restricted matter and carriers

There are two important new concepts that underpin the Act, the Regulation, and this manual: *biosecurity matter*, and *carriers*.

Biosecurity matter is defined in the Act (see s.15) and includes things that may pose a risk to the biosecurity of Queensland (a biosecurity risk). Biosecurity matter includes, but is not limited to, plant pests and pathogens, invasive animals, animal diseases, and contaminants.

The Act defines two types of biosecurity matter: *prohibited matter*, and *restricted matter*. Prohibited matter does not occur in Queensland, and restricted matter may occur in Queensland but is subject to

strict controls. This manual regulates things that can carry prohibited or restricted biosecurity matter; these are called – *carriers*.

Importantly, it is illegal to deal with, that is manage or handle anything classified as prohibited matter under the Act. Conditions apply to dealings with restricted matter.

1.4 Permits for movement of carriers

Movements of carriers that are not covered by the Prescribed Requirements may be permitted in a biosecurity authorisation issued by the Chief Executive, or a biosecurity instrument permit issued by an inspector.

1.4.1 Biosecurity instrument permits

Movement control orders and biosecurity zone regulatory provisions are collectively referred to as biosecurity instruments.

An inspector may issue a biosecurity instrument permit to authorise a person to perform an activity that does not comply with the requirements of a biosecurity instrument.

This includes the movement of biosecurity matter (or a carrier) if the movement is otherwise prohibited under the biosecurity instrument. For example, moving items that have been used in banana growing into or from biosecurity zones for bananas, or moving soil from a red imported fire ant biosecurity zone.

An inspector may issue a biosecurity instrument permit if satisfied that granting the permit:

- will not increase the level of the biosecurity risk posed by the relevant biosecurity matter; and
- will not otherwise be detrimental to the effectiveness of the biosecurity instrument.

An inspector may impose conditions that are necessary to ensure these two criteria are met.

A biosecurity instrument permit cannot permit something that is inconsistent with a biosecurity emergency order.

1.4.2 Biosecurity authorisations

The Act lists prohibited and restricted biosecurity matter.

The Chief Executive may authorise a person to move or otherwise deal with prohibited and restricted matter and any associated carrier.

An authorisation to move or deal with prohibited matter or a carrier of prohibited matter is known as a prohibited matter permit.

An authorisation to move or deal with restricted matter or a carrier of restricted matter is known as a restricted matter permit.

Inquiries regarding instrument permits and authorisations should be directed to the Customer Service Centre on 13 25 23 or email bgapplications@daf.qld.gov.au or post to: Department of Agriculture and Fisheries, P.O. Box 5083, Nambour, Qld, 4560.

1.5 Acceptable biosecurity certificate

Consignments must be accompanied by an acceptable biosecurity certificate unless otherwise stated in this manual.

An acceptable biosecurity certificate includes a Plant Health Certificate, Plant Health Assurance Certificate or other certificate issued by an interstate officer or interstate accredited certifier providing evidence to the biosecurity status of an item.

Where it is stated in this manual that a copy of the biosecurity certificate be provided to the Department, the certificate is to be emailed to qld.plantquarantine@daf.qld.gov.au prior to the movement occurring.

1.6 Reference guide to prescribed requirements

Table 1 –Reference guide to prescribed requirements by carrier

Carrier	Pest of concern	Prescribed requirement
Almond hulls/shells	Branched broomrape	5
Apiary appliances (hives, equipment etc)	Bee louse Far northern pests	3 4, 14
Apiary products (honey, wax etc)	Bee louse Far northern pests	3 4, 14
Appliances (apparatus, equipment, machinery, vehicles)	Banana pests Bee louse Branched broomrape Cucurbit virus (CGMMV & MNSV) Giant pine scale Panama TR4 Potato pests Far northern pests Phylloxera Sugar cane pests Tomato-potato psyllid	2 3 5 6 8 12 13 18 19, 21 23
Banana fruit	Banana pests Mediterranean fruit fly	2 10
Banana plants	Banana pests	2 12

Carrier	Pest of concern	Prescribed requirement
Bees	Bee louse	3
	Far northern pests	4
		14
Cattle tick carriers (livestock)	Cattle tick	17
Cereals, pulses and grains for planting	Branched broomrape	5
Citrus plants including fruit	Citrus canker carriers	24
Convolvulaceous tubers	Tomato-potato psyllid	23
Cut flowers and foliage	Banana pests	2
	Giant Pine Scale	8
	Tomato-potato psyllid	23
<p>Diagnostic and analytical samples</p> <p>Please note these requirements apply to samples that are carriers of these pests as defined in the Regulation.</p> <p>These requirements DO NOT apply to the pests themselves.</p> <p>Samples of pests that are restricted or prohibited biosecurity matter under the Act MUST be sent under a biosecurity authorisation issued by the Chief Executive.</p>	Banana pests	19 (Phylloxera) 22 (others)
	Bee louse	
	Branched broomrape	
	Cucurbit virus (CGMMV & MNSV)	
	EHB	
	Far northern pests	
	Giant pine scale	
	Mango malformation disease	
	Mediterranean fruit fly	
	Papaya ringspot	
	Phylloxera	
	Potato pests	
	Pyriform scale	
Sugar cane pests		
Tomato-potato psyllid		
Citrus canker carriers		
Fodder	Branched broomrape	5
	Far northern pests	14
	Red imported fire ant	15
	Electric ant	16
	Tomato-potato psyllid	23
Fruit that has not been processed, including fruit attached to plants	Banana pests	2
	Mango malformation	9
	Mediterranean fruit fly	10
	Far northern pests	14
	Phylloxera	19
	Tomato-potato psyllid	23
Citrus canker carriers	24	
Garden organics (green waste, mulch, unprocessed compost, bark etc.)	Banana pests	2
	Cucurbit virus (CGMMV & MNSV)	6
	Polyphagous Shot Hole Borer	27

Carrier	Pest of concern	Prescribed requirement
	Potato pests	13
	Panama TR4	12
	Far northern pests	14
	Red imported fire ant	15
	Electric ant	16
	Phylloxera	19
	Papaya ringspot	20
	Sugar cane pests	21
	Tomato-potato psyllid	23
	Citrus canker carriers	24
Grape juice	Phylloxera	19
Grapes	Mediterranean fruit fly	10
	Grape Phylloxera	19
Grapevines	Grape Phylloxera	19
Hay/straw	Branched broomrape	5
	Far northern pests	14
	Red imported fire ant	15
	Electric ant	16
Marc	Grape Phylloxera	19
Must	Grape Phylloxera	19
Nursery stock and plants	Banana pests	2
	Branched broomrape	5
	Cucurbit virus (CGMMV & MNSV)	6
	Giant pine scale	8
	Mango malformation disease	9
	Mediterranean fruit fly	10
	Pyriform scale	11
	Polyphagous Shot Hole Borer	27
	Potato pests (Solanaceae)	13
	Panama TR4	12
	Far northern pests	14
	Red imported fire ant	15
	Electric ant	16
	Phylloxera	19
	Papaya ringspot	20
	Sugar cane pests	21
	Tomato-potato psyllid	23
	Citrus canker carriers	24
Papaya plants	Papaya ringspot	20
Plants of the family <i>Cucurbitaceae</i> (e.g. cucumber, melons, pumpkin, squash)	Cucurbit virus (CGMMV & MNSV)	6
	Papaya ringspot	20

Carrier	Pest of concern	Prescribed requirement
Potatoes – processing	Branched broomrape	5
	Potato pests	13
	Tomato-potato psyllid	23
Potatoes – seed	Branched broomrape	5
	Potato pests	13
	Tomato-potato psyllid	23
Potatoes – ware	Branched broomrape	5
	Potato pests	13
	Tomato-potato psyllid	23
Soil	Banana pests	2
	Branched broomrape	5
	Cucurbit virus (CGMMV &MNSV)	6
	Panama TR4	12
	Potato pests	13
	Far northern pests	14
	Red imported fire ant	15
	Electric ant	16
	Phylloxera	19
	Sugar cane pests	21
Tomato-potato psyllid	23	
Timber including pallets	European house borer	7
Vegetables	Branched broomrape	5
	Mediterranean fruit fly	10
	Potato pests	13
	Far northern pests	14
	Tomato-potato psyllid	23

Note: this table is a quick reference guide and should not be taken to list all Prescribed Requirements relevant to a carrier. It is the responsibility of the reader to determine and comply with the Prescribed Requirements in this manual that are applicable to movement of a carrier.

Prescribed requirements for plants, bees, cattle tick and associated items

2 Banana pest carriers

Banana pest carriers (other than fruit) must not enter Queensland unless sourced from a state or part of a state that is certified free from banana bunchy top virus, Panama disease tropical race 4, and Cavendish-competent Panama disease tropical race 1 (i.e., Cavendish-competent race 1 (strain VCG 01220)).

Regulating Power: Biosecurity Regulation 2016 s.48(1)(b) and (3)(a) (i).

Banana pest carriers (other than banana fruit) must not be moved out of the northern or southern banana biosecurity zones into the rest of Queensland, or, into the northern banana biosecurity zone from outside that zone.

Regulating Power: Biosecurity Regulation 2016 s.79(1) and s.80(1).

Banana plantlets may be moved into Queensland if produced under a scheme for the clean planting of bananas outlined in the Nursery Industry Accreditation Scheme, Australia (NIASA) - Banana Nursery Stock Specification and accompanied by the appropriate label.

Regulating Power: Biosecurity Regulation 2016 s.48(3)(a)(ii) and s.80(2)(a).

Banana plantlets may be moved out of the northern and southern banana biosecurity zones if produced under a scheme for the clean planting of bananas outlined in the NIASA - Banana Nursery Stock Specification and accompanied by the appropriate label.

Regulating Power: Biosecurity Regulation 2016 s.79(3)(a)(i).

Banana plantlets may be moved into the northern banana biosecurity zone if produced under a scheme for the clean planting of bananas outlined in the NIASA - Banana Nursery Stock Specification and accompanied by the appropriate label.

Regulating Power: Biosecurity Regulation 2016 s.80(2)(a).

Banana pest carriers that do not meet these requirements may be moved if compliant with the following Risk Minimisation Requirements and accompanied by an acceptable biosecurity certificate.

Regulating Power: Biosecurity Regulation 2016 s.48(3)(a)(iii), s.79(3)(a)(ii), s.80(2)(b).

2.1 Risk minimisation requirements for banana pest carriers

2.1.1 Banana plantlets

The risk minimisation requirements for banana pest carriers that are banana plantlets under sections 48(3)(a)(iii), 79(3)(a)(ii), and 80(2)(b) of the Biosecurity Regulation 2016 are as follows:

1. A banana pest carrier that is a banana plantlet may be moved the plantlet:
 1. has been grown from tissue culture free of fungicides, biocides and antibiotics.
 2. has been tested and found free of bunchy top and Cavendish-competent Panama disease tropical race 1 (i.e., Cavendish-competent race 1 (strain VCG 01220), Panama disease tropical race 4
 3. has not been exposed to banana pests

4. is packaged in a quarantine secure manner.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

2.1.2 Soil or other growing mediums

The risk minimisation requirements for banana pest carriers that are soil, or other growing mediums, in which a banana plant has been grown under section 48(3)(a) of the Biosecurity Regulation 2016 are as follows.

A banana pest carrier that is soil, or other growing mediums, in which a banana plant has been grown in, and which is attached to any appliance or packaging. The soil or other growing mediums must be completely removed from all surfaces of the appliance or packaging prior to the movement of the appliance or packaging into Queensland.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector or from an accredited certifier.
- Enables movements into Queensland from other states and territories.

Note: there are also conditions that relate to the management of banana plants in the far northern pest biosecurity zones – see Risk Minimisation Requirement 13A.

Definitions

- **appliance** *includes* an apparatus, equipment, machinery, or a vehicle.
- **banana pest carrier** *means* (a) a banana plant; (b) soil, or other growing mediums, in which a banana plant has been grown; or (c) a banana appliance.
- **packaging** *includes* a container, pallet, box, crate, cage, or covering.

3 Bee louse carriers

Symptoms of bee louse infestation in a colony of honey bees (*Apis mellifera*) are **notifiable incidents** and must be reported to Biosecurity Queensland on 13 25 23, as soon as practical.

Prescribed symptoms for **notifiable incidents**—

Each of the following is prescribed as a symptom of bee louse infestation

- (a) malnourishment of the queen bee;
- (b) a reduction in the viability of the honeycomb;
- (c) a reduction in the strength of the bee hive.

Regulating Power: Biosecurity Regulation 2016 s.19(2)(a) to (c).

4 Bees and apiaries

Bees and apiaries must be managed in a manner that is compliant with the following provisions as set out in the Regulation. These provisions do not prescribe all that a person must do to fulfil the person's general biosecurity obligation in relation to bees and apiaries.

Regulating Power: Biosecurity Regulation 2016 s.31–32.

4.1 Discharging your general biosecurity obligation

4.1.1 Distance between apiaries

A person must not establish an apiary site containing more than 40 hives within 0.8km of another apiary site containing 40 or more hives; and must not establish an apiary site within 2km of a queen bee breeding apiary.

4.1.2 Asian honey bee

A person must not keep, in the person's possession or under the person's control, a live Asian honey bee; and must not move a live Asian honey bee.

Definitions

- **Asian honey bee** means *Apis dorsata*, *A. florea*, *A. cerana* other than *A. cerana javana*.

5 Branched broomrape carriers

Branched broomrape carriers must not be moved into Queensland from a state or part of a state where branched broomrape has been found.

Regulating Power: Biosecurity Regulation 2016 s.50(1) and (3)(a).

Branched broomrape carriers that are seed potatoes may enter Queensland if produced in accordance with the National Standard for Certification of Seed Potatoes (the Standard) and accompanied by the appropriate label. Seed potato certification schemes currently recognised by Queensland as compliant with the Standard are: ViCSPA, Tas Seed, the Crookwell Seed Potato Certification Scheme and the Western Australian Certified Seed Potato Scheme. **Regulating Power:** Biosecurity Regulation 2016 s.50(3)(c).

Branched broomrape carriers that is a ware potato may enter Queensland if it has been brushed and washed and does not carry any detachable soil; or the carrier is a processing potato and is sent directly to:

1. a facility for processing; or
2. a facility for storage before being processed in way that prevents an infestation with biosecurity matter; and the escape of biosecurity matter or a carrier.

Regulating Power: Biosecurity Regulation 2016 s.50(3)(d) and (3)(e)

Branched broomrape carriers may also be moved if compliant with the following Risk Minimisation Requirements and accompanied by an acceptable biosecurity certificate.

Regulating Power: Biosecurity Regulation 2016 s.50(3)(b).

5.1 Risk minimisation requirements for branched broomrape carriers

5.1.1 Soil and plants

The risk minimisation requirements for branched broomrape carriers that are soil and plants sourced within 50km of an infestation of branched broomrape, must not enter Queensland unless grown and dispatched from a property free of branched broomrape. This includes:

1. soil, hay, straw, fodder
2. unprocessed almond hulls and shells
3. any seed for planting or plant part for propagation including grain, cereals, pulses, and small grains.

Regulating Power: Biosecurity Regulation 2016 s.50(3)(b).

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

Definitions

- **Practically free of soil** means potato tubers that do not carry any detachable soil following brushing or washing.
- **processing potato means** a potato that, when harvested, is sent directly to a facility for processing; or a facility for storage before being processed.
- **ware potato means** a potato that is grown to be consumed without being processed and is not intended for replanting for the purpose of producing a potato plant.

Appliances

The risk minimisation requirement for a branched broomrape carrier that is an appliance under section 50(3)(b) of the Regulation sourced within 50km of an infestation of branched broomrape that has come into contact with a branched broomrape carrier that is listed at section 50(4)(a)—(g) of the Regulation must be cleaned so that it is for all practical purposes free of organic matter and soil by brushing, by using high pressure water or steam, or by air blasting using compressed air.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

Definitions

- **branched broomrape means** *Orobanche ramosa*.
- **branched broomrape carrier means:** (a) hay; or (b) fodder; or (c) potatoes; or (d) straw; or (e) cereals, pulses, and small grains, to be used for planting; or (f) unprocessed almond hulls

and shells; or (g) soil that has come into contact with a carrier marked (a) to (f); or an appliance that has come into contact with a carrier marked (a) to (g).

6 Cucurbit virus carriers

Cucurbit virus carriers must not be moved into Queensland for the purpose of trade or of business activities from a state or part of a state where a cucurbit virus has been found.

Regulating Power: Biosecurity Regulation 2016 s.51(1) and (3)(a).

Cucurbit virus carriers may be moved if compliant with the following Risk Minimisation Requirements and accompanied by an acceptable biosecurity certificate.

Regulating Power: Biosecurity Regulation 2016 s.51(2)(b).

6.1 Risk minimisation requirements for cucurbit virus carriers

6.1.1 Appliances

The risk minimisation requirement for a Cucurbit virus carrier that is an appliance under section 51(2)(b) of the Regulation has been cleaned free of organic matter and soil and treated with a solution of sodium hypochlorite at a strength of 1.0 per cent available chlorine, in accordance with the label or current APVMA permit.

Documentation requirement: biosecurity certificate.

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

Definitions

- **Cucurbit virus** means *Cucumber green mottle mosaic virus* (CGMMV) or *Melon necrotic spot virus* (MNSV).
- **Cucurbit virus carrier** means (a) any plant of the family *Cucurbitaceae* (excluding the fruit of these plants); or (b) soil or other growing mediums that have come into contact with a plant of the family *Cucurbitaceae* (excluding fruit); or (c) an appliance that has been used for planting, producing, or harvesting a plant of the family *Cucurbitaceae*; or (d) materials that have been used to package or contain and plant of the family *Cucurbitaceae*.

7 European house borer carriers

European house borer carriers must not enter Queensland unless sourced from a state or part of a state that is certified free from European house borer.

Regulating Power: Biosecurity Regulation 2016 s.52(1) and (3)(a)

A European house borer carrier, that may enter Queensland, is

1. a wood pallet or wooden packaging material.
2. produced under the Western Australian Compliance Arrangement for Manufacture of Pinewood Pallets and Packaging.

3. stamped in accordance with this compliance arrangement.

Regulating Power: Biosecurity Regulation 2016 s.52(1)

European house borer carriers may also be moved if compliant with the following Risk Minimisation Requirements, and if accompanied by an acceptable biosecurity certificate.

Regulating Power: Biosecurity Regulation 2016 s.52(3)(b).

7.1 Risk minimisation requirements for European house borer carriers

7.1.1 Wood

The risk minimisation requirement for a European house borer carrier that is wood under section 52(3)(b) of the Regulation:

1. has one dimension less than 4 mm thick; or
2. pallets are sourced from a supplier approved under a scheme administered by the state of Western Australia; or
3. is certified as treated with methyl bromide in accordance with table 2, or,
4. is certified as treated with methyl bromide in accordance with table 2:

Table 2 – Methyl bromide fumigation of timber

Temperature	Dosage Rate (g/m ³)	Minimum concentration (g/m ³) by fumigation time			
		2hrs	4hrs	12hrs	24hrs
21 °C or greater	32	36	31	28	24
15.5 °C or greater but less than 21 °C	40	42	36	32	28
10 °C or greater but less than 15.5 °C	48	48	42	36	32

5. With a preservative in accordance with Australian Standard AS 1604.1 - 2005 Specifications for preservative treatment - Sawn and round timber; or
6. By heating so that the core temperature is more than 56 °C for not less than 30 minutes.
7. In the case of structural pinewood, stored to prevent infestation:
 - i. in a secure building, which has been inspected and approved by an authorised officer as being suitable for the purpose of excluding European house borer; or
 - ii. by fully wrapping in plastic film, which is not ripped, torn or otherwise damaged.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector or from an accredited certifier.

Definitions

- **European house borer** means *Hylotrupes bajulus*.
- **European house borer carrier** means (a) a tree of the genera *Abies*, *Picea*, *Pinus* or *Pseudotsuga*; or (b) wood, or wooden articles, from a tree of the genera *Abies*, *Picea*, *Pinus* or *Pseudotsuga*.

8 Giant pine scale carriers

Giant pine scale carriers must not enter Queensland unless sourced from a state or part of a state that is certified free from giant pine scale.

Regulating Power: Biosecurity Regulation 2016 s.53(1) and (3)(a).

Giant pine scale carriers may also be moved if compliant with the following Risk Minimisation Requirements, and accompanied by an acceptable biosecurity certificate.

Regulating Power: Biosecurity Regulation 2016 s.53(3)(b).

8.1 Risk minimisation requirements for giant pine scale carriers

8.1.1 Logs and timber

Logs and timber sourced from an area where giant pine scale is known to occur may enter Queensland if it has been processed to remove all bark.

Regulating Power: Biosecurity Regulation 2016 s.53(3)(b).

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

8.1.2 Pine bark

A giant pine scale carrier that is pine bark may enter Queensland if it has been subjected to a constant temperature of 50°C for 5 hours starting from when the centre of the pile has reached 50°C and packaged in such a way to prevent reinfestation with giant pine scale.

Regulating Power: Biosecurity Regulation 2016 s.53(3)(b).

