



# *Persea americana* Plants for Planting

MPI.IHS.PERSEA.PFP

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## TITLE

Import Health Standard: *Persea americana* Plants for Planting

## COMMENCEMENT

This import health standard comes into force on [Effective Date]

## ISSUING AUTHORITY

This import health standard is issued under section 24A of the [Biosecurity Act 1993](#).

Dated at Wellington, [Document Date]

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## Introduction

This introduction is not part of the import health standard, but is intended to indicate its general effect.

## Purpose

An import health standard specifies the requirements for importing risk goods into New Zealand from all countries. This import health standard specifies the requirements that must be met when importing *P. americana* plants for planting into New Zealand.

## Background

An import health standard issued under the New Zealand [Biosecurity Act 1993](#) specifies the requirements to be met to effectively manage biosecurity risks associated with importing risk goods, including the risks from incidentally imported new organisms. Import health standards include measures that must be applied in the exporting country before the risk goods are exported. Import health standards also include requirements that must be met by importers during importation, including while the risk goods are in transit to New Zealand and held in a transitional facility, before biosecurity clearance can be given.

Post-clearance conditions may also be specified in an import health standard.

## Who should read this?

This import health standard should be read by anyone involved in the process of importing *P. americana* plants for planting into New Zealand (or who has an interest in importing *P. americana* plants for planting).

## Why is this important?

It is the responsibility of the importer to ensure that risk goods (i.e. *P. americana* plants for planting) comply with the requirements of the relevant import health standard. Risk goods that do not comply with the requirements of an import health standard may not be cleared for entry into New Zealand and may be directed for treatment, re-export, destruction or further action deemed appropriate by a chief technical officer (CTO). The pathway may be suspended if certain types of viable regulated pests or weed seeds are intercepted on the consignment.

Importers are liable for all associated expenses.

## Equivalence

A chief technical officer may consider an application for an equivalent phytosanitary measure to be approved, different from that provided for in this import health standard, to maintain at least the same level of protection assured by the current measures.

Equivalence will be considered with reference to the International Standard for Phytosanitary Measures [ISPM 24](#).

## Guidance information

Guidance boxes are included within this import health standard for explanatory purposes. The guidance included in these boxes is for information only and has no legal effect.

## Part 1: Requirements

### 1.1 Application

- (1) This import health standard applies to plants for planting of the species *Persea americana*.
- (2) The following types of *P. americana* plants for planting are eligible for import from any country:
  - a) leafless cuttings;
  - b) plants in vitro.

### 1.2 Incorporation by reference

- (1) The following documents are incorporated by reference under section 142M of the [Biosecurity Act 1993](#):
  - a) [ISPM 4. Requirements for the establishment of pest free areas](#). Rome, IPPC, FAO;
  - b) [ISPM 5. Glossary of phytosanitary terms](#). Rome, IPPC, FAO;
  - c) [ISPM 7. Phytosanitary certification system](#). Rome, IPPC, FAO;
  - d) [ISPM 8. Determination of pest status in an area](#). Rome, IPPC, FAO;
  - e) [ISPM 10. Requirements for the establishment of pest free places of production and pest free production sites](#). Rome, IPPC, FAO;
  - f) [ISPM 12. Phytosanitary certificates](#). Rome, IPPC, FAO;
  - g) [ISPM 23. Guidelines for inspection](#). Rome, IPPC, FAO;
  - h) [ISPM 24. Guidelines for the determination and recognition of equivalence of phytosanitary measures](#). Rome, IPPC, FAO;
  - i) [ISPM 27. Diagnostic protocols for regulated pests](#). Rome, IPPC, FAO;
  - j) [ISPM 36. Integrated measures for plants for planting](#). Rome, IPPC, FAO;
  - k) [Official New Zealand Pest Register \(ONZPR\)](#). Wellington, MPI;
  - l) [MPI Plants Biosecurity Index \(PBI\)](#). Wellington, MPI;
  - m) [MPI Schedule of Regulated \(Quarantine\) Weed Seeds](#). Wellington, MPI.
- (2) Under section 142O(3) of the [Biosecurity Act 1993](#) it is declared that section 142O(1) does not apply, that is, a notice under section 142O(2) is not required to be published before material that amends or replaces any material incorporated by reference has legal effect as part of those documents.

### 1.3 Definitions

- (1) Definitions are in [Schedule 5](#).

### 1.4 General requirements for *P. americana* plants for planting

- (1) For *P. americana* plants for planting to obtain authorisation for movement from port of first arrival to a transitional facility, *P. americana* plants for planting must:
  - a) meet the requirements for an import permit ([Part 1.5](#)) and choice of import options ([Part 1.6](#));
  - b) meet the requirements for leafless cuttings ([Part 2.1](#)) or plants in vitro ([Part 2.2](#)); and
  - c) be accompanied by documentation that meets the requirements of [Part 3](#).
- (2) In order to obtain biosecurity clearance into New Zealand, *P. americana* plants for planting must also:
  - a) meet the requirements of screening for regulated pests ([Part 2.3](#)) and post-entry quarantine ([Part 2.4](#));
  - b) be free from all viable regulated pests (including but not limited to the pests listed in [Schedule 1](#)); and

- c) have all sub-cultured and multiplied plants in vitro traceable back to either the original imported plant, or to a bud from an imported cutting which has met both the above requirements.

## 1.5 Import permit

- (1) An import permit is required for all consignments of *P. americana* plants for planting.
- (2) The import permit will identify the following:
  - a) the regulated pests for which screening is required in New Zealand;
  - b) the transitional facility to which plants must be directed from the port of first arrival;
  - c) the minimum post-entry quarantine period based on those regulated pests for which screening is required; and
  - d) the level of quarantine greenhouse and/or quarantine tissue culture laboratory in which consignments must be held, based on those regulated pests for which screening is required.

## 1.6 Options for import

- (1) *P. americana* plants for planting must be:
  - a) produced under an Export Plan in accordance with [Part 1.6.1](#); or
  - b) produced at an MPI-approved offshore facility in accordance with [Part 1.6.2](#); or
  - c) produced in any other way in accordance with [Part 1.6.3](#).

### 1.6.1 *P. americana* plants for planting produced under an Export Plan

- (1) Importers may import *P. americana* plants for planting produced under an Export Plan from a country where an Export Plan has been approved by a CTO. The Export Plan will detail the activities and processes established to achieve the measures identified in [Part 1.6.1\(2\)](#).
- (2) *P. americana* plants for planting must meet one of the following measures to manage the risk in relation to each regulated pest identified in the Export Plan:
  - a) Country freedom: The *P. americana* plants for planting are sourced from a country that has country freedom from the pest in accordance with [ISPM 4](#).
  - b) Pest-free area: The *P. americana* plants for planting are sourced from a pest-free area established in accordance with [ISPM 4](#).
  - c) Pest-free place of production: The *P. americana* plants for planting are sourced from a pest-free place of production established in accordance with [ISPM 10](#).
  - d) Integrated measures for plants for planting: The *P. americana* plants for planting are sourced from a production site that uses integrated measures for plants for planting in accordance with [ISPM 36](#).
- (3) A phytosanitary measure for any regulated pest listed in [Schedule 1](#) that is not identified in the Export Plan must be applied on arrival in New Zealand as described in [Parts 2.3](#) and [2.4](#).

### 1.6.2 *P. americana* plants for planting produced at an MPI-approved offshore facility

- (1) Importers may import *P. americana* plants for planting produced at an MPI-approved offshore facility.
- (2) *P. americana* plants for planting produced at an MPI-approved offshore facility must meet all the phytosanitary measures described in [Part 2.3](#) in relation to each regulated pest listed in the agreement between MPI and the offshore facility.
- (3) A phytosanitary measure for any regulated pest listed in [Schedule 1](#) that is not applied at the offshore facility must be applied on arrival in New Zealand as described in [Parts 2.3](#) and [2.4](#).

### **1.6.3 *P. americana* plants for planting produced in any other way**

- (1) For *P. americana* plants for planting not produced under an Export Plan or at an MPI-approved offshore facility, all phytosanitary measures described in [Parts 2.3](#) and [2.4](#) must be applied for each regulated pest on arrival in New Zealand.