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

8.1.3 Plants

A giant pine scale carrier that is a plant (including seedlings in trays) under s53(4)(a)(b) of the Regulation may enter Queensland if:

1. If the plant(s) originates from a property that is greater than 15 kilometres from a detection of giant pine scale or;

2. If the plant(s) originates from a property located less than 15 kilometres from a detection of giant pine scale, the plant(s) must be:
 - a) stored in quarantine secure conditions that prevent infestation of giant pine scale for at least 25 days prior to prior entry to Queensland; and
 - b) plants have been inspected at a minimum rate of either 600 plants, or 2% of all the plants in a consignment (whichever is greater), and no giant pine scale detected; and
 - c) transported directly under quarantine secure transport conditions to their destination within Queensland; or
3. Demonstrated equivalent measures.

Regulating Power: Biosecurity Regulation 2016 s.53(4)(a)(b).

Documentation requirement: biosecurity certificate

8.1.4 Appliances

A giant pine scale carrier that is an appliance under section 53(4)(c) of the Regulation may enter Queensland:

1. If the appliance originates from a property that is greater than 15 kilometres from a detection of giant pine scale or;
2. If the appliance originates from a property located less than 15 kilometres from a detection of giant pine scale, the appliance must be:
 - d) cleaned to be visibly free from giant pine scale risk carriers; and
 - e) stored in quarantine secure conditions that prevent infestation of giant pine scale for at least 25 days prior to consignment; and
 - f) the appliance has been inspected and no giant pine scale detected; and
 - g) transported directly under quarantine secure transport conditions to their destination in Queensland; or
3. Demonstrated equivalent measures.

Regulating Power: Biosecurity Regulation 2016 s.53(3)(c).

Documentation requirement: biosecurity certificate.

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

Definitions

- **Giant pine scale** means *Marchalina hellenica*.
- **Giant pine scale carrier** means:
 - a) a plant of the family *Pinaceae* (including cedar, fir, pine, spruce);
 - b) soil that has come into contact with a carrier mentioned in paragraph (a); or
 - c) an appliance that has come into contact with a carrier mentioned in paragraph (a) or (b).

9 Mango malformation disease carriers

Mango malformation disease carriers (excluding fruit that has been de-stemmed) must not enter Queensland unless sourced from a state or part of a state that is certified free from mango malformation disease.

Regulating Power: Biosecurity Regulation 2016 s.54(1) and (3)(a)

Definitions

- **mango malformation disease carrier** *means* a carrier that is a mango plant.
- **de-stemmed** *means* the stem has been completely removed from the fruit prior to packing.

10 Mediterranean fruit fly carriers

Mediterranean fruit fly carriers must not enter Queensland unless sourced from a state or part of a state that is certified free from Mediterranean fruit fly.

Regulating Power: Biosecurity Regulation 2016 s.55(1) and (3)(a).

Mediterranean fruit fly carriers that do not meet these requirements may be moved into Queensland if compliant with the following Risk Minimisation Requirements, and if accompanied by an acceptable biosecurity certificate.

Regulating Power: Biosecurity Regulation 2016 s.55(3)(b).

10.1 Risk minimisation requirements for Mediterranean fruit fly carriers

The risk minimisation requirements for the movement of Mediterranean fruit fly carriers under s.55(3)(b) of the Regulation is unprocessed fruit, the unprocessed fruit must meet one or more of the risk minimisation requirements below.

10.1.1 Fumigation with methyl bromide

1. The fruit must be fumigated with methyl bromide at the rate of:
 - a) 10 °C - 10.9 °C @ 56 g/m³ for 2 hours; or
 - b) 11 °C - 15.9 °C @ 48 g/m³ for 2 hours; or
 - c) 16 °C - 20.9 °C @ 40 g/m³ for 2 hours; or
 - d) 21 °C - 25.9 °C @ 32 g/m³ for 2 hours; and
2. fumigant loading rates for fruits and vegetables are not less than 30%, nor more than 50%, of the volume of the chamber when empty; and
3. the fumigator in charge ensures produce that is packaged or covered with impervious materials (such as plastic bags, stacked plastic punnets or waxed paper) has the packaging opened, cut, or removed to allow adequate penetration of the gas unless impervious materials contain:

- a) not less than four unobstructed perforations of 6 mm diameter per 100 cm²; or
- b) five unobstructed perforations of 5 mm diameter per 100 cm²; or
- c) numerous pinholes (at least 6 holes per square centimetre).

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.
- An approved certification program for Mediterranean fruit fly carriers is: ICA-04 Fumigating with Methyl Bromide.

Note: Defective-flower-end type papaya must be certified as being in mature green condition at the time of packing prior to fumigation.

Caution: some fruit may be damaged by this treatment. A trial treatment is recommended unless the response of fruit to this treatment is known.

10.1.2 Cold treatment

1. The fruit must be post-harvest cold treated at a temperature of:
 - a) 0.0 °C ± 0.5 °C for at least 14 days; or
 - b) 1.0 °C ± 0.5 °C for at least 16 days; or
 - c) 1.5 °C ± 0.5 °C for at least 18 days; or
 - d) 2.5 °C ± 0.5 °C for at least 20 days; or
2. in the case of citrus only, post-harvest cold treated at a temperature of:
 - a) 0 °C ± 0.5 °C for at least 14 days; or
 - b) 1 °C ± 0.5 °C for at least 16 days (lemons for 14 days); or
 - c) 2 °C ± 0.5 °C for at least 18 days (lemons for 16 days); or
 - d) 3 °C ± 0.5 °C for at least 20 days (lemons for 18 days).

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.
- An approved certification program for Mediterranean fruit fly carriers is ICA-07 Cold Treatment.

Note: the treatment commences when the core temperature of the produce reaches the temperature indicated above.

Caution: some fruit may be damaged by this treatment. A trial treatment is recommended unless the response of fruit to this treatment is known.

10.1.3 Irradiation

Fruit and vegetables listed in Appendix 28.1.4 Table 10 Mediterranean Fruit Fly Carriers must be post-harvest irradiated, with an absorbed dose:

- a) no lower than 150 Gy; and
- a)b) no higher than 1 kGy. minimum dose of 150 Gy.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.
- An approved certification program for Mediterranean fruit fly carriers is: ICA-55 Irradiation Treatment.

Refer to: Appendix 28.1.4 Table 10 Mediterranean Fruit Fly Carriers for full host list.

10.1.4 Mature green condition

Banana, black sapote, passionfruit, limes, babaco, and papaya (excluding defective flower end types) must be harvested and packed in a mature green condition.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.
- An approved certification program for Mediterranean fruit fly carriers is: ICA-08 Mature Green Condition and Immature Green Condition of Papaw and Babaco; ICA-15 Mature Green Condition of Passionfruit, Tahitian Limes, Black Sapotes and Tomatoes; ICA-16 Mature Green Condition of Bananas.

10.1.5 Immature green condition

Papaya fruit (excluding defective flower end types) must be harvested and packed in an immature green condition.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.
- An approved certification program for Mediterranean fruit fly carriers is: ICA-08 Mature Green Condition and Immature Green Condition of Papaw and Babaco.

10.1.6 Hard condition of avocado

Avocados (Fuerte, Hass, Lamb Hass, Reed and Sharwil varieties only) must be harvested in hard condition and stored in quarantine secure conditions within 48 hours of harvest.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.
- An approved certification program for Mediterranean fruit fly carriers is: ICA-30 Hard Condition of Avocados.

10.1.7 Unbroken skin

Durian, lychee, mangosteen, passionfruit, pomegranate, and rambutan must be harvested and packed with unbroken skin.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

Note: unbroken skin means the skin has no pre-harvest crack, puncture, pulled stem or other break that penetrates through to the flesh and has not healed with callus tissue.

Definitions

- **Mediterranean fruit fly** means *Ceratitis capitata*.
- **Mediterranean fruit fly carrier** means the fruit of a plant mentioned in Schedule 6 of the Regulation and in Appendix 28.1.4 and includes fruit attached to a plant.

11 Pyriform scale carriers

Pyriform scale carriers must not be moved into Queensland for trade or business activities from a state or part of a state where Pyriform scale has been found.

Regulating Power: Biosecurity Regulation 2016 s.56(1) and (3).

Pyriform scale carriers may be moved if compliant with the following Risk Minimisation Requirements and accompanied by an acceptable biosecurity certificate.

Regulating Power: Biosecurity Regulation 2016 s.56(2)(b).

11.1 Risk minimisation requirements for pyriform scale carriers

11.1.1 Potted plants

The risk minimisation requirement for a pyriform scale carrier that is a potted plant under section 56(3) (b) of the Regulation have been treated in the following manner:

1. All plants in the consignment have been treated with an insecticide registered for the control of scale at rates specified on the label (or used under an approved APVMA permit).
2. All plants have been inspected at the rate of either 600 plants, or 2% of the plants in the consignment (whichever is greater), and no pyriform scale detected.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

Definitions

- **Pyriform scale** means *Protopulvinaria pyriformis*
- **Pyriform scale carrier** means a potted plant of the following families:

<i>Acanthaceae</i>	<i>Araliaceae</i>	<i>Ebenaceae</i>	<i>Malpighiaceae</i>	<i>Oleaceae</i>	<i>Rubiaceae</i>
<i>Agavaceae</i>	<i>Asclepiadaceae</i>	<i>Elaeocarpaceae</i>	<i>Malvaceae</i>	<i>Orchidaceae</i>	<i>Rutaceae</i>
<i>Anacardiaceae</i>	<i>Cannaceae</i>	<i>Euphorbiaceae</i>	<i>Moraceae</i>	<i>Passifloraceae</i>	<i>Saxifragaceae</i>
<i>Apocynaceae</i>	<i>Caprifoliaceae</i>	<i>Fabaceae</i>	<i>Musaceae</i>	<i>Phyllanthaceae</i>	<i>Scrophulariaceae</i>
<i>Aquifoliaceae</i>	<i>Caricaceae</i>	<i>Lauraceae</i>	<i>Myricaceae</i>	<i>Pittosporaceae</i>	<i>Verbenaceae</i>
<i>Araceae</i>	<i>Convolvulaceae</i>	<i>Lythraceae</i>	<i>Myrtaceae</i>	<i>Punicaceae</i>	

12 Panama disease tropical race 4

Regulatory provisions exist to manage the risks associated with Panama disease tropical race 4 within Queensland. The owner or occupier of a commercial banana farm must observe the [Code of Practice for the Management and control of Panama disease TR4](#). The Code applies to commercial banana farms where a banana plant has tested positive to Panama disease tropical race 4 by molecular testing.

Regulating Power: *Biosecurity Act 2014* s.104

Definitions

- **commercial banana farm** means a property used for the growing of banana plants for commercial purposes.

13 Potato pest carriers

Potato pest carriers (excluding seed potatoes) may enter Queensland if sourced from a state where a potato pest has not been found, or from land that is not interstate potato pest infested land or linked land.

Regulating Power: *Biosecurity Regulation 2016* s.57(1) and (3)(a).

Potato pest carriers that are seed potatoes may enter Queensland if produced in accordance with the National Standard for Certification of Seed Potatoes (the Standard). Seed potato certification schemes recognised by Queensland as compliant with the Standard are: ViCSPA, Tas Seed, the Crookwell seed potato certification scheme and the Western Australian Certified Seed Potato Scheme.

Regulating Power: *Biosecurity Regulation 2016* s.57(3)(b).

Potato pest carriers that do not meet these requirements may be moved into Queensland if compliant with the following Risk Minimisation Requirements and accompanied by an acceptable biosecurity certificate.

Regulating Power: *Biosecurity Regulation 2016* s.57(3)(c).

13.1 Risk minimisation requirements for potato pest carriers

13.2 Seed potatoes

The risk minimisation requirements for a potato pest carrier that is a seed potato (excluding seed potato certification schemes recognised by Queensland) under section 57, 3(c) of the Regulation are:

1. Not produced on or sourced from interstate potato pest infested land or linked land
2. produced on land that has tested negative to potato pests during the current growing season.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.
- A copy of the biosecurity certificate must be provided to the Department.
- Approved certification programs for potato pest carriers are ICA-59 Property Freedom of Potatoes for Potato Cyst Nematode.

13.3 Ware and processing potatoes from linked land

The risk minimisation requirements for potato pest carriers that are ware and processing potatoes from linked land under section 57, 3(c) of the Regulation. In the case of a potato pest carrier that is ware or processing potatoes from linked land, the potato has been grown on land that has tested negative to potato pests during the current growing season and is washed or brushed and does not carry any detachable soil.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.
- A copy of the biosecurity certificate must be provided to the Department.
- Approved certification programs for potato pest carriers such as ICA 44 Movement of potatoes (processing and ware) from PCN linked land.

13.4 Plants of the Solanaceae family

The risk minimisation requirements for potato pest carriers that are plants of the Solanaceae family under section 57(3)(c) of the Regulation that are produced:

1. On interstate potato pest infested land the plant has been grown in soil-free media and the plants, pots and potting mix have not been in contact with soil; or
2. on linked land where the plant:
 - a. has been grown in soil-free media and the plants, pots and potting mix have not been in contact with soil; or
 - b. is bare rooted and free of all soil.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.
- A copy of the biosecurity certificate must be provided to the Department.
- Approved certification programs for potato pest carriers are: PS 27 Interstate movement of plants.

13.5 Appliances

The risk minimisation requirements for potato pest carriers that are appliances under section 57(3)(c) of the Regulation has been cleaned to remove all soil and plant material and treated by:

1. Dipping or drenching with a solution of sodium hypochlorite at a strength of 1.0 percent available chlorine; or
2. Steam cleaning at a temperature greater than or equal to 85 °C for one minute or more.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.
- A copy of the biosecurity certificate must be provided to the Department.

Definitions

- **interstate potato pest infested land** means a parcel of land outside the State on which a potato pest has been found.
- **linked land** means land to which any of the following applies:
 - the land adjoins interstate potato pest infested land;
 - the land has been planted with seed from interstate potato pest infested land;
 - and appliance, that has been used on interstate potato pest infested land, is used on the land;
 - water can drain directly from interstate potato pest infested land to the land;
 - a person has dealt with a potato pest carrier on the land in contravention of a corresponding law relating to a potato pest.
- **potato pest carrier** means
 - a. a plant of the *Solanaceae* family (examples: capsicum; chillies; eggplant; tomato, petunia; *Browallia*; *Brugmansia*; *Solandra*; *Solanum*); or
 - b. soil; or
 - c. an appliance that has come into contact with a potato pest carrier mentioned in a. or b.
- **potato pest** means *Globodera rostochiensis* and *Globodera pallida*.
- **processing potato** means a potato that, when harvested, is sent directly to a facility for processing; or a facility for storage before being processed.

- **seed potato** *means* a potato that is intended for replanting for the purpose of producing a new potato plant.

tested *means* a soil sample has been assayed by extraction of cysts with a Fenwick can and manual counting of those cysts or by using a molecular diagnostic method for the presence of PCN, where the soil sample has been collected by coring of the paddock prior to planting, or within 1 month of planting, so that cores are collected at the intersections of a 10 m by 10 m grid, with at least 1 kg of soil collected per hectare, and where each sample to be submitted for testing is no less than 500 g, collected as a representative sub-sample of soil from every two hectares of paddock. paddock; or

In the case of land that is not interstate potato pest infested land or linked land:

- accumulation of soil in a receptacle positioned under the top inspection table of a potato harvester during harvest, with at least 1 kg of soil collected per hectare; and
 - where each sample to be submitted for testing is no less than 500 g for each 2 hectares or part thereof harvested; and
 - is collected as a representative sub-sample of the total soil accumulated during harvest.
- **ware potato** *means* a potato that is grown to be consumed without being processed and is not intended for replanting for the purpose of producing a new potato plant.

14 Far northern biosecurity zones

An owner or occupier of land in far northern biosecurity zones 1 or 2 must not plant or cultivate more than 10 banana plants consisting of up to no more than 30 pseudostems on the land, with all cultivars being resistant to black Sigatoka as listed in Appendix 28.1.3;

Regulating Power: Biosecurity Regulation 2016 s.64.

An owner or occupier of land in far northern biosecurity zones 1 or 2 must treat an unmanaged banana plant in accordance with the Risk Minimisation Requirement 13A.

Regulating Power: Biosecurity Regulation 2016 s.65(2).

Banana plantlets may be moved from the far northern biosecurity zone 1 to a place outside the biosecurity zone, or from the far northern biosecurity zone 2 to a place other than the far northern biosecurity zone 1, if produced under a scheme for the clean planting of bananas outlined in the NIASA - Banana Nursery Stock Specification and accompanied by the appropriate label.

Regulating Power: Biosecurity Regulation 2016 s.63(2)(a)(i).

Far northern pest carriers must not be moved out of the far northern biosecurity zone 1, or from the far northern biosecurity zone 2 to the rest of Queensland (excluding the far northern biosecurity zone 1).

Regulating Power: Biosecurity Regulation 2016 s.63(1)

Far northern pest carriers that do not meet these requirements may be moved if compliant with the Risk Minimisation Requirements below.

Regulating Power: Biosecurity Regulation 2016 s.63(2)(b)

14.1 Risk minimisation requirements for far northern pest carriers

14.1.1 Method of treating unmanaged banana plants

An owner or occupier of land in far northern biosecurity zones 1 or 2 must treat an unmanaged banana plant by:

1. Removing the plant, including the corm, suckers and pseudostem from the soil.
2. Cutting each pseudostem into pieces and split each piece lengthwise.
3. Cutting the corm into pieces no more than 5 cm in diameter.

Definitions

- **far northern pest** means an organism listed in Schedule 8 of the Biosecurity Regulation 2016.
- **far northern pest carrier** means an appliance that has come into contact with a:
 - A hive, a mango plant or soil, or other growing mediums, in which a banana plant, a mango plant or a sugar cane plant has been grown; or (iv) a vegetative part of a sugar cane plant; or
 - a banana appliance
 - a hive
 - material that is a product or by-product of the processing of (i) a plant; or (ii) anything that comes from a plant; or
 - a plant
 - soil
 - other growing mediums.
 - A hive, mango plant, soil other growing mediums, in which a banana, mango or sugar cane plant, has been grown; or a vegetative part of a sugar cane plant.
 - A banana appliance; hive, material that is a product or by-product of the processing of a plant; or anything that comes from a plant; a plant; soil or other growing mediums.

15 Red imported fire ant

Regulatory provisions exist to establish biosecurity zones and manage the risks associated with red imported fire ant (*Solenopsis invicta*) within Queensland. These provisions are contained in Part 5 of the Regulation. occupier

Regulating Power: Biosecurity Regulation 2016, Chapter 5, Part 5.

16 Electric ant

Regulatory provisions exist to establish a biosecurity zone and manage the risks associated with electric ant (*Wasmannia auropunctata*) within Queensland. These provisions are contained in Part 6 of the Regulation.

Regulating Power: Biosecurity Regulation 2016, Chapter 5, Part 6.

17 Cattle tick

Cattle tick biosecurity zones are established to manage the risks associated with cattle tick (*Rhipicephalus (Boophilus) sp.*) in Queensland.

Regulating power: Biosecurity Regulation 2016 Chapter 5, Part 8.

The owner or occupier of land in the free zone infested with cattle tick must take action to eradicate cattle tick in accordance with the procedures stated in section 17.1.

Regulating power: Biosecurity Regulation 2016 s.61

The movement of cattle tick carriers must be in accordance with the risk minimisation requirements stated in section 17.2 To complete the risk minimisation requirements for a specific movement, the procedures that are identified for that movement must be followed. Below is a list of all procedures:

- [Procedure for the use of chemical treatments on cattle tick carriers](#)
- [Procedure for eradicating cattle tick from infested land](#)
- [Procedure for manual inspection of high-risk tick carriers](#)
- [Procedure for manual inspection – high-risk tick carriers free of adult cattle tick](#)
- [Procedure for manual inspection of low-risk tick carriers](#)
- [Procedure for dealing with high-risk tick carriers in a stated way](#)
- [Procedure for visual inspection of high-risk tick carriers](#)

Where a biosecurity certificate is required, the procedures must be performed by an accredited certifier.

Where a biosecurity certificate is not required, procedures may be performed by a person or an accredited certifier.

Regulating power: Biosecurity Regulation 2016 ss.83–87.

Discharging the general biosecurity obligation

17.1 Procedures for eradicating cattle tick from infested land

To eradicate cattle tick from infested land **at least one** of the following techniques must be used as described in the [Procedure for eradicating cattle tick from infested land](#).

1. Chemical treatment program
2. Destocking
3. Pasture spelling

Documentation requirement: Evidence of the eradication procedure/s being undertaken must be kept. Evidence may include:

- Movement records kept in accordance with s194 of the Act
- NLIS movement records as contained in the NLIS database

- Evidence of the purchase of chemical treatment proportionate to the number of livestock treated
- Records of chemical treatment undertaken
- A biosecurity certificate stating that carriers are free of cattle tick
- Other information kept by the person as evidence of eradication activities.

17.2 Risk minimisation requirements for cattle tick carriers

17.2.1 Moving a high-risk tick carrier into or through the cattle tick free zone

Table 3 – Risk minimisation requirements for moving a high-risk tick carrier into or through the cattle tick free zone

Origin	Destination	Risk minimisation requirement procedures	Biosecurity certificate issued by accredited certifier
Infested zone excluding feedlots	Free zone	<ul style="list-style-type: none"> • Tick free manual inspection; and • Supervised chemical treatment <p>OR</p> <ul style="list-style-type: none"> • Tick free manual inspection; and • Dealt with in a stated way 	Yes
	Prescribed facility free zone (feedlot)	<ul style="list-style-type: none"> • Tick free visual inspection; and • Supervised chemical treatment <p>OR</p> <ul style="list-style-type: none"> • Tick free manual inspection 	Yes
	Prescribed facility in the free zone (meat processing facility)	<ul style="list-style-type: none"> • Manual inspection free of adult cattle tick <p>OR</p> <ul style="list-style-type: none"> • Tick free visual inspection; and • Supervised chemical treatment 	Yes
	Prescribed facility free zone (clearing facility)	<ul style="list-style-type: none"> • Tick free visual inspection; and • Owner chemical treatment <p>OR</p> <ul style="list-style-type: none"> • Tick free manual inspection 	No

	<p>Infested zone via free zone</p> <p><i>Meeting requirements in s83(2) of the Biosecurity Regulation 2016</i></p>	<ul style="list-style-type: none"> • No vehicle stops for more than a 2 hour period while in the free zone; and • No total vehicle stops for more than a total of 4 hours while in the free zone; and • No cross loading, loading or unloading in the free zone. 	No
	<p>Infested zone via free zone</p> <p><i>Without meeting requirements in Biosecurity Regulation 2016 s83(2).</i></p>	<ul style="list-style-type: none"> • Tick free visual inspection; and • Supervised chemical treatment <p>OR</p> <ul style="list-style-type: none"> • Tick free manual inspection 	Yes

17.2.2 Moving a high-risk tick carrier from infested land to the free zone or a prescribed facility

Table 4 – Risk minimisation requirements for moving a high-risk tick carrier from infested land to the free zone or a prescribed facility

Origin	Destination	Risk minimisation requirement procedures	Biosecurity certificate issued by accredited certifier
Infested land	Free zone	<ul style="list-style-type: none"> • Tick free manual inspection; and • Supervised chemical treatment 	Yes
	Infested zone	<ul style="list-style-type: none"> • Supervised chemical treatment <p>OR</p> <ul style="list-style-type: none"> • Tick free manual inspection 	Yes
	Prescribed facility in the free zone (feedlot or meat processing facility)	<ul style="list-style-type: none"> • Tick free visual inspection; and • Supervised chemical treatment <p>OR</p> <ul style="list-style-type: none"> • Tick free manual inspection 	Yes
	Prescribed facility free zone (clearing facility)	<ul style="list-style-type: none"> • Tick free visual inspection; and • Owner chemical treatment <p>OR</p> <ul style="list-style-type: none"> • Tick free manual inspection 	No

17.2.3 Moving a high-risk tick carrier from feedlot in cattle tick infested zone

Table 5 – Risk minimisation requirements for moving a high-risk tick carrier from feedlot in cattle tick infested zone

Origin	Destination	Risk minimisation requirement procedures	Biosecurity certificate issued by accredited certifier
Feedlot in the infested zone	Free zone	<ul style="list-style-type: none"> • Tick free manual inspection; and • Owner chemical treatment; and • Dealt with in a stated way 	No
	Free zone	<ul style="list-style-type: none"> • Tick free manual inspection; and • Supervised chemical treatment <p>OR</p> <ul style="list-style-type: none"> • Tick free manual inspection; and • Dealt with in a stated way 	Yes
	Prescribed facility in the free zone (feedlot or meat processing facility)	<ul style="list-style-type: none"> • Tick free visual inspection; and • Dealt with in a stated way 	No
	Infested zone via free zone <i>With meeting requirements in s83(2a) of the Biosecurity Regulation 2016</i>	<ul style="list-style-type: none"> • No vehicle stops more than a 2 hour period while in the free zone; and • No total vehicle stops for more than a total of 4 hours while in the free zone; and • No cross loading, loading or unloading in the free zone. 	No
	Infested zone via free zone <i>Without meeting requirements in s83(2)(a) of the Biosecurity Regulation 2016 where exemptions apply as specified in s83(3).</i>	<ul style="list-style-type: none"> • Tick free manual inspection 	Yes

17.2.4 Moving a high-risk tick carrier from clearing facility in cattle tick free zone

Table 6 – Risk minimisation requirements for moving a high-risk tick carrier from a clearing facility in cattle tick free zone

Origin	Destination	Risk minimisation requirement procedures	Biosecurity certificate issued by accredited certifier
Clearing facility in the free zone	Free zone	<ul style="list-style-type: none"> • Tick free manual inspection; and • Supervised chemical treatment 	Yes
	Prescribed facility free zone (feedlot or meat processing facility)	<ul style="list-style-type: none"> • Tick free visual inspection; and • Supervised chemical treatment OR <ul style="list-style-type: none"> • Tick free manual inspection 	Yes
	Infested zone	<ul style="list-style-type: none"> • Supervised chemical treatment OR <ul style="list-style-type: none"> • Tick free manual inspection 	Yes

17.2.5 Moving a low-risk tick carrier from infested land or infested zone

Table 7 – Risk minimisation requirements for moving a low-risk tick carrier into or through the cattle tick free zone

Origin	Destination	Risk minimisation requirement procedures	Biosecurity certificate issued by accredited certifier
Infested zone or infested land	Any destination within or through the Queensland free zone	<ul style="list-style-type: none"> • Tick free manual inspection 	No

Documentation requirement (17.2.1-17.2.5): A biosecurity certificate can only be issued by an accredited certifier and must be issued before the movement takes place. The biosecurity certificate provides evidence that the risk minimisation requirements have been met for that movement.

Where a biosecurity certificate is not required, the accompanying movement record must state the actions taken to achieve the risk minimisation requirements. The following information must be included in the movement record:

Chemical treatments:

1. Date of treatment
2. Type of treatment

Inspections:

- Date of inspection
- Name and contact details of the person who inspected the carrier

Definitions

For section 17 of the Biosecurity Manual:

- **adult stages of the life cycle of cattle tick** *means* a cattle tick described as an adult cattle tick in the DAF Procedure for identifying the life cycle stage of cattle tick.
- **all stages of the life cycle of cattle tick** *means* a cattle tick of any of the life stages (larvae, nymph or adult) as described in the DAF Procedure for identifying the life cycle stage of cattle tick.
- **cattle tick** *means* *Rhipicephalus (Boophilus) sp.*
- **cattle tick carrier** *means* a designated animal that is a member of any of the following groups of animals:
 - bison
 - buffalo
 - the family Camelidae (e.g. alpacas, Arabian camels, llamas)
 - cattle
 - deer
 - the family Equidae (e.g. horses, ponies, donkeys, mules)
 - goats
 - sheep
- **clearing facility** *means* a place where cattle tick carriers are inspected or treated for cattle tick.
- **feedlot** *means* a facility where intensive animal feedlotting is periodically carried out.
- **free zone** *means* the part of the state identified as the cattle tick free zone on the cattle tick biosecurity zone map.
- **high risk tick carrier** *means* a cattle tick carrier other than a low-risk carrier. These are:
 - bison
 - buffalo
 - cattle
 - deer

- **infested land** *means* land in the free zone infested with cattle tick and is declared a restricted place.
- **infested zone** *means* the part of the State identified as the cattle tick infested zone on the cattle tick biosecurity zone map.
- **live cattle tick** *means* one that shows obvious signs of movement or from which body fluids can be expressed.
- **low risk tick carrier** *means* a cattle tick carrier that is a member of any of the following groups of animals:
 - the family Camelidae (e.g. alpacas, Arabian camels, llamas)
 - the family Equidae (e.g. horses, ponies, donkeys, mules)
 - goats
 - sheep.
- **movement record** *means* a movement record in s194 of the Act.
- **owner chemical treatment** *means* a chemical treatment, conducted in accordance with the *DAF Procedure for the use of chemical treatments on cattle tick carriers*, by an owner of a cattle tick carrier.
- **prescribed facility** *means*:
 - a meat processing facility that is permanently fixed and operated by an entity holding an accreditation under the Food Production (Safety) Act 2000 authorising the holder to process meat at the facility; or
 - a feedlot where intensive animal feedlotting is periodically carried on; or
 - a clearing facility.
- **procedure** *means* a procedure, published on the Department's website, which describes the actions a person must undertake (e.g. inspection, treatment) to meet a risk minimisation requirement or an eradication requirement in relation to cattle tick. Procedures listed below:
 - Procedure for the use of chemical treatments on cattle tick carriers
 - Procedure for eradicating cattle tick from infested land
 - Procedure for identifying the life cycle stages of cattle tick
 - Procedure for manual inspection of high-risk cattle tick carriers
 - Procedure for manual inspection – high risk tick carriers free of adult cattle tick
 - Procedure for dealing with high-risk cattle tick carriers in a stated way
 - Procedure for visual inspection of high-risk tick carriers

- **supervised chemical treatment** means a chemical treatment, conducted in accordance with the DAF *Procedure for the use of chemical treatments on cattle tick carriers*, by, or witnessed by an accredited certifier.
- **tick free manual inspection** means a manual inspection has been conducted in accordance with the DAF *Procedure for manual inspection of high-risk cattle tick carriers* or the DAF *Procedure for manual inspection of low-risk cattle tick carriers*.
- **tick free visual inspection** means a visual inspection has been conducted in accordance with the DAF *Procedure for visual inspection of cattle tick carriers*.

18 Phylloxera carriers

Prescribed grape phylloxera carriers may enter a phylloxera exclusion zone (PEZ) or phylloxera risk zone (PRZ) if sourced from a PEZ.

Regulating Power: Biosecurity Regulation 2016 s.89(3)

Grape phylloxera carriers that 1) are not prescribed grape phylloxera carriers or 2) that are prescribed phylloxera carriers but originate from a phylloxera infested zone (PIZ) or PRZ, may be moved into or within Queensland if compliant with the following Risk Minimisation Requirements and accompanied by an acceptable biosecurity certificate.

Regulating Power: Biosecurity Regulation 2016 s.89(1)

18.1 Risk minimisation requirements for phylloxera carriers

18.1.1 Table grapes

The risk minimisation requirements for a prescribed grape phylloxera carrier that is table grapes sourced from a PIZ or PRZ under section 89(1)(a) and (b) of the Regulation are:

1. The grapes have been packed for sale as table grapes into new containers or returnable plastic containers free of soil and plant material.
2. The packed table grapes have undergone one of the disinfestation treatments specified below:
 - a. packed with sulphur pads containing a minimum 970 g/kg sodium metabisulphite at the rate specified on the label and in accordance with the manufacturer's instructions:
or
 - b. fumigated with methyl bromide following one of the treatments listed below in Table 7.
3. The packed table grape containers are loaded onto a transport vehicle on a hard surface, not within the vineyard.
4. The transport vehicle must be cleaned free of all soil and plant material.
5. The transport undertaken should be via the most direct route possible.

Table 8 – Methyl bromide fumigation of table grapes

Fruit Pulp Temperature	Dosage Rate (g/m ³)	Duration (hours)	Dosage at 30 minutes (75%)	Dosage at 2 hours (60%)
21 °C or greater	32	2	24 g/m ³	20 g/m ³
15.5 °C or greater but less than 21 °C	40	2	30 g/m ³	24 g/m ³
10 °C or greater but less than 15.5 °C	48	2	36 g/m ³	29 g/m ³

6. In the case of a prescribed grape phylloxera carrier that is table grapes sourced from a Phylloxera Risk Zone (PRZ):
- a) the source vineyard has been inspected in the last 12 months in accordance with the provisions of the National Phylloxera Management Protocol, and found free of phylloxera; or
 - b) the grapes have been packed and treated as per 17A (1)(2) (a) and (b) above; and
 - c) the packed table grape containers have been loaded and transported as per 17 (3)(4)(5), above.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

18.1.2 Wine grapes

The risk minimisation requirements for a prescribed grape phylloxera carrier that is wine grapes sourced from a PRZ under section 89(1)(a) and (b) of the Regulation have:

1. Been grown on a property which has been inspected in the last 12 months in accordance with the provisions of the National Phylloxera Management Protocol and found free of phylloxera.
2. Been packed in bins which have been cleaned free of all soil and plant material before delivery and are securely covered after packing.
3. The bins are loaded onto a transport vehicle on a hard surface, not within the vineyard.
4. The transport vehicle has been cleaned free of all soil and organic matter.

Note: loads must be securely covered, and transport should occur via the most direct route possible and preferably not through a PIZ.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

18.1.3 Unfiltered juice or must

Unfiltered juice from grapes originating from a PEZ may enter a phylloxera exclusion zone (PEZ) or phylloxera risk zone (PRZ) if sourced from a PEZ.

Otherwise, the risk minimisation requirements for prescribed grape phylloxera carriers that are unfiltered juice or must be sourced from a PIZ or PRZ under section 89(1)(a) and (b) of the Regulation are as follows:

1. the juice or must has completed at least three days (72 hours) of fermentation; or
2. the juice or must has been filtered or otherwise processed to achieve a maximum particle size of 50 microns; or
3. if the juice or must has not been through one of the disinfestation procedures listed above, the product has been moved under the conditions described in the National Phylloxera Management Protocol by businesses accredited under ICA-22.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.
- Approved certification programs for grape phylloxera carriers are ICA-22 Transfer of Grape Must and Unfiltered Juice PIZ or PRZ for Winemaking in a PEZ.

18.1.4 Marc

The risk minimisation requirements for a grape phylloxera carrier that is sourced from a PIZ or PRZ under regulation 89(1)(a) and (b) of the Regulation is as follows:

1. marc of the genus *Vitis* sourced from a PIZ or a PRZ must have:
 - a) completed at least three days (72 hours) of fermentation; or
 - b) been composted in accordance with Australian Standard AS 4454; or
 - c) been pasteurised in accordance with Australian Standard AS 4454.
 - d) must be securely packed or covered to prevent spillage; and
 - e) the container and transport vehicle must be clean, free of soil and organic matter.

Note: transport should be by the most direct route possible.

Documentation requirement: biosecurity certificate

18.1.5 A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

Grapevine cuttings and grape rootlings

The risk minimisation requirements for grape phylloxera carriers that are grapevine cuttings and grape rootlings sourced from a PRZ or PEZ under section 89(1)(a) and (b) of the Regulation are as follows:

1. In the case of a grape phylloxera carrier that is a grapevine cutting:

- a) the dormant cuttings originated from a PRZ or PEZ; and
 - i. were fully lignified before taking; and
 - ii. were washed free of soil and organic matter before bundling with no more than 200 cuttings in a bundle; and
 - iii. have been treated by:
 - a. fumigation with methyl bromide at 32 g/m³ for 3 hours at a temperature of at least 18 °C; or
 - b. were subjected to complete submersion in a hot water dip for either 30 minutes at a temperature of 50 ± 1 °C, or 5 minutes at a temperature of 54 ± 1 °C; or
 - b) the cuttings were sourced from a Commonwealth post-quarantine facility.
2. In the case of a grape phylloxera carrier that is a grape rootling:
- a) the original cuttings were sourced from a PRZ or PEZ vineyard and subjected to fumigation with methyl bromide, or complete submersion in a hot water dip as for 1.iii. above, prior to growing on as rootlings; and
 - b) the rootlings (including grafted rootlings) were fully dormant before lifting; and
 - c) the rootlings were bare-rooted and washed completely visibly free of soil prior to treatment, with no more than 100 rootlings in a bundle (if bundled); and
 - d) were subjected to complete submersion in a hot water dip for either 30 minutes at a temperature of 50 ± 1 °C or 5 minutes at a temperature of 54 ± 1 °C; and
 - e) immediately prior to dispatch and subsequently, handled to prevent infestation by phylloxera after treatment; or
 - f) the grape rootling was sourced from a Commonwealth post-quarantine facility.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.
- Approved certification program for phylloxera carriers: ICA-37 Hot Water Treatment of Grapevines.
- A copy of the biosecurity certificate must be provided to the Department.

18.1.6 Diagnostic samples

The risk minimisation requirements for grape phylloxera carriers that are diagnostic samples from a PIZ or PRZ under section 89(1)(a) and (b) of the Regulation are as follows:

1. Diagnostic samples must be packaged in a quarantine secure manner; or
2. Disinfested prior to moving the diagnostic sample by:
 - a) autoclaving at 121 °C and 103 kPa for 15 minutes; or 134 °C and 103 kPa for 4 minutes; or
 - b) freezing to -18 °C for 24 hours; or
 - c) freezing and transfer under liquid nitrogen at -196 °C; or
 - d) freeze drying; or
 - e) oven drying to 45 °C for 2 hours; or
 - f) hot water treatment at 54 ± 1 °C for 5 minutes; or
 - g) fixing in formalin/acetic acid, 70% ethanol.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.
- A copy of the biosecurity certificate must be provided to the Department.

When moving samples to approved facilities, refer to Condition 22 Diagnostic Samples.

18.1.7 Appliances

1. The risk minimisation requirements for a grape phylloxera carrier that is an appliance (including vineyard machinery, equipment, and second-hand packages) sourced from a PIZ or PRZ under section 89(1)(a) and (b) of the Regulation must be thoroughly cleaned with steam or high-pressure hot water to remove all soil and plant debris; and disinfested using one of the following methods where the steam:
 - a) applied is above 100 °C.
 - b) contacts all surfaces.
 - c) the surface is left dry and not wet with condensate.

Or the hot water where:

- a) the machinery or equipment is fully immersed in water heated to a minimum of 70 °C; and
- b) the machinery or equipment remains immersed for at least 2 minutes after it has reached 70 °C.

Or dry heat (compulsory for mechanical harvesters) where:

- a) the machinery or equipment can be placed in a hot room that can maintain the required temperature; and

- b) temperature probes are applied to measure the temperature of the whole piece of machinery or equipment and the equipment shall reach the required temperature; and
- c) the whole piece of machinery or equipment is held in the hot room for a minimum of either 75 minutes after the machinery or equipment has reached 45 °C, or 120 minutes after the machinery or equipment has reached 40 °C.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.
- A copy of the biosecurity certificate must be provided to the Department.

Definitions

- **approved facility** *means* a facility listed in the biosecurity manual as an approved facility for receiving and handling diagnostic samples.
- **filtered juice** *means* juice processed through a filter that removes all particles larger than 50 microns. Centrifugation and cold settling are accepted alternatives to filtration for the purposes of this definition provided that the same outcomes are achieved.
- **juice** *means* is the liquid fraction of must and may contain small-suspended solids, other than grape skin or seeds.
- **marc** *means* the fraction of must that is not juice.
- **must**, for grapes, *means* the total product of crushing grape berries including juice, skins, seeds, pulp, and possibly some stems and leaves.
- **grape phylloxera carrier** *means* a carrier mentioned in schedule 9 of the Biosecurity Regulation 2016:
 - a grape plant *Vitis* spp., including—
 - grapevine cuttings, buds and vegetative tissue, or plant parts, for propagation
 - germplasm establishment cuttings
 - grape rootlings
 - any vegetative part of a grape plant
 - a product derived from a grape plant, including—
 - table grapes
 - wine grapes
 - marc that has not been fermented
 - must
 - juice other than filtered juice
 - an appliance that has been used in connection with a viticulture activity.
 - soil, or other growing mediums, that have been within 100 m of a living grapevine.

- **phylloxera exclusion zone (PEZ)** means an area that has been surveyed in accordance with the National Phylloxera Management Protocol and found free of grape phylloxera and certified to this effect.
- **phylloxera infested zone (PIZ)** means any area that is not certified as a PRZ or PEZ.
- **phylloxera risk zone (PRZ)** means any area that is not certified as a PIZ or PEZ.
- **prescribed grape phylloxera carrier** means:
 - a) table grapes that have been packed for human consumption, or
 - b) wine grapes, or
 - c) marc that has not been fermented, or
 - d) must, or
 - e) juice, other than filtered juice.
- **packaged in a quarantine secure manner** means the sample is sealed within the following 3 layers of packaging to prevent the escape of the sample or any biosecurity matter—
 - an inner layer of paper, cardboard or plastic that is sealed.
 - a middle layer that is a strong plastic bag and is sealed and labeled “Quarantine Material—Do Not Open”;
 - an outer layer that is a sealed box or other sealed container.

19 Papaya ringspot biosecurity zone

A plant of the genus *Carica* (e.g. papaw, pawpaw, papaya) must not be moved from the papaya ringspot biosecurity zone 1 to the rest of Queensland; and a plant of the family *Cucurbitaceae* must not be moved from the papaya ringspot biosecurity zone 2 to the rest of Queensland (excluding the papaya ringspot biosecurity zone 1).

Regulating Power: Biosecurity Regulation 2016 s.91(1) and s.92.

Plants of the family *Cucurbitaceae* may be moved under the conditions of a Biosecurity Instrument Permit issued by an Inspector. Producers should contact the Department on 13 25 23 or email qld.plantquarantine@daf.qld.gov.au.

Regulating Power: *Biosecurity Act 2014* s.132.

Papaya ringspot carriers that do not meet these requirements may be moved if compliant with the following Risk Minimisation Requirements.

Regulating Power: Biosecurity Regulation 2016 s.91(2).

19.1 Risk minimisation requirements for papaya ringspot carriers

19.1.1 Plants of the genus *Carica*

This condition provides the risk minimisation requirements for movement of papaya ringspot carriers from the papaya ringspot biosecurity zone 1 to the rest of Queensland in accordance with section 92(2) of the Regulation.

1. In the case of a tissue culture plant of the genus *Carica*:
 - a) it is a plantlet that has been produced in quarantine secure conditions.
 - b) the plantlet has been tested and found free of *Papaya ringspot virus* - type P (PRSV-P)
 - c) the plantlet has been packed in a quarantine secure manner.
2. In the case of *Carica* plants from seed, cuttings, including unrooted cuttings, the plants have been:
 - a) produced in quarantine secure conditions.
 - b) tested and found free of PRSV-P
 - c) packed in a quarantine secure manner.

Documentation requirement: biosecurity certificate

Note: maps of the papaya ringspot biosecurity zones are published on the Department's website.

Definitions

- **papaya ringspot carrier** means a plant of the genus *Carica* or a plant of the family *Cucurbitaceae*. Examples of plants of the family *Cucurbitaceae* — cucumber, melon, pumpkin, squash and zucchini.

20 Sugar cane pest carriers

Sugar cane pest carriers must not be moved from a place outside of Queensland into biosecurity zones 1 to 6; or from a place within Queensland into sugar cane biosecurity zone 1 or 5; or from within a biosecurity zone to any place outside of that biosecurity zone.

Regulating Power: Biosecurity Regulation 2016 s.94(1).

Sugar cane plants that are produced under the Sugar Research Australia plant breeding and clean planting scheme for sugar cane may move into and within Queensland without restriction.

Regulating Power: Biosecurity Regulation 2016 s.94(3)(a).

Dried sugar cane trash may be moved into and within Queensland without restriction.

Regulating Power: Biosecurity Regulation 2016 s.94(3)(c).

Sugar cane pest carriers may also be moved if compliant with the following Risk Minimisation Requirements and accompanied by an acceptable biosecurity certificate.

Regulating Power: Biosecurity Regulation 2016 s.94(3)(b).

20.1 Risk minimisation requirements for sugar cane pest carriers

20.1.1 Plants

The risk minimisation requirements for a sugar cane pest carrier that is a plant under section 94(3)(b) of the Regulation is:

1. the plant is a tissue culture plant.
2. it is contained within a sealed pest proof container.
3. it is free from biosecurity matter affecting sugar cane pest carriers and far northern pests. it is moved under quarantine secure transport.

Documentation requirement:

- A biosecurity certificate certifying that a) and b) above have been met may be obtained from an inspector or an accredited certifier.
- A copy of the biosecurity certificate must be provided to the Department.

20.1.2 Appliances

The risk minimisation requirements for a sugar cane pest carrier that is an appliance under section 94(3)(b) of the Regulation has been inspected and found free of soil and plant material.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.
- Approved certification programs for sugar cane pest carriers are: CAAA-01 Inspection of Appliances Used in Sugarcane Production for Contaminants.

Definitions

- **sugar cane pest** means biosecurity matter affecting sugar cane pest carriers, identified in s93 of the Regulation; *Fiji disease virus* (causal agent of Fiji leaf gall disease); *Sugar cane mosaic virus* (Strain A); *Sugar cane striate mosaic-associated virus*.
- **sugar cane pest carrier** means (a) a vegetative part of a sugar cane plant; or (b) soil, or other growing mediums, in which a sugar cane plant has been grown; or (c) an appliance that has come into contact with a part of a sugar cane plant mentioned in (a) or soil mentioned in (b).

21 Diagnostic samples

1. Diagnostic samples of **carriers** can be moved into Queensland if:
 - a) the samples are consigned to an **approved facility** and
 - b) they are quarantine secured.

Regulating Power: Biosecurity Regulation 2016 s.46A(1) and (3)

2. Diagnostic samples can be moved out of a biosecurity zone if:
 - a) the samples are being moved out of the state for testing; and

- b) they are quarantine secured.

Regulating Power: Biosecurity Regulation 2016 s.46A(2) and (3)

21.1 Risk minimisation requirements for diagnostic samples

Diagnostic samples for commercial and non-commercial purposes may be moved if compliant with the following Risk Minimisation Requirements.

Regulating Power: Biosecurity Regulation 2016 s.48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 57A, 57B, 79, 80, 89, 91, 94,94ED.

For phylloxera carriers that are diagnostic samples from a PIZ or PRZ, refer to Condition 19.1.7.

21.1.1 Diagnostic samples

This Risk Minimisation Requirement applies to the movement of diagnostic samples that may be carriers of biosecurity matter and not to the restricted or prohibited matter itself.

Diagnostic samples of carriers can be moved into or within Queensland if:

1. The samples are quarantine secured.
2. The package(s) is clearly and legibly marked on the outside with the name of the collector, the place of collection, the name, and address of the recipient.
3. The samples are denatured at the completion of testing by autoclaving before disposal into the municipal waste stream.

Documentation requirement:

- A biosecurity certificate certifying that a) and b) above have been met may be obtained from an inspector or an accredited certifier.
- A copy of the biosecurity certificate must be provided to the Department.

Note:

- Where the intention is to transport prohibited or restricted matter, the person intending to move the matter must apply for a biosecurity authorisation.
- A separate condition applies for the movement of Phylloxera carriers that are diagnostic samples. See Prescribed Requirement 18.
- An instrument permit is required to move diagnostic samples from the far northern pest biosecurity zones (s.63).
- An instrument permit is required to move plants of the family Cucurbitaceae from the papaya ringspot biosecurity zone 2 to a place outside the zone - excluding papaya ringspot biosecurity zone 1 (s.92).
- Approved facilities for the receipt of diagnostic samples of carriers under this condition are listed at 3.1.2.

Definitions

- **carrier means** carriers regulated under the following sections of the Biosecurity Regulation 2016:
 - 48 (banana pest carriers)
 - 50 (branched broomrape carriers)
 - 51 (cucumber green mottle mosaic virus carriers)
 - 52 (European house borer carriers)
 - 53 (giant pine scale carriers)
 - 54 (mango malformation disease carriers)
 - 55 (Mediterranean fruit fly carriers)
 - 56 (pyriform scale carriers)
 - 57 (potato pest carriers)
 - 57A (tomato-potato psyllid carriers)
 - 57B (citrus canker carriers)
 - 79 (banana pest carriers)
 - 80 (banana pest carriers)
 - 89 (grape phylloxera carriers)
 - 91 (papaya ringspot carriers)
 - 94 (sugar cane pest carriers).
 - 94EA (varroa mite carrier)
 - 94EF (polyphagous shot-hole borer carriers)
- **approved facility means** a facility listed at 3.1.2
- **diagnostic sample means** a sample collected to be submitted for any form of analysis including diagnosis of the presence or absence of an organism, chemical analysis, and analysis of physical properties.
- **quarantine secured means** the sample is sealed within the following 3 layers of packaging to prevent the escape of the sample or any biosecurity matter—
 - an inner layer of paper, cardboard or plastic that is sealed.
 - a middle layer that is a strong plastic bag and is sealed and labeled “Quarantine Material—Do Not Open”.
 - an outer layer that is a sealed box or other sealed container.
 -

22 Tomato/potato psyllid Carriers

Tomato/potato psyllid carriers must not enter Queensland from a State where tomato/potato psyllid has been found.

Regulating Power: Biosecurity Regulation 2016 s.57A(1)A

Tomato/potato psyllid carriers may enter Queensland if the carrier is:

- a seed that is free of any vegetative material; or
- a **packing house prepared carrier**; or
- a **permitted plant product**.

Regulating Power: Biosecurity Regulation 2016 s.57A(2)(a)(b) and 57A(3)

Tomato/potato psyllid plant carriers from a part of the state that is a certified interstate free area for tomato/potato psyllid and zebra chip (*Candidatus Liberibacter psyllaurous*), may be moved into Queensland, if the person gets an acceptable biosecurity certificate that states the carrier comes from the certified interstate free area, before moving the carrier.

Regulating Power: Biosecurity Regulation 2016 s.57A(2)(c)(i)(ii)

A tomato/potato psyllid carrier that is not a plant (e.g., machinery, equipment, soil, and planting media used in association with TPP production) may be moved into Queensland if the carrier has been continuously located in the certified interstate free area for at least 12 months immediately before being moved. It may also be moved in Queensland if the person gets an acceptable biosecurity certificate that states the carrier comes from the certified interstate free area, before moving the carrier.

Regulating Power: Biosecurity Regulation 2016 s.57A(2)(c)(iii)

Tomato/potato psyllid plant carriers that have been certified as free from tomato/potato psyllid in accordance with a corresponding law or an inspection and certification program may be moved into Queensland, if accompanied by an acceptable biosecurity certificate.

Regulating Power: Biosecurity Regulation 2016 s.57A(d)(i)(ii)

Tomato/potato psyllid carriers that do not meet these requirements may be moved into Queensland if compliant with the following Risk Minimisation Requirements and accompanied by an acceptable biosecurity certificate.

Regulating Power: Biosecurity Regulation 2016 s.57A(2)(e)(i)(ii)

22.1 Risk minimisation requirements for tomato/potato psyllid carriers

22.1.1 Solanaceous fruit

The risk minimisation requirements for tomato/potato psyllid carrier that is solanaceous fruit under section 57A(2)(e) of the Regulation are as follows:

1. All solanaceous fruit in the consignment have been treated according to the following schedule:
 - (a) Treated with an insecticide effective against all life stages of the tomato-potato psyllid and registered for the control of tomato-potato psyllid at rates specified on the label (or in accordance with an Australian Pesticides and Veterinary Medicines Authority (APVMA) emergency use/minor use permit), and
 - (b) Packed in quarantine secure conditions that prevent infestation with tomato-potato psyllid,

and

- (c) A 2% or 600 unit inspection prior to dispatch and found to be free of tomato-potato psyllid; or
- (d) Fumigated with methyl bromide at rates specified on the label (or in accordance with an approved Australian Pesticides and Veterinary Medicines Authority (APVMA) emergency use/minor use permit); and
- (e) Packed in quarantine secure conditions that prevent infestation with tomato-potato psyllid.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

22.1.2 Convolvulaceae's tubers

The risk minimisation requirements for tomato/potato psyllid carriers that are Convolvulaceae's tubers under section 57A(2)(e) of the Regulation are as follows:

1. All Convolvulaceae's tubers in the consignment are in a dormant state, and have been treated according to the following schedule:
 - a) Fumigated with methyl bromide at rates specified on the label (or in accordance with an approved Australian Pesticides and Veterinary Medicines Authority (APVMA) emergency use/minor use permit); or
 - b) Brushed or washed to remove soil; and
 - c) Packed in quarantine secure conditions that prevent infestation with tomato-potato psyllid, and
 - d) A 2%- or 600-unit inspection prior to dispatch and found to be free of green plant material i.e. leaves, stems, stalks etc. and tomato-potato psyllid.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

22.1.3 Solanaceous tubers

The risk minimisation requirements for tomato/potato psyllid carriers that are Solanaceous tubers under section 57A(2)(e) of the Regulation are as follows:

1. All potato tubers in the consignment have been treated according to the following schedule:
 - a) Fumigated with methyl bromide at rates specified on the label (or in accordance with an approved Australian Pesticides and Veterinary Medicines Authority (APVMA) emergency use/minor use permit); or
 - b) Brushed or washed to remove soil; and
 - c) A 2%- or 600-unit inspection prior to dispatch and found to be free of green plant material i.e. leaves, stems, stalks etc. and tomato-potato psyllid.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

Note, tomato/potato psyllid carriers that are Solanaceous tubers must also meet entry requirements for potato pest carriers, refer to Condition 11 above.

22.1.4 Field packed fruits and vegetables

The risk minimisation requirements for tomato/potato psyllid carriers that are field packed fruits and vegetables under section 57A(2)(e) of the Regulation are as follows:

1. Field packed fruits and vegetables (including broccoli, Brussel sprouts, cauliflower (with protective outer leaves removed), corn, pea, grape, summer fruit, cherry, cucumber, zucchini, rockmelon, honeydew melon, watermelon) when treated in accordance with the following procedure:
 - a) Commercially sorted, graded, and packed (including the removal of outer leaves and calyx); and
 - b) A 2%- or 600-unit inspection prior to dispatch and found to be free of tomato-potato psyllid; and
 - c) Packed in quarantine secure conditions that prevent infestation with tomato-potato psyllid.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

(Note: Field packed leafy vegetables such as lettuce, cabbage and celery, or vegetables with the protective outer leaves still attached, are not permitted under this condition)

22.1.5 Field packed leafy vegetables

The risk minimisation requirements for tomato/potato psyllid carriers that are field packed leafy vegetables under section 57A(2)(e) of the Regulation are as follows:

1. Field packed leafy vegetables such as loose leaf lettuce, spinach, cabbage and celery, or vegetables with the protective outer leaves still attached when treated in accordance with the following procedure:
 - (a) Commercially sorted, graded and packed; and
 - (b) Treated with an insecticide effective against all life stages of the tomato-potato psyllid within 4 days of harvest and registered for the control of tomato-potato psyllid at rates specified on the label (or in accordance with an Australian Pesticides and Veterinary Medicines Authority (APVMA) emergency use/minor use permit); and
 - (c) A 2%- or 600-unit inspection prior to dispatch and found to be free of tomato-potato psyllid; and
 - (d) Packed in quarantine secure conditions that prevent infestation with tomato-potato psyllid.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

22.1.6 Packing shed packed fruit and vegetables that have vegetative material attached.

The risk minimisation requirements for tomato/potato psyllid carriers that are packing shed packed fruit and vegetables that have vegetative material attached under section 57A(2)(e) of the Regulation are as follows:

1. Packing shed packed fruit and vegetables that have vegetative material attached (includes

sweet corn, broccoli, cauliflower, cabbage and loose leaf lettuce) which have been treated in accordance with the following procedure:

- (a) Washed, for produce that is suitable for washing (acceptable washing methods include, hydro cooling, drenching and dipping); and
- (b) Commercially sorted, graded and packed (including the removal of outer leaves), for produce that is not suitable for washing i.e. cauliflower, sweet corn, etc.; and
- (c) A 2%- or 600-unit inspection prior to dispatch and found to be free of tomato-potato psyllid; and
- (d) Packed in quarantine secure conditions that prevent infestation with tomato-potato psyllid.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

22.1.7 Nursery stock other than dormant plants

The risk minimisation requirements for tomato/potato psyllid carriers that are nursery stock other than dormant plants under section 57A(2)(e) of the Regulation are as follows:

1. Nursery stock other than dormant plants when treated in accordance with the following procedure:
 - (a) Treated with an insecticide, effective against all life stages of the tomato-potato psyllid, registered for the control of tomato-potato psyllid, at rates specified on the label (or in accordance with an APVMA emergency use/minor use permit) not less than 72 hours prior to dispatch; and
 - (b) Commercially sorted and packed; and
 - (c) A 2%- or 600-unit inspection prior to dispatch and found to be free of tomato-potato psyllid; and
 - (d) Packed in quarantine secure conditions that prevent infestation with tomato-potato psyllid.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

22.1.8 Dormant nursery stock

The risk minimisation requirements for tomato/potato psyllid carriers that are dormant nursery stock under section 57A(2)(e) of the Regulation with the following conditions:

1. Plants are free of any green vegetative material including buds or leaves.
2. 2%- or 600-unit inspection prior to dispatch and found to be free of tomato-potato psyllid.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

22.1.9 Cut flowers

The risk minimisation requirements for tomato/potato psyllid carriers that are cut flowers under section 57A(2)(e) of the Regulation are as follows:

1. Cut flowers when treated in accordance with the following conditions:
 - (a) Treated with an fumigant effective against all life stages of the tomato-potato psyllid and registered for the control of tomato-potato psyllid at rates specified on the label (or in accordance with an APVMA emergency use/minor use permit).
 - (b) Commercially sorted and packed.
 - (c) Packed in quarantine secure conditions that prevent infestation with tomato-potato psyllid.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

22.1.10 Strawberry fruit

The risk minimisation requirements for tomato/potato psyllid carriers that are strawberry fruit under section 57A(2)(e) of the Regulation are:

1. Commercially sorted and packed.
2. A 2%- or 600-unit inspection prior to dispatch and found to be free of tomato-potato psyllid
3. Packed in quarantine secure conditions that prevent infestation with tomato-potato psyllid.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

22.1.11 Machinery and equipment used in the production of plants or plant material

The risk minimisation requirements for tomato/potato psyllid carriers that are machinery and equipment used in the production of any plants or plant material under section 57A(2)(e) of the Regulation has been treated according to the following schedule:

1. Washed and cleaned free of plant material and soil with high pressure hot water to a temperature $\geq 70^{\circ}\text{C}$; or
2. Treated with an insecticide effective against all life stages of the tomato-potato psyllid and registered for the control of tomato-potato psyllid at rates specified on the label (or in accordance with an APVMA emergency use/minor use permit); and
3. Inspected and found free of tomato-potato psyllid, plant material and soil.

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from an inspector, or from an accredited certifier.

Definitions:

- ***inspection and certification program*** means a program, administered by another State, under which tomato/potato psyllid carriers are inspected and certified as being free of tomato/potato psyllid.

- ***packing house prepared carrier*** means a fruit or vegetable, other than a plant of the Solanaceae family or Convolvulaceae family, that—

(a) is prepared, stemmed, processed, graded, sorted or packed in a packing house; and

(b) is free of other vegetative material, including, for example, a calyx.

permitted plant product means any of the following—

(a) grain;

(b) dried plant parts;

(c) mulch;

(d) timber;

(e) chaff or hay

tomato/potato psyllid means tomato/potato psyllid (*Bactericera cockerelli*).

tomato/potato psyllid carrier means—

(a) a plant of the Solanaceae family; or

Examples—

- capsicum

- potato

- thornapple

- tobacco

- tomato

(b) a plant of the Convolvulaceae family; or

Examples—

- sweet potato

- field bindweed (sp. Field bindweed)

(c) another plant that is not a permitted plant product; or

(d) soil that has come into contact with a

tomato/potato psyllid carrier mentioned in paragraph (a) or (b); or

(e) an appliance that has come into contact with a tomato/potato psyllid carrier mentioned in

paragraph (a), (b) or (d).

23 Citrus canker carriers

Citrus canker carriers must not enter Queensland unless sourced from a state or part of a state that is certified free from citrus canker.

Regulating Power: Biosecurity Regulation 2016 s.57B(1) and (3)(a)

Citrus canker carriers that do not meet these requirements may be moved into Queensland if compliant with the following Risk Minimisation Requirements, and if accompanied by an acceptable biosecurity certificate.

Regulating Power: Biosecurity Regulation 2016 s.57B(3)(b)

23.1 Risk Minimisation Requirements for citrus canker carriers

23.1.1 Citrus fruit

The risk minimisation requirements for movement of citrus canker carriers under section 57B(3)(b) of the Regulation are as follows:

1. The fruit in the consignment has been commercially grown on a property that:
 - (a) was surveyed by an authorised officer of the department responsible for agriculture in the State or Territory of Australia in which the property is located (the Relevant Department) and accredited by the Relevant Department as being free from citrus canker a minimum of three times per year. In the case of the Northern Territory the surveys are to be scheduled:
 - at the beginning of the wet season (November);
 - mid-way through of the wet season (February); and
 - at the and end of the wet season (April); and
 - (b) has been registered by the Relevant Department as a property that is free from citrus canker; and
2. The fruit in the consignment has been commercially grown by a commercial grower:
 - (a) whose property has been surveyed and registered in accordance with condition (1)(a) and (1)(b) above; and
 - (b) who has applied to, and been approved by, the Relevant Department for grower registration; and
3. The citrus trees from which the fruit in the consignment is sourced have been:
 - (a) treated with a copper-based fungicide for citrus canker in accordance with an approved Australian Pesticides and Veterinary Medicines Authority (APVMA) minor use or emergency permit; and
 - (b) monitored for citrus leaf miner, and treated as required with an insecticide registered for the control of citrus leaf miner in accordance with the instructions on an approved label (or in accordance with an approved APVMA minor use or emergency permit); and
4. The fruit in the consignment is post-harvest treated with one of the following means (and no artificial drying or further treatment has occurred during either of the treatments described in (4)(a) or (4)(b) below):

- (a) As specified on an approved label or in accordance with an approved APVMA minor use or emergency permit completely wet the fruit either by immersion or continuous spraying using a product containing sodium hypochlorite to produce a solution of 200 ppm w/v of available chlorine (and which is maintained at a pH of 6.0 to 7.5). The fruit must remain completely wet within the solution for at least 2 minutes, either through continued immersion or continuous spraying; or
5. As specified on an approved label or in accordance with an approved APVMA minor use or emergency permit containing 950g/kg sodium ortho-phenylphenate tetrahydrate (SOPP tetrahydrate) to produce a solution of 2kg SOPP tetrahydrate to 100L water (and which is maintained at a pH of 12.0), completely wet fruit with the solution for at least:
 - 45 seconds if the solution has sufficient soap or detergent to cause foam to appear; or
 - 1 minute otherwise.
6. The facility (packing shed) in which the fruit in the consignment has been sorted, graded, treated and packed has been audited by an authorised officer of the Relevant Department, and registered by the Relevant Department, for the purpose of moving fruit out of particular areas that are or may be affected by citrus canker; and
7. The fruit in the consignment is inspected by an authorised officer of the relevant Department at a rate of 600 or 2% (whichever is greater) units per consignment lot, prior to dispatch and:
 - (a) found free from symptoms of citrus canker; and
 - (b) each package from which fruit is taken for inspection shall also be inspected for freedom from leaves, twigs, and other plant parts (except for stems that are less than 2.5cm long and attached to the fruit).

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from a government inspector, or from an accredited certifier.

24 Kaffir lime leaves

The risk minimisation requirements for movement of citrus canker carriers under section 57B(3)(b) of the Regulation that are kaffir lime leaves (*Citrus hystrix*) in the consignment:

1. Have been commercially grown on a property that was surveyed by an authorised officer of the department responsible for agriculture in the State or Territory of Australia in which the property is located (the Relevant Department) and accredited by the Relevant Department as being free from citrus canker; and
2. Have been sourced from a registered grower:
 - (a) whose property has been surveyed and accredited in accordance with condition (1) above; and
 - (b) who has applied to, and been approved by, the Relevant Department for grower accreditation.
3. Is sourced have been monitored for citrus leaf miner and treated as required with an

insecticide registered for the control of citrus leaf miner in accordance with the instructions on an approved label (or in accordance with an approved APVMA minor use or emergency use permit) during the production season.

4. Have undergone a post-harvest citrus canker treatment in accordance with the product label or APVMA minor use or emergency use permit and have been sorted, graded, post-harvest treated, packed, and identified in a registered packing house.
5. Have been sorted, graded, post-harvest treated, packed, and identified at the facility (packing house). These have also been audited by an authorised officer of the relevant Department, and registered by the relevant Department, for the purpose of moving kaffir lime leaves out of particular areas that are or may be affected by citrus canker; and
6. Have been inspected by an authorised officer of the relevant Department at a rate of 600 units per consignment lot, prior to dispatch and:
 - (a) found free from symptoms of citrus canker; and
 - (b) each package from which leaves are taken for inspection shall also be inspected for freedom from twigs and other plant parts (except for the small petiole attached to the leaves).

Documentation requirement: biosecurity certificate

- A biosecurity certificate may be obtained from a government inspector, or from an accredited certifier.

Definitions

- **Citrus canker** means *Xanthomonas citri* pv. *citri*, also known as *Xanthomonas citri* subsp. *citri*,
- **Citrus canker carrier** means
 1. a plant mentioned in Schedule 7A of the Regulation and in 3.1.5; or
 2. soil, or other growing mediums, that have come into contact with a plant mentioned in Schedule 7A of the Regulation and in 3.1.5; or
 3. an appliance that has come into contact with a carrier mentioned in Schedule 7A of the Regulation and in 3.1.5.

25 Varroa mite carriers

Biosecurity Zone

The whole of the State is established as a biosecurity zone (the **varroa mite biosecurity zone**) for varroa mite.

Regulating Power: Biosecurity Regulation 2016 s.94EB.

Varroa mite carriers must not enter Queensland unless sourced from a state that is certified free from varroa mite.

Regulating Power: Biosecurity Regulation 2016 s.94ED(1).

Exempt varroa mite carriers

Varroa mite carriers may be moved into Queensland from a state where varroa mite has been found if:

1. the carrier is a new and unused apiary appliance; or
2. the carrier is processed beeswax or processed honey that is dealt with using a clean container movement system; or
3. the carrier is a sample of honey that—
 - (a) is being moved to an approved facility for testing; and
 - (b) is quarantine secured.

Regulating Power: Biosecurity Regulation 2016 s.94ED(2), s.46A(3).

Moving a varroa mite carrier

A person can apply to move a varroa mite carrier, including, live bees in hives, queen bees and escort bees, used empty hives, used honey supers and used apiary appliances from a State where varroa mite has been found. Apply at, www.daf.qld.gov.au/business-priorities/biosecurity/policy-legislation-regulation/biosecurity-instrument-permit. Alternatively, you may contact the Department on 13 25 23 or email qld.plantquarantine@daf.qld.gov.au

Notification of presence of varroa mite

Suspected detections of varroa mite in or on a carrier must be reported to Biosecurity Queensland on 13 25 23, as soon as practical.

Regulating Power: Biosecurity Regulation 2016 s.94EE.

Definitions

- **New and unused apiary appliance** means an apiary appliance that—
 1. has been packed—
 - i. at a place from which bees have been excluded; and
 - ii. in a way that excludes bees; and
 2. has remained sealed in its original packaging; and
 3. has not been in contact with bees or an apiary product.

Regulating Power: Biosecurity Regulation 2016 s94ED

- **apiary appliance** means any apparatus, equipment, fitting, implement or utensil for beekeeping or processing, handling, or storing an apiary product.
- **apiary product** means anything produced or collected by bees; but does not include the following—
 - (i) drone semen;
 - (ii) processed bee bread;
 - (iii) processed beeswax;
 - (iv) processed honey;

- (v) processed *pollen*;
 - (vi) processed propolis;
 - (vii) processed royal jelly.
- **approved facility** means a facility listed in the biosecurity manual as an approved facility for receiving and handling diagnostic or analytical samples.
 - **bee** means a bee of any species of the genus *Apis* (*Apis* spp.), whether living or dead.
 - **biosecurity zone** means the whole of the State of Queensland.
 - **clean container movement system** means a system for packing and moving an apiary product, processed beeswax or processed honey in a container in a way that ensures—
 - a. there is no contamination of the apiary product, processed beeswax or processed honey from varroa mite or a varroa mite carrier; and
 - b. there is no contamination of the outside of the container, or any outer protective framing or pallet used to move the container, by the apiary product, processed beeswax or processed honey; and
 - c. bees are excluded from—
 - i. the place where the container is packed; and
 - ii. the container and any outer protective framing or pallet while the container is being packed or moved.
 - **Packing** means a thing in a container, includes decanting the thing into the container.
 - **processed beeswax** means beeswax processed by—
 - a. melting; and
 - b. filtering to remove bees, brood, and debris; and
 - c. rendering.
 - **processed honey** means honey extracted and processed by filtering, straining, or settling to remove wax cappings and bees.
 - **varroa mite** means varroa mite (*Varroa* spp.).
 - **varroa mite carrier** means—
 - a. an apiary; or
 - b. an apiary appliance; or
 - c. an apiary product; or
 - d. a bee; or
 - e. processed beeswax; or
 - f. processed honey; or
 - g. a shelter in which a bee may form a nest outside of a hive; or
 - h. a swarm of bees.

Regulating Power: Biosecurity Regulation 2016 s.94EA

27 Polyphagous shot-hole borer carriers

A person must not move polyphagous shot-hole borer carrier into a polyphagous shot-hole borer biosecurity zone from a State where polyphagous shot-hole borer has been found. The State of Queensland is a polyphagous shot-hole borer biosecurity zone.

However, a person may move a polyphagous shot-hole borer carrier into polyphagous shot-hole borer biosecurity zone if the carrier has come from a certified interstate free area for polyphagous shot-hole borer, or, if the person gets an acceptable biosecurity certificate that states the carrier meets the risk minimisation requirements for the carrier, before moving the carrier, and ensures that until the move is completed, the carrier is dealt with in accordance with the risk minimisation requirements for the carrier.

Regulating Power: Biosecurity Regulation 2016 s.94EH(1) and (2).

Notification of presence of polyphagous shot-hole borer

If a person becomes aware or believes, or ought reasonably to believe, that polyphagous shot-hole borer is present in or on a polyphagous shot-hole borer carrier, it must be reported to Biosecurity Queensland on 13 25 23, as soon as practicable.

Regulating Power: Biosecurity Regulation 2016 s.94EI.

The following are not considered polyphagous shot-hole borer carriers and may enter Queensland without regulation:-

- Wood that is treated, dried or seasoned (greater than 6 months) or is a timber or wood product used for construction, fencing or furniture, packaging or pallets; or
- Mulch or woodchips smaller than 2.5 centimetres in diameter; or
- A living plant or plant part (including plant cuttings) with woody stems that are less than 2.0 centimetres in diameter.

Refer polyphagous shot-hole borer carrier definition at the end.

Regulating Power: Biosecurity Regulation 2016 s.94EF, definitions *polyphagous shot-hole borer carrier* and *processed wood*.

Polyphagous shot-hole borer carriers may be moved into the polyphagous shot-hole borer zone if the person gets an acceptable biosecurity certificate that states the carrier meets the risk minimisation requirements for the carrier, before moving the carrier, and ensures that until the move is completed, the carrier is dealt with in accordance with the risk minimisation requirements for the carrier.

Regulating Power: Biosecurity Regulation 2016, s.94EH(2)(b)(i) and (ii).

Risk minimisation requirements may be discharged by:-

- (a) meeting an approved inspection and certification program, such as Pest Free Place of Production, under which polyphagous shot-hole borer carriers are inspected and certified as being free of polyphagous shot-hole borer; or
- (b) meeting one of the Risk Minimisation Requirements in the following 'Risk minimisation requirements for polyphagous shot-hole borer carriers' section.

Regulating Power: Biosecurity Regulation 2016 s.94EH(2)(b)(i) and (ii).

27.1 Risk minimisation requirements for polyphagous shot-hole borer carriers

27.1.1 Appliances

A polyphagous shot-hole borer carrier that is not a carrier plant (e.g. wood machinery, vehicle, equipment or other mechanical apparatus of any kind) that has been used in relation to arboriculture, wood mulching, wood chipping or handling of any other wood may be moved into the polyphagous shot-hole borer biosecurity zone if the carrier has been treated according to the following risk minimisation requirements:-

- (1) washed and cleaned free of biosecurity risk material by brushing, high pressure water or steam.

The carrier(s) must be accompanied by an acceptable biosecurity certificate under section 413 of the Act certifying that the condition has been met. A copy of the biosecurity certificate(s) must be emailed to Biosecurity Queensland (qld.plantquarantine@daf.qld.gov.au) at least 24 hours prior the arrival of the consignment to which it relates.

Regulating Power: Biosecurity Regulation 2016 s.94EF, definition *polyphagous shot-hole borer carrier*, paragraph (d).

27.1.2 Methyl bromide fumigation

Methyl bromide fumigation risk minimisation requirements for polyphagous shot-hole borer carriers under the Biosecurity Regulation 2016 s.94EF, definition *polyphagous shot-hole borer carrier*, paragraph (a), (b), (c) or (d) are as follows:-

- (1) Treated by methyl bromide fumigation for a minimum of 24 hours at one of the following rates:

- a) 10°Celsius – 15.9°Celsius @ 64 g/m³; **or**
- b) 16°Celsius – 20.9°Celsius @ 56 g/m³; **or**
- c) 21°Celsius or above @ 48 g/m³; **and**

- (2) Monitoring at regular intervals throughout the fumigation treatment to ensure minimum concentration is maintained at the following rates:

Starting temperature and dosage		Minimum concentration (g/m ³) at:			
Temperature	Dosage (g/m ³)	2 hours	4 hours	12 hours	24 hours
10°Celsius – 15.9°Celsius	64	48	42	36	32
16°Celsius– 20.9°Celsius	56	42	36	32	28
21°Celsius or above	48	36	31	28	24

and

- (3) The treated consignment must permanently bear a treatment symbol approved by the Chief Inspector, or delegate, placed in a visible location and containing the treatment date.

Note-

Wood packaging material containing a piece of wood exceeding 20 centimetres in cross-section at its smallest dimension must not be treated with methyl bromide.

Removal of bark must be carried out before methyl bromide treatment as the presence of bark on the wood may affect treatment efficacy.

Wood packaging material must be made of debarked wood. For this standard, any number of visually separate and clearly distinct small pieces of bark may remain if they are:

- *less than 2.0 centimetres in width (regardless of the length) or*
- *greater than 2.0 centimetres in width, with the total surface area of an individual piece of bark less than 5.0 centimetres square*

The carrier(s) must be accompanied by an acceptable biosecurity certificate under section 413 of the Act certifying that the condition has been met. A copy of the biosecurity certificate(s) must be emailed to Biosecurity Queensland (qld.plantquarantine@daf.qld.gov.au) at least 24 hours prior the arrival of the consignment to which it relates.

27.1.3 Heat treatment

Heat treatment risk minimisation requirements for polyphagous shot-hole borer carriers under the Biosecurity Regulation 2016 section 94EF, definition *polyphagous shot-hole borer carrier*, paragraph (a), (b), (c) or (d) are as follows:-

- (1) The temperature of the core of the timber and/or product is measured at a minimum of 56°Celsius for at least 30 minutes; **and**
- (2) The temperature of the core of the timber and/or product is regularly measured at maximum of 5-minute intervals verifying the temperature has not fallen below 56°Celsius throughout the treatment; **and**
- (3) The treated consignment must permanently bear a treatment symbol approved by the Chief Inspector, or delegate, placed in a visible location and containing the treatment date.

Note-

For heat treatment, the removal of bark may be carried out before or after treatment. When a dimension limitation is specified for a certain type of heat treatment (e.g. dielectric heating), any bark must be included in the dimension measurement.

Wood packaging material must be made of debarked wood. For this standard, any number of visually separate and clearly distinct small pieces of bark may remain if they are:

- *less than 2.0 centimetres in width (regardless of the length) or*
- *greater than 2.0 centimetres in width, with the total surface area of an individual piece of bark less than 5.0 centimetres square.*

The carrier(s) must be accompanied by an acceptable biosecurity certificate under section 413 of the Act certifying that the condition has been met. A copy of the biosecurity certificate(s) must be emailed to Biosecurity Queensland (qld.plantquarantine@daf.qld.gov.au) at least 24 hours prior the arrival of the consignment to which it relates.

27.1.4 Carrier Plants

The risk minimisation requirements for carrier plants that are polyphagous shot-hole borer carriers under the Biosecurity Regulation 2016 section 94EF, definitions carrier plant and polyphagous shot-hole borer carrier are as follows:-

- (1) Carrier Plants inspected at a rate of 2 per cent or 600-unit (whichever is greater), as per ISPM 31 inspection rate, within 48 hours prior to dispatch and found to be free of signs or symptoms of polyphagous shot-hole borer infestation; or
- (2) Carrier Plants inspected and found to be free of signs or symptoms of polyphagous shot-hole borer and treated with four (4) preventative cover sprays of bifenthrin applied at four (4) weekly intervals, with the last treatment applied within four (4) weeks prior to dispatch i.e. four (4) sprays over 12 weeks (day 0, week 4, week 8, and week 12) with the consignment dispatched prior to 16 weeks after day 0.

Treatments must be applied in accordance with all Australian Pesticides and Veterinary Medicines Authority (APVMA) permit conditions or label requirements.

The carrier(s) must be accompanied by an acceptable biosecurity certificate under section 413 of the Act certifying that the condition has been met.

A copy of the biosecurity certificate(s) must be emailed to Biosecurity Queensland (qld.plantquarantine@daf.qld.gov.au) at least 24 hours prior the arrival of the consignment to which it relates.

Definitions:

- **carrier plant** means a plant that is capable of being infested with polyphagous shot-hole borer.

Note- see Appendices s 28.1.6 Polyphagous shot-hole borer carrier plant host list.

- **polyphagous shot-hole borer** means polyphagous shot-hole borer (*Euwallacea fornicatus*)
- **processed wood** means—
 - (a) wood that has been treated, dried or seasoned for at least 6 months; or
 - (b) wooden articles that are in use for construction, furniture or packaging.
- **polyphagous shot-hole borer biosecurity zone** means the whole of the State is established as a biosecurity zone (polyphagous shot-hole borer **biosecurity zone**) for polyphagous shot-hole borer and polyphagous shot-hole borer carriers.
- **polyphagous shot-hole borer carrier** means
 - (a) a carrier plant, or part of a carrier plant, that—
 - (i) is alive; and
 - (ii) has woody parts that are larger than 2cm in diameter; or
 - (b) wood, other than processed wood, mulch or woodchips, that is—
 - (i) from a carrier plant; and

- (ii) larger than 2cm in diameter; or
- (c) mulch or a woodchip that is—
 - (i) from a carrier plant; and
 - (ii) larger than 2.5cm in diameter; or
- (d) an appliance that has come into contact with a carrier mentioned in paragraph (a), (b) or (c).

Regulating Power: Biosecurity Regulation 2016 s.94EF

28 Appendices

28.1.1 Biosecurity Zone Maps

Biosecurity zone maps are published on the Department's at <https://www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/biosecurity/plants/moving/restrictions/zones>

28.1.2 Schedule of approved facilities

Section 46A of the Regulation allows for a person to move a sample of a carrier of biosecurity matter into the State, or into or from a biosecurity zone for testing at an approved facility for receiving and handling diagnostic or analytical samples, that would otherwise be restricted.

The following facilities have been approved by the Department for the receipt and handling of certain diagnostic samples, as detailed below.

Table 9 – Approved facilities

Facility	Diagnostic samples	Address	Contact
SYMBIO Brisbane Chemistry Laboratory	banana & sugarcane plantation soils, interstate grapevine soils.	52 Brandl Street, Eight Mile Plains QLD 4113.	(07) 3340 5700

Facility	Diagnostic samples	Address	Contact
Plant Biosecurity Laboratory	Priority plant pests (including suspect exotic viruses, viroids, nematodes, bacterial and fungal plant disease samples).	Level 2 C East, EcoSciences Precinct, 41 Boggo Road, Dutton Park QLD 4102. B3 Loading Dock, Joe Baker Street, Dutton Park, QLD 4102. GPO Box 267, Brisbane QLD 4001.	Biosecurity Queensland Customer Service Centre 13 25 23 info@daf.qld.gov.au
Molecular Diagnostics and Diversity Laboratory	Viruses and phytoplasma diagnostics. Banana bunchy top virus.	Level 2C West, EcoSciences Precinct, 41 Boggo Rd, Dutton Park QLD 4102. Deliveries via: B3 Loading Dock, Joe Baker Street, Dutton Park, QLD 4102 Postal mail: GPO Box 267, Brisbane QLD 4001.	Department of Agriculture and Fisheries Customer Service Centre 13 25 23
(Department of Environment and Science Chemistry Centre Soil and Plant Laboratory	Banana and sugarcane plant samples and soil samples used in agricultural and environmental assessment.	Level 3A, EcoSciences Precinct, 41 Boggo Rd, Dutton Park QLD 4102. Deliveries via: B3 Loading Dock, Joe Baker Street, Dutton Park QLD 4102.	Chemistry Centre Sample Receipt team T:(07) 3170 5696 Or E: chemistry.centre@des.qld.gov.au

Facility	Diagnostic samples	Address	Contact
Grow Help Australia (Plant pathology, Entomology)	Commercial clients only.	Level 2C West, EcoSciences Precinct, 41 Boggo Rd Dutton Park, QLD, 4102. Deliveries via: B3 Loading Dock, Joe Baker Street, Dutton Park, QLD, 4102	Department of Agriculture and Fisheries Customer Service Centre 13 25 23 growhelp@daf.qld.gov.au
Centre for Tropical Agriculture	No diagnostic samples of banana & sugarcane plant/soil accepted from the public.	PO Box 1054, Mareeba, QLD, 4880.	(07) 4048 4675 (07) 4048 4676
Chemical Residues Laboratory – Health and Food Sciences Precinct	Samples for National Residue Survey, and samples of food and feed for antibiotic and pesticide residues.	Health and Food Sciences Precinct 39 Kessels Road, Coopers Plains, QLD, 4108 Deliveries via. Health and Food Sciences Precinct Loading dock 12. PO Box 156, Archerfield BC, QLD 4108.	Biosecurity Queensland Customer Service Centre 13 25 23 info@daf.qld.gov.au
Sugar Research Australia	Sugarcane plant and soil samples.	50 Meiers Road, Indooroopilly, QLD, 4068 Postal mail: PO Box 86, Indooroopilly, QLD, 4068.	(07) 3331 3333 sra@sugarresearch.com.au

Facility	Diagnostic samples	Address	Contact
Maroochy Research Facility Tissue Culture Quarantine Laboratory	Banana plant material for NIASA-QBAN only. No diagnostic samples of banana & sugarcane plant/soil accepted from the public.	PO Box 5083, Sunshine Coast Mail Centre QLD 4560.	4365 Department of Agriculture and Fisheries Customer Service Centre 13 25 23 info@daf.qld.gov.au
Centre for Wet Tropics Agriculture	No diagnostic samples of banana & sugar cane plant/soil accepted from the public.	Postal mail: PO Box 20, South Johnstone QLD 4859.	(07) 4064 1130
Field Crop Plant Pest Diagnostics (Entomology, plant pathology & soil analysis)	No diagnostic samples of bananas & sugar cane accepted from the public.	Ground Floor O-Block, Tor Street Complex, Toowoomba QLD 4350.	(07) 4688 1200

28.1.3 Banana cultivars that are considered resistant to black Sigatoka disease

The following banana cultivars are considered resistant to black Sigatoka:

- Blue Java
- Bluggoe;
- Ducasse
- FHIA 01 (Goldfinger)
- FHIA 02
- FHIA 25

- Klulai Namwa Khom (Dwarf Ducasse)
- Pisang Ceylan (Mysore type)
- SH 3436
- Simoi
- Tu-8
- Yangambi Km5.

28.1.4 Mediterranean fruit fly carriers

Table 10 – Mediterranean fruit fly carriers

Common name	Scientific name
abiu	<i>Pouteria caimito</i>
acerola	<i>Malpighia glabra</i> L. <i>M.glabra</i> x <i>M.punicifolia</i> L. (Barbados cherry)
achchairu	<i>Garcinia humilis</i>
akee	<i>Blighia sapida</i>
akia	<i>Wikstroemia phillyreifolia</i>
almond (with husk)	<i>Prunus amygdalus</i> Batsch => <i>Prunus dulcis</i>
apple	<i>Malus domestica</i> , <i>Malus sylvestris</i> (crab apple)
apricot	<i>Prunus armeniaca</i> L.
avocado	<i>Persea americana</i>
Barbados cherry	<i>Malpighia punicifolia</i> L.
babaco (ripe)	<i>Carica pentagona</i>
banana	<i>Musa</i> spp.
berries, other than strawberries, not mentioned elsewhere in this schedule	
blackberry	<i>Rubus fruticosus</i> L.
black plum	<i>Syzygium cumini</i>
black sapote	<i>Diospyros digyna</i>
black walnut	<i>Juglans nigra</i> L.
blueberry	<i>Vaccinium corymbosum</i> L.
blue-crown passion flower	<i>Passiflora coerulea</i>
bourbon orange	<i>Ochrosia elliptica</i>
boxthorn	<i>Lycium europaeum</i> L.
boysenberry	<i>Rubus ursinus</i> x <i>R. idaeus</i>
brazil cherry see grumichama	
breadfruit	<i>Artocarpus altilis</i>
calamondin orange	<i>Citrofortunella mitis</i>
camito (star cherry)	<i>Chrysophyllum cainito</i> L.
cape gooseberry	<i>Physalis peruviana</i> L.
capsicum	<i>Capsicum annuum</i> L. var. <i>grossum</i> Sendt
carambola (star fruit)	<i>Averrhoa carambola</i> L.
carissa, not mentioned elsewhere in this schedule	<i>Carissa</i> spp.
cashew apple	<i>Anacardium occidentale</i> L.
casimiroa (white sapote)	<i>Casimiroa edulis</i>
chapote	<i>Diospyros texana</i>
cherimoya	<i>Annona cherimolia</i>
cherry	<i>P. cerasus</i> L. (sour cherry) <i>Prunus avium</i> L. (sweet cherry)
chilli	<i>Capsicum annuum</i> L. v <i>acuminatum</i> Fingerh. (chillies)

Common name	Scientific name
	<i>C. annum</i> v <i>cerasiforme</i> Irish (cherry peppers)
	<i>C. annum</i> v <i>conoides</i> Irish (tabasco)
choko	<i>Sechium edule</i>
citron	<i>Citrus medica</i> L.
citrus, not mentioned elsewhere in this schedule	
cocoa	<i>Theobroma cacao</i>
coffee berry	<i>Coffea arabica</i> (arabian coffee)
	<i>C. canephora</i>
	<i>C. excelsa</i> Chiov. (excelsa coffee)
	<i>C. liberica</i> Hiern. (liberian coffee)
	<i>C. robusta</i> Linden (robusta coffee)
cola	<i>Cola natalensis</i>
common jujube	<i>Ziziphus jujuba</i>
custard apple	<i>Annona squamosa</i> L. x <i>A. cherimolia</i>
date (fresh)	<i>Phoenix dactylifera</i> L.
diospyros, not mentioned elsewhere in this schedule	<i>Diospyros</i> spp.
durian	<i>Durio zibethinus</i>
eggplant	<i>Solanum melongena</i> L.
eugenia, not mentioned elsewhere in this schedule	<i>Eugenia</i> spp.
feijoa	<i>Acca sellowiana</i>
fig	<i>Ficus carica</i> L.
goji berry	<i>Lycium barbarum</i>
gooseberry	<i>Ribes uva-crispa</i>
granadilla	<i>Passiflora quadrangularis</i> L.
grape	<i>Vitis labrusca</i> L. (isabella grape)
	<i>Vitis vinifera</i> L. (wine grape)
grapefruit	<i>Citrus paradisi</i>
green sapote	<i>Pouteria viridis</i>
grumichama (brazil cherry)	<i>Eugenia braziliensis</i>
guava	<i>Psidium guajava</i> L.
	<i>P. littorale</i> Raddi syn <i>P. cattleianum</i> Sabine (strawberry guava)
	<i>P. cattleianum</i> Sabine var. <i>guineense</i> Sw. (brazilian guava)
	<i>P. cattleianum</i> var. <i>lucidum</i> (yellow cattley guava)
	<i>P. friedrichsthalianum</i> (costa rican guava)
hawthorn	<i>Crataegis</i> spp.
Indian caper (fresh)	<i>Capparis sepiaria</i>
ironwood	<i>Sideroxylon inerme</i>
jaboticaba	<i>Myrciaria cauliflora</i>
jackfruit	<i>Artocarpus heterophyllus</i>
jambu	<i>Syzygium cumini</i> L. Skeels

Common name	Scientific name
jerusalem cherry	<i>Solanum pseudocapsicum</i> L.
jujube	<i>Ziziphus mauritania</i>
kei apple	<i>Dovyalis caffra</i> Warb.
kiwifruit	<i>Actinidia deliciosa</i>
kumquat	<i>Fortunella japonica</i> * <i>F. margarita</i>
lemon	<i>Citrus limon</i> x <i>C. chinense</i>
lemon (meyer)	<i>Citrus meyeri</i>
lime	<i>Citrus aurantiifolia</i> (West Indian lime)
	<i>C. latifolia</i> (Tahitian lime)
	<i>C. reticulata</i> var. <i>Austera</i> (Rangpur lime)
loganberry	<i>Rubus loganobaccus</i>
longan	<i>Euphoria longan</i>
loofah, smooth	<i>Luffa cylindrical</i>
loquat	<i>Eriobotrya japonica</i>
lychee	<i>Litchi chinensis</i>
lycium, not mentioned elsewhere in this schedule	<i>Lycium</i> spp.
madagascar olive	<i>Noronihia emarginata</i>
mamey sapote	<i>Pouteria spanota</i>
mandarin	<i>Citrus reticulata</i>
mangosteen	<i>Garcinia mangostana</i> L.
mango	<i>Mangifera indica</i> L.
medlar	<i>Mespilus germanica</i>
mimusops, not mentioned elsewhere in this schedule	<i>Mimusops</i> spp.
mock orange	<i>Murraya paniculata</i> (L.) Jack syn. <i>M. exotica</i> L.
mombin (vai apple, hog plum)	<i>Spondias aurantiaca</i> syn. <i>Spondias mombin</i> L.
monstera	<i>Monstera deliciosa</i>
mountain apple (malay apple)	<i>Syzygium malaccensis</i>
mulberry	<i>Morus nigra</i> L.
nashi	<i>Pyrus pyrifolia</i> var. <i>culta betulaefolia</i>
natal plum	<i>Carissa macrocarpa</i>
	<i>Terminalia chebula</i>
nectarine	<i>Prunus persicae</i> var. <i>nectarina</i>
olive	<i>Olea europaea</i>
orange	<i>Citrus aurantium</i> L.
oriental pear tree	<i>Pyrus pyrifolia</i>
otaheite apple	<i>Spondias dulcis</i>
papaya	<i>Carica papaya</i> L.
passionfruit	<i>Passiflora edulis</i> f. <i>edulis</i> (purple passionfruit)
	<i>P. edulis</i> f. <i>flavicarpa</i> (yellow passionfruit)
peach	<i>Prunus persicae</i>
peacharine	<i>Prunus nucipersica</i>
peachcot	<i>Prunus persica</i> x <i>P. armeniaca</i>

Common name	Scientific name
pear	<i>Pyrus communis</i> L.
pepino	<i>Solanum muricatum</i> Aiton
persimmon	<i>Diospyros kaki</i> L.f. (japanese persimmon)
	<i>D. decandra</i> Lour. (persimmon)
plum	<i>Prunus domestica</i> (prune)
	<i>Prunus insitita</i> L. (damson plum)
	<i>Prunus salicina</i> (japanese plum)
plumcot	<i>Prunus domestica</i> x <i>P. armeniaca</i>
pomegranate	<i>Punica granatum</i> L.
pond apple	<i>Annona glabra</i> L.
prickly pear	<i>Opuntia ficus indica</i> or <i>Opuntia stricta</i>
pummelo	<i>Citrus grandis</i> L. Osbeck
pyrus	<i>Pyrus syriaca</i>
quince	<i>Cydonia oblonga</i>
rambutan	<i>Nephelium lappaceum</i> L.
raspberry	<i>Rubus idaeus</i> L.
rollinia	<i>Rollinia deliciosa</i>
rose apple	<i>Syzygium jambos</i> L.
santol	<i>Sandoricum indicum</i>
sapodilla	<i>Manilkara zapota</i> L.
sapote, not mentioned elsewhere in this schedule	Family <i>Sapotaceae</i>
	Family <i>Ebenaceae</i>
shaddock	<i>Citrus maxima</i>
soursop	<i>Annona muricata</i> L.
south american sapote	<i>Quararibea cordata</i>
spanish cherry	<i>Mimusops elengi</i> L.
spondias, not mentioned elsewhere in this schedule	
stonefruit, not mentioned elsewhere in this schedule	
surinam cherry	<i>Eugenia uniflora</i> L.
sweetsop (sugar apple)	<i>Annona squamosa</i> L.
tamarillo	<i>Cyphomandra betacea</i>
tangelo	<i>Citrus reticulata</i> x <i>C. paradisi</i>
tomato	<i>Lycopersicon esculentum</i> L.
tree tomato	<i>Cyphomandra betacea</i>
tropical almond	<i>Terminalia catappa</i> L.
walnut	<i>Juglans regia</i> L.
wax apple (rose apple)	<i>Syzygium jambos</i> L. <i>syn. Eugenia jambos</i> L.
wax jambu	<i>Syzygium samarangense</i>
ziziphus	<i>Ziziphus joazeiro</i>

28.1.5 Citrus Canker Carriers

Table 11 – Citrus Canker carriers

Common name	Scientific name
Doughwood	<i>Acronychia wilcoxiana</i>
African cherry orange	<i>Citropsis schweinfurthii</i> (syn. <i>Limonia schweinfurthii</i>)
Alemow	<i>Citrus macrophylla</i>
Alianthus-like prickly ash	<i>Zanthoxylum ailanthoides</i> <i>Atalantia</i> spp.
Australian round lime	<i>Citrus australis</i> (syn. <i>Microcitrus australis</i>)
Bigaraldin	<i>Citrus madurensis</i> x <i>Citrus aurantiifolia</i>
Calamondin	<i>Citrus madurensis</i>
Calarin	<i>Citrus deliciosa</i> x <i>Citrus madurensis</i>
Calashu	<i>Citrus unshiu</i> x <i>Citrus madurensis</i>
Cicitrangle (cicitrangle)	<i>Citrus sinensis</i> x <i>Poncirus trifoliata</i> (citrange) x <i>Poncirus trifoliata</i>
Citradia	<i>Citrus aurantifolium</i> x <i>Poncirus trifoliata</i>
Citrandin (citradarin)	<i>Citrus nobilis</i> x <i>Poncirus trifoliata</i>
Citrangarin	<i>Citrus deliciosa</i> x <i>Citrus sinensis</i> x <i>Poncirus trifoliata</i> (citrange) x <i>Poncirus trifoliata</i>
Citrange	<i>Citrus sinensis</i> x <i>Poncirus trifoliata</i>
Citrangedin	<i>Citrus adurensis</i> x <i>Citrus sinensis</i> x <i>Poncirus trifoliata</i> (citrange) x <i>Poncirus trifoliata</i>
Citrangequat	<i>Citrus margarita</i> (syn. <i>Fortunella margarita</i>) x <i>Citrus sinensis</i> x <i>Poncirus trifoliata</i> (citrange)
Citranguma	<i>Citrus unshiu</i> x <i>Citrus sinensis</i> x <i>Poncirus trifoliata</i> (citrange) x <i>Poncirus trifoliata</i>
Citrofortunella	<i>Citrus</i> spp. (syn. <i>Citrofortunella</i> spp.)
Citron	<i>Citrus medica</i>
	<i>Citroncirus</i> spp.
	<i>Citropsis daweana</i> (syn. <i>Hesperethusa villosa</i>)
Citrumelo	<i>Citrus reticulata</i> x <i>Poncirus trifoliata</i>
Citrunshu	<i>Citrus unshiu</i> x <i>Poncirus trifoliata</i>
	<i>Citrus amblycarpa</i>
	<i>Citrus benikoji</i>
	<i>Citrus davaoensis</i>
	<i>Citrus depressa</i>
	<i>Citrus excels</i>
	<i>Clausena harmandiana</i>
	<i>Citrus intermedia</i>
	<i>Citrus leiocarpa</i>
	<i>Citrus longispina</i>
	<i>Citrus lycopersiciformis</i>
<i>Citrus maderaspatana</i>	
Clemelo	<i>Citrus nobilis</i> (clementine) x <i>Citrus maxima</i>
Cleopatra mandarin	<i>Citrus reshni</i>

Common name	Scientific name
Cochin China atalantia	<i>Atalantia citroides</i>
Desert lime (Australian desert lime)	<i>Citrus glauca</i> (syn. <i>Eremocitrus glauca</i>)
Evodia	<i>Melicope denhamii</i> (syn. <i>Euodia ridleyi</i>)
False foot of the turtle	<i>Melicope triphylla</i>
Faustrime	<i>Citrus aurantiifolia</i> x <i>Citrus australasica</i> (syn. <i>Microcitrus australasica</i>)
Faustrimedina	<i>Citrus madurensis</i> x <i>Citrus australasica</i> (syn. <i>Microcitrus australasica</i>)
Faustrimon	<i>Citrus limon</i> x <i>Citrus australasica</i> (syn. <i>Microcitrus australasica</i>) <i>Feroniella crassifolia</i>
Finger lime	<i>Citrus australasica</i> (syn. <i>Microcitrus australasica</i>)
Grapefruit	<i>Citrus paradisi</i>
Hassaku orange	<i>Citrus hassaku</i>
Hong Kong kumquat	<i>Citrus hindsii</i> (syn. <i>Fortunella hindsii</i>)
Humpty doo lime	<i>Citrus gracilis</i>
Kaffir lime (Mauritius bitter orange)	<i>Citrus hystrix</i>
Kalpi	<i>Citrus webberi</i>
Khasi papeda	<i>Citrus latipes</i>
Kumquat	<i>Citrus japonica</i> (syn. <i>Fortunella japonica</i>)
Kuranga (Indian)	<i>Atalantia racemosa</i> (syn. <i>Atalantia disticha</i>)
Langsat	<i>Lansium domesticum</i>
Lemon	<i>Citrus limon</i>
Lemon aspen	<i>Acronychia acidula</i>
Lime berry	<i>Micromelum minutum</i>
Limelo	<i>Citrus maxima</i> x <i>Citrus aurantiifolia</i>
Limequat	<i>Citrus japonica</i> (syn. <i>Fortunella japonica</i>) x <i>Citrus aurantiifolia</i> <i>Lunasia amara</i>
Mandarin and Tangerine	<i>Citrus reticulata</i>
Meiwa sweet kumquat	<i>Citrus japonica</i> subfo. <i>crassifolia</i> (syn. <i>Fortunella crassifolia</i>) <i>Citrus crassifolia</i> (syn. <i>Fortunella crassifolia</i>) <i>Melicope latifolia</i> (syn. <i>Euodia latifolia</i>)
Mexican lime (West Indian lime)	<i>Citrus aurantifolia</i>
Meyer lemon	<i>Citrus meyeri</i> <i>Microcitronella</i> spp.
Mountain citron	<i>Citrus halimii</i>
Mount White lime	<i>Citrus garrawayi</i> (syn. <i>Microcitrus garrawayi</i>)
Murcott tangor	<i>Citrus reticulata</i> x <i>Citrus sinensis</i>
Native mock orange	<i>Murraya ovatifoliolata</i> (syn. <i>Murraya paniculata</i> var. <i>ovatifoliolata</i>)
Natsudaidai	<i>Citrus natsudaidai</i>
North Queensland lime (Russell River lime)	<i>Citrus inodora</i> (syn. <i>Microcitrus inodora</i>)

Common name	Scientific name
Orangelo	<i>Citrus maxima</i> x <i>Citrus sinensis</i>
Orangequat	<i>Citrus margarita</i> (syn. <i>Fortunella margarita</i>) x <i>Citrus sinensis</i>
Oval kumquat	<i>Citrus margarita</i> (syn. <i>Fortunella margarita</i>)
Palestine sweet lime	<i>Citrus limettioides</i>
	<i>Paramignya longipedunculata</i>
	<i>Paramignya monophylla</i>
Pummelo	<i>Citrus maxima</i> (syn. <i>Citrus grandis</i>)
Rangpur	<i>Citrus limonia</i>
Rough lemon	<i>Citrus jambhiri</i>
Satsumelo	<i>Citrus unshiu</i> x <i>Citrus maxima</i>
Siamelo	<i>Citrus nobilis</i> (King of Siam) x <i>Citrus maxima</i>
Siamor	<i>Citrus nobilis</i> (King of Siam) x <i>Citrus sinensis</i>
Sour mandarin	<i>Citrus sunki</i>
Sour orange	<i>Citrus taiwanica</i>
Sour oranges	<i>Citrus aurantium</i>
sweet lemon tree	<i>Citrus limetta</i>
Sweet orange (Navel orange)	<i>Citrus sinensis</i>
	<i>Swinglea glutinosa</i> (syn. <i>Chaetospermum glutinosa</i> , <i>Aegle glutinosa</i>)
Swingle citrumelo	<i>Citrus paradisi</i> x <i>Poncirus trifoliata</i>
Tachibana	<i>Citrus tachibana</i>
Tahiti lime	<i>Citrus latifolia</i>
Tangelo	<i>Citrus deliciosa</i> x <i>Citrus maxima</i>
Tangelo	<i>Citrus</i> x <i>tangelo</i>
Tangor	<i>Citrus nobilis</i>
Tankan mandarin	<i>Citrus tankan</i>
	<i>Toddalia asiatica</i>
Tooth-ache tree	<i>Zanthoxylum clava-herculis</i> (syn. <i>Xanthoxylum clava-herculis</i>)
Tosu sour orange	<i>Citrus neo-aurantium</i>
Trifoliata orange	<i>Poncirus trifoliata</i>
Unshu mandarin (Satsuma)	<i>Citrus unshiu</i>
Wampee (wampi)	<i>Clausena lansium</i>
White sapote	<i>Casimiroa sapota</i> (syn. <i>Casimiroa edulis</i>)
Wild lime	<i>Zanthoxylum fagara</i> (syn. <i>Xanthoxylum fagara</i>)
Yuzu	<i>Citrus junos</i>

28.1.6 Polyphagous shot-hole borer carrier plant host list

A carrier plant means a plant that is capable of being infested with polyphagous shot-hole borer.

Regulating Power: Biosecurity Regulation 2016 s.94EF, definition *carrier plant*.

The Polyphagous shot-hole borer carrier plant host list includes, but is not limited to, the following plants that are capable of being infested with polyphagous shot-hole borer:

Table 12 – Polyphagous shot-hole borer carrier plant host list

Scientific name	Reference
<i>Acacia auriculiformis</i>	(Stouthamer et al. 2017; Thu et al. 2021)
<i>Acacia caffra</i>	(Mendel et al. 2021)
<i>Acacia floribunda</i>	(Mendel et al. 2021)
<i>Acacia julibrissin</i>	(Mendel et al. 2021)
<i>Acacia longifolia</i>	(FABI 2022)
<i>Acacia mangium</i>	(Stouthamer et al. 2017; Thu et al. 2021)
<i>Acacia mangium x auriculiformis</i>	(Stouthamer et al. 2017; Thu et al. 2021)
<i>Acacia mearnsii</i>	(FABI 2022)
<i>Acacia melanoxylon</i>	(Mendel et al. 2021; FABI 2022)
<i>Acacia retinodes</i>	(DPIRD 2023)
<i>Acacia saligna</i>	(Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Acacia sp.</i>	(Mendel et al. 2021)
<i>Acacia stenophylla</i>	(Mendel et al. 2021)
<i>Acacia victoriae</i>	(Mendel et al. 2021)
<i>Acalypha glabrata</i>	(FABI 2022)
<i>Acalypha wilkesiana</i>	(DPIRD 2023)
<i>Acer buergerianum</i>	(Stouthamer et al. 2017; Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Acer campestre</i>	(Mendel et al. 2021)
<i>Acer caudatifolium</i>	(Mendel et al. 2021)
<i>Acer davidii</i>	(Mendel et al. 2021)
<i>Acer macrophyllum</i>	(Mendel et al. 2021)
<i>Acer negundo</i>	(Stouthamer et al. 2017; Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Acer obtusifolium</i>	(Mendel et al. 2021)
<i>Acer palmatum</i>	(Mendel et al. 2021; FABI 2022)
<i>Acer paxii</i>	(Mendel et al. 2021)
<i>Acer pectinatum subsp. laxiflorum</i>	(Mendel et al. 2021)
<i>Acer pictum subsp. mono</i>	(Mendel et al. 2021)
<i>Acer pseudoplatanus</i>	(Mendel et al. 2021; FABI 2022)
<i>Acer saccharinum</i>	(FABI 2022)
<i>Acer x freemanii</i>	(Mendel et al. 2021)
<i>Adansonia digitata</i>	(FABI 2022)
<i>Afrocarpus falcatus</i>	(FABI 2022)
<i>Afrocarpus gracilior</i>	(Mendel et al. 2021)
<i>Afzelia quanzensis</i>	(FABI 2022)
<i>Aglaia odorata</i>	(Mendel et al. 2021)
<i>Ailanthus altissima</i>	(Stouthamer et al. 2017; Mendel et al. 2021)
<i>Alangium chinense</i>	(Mendel et al. 2021)

Scientific name	Reference
<i>Albizia adianthifolia</i>	(FABI 2022)
<i>Albizia cf. gummifera</i>	(Mendel et al. 2021)
<i>Albizia julibrissin</i>	(Mendel et al. 2021)
<i>Albizia kalkora</i>	(Mendel et al. 2021)
<i>Albizia lebbeck</i>	(Mendel et al. 2021; DPIRD 2023)
<i>Alectryon excelsus</i>	(Mendel et al. 2021)
<i>Aleurites moluccanus</i>	(DPIRD 2023)
<i>Alnus cordata</i>	(Mendel et al. 2021)
<i>Alnus glutinosa</i>	(Mendel et al. 2021)
<i>Alnus incana</i>	(Mendel et al. 2021)
<i>Alnus rhombifolia</i>	(Mendel et al. 2021)
<i>Aloysia virgata</i>	(Mendel et al. 2021)
<i>Anisodonteia scabrosa</i>	(FABI 2022)
<i>Aralia sp.</i>	(Wang et al. 2022)
<i>Arbutus unedo</i>	(Mendel et al. 2021)
<i>Archontophoenix alexandrae</i>	(Mendel et al. 2021)
<i>Archontophoenix cunninghamiana</i>	(DPIRD 2023)
<i>Bambusa sp.</i>	(Mendel et al. 2021)
<i>Banksia littoralis</i>	(DPIRD 2023)
<i>Banksia saxicola</i>	(Mendel et al. 2021)
<i>Bauhinia galpinii</i>	(Mendel et al. 2021; FABI 2022)
<i>Bauhinia petersiana</i>	(Mendel et al. 2021)
<i>Bauhinia purpurea</i>	(FABI 2022)
<i>Bauhinia purpurea x variegata</i>	(Mendel et al. 2021)
<i>Bauhinia variegata</i>	(Mendel et al. 2021; FABI 2022)
<i>Bauhinia variegata var. candida</i>	(DPIRD 2023)
<i>Beilschmiedia miersii</i>	(Mendel et al. 2021)
<i>Betula pendula</i>	(Mendel et al. 2021; FABI 2022)
<i>Bischofia javanica</i>	(Mendel et al. 2021)
<i>Bocconia arborea</i>	(Mendel et al. 2021)
<i>Bombax ceiba</i>	(Mendel et al. 2021)
<i>Bougainvillea sp.</i>	(FABI 2022; DPIRD 2023)
<i>Brachychiton acerifolius</i>	(Mendel et al. 2021; DPIRD 2023)
<i>Brachychiton australis</i>	(Mendel et al. 2021)
<i>Brachychiton bidwillii</i>	(Mendel et al. 2021)
<i>Brachychiton discolor</i>	(Mendel et al. 2021; FABI 2022)
<i>Brachychiton diversifolius</i>	(Mendel et al. 2021)
<i>Brachychiton populneus</i>	(Mendel et al. 2021; DPIRD 2023)
<i>Brachychiton rupestris</i>	(Mendel et al. 2021)
<i>Brachylaena discolor</i>	(FABI 2022)
<i>Brahea armata</i>	(Mendel et al. 2021)
<i>Broussonetia papyrifera</i>	(Mendel et al. 2021)
<i>Brugmansia arborea</i>	(DPIRD 2023)
<i>Buddleja saligna</i>	(FABI 2022)
<i>Bunchosia armeniaca</i>	(Mendel et al. 2021)
<i>Bursera hindsiana</i>	(Mendel et al. 2021)
<i>Butia capitata</i>	(Mendel et al. 2021)
<i>Calliandra surinamensis</i>	(Mendel et al. 2021)
<i>Callistemon salignus</i>	(Mendel et al. 2021)

Scientific name	Reference
<i>Callistemon viminalis</i>	(Mendel et al. 2021)
<i>Calodendrum capense</i>	(FABI 2022; DPIRD 2023)
<i>Calpurnia aurea</i>	(Mendel et al. 2021; FABI 2022)
<i>Camellia chrysanthoides</i>	(Mendel et al. 2021)
<i>Camellia grijsii</i>	(Mendel et al. 2021)
<i>Camellia hiemalis</i> 'Kanjiro'	(Mendel et al. 2021)
<i>Camellia indochinensis</i>	(Mendel et al. 2021)
<i>Camellia japonica</i>	(FABI 2022)
<i>Camellia japonica</i> 'Rosary'	(Mendel et al. 2021)
<i>Camellia japonica x reticulata</i>	(Mendel et al. 2021)
<i>Camellia oleifera</i>	(Mendel et al. 2021)
<i>Camellia oleifera</i> 'Apple Blossom'	(Mendel et al. 2021)
<i>Camellia reticulata</i>	(Mendel et al. 2021)
<i>Camellia rosiflora</i> 'Cascade'	(Mendel et al. 2021)
<i>Camellia saluenensis</i>	(Mendel et al. 2021)
<i>Camellia semiserrata</i>	(Mendel et al. 2021)
<i>Camellia x williamsii</i> 'Grand Jury'	(Mendel et al. 2021)
<i>Camptotheca acuminata</i>	(Mendel et al. 2021)
<i>Cananga odorata</i>	(FABI 2022)
<i>Carya illinoensis</i>	(Mendel et al. 2021; FABI 2022)
<i>Cassia brewsteri</i>	(Mendel et al. 2021)
<i>Cassia fistula</i>	(DPIRD 2023)
<i>Cassia leptophylla</i>	(Mendel et al. 2021)
<i>Castanospermum australe</i>	(Mendel et al. 2021)
<i>Casuarina cunninghamiana</i>	(Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Casuarina equisetifolia</i>	(DPIRD 2023)
<i>Casuarina obesa</i>	(DPIRD 2023)
<i>Catalpa speciosa</i>	(Mendel et al. 2021)
<i>Ceanothus caeruleus</i>	(Mendel et al. 2021)
<i>Cedrela sp.</i>	(DPIRD 2023)
<i>Cedrus atlantica</i>	(Mendel et al. 2021)
<i>Ceiba pentandra</i>	(FABI 2022)
<i>Ceiba speciosa</i>	(Mendel et al. 2021; FABI 2022)
<i>Celtis africana</i>	(FABI 2022)
<i>Celtis australis</i>	(Mendel et al. 2021)
<i>Celtis bungeana</i>	(Mendel et al. 2021)
<i>Celtis laevigata</i>	(Mendel et al. 2021)
<i>Ceratonia siliqua</i>	(DPIRD 2023)
<i>Cercis chinensis</i>	(Mendel et al. 2021)
<i>Cercis siliquastrum</i>	(Mendel et al. 2021)
<i>Cestrum diurnum x nocturnum</i> 'Orange Peel'	(Mendel et al. 2021)
<i>Cestrum nocturnum</i>	(DPIRD 2023)
<i>Chamaedorea elegans</i>	(Mendel et al. 2021)
<i>Chionanthus retusus</i>	(Mendel et al. 2021)
<i>Chiranthodendron pentadactylon</i>	(Mendel et al. 2021)
<i>Cinnamomum camphora</i>	(Mendel et al. 2021; FABI 2022)
<i>Cinnamomum cassia</i>	(Stouthamer et al. 2017)
<i>Cinnamomum glanduliferum</i>	(Mendel et al. 2021)

Scientific name	Reference
<i>Cinnamomum tenuifolium</i>	(Mendel et al. 2021)
<i>Citharexylum montevidense</i>	(Mendel et al. 2021)
<i>Citharexylum spinosum</i>	(DPIRD 2023)
<i>Citrus sinensis</i>	(Mendel et al. 2021; FABI 2022)
<i>Citrus x aurantium</i>	(DPIRD 2023)
<i>Citrus grandis</i>	(DPIRD 2023)
<i>Citrus x latifolia</i>	(DPIRD 2023)
<i>Citrus x limon</i>	(FABI 2022; DPIRD 2023)
<i>Citrus x meyeri</i>	(DPIRD 2023)
<i>Cladrastis delavayi</i>	(Mendel et al. 2021)
<i>Cleyera japonica</i>	(Mendel et al. 2021)
<i>Cocculus laurifolius</i>	(Mendel et al. 2021)
<i>Cocculus orbiculatus</i>	(Mendel et al. 2021)
<i>Colletia paradoxa</i>	(Mendel et al. 2021)
<i>Combretum erythrophyllum</i>	(FABI 2022)
<i>Combretum krausii</i>	(FABI 2022)
<i>Commiphora harveyi</i>	(FABI 2022)
<i>Coprosma repens</i>	(DPIRD 2023)
<i>Cordia caffra</i>	(FABI 2022)
<i>Cordia myxa</i>	(FABI 2022)
<i>Cornus controversa</i>	(Mendel et al. 2021)
<i>Cornus drummondii</i>	(Mendel et al. 2021)
<i>Cornus florida</i>	(Mendel et al. 2021)
<i>Corylus colurna</i>	(Mendel et al. 2021)
<i>Corymbia calophylla</i>	(DPIRD 2023)
<i>Corymbia ficifolia</i>	(Mendel et al. 2021; DPIRD 2023)
<i>Crataegus pubescens</i>	(Mendel et al. 2021)
<i>Crinodendron patagua</i>	(Mendel et al. 2021)
<i>Cunonia capensis</i>	(Mendel et al. 2021)
<i>Cupaniopsis anacardioides</i>	(Mendel et al. 2021)
<i>Cussonia spicata</i>	(Mendel et al. 2021; FABI 2022)
<i>Dahlstedtia pinnata</i>	(Mendel et al. 2021)
<i>Dalbergia sissoo</i>	(Mendel et al. 2021)
<i>Davidia involucreta</i>	(Mendel et al. 2021)
<i>Delonix regia</i>	(DPIRD 2023)
<i>Desmodium elegans</i>	(Mendel et al. 2021)
<i>Diospyros dichrophylla</i>	(FABI 2022)
<i>Diospyros glabra</i>	(FABI 2022)
<i>Diospyros kaki</i>	(Mendel et al. 2021; FABI 2022)
<i>Diospyros lycioides</i>	(Mendel et al. 2021)
<i>Diospyros lycoides</i>	(FABI 2022)
<i>Diospyros sp.</i>	(Stouthamer et al. 2017)
<i>Diospyros whyteana</i>	(FABI 2022)
<i>Diploglottis cunninghamii</i>	(Mendel et al. 2021)
<i>Dombeya cacuminum</i>	(Mendel et al. 2021)
<i>Dombeya rotundifolia</i>	(FABI 2022)
<i>Dombeya tiliaceae</i>	(DPIRD 2023)
<i>Dovyalis caffra</i>	(Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Dracaena draco</i>	(Mendel et al. 2021)

Scientific name	Reference
<i>Dracaena</i> sp.	(DPIRD 2023)
<i>Duranta erecta</i>	(DPIRD 2023)
<i>Ebenopsis ebano</i>	(Mendel et al. 2021)
<i>Ehretia latifolia</i>	(Mendel et al. 2021)
<i>Ekebergia capensis</i>	(FABI 2022)
<i>Elaeocarpus decipiens</i>	(Mendel et al. 2021)
<i>Elaeocarpus</i> sp.	(DPIRD 2023)
<i>Enterolobium contortisiliquum</i>	(Mendel et al. 2021)
<i>Erythrina americana</i>	(Mendel et al. 2021)
<i>Erythrina caffra</i>	(Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Erythrina chiriquensis</i>	(Mendel et al. 2021)
<i>Erythrina corallodendron</i>	(Mendel et al. 2021)
<i>Erythrina crista-galli</i>	(Mendel et al. 2021)
<i>Erythrina falcata</i>	(Mendel et al. 2021)
<i>Erythrina flabelliformis</i>	(Mendel et al. 2021)
<i>Erythrina folkersii</i>	(Mendel et al. 2021)
<i>Erythrina humeana</i>	(Mendel et al. 2021)
<i>Erythrina indica</i>	(DPIRD 2023)
<i>Erythrina livingstoniana</i>	(FABI 2022)
<i>Erythrina lysistemon</i>	(Mendel et al. 2021; FABI 2022)
<i>Erythrina macrophylla</i>	(Mendel et al. 2021)
<i>Erythrina x bidwillii</i>	(Mendel et al. 2021)
<i>Erythrina x sykesii</i>	(Mendel et al. 2021; DPIRD 2023)
<i>Erythrostemon mexicanus</i>	(Mendel et al. 2021)
<i>Eucalyptus camaldulensis</i>	(Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Eucalyptus cinerea</i>	(Mendel et al. 2021)
<i>Eucalyptus cladocalyx</i>	(DPIRD 2023)
<i>Eucalyptus froggattii</i>	(Mendel et al. 2021)
<i>Eucalyptus globulus</i>	(DPIRD 2023)
<i>Eucalyptus kitsoniana</i>	(Mendel et al. 2021)
<i>Eucalyptus perriniana</i>	(Mendel et al. 2021)
<i>Eucalyptus polyanthemos</i>	(Mendel et al. 2021)
<i>Eucalyptus robusta</i>	(DPIRD 2023)
<i>Eucalyptus</i> sp. 1 cf. <i>rudis</i> or <i>decipiens</i>	(DPIRD 2023)
<i>Eucalyptus torquata</i>	(Mendel et al. 2021)
<i>Euphorbia tirucalli</i>	(DPIRD 2023)
<i>Fagus crenata</i>	(Mendel et al. 2021)
<i>Fagus sylvatica</i>	(Mendel et al. 2021)
<i>Faidherbia albida</i>	(Mendel et al. 2021)
<i>Fatsia japonica</i>	(Mendel et al. 2021; DPIRD 2023)
<i>Ficus altissima</i>	(Mendel et al. 2021)
<i>Ficus benjamina</i>	(Mendel et al. 2021; DPIRD 2023)
<i>Ficus carica</i>	(Mendel et al. 2021; FABI 2022; Wang et al. 2022; DPIRD 2023)
<i>Ficus elastica</i>	(DPIRD 2023)
<i>Ficus macrophylla</i>	(Mendel et al. 2021; DPIRD 2023)
<i>Ficus maxima</i>	(Mendel et al. 2021)
<i>Ficus microcarpa</i>	(Wang et al. 2022; DPIRD 2023)

Scientific name	Reference
<i>Ficus natalensis</i>	(FABI 2022)
<i>Ficus obliqua</i>	(Mendel et al. 2021)
<i>Ficus platypoda</i>	(Mendel et al. 2021)
<i>Ficus rubiginosa</i>	(Mendel et al. 2021; DPIRD 2023)
<i>Ficus sp.</i>	(Stouthamer et al. 2017)
<i>Ficus sur</i>	(FABI 2022)
<i>Ficus trichopoda</i>	(FABI 2022)
<i>Firmiana simplex</i>	(Mendel et al. 2021)
<i>Frangula californica subsp.</i>	
<i>californica</i>	(Mendel et al. 2021)
<i>Fraxinus americana</i>	(FABI 2022)
<i>Fraxinus angustifolia</i>	(DPIRD 2023)
<i>Fraxinus angustifolia subsp.</i>	
<i>oxycarpa</i>	(DPIRD 2023)
<i>Fraxinus excelsior</i>	(FABI 2022)
<i>Fraxinus griffithii</i>	(Mendel et al. 2021; DPIRD 2023)
<i>Fraxinus hudei</i>	(Mendel et al. 2021)
<i>Fraxinus sp.</i>	(Mendel et al. 2021; DPIRD 2023)
<i>Fraxinus uhdei</i>	(Mendel et al. 2021)
<i>Fraxinus velutina</i>	(Mendel et al. 2021)
<i>Geijera parviflora</i>	(Mendel et al. 2021)
<i>Gleditsia japonica</i>	(Mendel et al. 2021)
<i>Gleditsia triacanthos</i>	(Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Gleditsia triacanthos 'Rubylace'</i>	(Mendel et al. 2021)
<i>Grevillea banksii</i>	(DPIRD 2023)
<i>Grevillea rosmarinifolia</i>	(DPIRD 2023)
<i>Grewia occidentalis</i>	(FABI 2022; DPIRD 2023)
<i>Gymnosporia buxifolia</i>	(FABI 2022)
<i>Hakea salicifolia</i>	(FABI 2022)
<i>Halleria lucida</i>	(FABI 2022)
<i>Handroanthus impetiginosus</i>	(Mendel et al. 2021)
<i>Harpephyllum caffrum</i>	(FABI 2022; DPIRD 2023)
<i>Harpullia arborea</i>	(Mendel et al. 2021)
<i>Harpullia pendula</i>	(Mendel et al. 2021)
<i>Hauya elegans subsp. cornuta</i>	(Mendel et al. 2021)
<i>Hauya microcerata</i>	(Mendel et al. 2021)
<i>Heliocarpus donnellsmithii</i>	(Mendel et al. 2021)
<i>Heptapleurum arboricola</i>	(DPIRD 2023)
<i>Heteropterys purpurea</i>	(Mendel et al. 2021)
<i>Hibiscus martianus</i>	(DPIRD 2023)
<i>Hibiscus rosa-sinensis</i>	(FABI 2022; DPIRD 2023)
<i>Hovenia dulcis</i>	(Mendel et al. 2021)
<i>Howea forsteriana</i>	(Mendel et al. 2021)
<i>Hymenosporum flavum</i>	(Mendel et al. 2021)
<i>Ilex aquifolium</i>	(Mendel et al. 2021)
<i>Ilex cornuta</i>	(Mendel et al. 2021)
<i>Ilex latifolia</i>	(Mendel et al. 2021)
<i>Ilex mitis</i>	(FABI 2022)
<i>Indigofera jucunda</i>	(FABI 2022)

Scientific name	Reference
<i>Inga feuillei</i>	(Mendel et al. 2021)
<i>Inga insignis</i>	(Mendel et al. 2021)
<i>Inga sp.</i>	(Mendel et al. 2021)
<i>Inga vera</i>	(Mendel et al. 2021)
<i>Jacaranda cuspidifolia</i>	(Mendel et al. 2021)
<i>Jacaranda mimosifolia</i>	(Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Jatropha cinerea</i>	(Mendel et al. 2021)
<i>Jatropha mcvaughii</i>	(Mendel et al. 2021)
<i>Juglans californica</i>	(Mendel et al. 2021)
<i>Juglans mandshurica</i>	(Mendel et al. 2021)
<i>Juglans nigra</i>	(Mendel et al. 2021)
<i>Juglans regia</i>	(Mendel et al. 2021)
<i>Juniperus chinensis</i>	(Mendel et al. 2021)
<i>Juniperus virginiana</i>	(Mendel et al. 2021)
<i>Keteleeria evelyniana</i>	(Mendel et al. 2021)
<i>Kiggelaria africana</i>	(FABI 2022)
<i>Kigelia africana</i>	(DPIRD 2023)
<i>Koelreuteria bipinnata</i>	(Mendel et al. 2021)
<i>Koelreuteria elegans</i>	(Mendel et al. 2021)
<i>Koelreuteria paniculata</i>	(FABI 2022; Wang et al. 2022; DPIRD 2023)
<i>Lantana camara</i>	(DPIRD 2023)
<i>Leonotis leonurus</i>	(FABI 2022)
<i>Leucaena leucocephala</i>	(Mendel et al. 2021)
<i>Ligustrum japonicum</i>	(DPIRD 2023)
<i>Ligustrum lucidum</i>	(Wang et al. 2022)
<i>Ligustrum ovalifolium</i>	(DPIRD 2023)
<i>Ligustrum sinense</i>	(DPIRD 2023)
<i>Liquidambar formosana</i>	(Mendel et al. 2021)
<i>Liquidambar styraciflua</i>	(Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Liriodendron tulipifera</i>	(Mendel et al. 2021)
<i>Litchi chinensis</i>	(Stouthamer et al. 2017)
<i>Livistona chinensis</i>	(Mendel et al. 2021)
<i>Lonchocarpus nitidus</i>	(Mendel et al. 2021)
<i>Loxostylis alata</i>	(FABI 2022)
<i>Luehea divaricata</i>	(Mendel et al. 2021)
<i>Lysiphyllum carronii</i>	(Mendel et al. 2021)
<i>Macadamia integrifolia</i>	(Mendel et al. 2021; DPIRD 2023)
<i>Macadamia sp.</i>	(FABI 2022)
<i>Machilus thunbergii</i>	(Mendel et al. 2021)
<i>Maesa lanceolata</i>	(FABI 2022)
<i>Magnolia brooklynensis</i> x ' <i>Sundance</i> '	(Mendel et al. 2021)
<i>Magnolia campbellii</i>	(Mendel et al. 2021)
<i>Magnolia compressa</i>	(Mendel et al. 2021)
<i>Magnolia cylindrica</i>	(Mendel et al. 2021)
<i>Magnolia delavayi</i>	(Mendel et al. 2021)
<i>Magnolia denudata</i>	(Mendel et al. 2021)
<i>Magnolia denudata</i> x <i>veitchii</i>	(Mendel et al. 2021)
<i>Magnolia doltsopa</i>	(Mendel et al. 2021)
<i>Magnolia figo</i>	(DPIRD 2023)

Scientific name	Reference
<i>Magnolia fordiana</i>	(Wang et al. 2022)
<i>Magnolia foveolata</i>	(Mendel et al. 2021)
<i>Magnolia grandiflora</i>	(Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Magnolia grandis</i>	(Mendel et al. 2021)
<i>Magnolia guatemalensis</i>	(Mendel et al. 2021)
<i>Magnolia hodgsonii</i>	(Mendel et al. 2021)
<i>Magnolia kobus x stellata</i>	(Mendel et al. 2021)
<i>Magnolia liliiflora</i>	(Mendel et al. 2021)
<i>Magnolia liliiflora x sprengeri</i>	(Mendel et al. 2021)
<i>Magnolia liliiflora x veitchii</i>	(Mendel et al. 2021)
<i>Magnolia pacifica</i>	(Mendel et al. 2021)
<i>Magnolia sargentiana</i>	(Mendel et al. 2021)
<i>Magnolia sharpii</i>	(Mendel et al. 2021)
<i>Magnolia sprengeri</i> 'Diva'	(Mendel et al. 2021)
<i>Magnolia tamaulipana</i>	(Mendel et al. 2021)
<i>Magnolia virginiana</i>	(Mendel et al. 2021)
<i>Magnolia x denudata</i>	(Mendel et al. 2021)
<i>Magnolia x loebneri</i>	(Mendel et al. 2021)
<i>Magnolia x soulangeana</i>	(Mendel et al. 2021)
<i>Magnolia x veitchii</i>	(Mendel et al. 2021)
<i>Magnolia yunnanensis</i>	(Mendel et al. 2021)
<i>Mallotus apelta</i>	(Wang et al. 2022)
<i>Malus domestica</i>	(Mendel et al. 2021; FABI 2022)
<i>Malus</i> sp. 1 'Crab apple'	(DPIRD 2023)
<i>Malva</i> cf. <i>assurgentiflora</i> subsp. <i>Assurgentiflora</i>	(Mendel et al. 2021)
<i>Mangifera indica</i>	(DPIRD 2023)
<i>Manihot esculenta</i>	(Mendel et al. 2021)
<i>Melaleuca quinquenervia</i>	
<i>Melaleuca raphiophylla</i>	(DPIRD 2023)
<i>Melia azedarach</i>	(Mendel et al. 2021; FABI 2022)
<i>Melianthus major</i>	(Mendel et al. 2021; FABI 2022)
<i>Metasequoia glyptostroboides</i>	(Mendel et al. 2021; FABI 2022)
<i>Mezoneuron kauaiense</i>	(Mendel et al. 2021)
<i>Moringa</i> sp.	(Mendel et al. 2021)
<i>Morus alba</i>	(Mendel et al. 2021; Wang et al. 2022; DPIRD 2023)
<i>Morus alba</i> 'Pendula'	(DPIRD 2023)
<i>Morus nigra</i>	(FABI 2022; DPIRD 2023)
<i>Neolitsea sericea</i>	(Mendel et al. 2021)
<i>Neomirandea</i> sp.	(Mendel et al. 2021)
<i>Nuxia floribunda</i>	(Mendel et al. 2021; FABI 2022)
<i>Olea europaea</i>	(Mendel et al. 2021)
<i>Olea europaea</i> subsp. <i>africana</i>	(FABI 2022)
<i>Olea europaea</i> subsp. <i>europaea</i>	(FABI 2022)
<i>Olinia ventosa</i>	(FABI 2022)
<i>Olneya tesota</i>	(Mendel et al. 2021)
<i>Oncoba spinosa</i>	(DPIRD 2023)
<i>Oreocnide pedunculata</i>	(Stouthamer et al. 2017)
<i>Osmanthus fragrans</i>	(Mendel et al. 2021)

Scientific name	Reference
<i>Osteospermum moniliferum</i>	(FABI 2022)
<i>Pararchidendron pruinosum</i>	(Mendel et al. 2021)
<i>Parasenegalia visco</i>	(Mendel et al. 2021)
<i>Parkinsonia aculeata</i>	(Mendel et al. 2021)
<i>Parkinsonia florida</i>	(Mendel et al. 2021)
<i>Parkinsonia x sonorae</i>	(Mendel et al. 2021)
<i>Peltophorum africanum</i>	(Mendel et al. 2021)
<i>Persea americana</i>	(Stouthamer et al. 2017; Carrillo et al. 2019; Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Persea sp.</i>	(Stouthamer et al. 2017)
<i>Peumus boldus</i>	(Mendel et al. 2021)
<i>Phellodendron amurense</i>	(Mendel et al. 2021)
<i>Phoebe cavaleriei</i>	(Mendel et al. 2021)
<i>Photinia x fraseri</i>	(FABI 2022)
<i>Pinus densiflora</i>	(Mendel et al. 2021)
<i>Pinus douglasiana</i>	(Mendel et al. 2021)
<i>Pipturus argenteus</i>	(Mendel et al. 2021)
<i>Pistacia atlantica</i>	(Mendel et al. 2021)
<i>Pistacia chinensis</i>	(Mendel et al. 2021)
<i>Pistacia terebinthus</i>	(Mendel et al. 2021)
<i>Pithecellobium sp.</i>	(Mendel et al. 2021)
<i>Pittosporum undulatum</i>	(Mendel et al. 2021)
<i>Platanus mexicana</i>	(Mendel et al. 2021)
<i>Platanus occidentalis</i>	(Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Platanus orientalis</i>	(Mendel et al. 2021)
<i>Platanus racemosa</i>	(Mendel et al. 2021; FABI 2022)
<i>Platanus sp.</i>	(Stouthamer et al. 2017)
<i>Platanus wrightii</i>	(Mendel et al. 2021)
<i>Platanus x acerifolia</i>	(Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Plumeria rubra</i>	(FABI 2022)
<i>Podalyria calyptrata</i>	(FABI 2022)
<i>Podocarpus henkelii</i>	(FABI 2022)
<i>Polyalthia longifolia</i>	(FABI 2022)
<i>Populus alba</i>	(Mendel et al. 2021; FABI 2022)
<i>Populus brandegeei</i>	(Mendel et al. 2021)
<i>Populus euphratica</i>	(Mendel et al. 2021)
<i>Populus fremontii</i>	(Mendel et al. 2021)
<i>Populus nigra</i>	(Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Populus simonii</i>	(FABI 2022; DPIRD 2023)
<i>Populus trichocarpa</i>	(Mendel et al. 2021)
<i>Populus x canadensis</i>	(Mendel et al. 2021)
<i>Populus x canescens</i>	(FABI 2022)
<i>Prosopis articulata</i>	(Mendel et al. 2021)
<i>Prosopis glandulosa</i>	(Mendel et al. 2021)
<i>Protea mundii</i>	(FABI 2022)
<i>Prunus africana</i>	(FABI 2022)
<i>Prunus avium</i>	(FABI 2022)
<i>Prunus caroliniana</i>	(Mendel et al. 2021)
<i>Prunus cerasifera</i>	(FABI 2022; DPIRD 2023)

Scientific name	Reference
<i>Prunus cerasoides</i>	(Mendel et al. 2021)
<i>Prunus domestica</i>	(Mendel et al. 2021)
<i>Prunus ilicifolia</i> subsp. <i>Lyonii</i>	(Mendel et al. 2021)
<i>Prunus mexicana</i>	(Mendel et al. 2021)
<i>Prunus mume</i>	(Mendel et al. 2021)
<i>Prunus nigra</i>	(FABI 2022)
<i>Prunus persica</i>	(Mendel et al. 2021; FABI 2022)
<i>Prunus serrulata</i>	(Mendel et al. 2021)
<i>Pseudobombax ellipticum</i>	(Mendel et al. 2021)
<i>Pseudocydonia sinensis</i>	(Mendel et al. 2021)
<i>Psidium guajava</i>	(FABI 2022)
<i>Psoralea aphylla</i>	(FABI 2022)
<i>Psoralea pinata</i>	(FABI 2022)
<i>Pterocarya stenoptera</i>	(Mendel et al. 2021)
<i>Pyrus calleryana</i>	(Mendel et al. 2021; DPIRD 2023)
<i>Pyrus communis</i>	(FABI 2022)
<i>Pyrus kawakamii</i>	(Mendel et al. 2021)
<i>Quararibea funebris</i>	(Mendel et al. 2021)
<i>Quercus acutissima</i>	(Mendel et al. 2021)
<i>Quercus agrifolia</i>	(Mendel et al. 2021)
<i>Quercus alba</i>	(Mendel et al. 2021)
<i>Quercus brantii</i>	(Mendel et al. 2021)
<i>Quercus castaneifolia</i>	(Mendel et al. 2021)
<i>Quercus cf. oblongata</i>	(Mendel et al. 2021)
<i>Quercus chihuahuensis</i>	(Mendel et al. 2021)
<i>Quercus chrysolepis</i>	(Mendel et al. 2021)
<i>Quercus coccifera</i>	(Mendel et al. 2021)
<i>Quercus dentata</i> subsp. <i>yunnanensis</i>	(Mendel et al. 2021)
<i>Quercus engelmannii</i>	(Stouthamer et al. 2017; Mendel et al. 2021)
<i>Quercus frainetto</i>	(Mendel et al. 2021)
<i>Quercus hartwissiana</i>	(Mendel et al. 2021)
<i>Quercus ilex</i>	(Mendel et al. 2021)
<i>Quercus infectoria</i>	(Mendel et al. 2021)
<i>Quercus ithaburensis</i>	(Mendel et al. 2021)
<i>Quercus lobata</i>	(Mendel et al. 2021)
<i>Quercus look</i>	(Mendel et al. 2021)
<i>Quercus macrocarpa</i>	(Mendel et al. 2021)
<i>Quercus mexicana</i>	(Mendel et al. 2021)
<i>Quercus myrsinifolia</i>	(Mendel et al. 2021)
<i>Quercus palustris</i>	(Mendel et al. 2021; FABI 2022)
<i>Quercus pontica</i>	(Mendel et al. 2021)
<i>Quercus robur</i>	(Stouthamer et al. 2017; Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Quercus robur</i> subsp. <i>pedunculiflora</i>	(Stouthamer et al. 2017; Mendel et al. 2021)
<i>Quercus rubra</i>	(Mendel et al. 2021)
<i>Quercus rugosa</i>	(FABI 2022)
<i>Quercus suber</i>	(Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Quercus virginiana</i>	(Mendel et al. 2021)
<i>Quercus x rosacea</i>	(Mendel et al. 2021)

Scientific name	Reference
<i>Quercus x turneri</i> 'Pseudo-turneri'	(Mendel et al. 2021)
<i>Rapanea melanophloeos</i>	(FABI 2022)
<i>Rhamnus alaternus</i>	(Mendel et al. 2021)
<i>Rhaphiolepis loquata</i>	(Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Ricinocarpos pinifolius</i>	(DPIRD 2023)
<i>Ricinocarpos tuberculatus x cyanescens</i>	(DPIRD 2023)
<i>Ricinus communis</i>	(Stouthamer et al. 2017; Mendel et al. 2021; FABI 2022; Wang et al. 2022; DPIRD 2023)
<i>Robinia pseudoacacia</i>	(Stouthamer et al. 2017; Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Robinsonella discolor</i>	(Mendel et al. 2021)
<i>Rosa</i> 'Crepuscule'	(Mendel et al. 2021)
<i>Roystonea regia</i>	(Mendel et al. 2021)
<i>Salix acmophylla</i>	(Mendel et al. 2021)
<i>Salix alba</i>	(FABI 2022; DPIRD 2023)
<i>Salix babylonica</i>	(Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Salix eastwoodiae</i>	(Mendel et al. 2021)
<i>Salix exigua</i>	(Mendel et al. 2021)
<i>Salix gooddingii</i>	(Mendel et al. 2021)
<i>Salix laevigata</i>	(Mendel et al. 2021)
<i>Salix lasiolepis</i>	(Mendel et al. 2021)
<i>Salix matsudana</i>	(DPIRD 2023)
<i>Salix mucronata</i>	(FABI 2022)
<i>Salix nigra</i>	(Mendel et al. 2021)
<i>Salix</i> sp. 1 'Humboldt Willow'	(DPIRD 2023)
<i>Sapindus saponaria</i>	(Mendel et al. 2021)
<i>Sapindus saponaria</i> subsp. <i>drummondii</i>	(DPIRD 2023)
<i>Schefflera actinophylla</i>	(DPIRD 2023)
<i>Schinus molle</i>	(FABI 2022)
<i>Schinus polygama</i>	(Mendel et al. 2021)
<i>Schinus terebinthifolia</i>	(Mendel et al. 2021)
<i>Schotia brachypetala</i>	(Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Searsia chirindensis</i>	(FABI 2022)
<i>Searsia lansea</i>	(FABI 2022)
<i>Senegalia burkei</i>	(FABI 2022)
<i>Senegalia galpinii</i>	(FABI 2022)
<i>Senna candolleana</i>	(Mendel et al. 2021)
<i>Senna japonica</i>	(Mendel et al. 2021)
<i>Senna racemosa</i>	(Mendel et al. 2021)
<i>Senna spectabilis</i>	(Mendel et al. 2021)
<i>Senna x floribunda</i>	(Mendel et al. 2021)
<i>Sindora glabra</i>	(Wang et al. 2022)
<i>Sinomalus sieboldii</i>	(Mendel et al. 2021)
<i>Solanum mauritianum</i>	(FABI 2022)
<i>Sparrmannia africana</i>	(FABI 2022)
<i>Spathodea campanulata</i>	(Mendel et al. 2021)
<i>Sterculia murex</i>	(FABI 2022)

Scientific name	Reference
<i>Strelitzia nicotia</i>	(DPIRD 2023)
<i>Styphnolobium japonicum</i>	(Mendel et al. 2021; DPIRD 2023)
<i>Swietenia chickrassa</i>	(Mendel et al. 2021)
<i>Syzygium cordatum</i>	(FABI 2022)
<i>Syzygium cumini</i>	(DPIRD 2023)
<i>Syzygium smithii</i>	(DPIRD 2023)
<i>Talipariti tiliaceum</i>	(DPIRD 2023)
<i>Tamarindus indica</i>	(Mendel et al. 2021)
<i>Tara cacalaco</i>	(Mendel et al. 2021)
<i>Taxodium distichum</i>	(Mendel et al. 2021; FABI 2022)
<i>Tecoma capensis</i>	(DPIRD 2023)
<i>Tecoma stans</i>	(DPIRD 2023)
<i>Templetonia retusa</i>	(DPIRD 2023)
<i>Terminalia mantaly</i>	(Mendel et al. 2021)
<i>Tetrapanax papyrifer</i>	(DPIRD 2023)
<i>Thevetia thevetioides</i>	(Mendel et al. 2021)
<i>Tilia americana</i>	(Mendel et al. 2021)
<i>Tilia caroliniana</i>	(Mendel et al. 2021)
<i>Tipuana tipu</i>	(Mendel et al. 2021)
<i>Toona ciliata</i>	(DPIRD 2023)
<i>Trema orientalis</i>	(FABI 2022)
<i>Triadica sebifera</i>	(Mendel et al. 2021; DPIRD 2023)
<i>Trichilia emetica</i>	(FABI 2022)
<i>Ulmus alata</i>	(Mendel et al. 2021)
<i>Ulmus americana</i>	(Mendel et al. 2021)
<i>Ulmus davidiana</i> var. <i>japonica</i>	(Mendel et al. 2021)
<i>Ulmus glabra</i>	(Mendel et al. 2021; DPIRD 2023)
<i>Ulmus minor</i> = <i>procera</i>	(FABI 2022)
<i>Ulmus parvifolia</i>	(Mendel et al. 2021; FABI 2022)
<i>Ulmus</i> sp. 1 cf. <i>glabra</i> or <i>minor</i>	(DPIRD 2023)
<i>Umbellularia californica</i>	(Mendel et al. 2021)
<i>Ungnadia speciosa</i>	(Mendel et al. 2021)
<i>Vachellia</i> aff. <i>etbaica</i>	(Mendel et al. 2021)
<i>Vachellia campeachiana</i>	(Mendel et al. 2021)
<i>Vachellia caven</i>	(Mendel et al. 2021)
<i>Vachellia farnesiana</i> var. <i>farnesiana</i>	(Mendel et al. 2021)
<i>Vachellia karroo</i>	(FABI 2022)
<i>Vachellia sieberiana</i>	(Mendel et al. 2021)
<i>Vachellia sieberiana</i> var. <i>woodii</i>	(FABI 2022)
<i>Vepris lanceolata</i>	(FABI 2022)
<i>Verbesina gigantea</i>	(Mendel et al. 2021)
<i>Vernicia fordii</i>	(Mendel et al. 2021)
<i>Viburnum odoratissimum</i>	(Mendel et al. 2021; FABI 2022)
<i>Virgilia divaricata</i>	(FABI 2022)
<i>Virgilia oroboides</i> subsp. <i>ferruginea</i>	(FABI 2022)
<i>Vitis vinifera</i>	(Mendel et al. 2021; FABI 2022)

Scientific name	Reference
<i>Washingtonia filifera</i>	(Mendel et al. 2021)
<i>Wigandia urens</i>	(Mendel et al. 2021)
<i>Wisteria floribunda</i>	(Mendel et al. 2021)
<i>Wisteria sinensis</i>	(Mendel et al. 2021; FABI 2022; DPIRD 2023)
<i>Wisteria sp.</i>	(Stouthamer et al. 2017)
<i>Wisteria sp. 1</i>	(DPIRD 2023)
<i>Xylosma racemosum</i>	(Mendel et al. 2021)
<i>Zelkova carpinifolia</i>	(Mendel et al. 2021)
<i>Zelkova serrata</i>	(Mendel et al. 2021; DPIRD 2023)
<i>Zenia insignis</i>	(Mendel et al. 2021)
<i>Ziziphus jujuba</i>	(Mendel et al. 2021)
<i>Ziziphus spina-christi</i>	(Mendel et al. 2021)

The polyphagous shot-hole borer carrier plant host list has been generated and validated for molecular records that confirm polyphagous shot-hole borer identity from numerous sources (Stouthamer et al. 2017; Carrillo et al. 2019; Mendel et al. 2021; Thu et al. 2021; FABI 2022; Wang et al. 2022), and includes observations made in Western Australia (DPIRD 2023). New global hosts from Western Australia can be identified where the reference cited is only as “DPIRD 2023”.

References

Carrillo JD, Rugman-Jones PF, Husein D, Stajich JE, Kasson MT, Carrillo D, Stouthamer R & Eskalen A 2019, Members of the *Euwallacea fornicatus* species complex exhibit promiscuous mutualism with ambrosia fungi in Taiwan. *Fungal Genetics and Biology*, 133.

DPIRD 2023, *Polyphagous shot-hole borer (PSHB) Australian Host List, Version 10.0, 31 May 2023*. Department of Primary Industries and Regional Development, Western Australia. <<https://www.agric.wa.gov.au/borer>> [7 June 2023]

FABI 2022, *Polyphagous Shot Hole Borer host list*. Forestry and Agricultural Biotechnology Institute, University of Pretoria. <https://www.fabinet.up.ac.za/images/PSHB/8-PSHB_host_list_2022-08-02.pdf> [13 September 2022]

Mendel Z, Lynch SC, Eskalen A, Protasov A, Maymon M & Freeman S 2021, What determines host range and reproductive performance of an invasive ambrosia beetle *Euwallacea fornicatus*; Lessons from Israel and California. *Frontiers in Forests and Global Change*, 4:Article 654702.

Stouthamer R, Rugman-Jones P, Thu PQ, Eskalen A, Thibault T, Hulcr J, Wang L-J, Jordal BH, Chen CY, Cooperband M et al. 2017, Tracing the origin of a cryptic invader: phylogeography of the *Euwallacea fornicatus* (Coleoptera: Curculionidae: Scolytinae) species complex. *Agricultural and Forest Entomology*, 19:366-375.

Thu PQ, Quang DN, Chi NM, Hung TX, Binh LV & Dell B 2021, New and Emerging Insect Pest and Disease Threats to Forest Plantations in Vietnam. *Forests*, 12.

Wang Y, Lu J, Sun R, Gomez DF, Hulcr J, Li Y, Li Y & Gao L 2022, Uncovering hidden diversity within the *Euwallacea fornicatus* species complex in China. *Entomologia Generalis*, 42:631-639.

29 Glossary

Term	Definition
Acceptable biosecurity certificate	<i>means</i> a certificate issued by an accredited certifier in compliance with the <i>Biosecurity Act 2014</i> .
Act	<i>means</i> <i>Biosecurity Act 2014</i>
Department	<i>means</i> Department of Agriculture and Fisheries
Quarantine secure conditions	<i>means</i> in a manner that prevents contamination or contact with biosecurity matter.
Quarantine secure manner	<i>means</i> sealed to completely prevent the escape of the biosecurity matter or carrier, within three (3) layers of packaging, the outer layer being a sealed box or courier satchel, and the inner two (2) layers being sealed paper, cardboard or plastic containers including bags or boxes, one of which must be a strong plastic bag. A label stating “Quarantine Material – Do Not Open” must be affixed between the second and outer layer of packaging.
Quarantine secure transport	<i>means</i> transported in a manner that prevents infestation with biosecurity matter and prevents the escape of any biosecurity matter or carrier.
Regulation	<i>means</i> <i>Biosecurity Regulation 2016</i>
Risk minimisation requirement	<i>means</i> for dealing with biosecurity matter or a carrier, a requirement stated in the biosecurity manual for preventing or minimising a biosecurity risk posed, or likely to be posed, by dealing with the biosecurity matter or carrier.
Processing	<i>means</i> altering the form of the fruit to allow for domestic consumption and includes cutting into segments, cooking, drying, freezing, and pickling.