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## Part 2: Specific requirements

- (1) Leafless cuttings must meet all requirements in [Part 2.1](#).
- (2) Plants in vitro must meet all requirements in [Part 2.2](#).
- (3) *P. americana* plants for planting must be screened in New Zealand for each regulated pest, listed in [Schedule 1](#), as described in [Part 2.3](#), unless:
  - a) phytosanitary measures in relation to a regulated pest have been applied in accordance with an agreed Export Plan or at an MPI-approved offshore facility. In these cases, the import permit will identify the regulated pests for which phytosanitary measures must be applied on arrival in New Zealand.
- (4) *P. americana* plants for planting that require phytosanitary measures to be applied on arrival in New Zealand must be held in a transitional facility approved to the [MPI Facility Standard: Post Entry Quarantine for Plants](#) as described in [Part 2.4](#).

### 2.1 Leafless cuttings

- (1) Before export, leafless cuttings must be:
  - a) free from soil and other regulated articles;
  - b) clearly labelled with their genus and species names;
  - c) treated for insects and mites in accordance with [Schedules 3 and 4](#), or by alternative treatments that have been approved by MPI;
  - d) held in a manner to prevent recontamination after insect and mite treatments have been applied;
  - e) shipped in packaging that:
    - i) is clean and free from soil, visible regulated pests and other regulated articles;
    - ii) prevents the plant material from becoming contaminated with regulated pests or other regulated articles during transit; and
  - f) accompanied by a phytosanitary certificate in accordance with [Part 3.3](#).

### 2.2 Plants in vitro

- (1) Before export, plants in vitro must be:
  - a) clearly labelled with their genus and species names;
  - b) derived from aerial plant parts;
  - c) grown in a pest-proof and transparent vessel;
  - d) grown in a medium free from fungicides, antibiotics, and charcoal;
  - e) grown in the vessel they will be exported in for at least 14 days before shipment;
  - f) free from visible fungal or bacterial contamination; and
  - g) accompanied by a phytosanitary certificate, as described in [Part 3.3](#).

### 2.3 Screening for regulated pests

- (1) To ensure freedom from regulated pests, *P. americana* plants for planting must be screened for each regulated pest listed in [Schedule 1](#) on arrival in New Zealand, as described in this Part, unless:
  - a) phytosanitary measures for a particular pest have been applied as described under an agreed Export Plan or at an MPI-approved offshore facility. In this case, the import permit will identify the requirements of this Part that must be applied on arrival in New Zealand.



### 2.3.1 Testing for regulated pest and disease symptoms

- (1) Testing for regulated pests must be done at a transitional facility approved to [MPI Facility Standard: Identification of Organisms](#).
- (2) *P. americana* plants for planting must be tested for all regulated pests identified in [Schedule 2](#), regardless of whether a plant is showing signs or symptoms of pests or disease (mandatory test).
- (3) Samples for a mandatory test must be collected according to [Schedule 2](#).
- (4) Each *P. americana* plant in a quarantine greenhouse, must be individually labelled and tested, with the following exception:
  - a) For PCR testing, samples taken from up to five plants of the same species can be combined to form a single composite sample for mandatory testing.

### 2.3.2 Inspection

- (1) All plants must be inspected for signs and symptoms of regulated pests by the facility operator at least twice per week during periods of active growth.
- (2) All plants must be inspected for signs and symptoms of regulated pests by the MPI inspector according to [Schedule 2](#).

### 2.3.3 Reporting pest and disease symptoms

- (1) When a pest is found, or signs or symptoms of a pest are observed on a *P. americana* plant for planting by the facility operator, the facility operator must inform the MPI inspector within 24 hours of detection.

#### Guidance

- The [MPI Facility Standard: Post Entry Quarantine for Plants](#) outlines the procedures when any pests or disease symptoms are observed by the facility operator.

## 2.4 Post-entry quarantine

- (1) For *P. americana* plants for planting, all requirements must be applied as described in this Part, unless:
  - a) phytosanitary measures for a particular pest have been applied as described under an agreed Export Plan or in accordance with the agreement between MPI and an approved offshore facility. In this case, the import permit will identify the requirements of this Part that must be applied on arrival in New Zealand.
- (2) *P. americana* plants for planting must be quarantined in a transitional facility approved to the [MPI Facility Standard: Post Entry Quarantine for Plants](#). The type and level of transitional facility will be specified on the import permit:
  - a) For plants produced under an export plan ([Part 1.6.1](#)) or from an MPI-approved offshore facility ([Part 1.6.2](#)), the minimum period of post-entry quarantine, and type of quarantine greenhouse, will be determined during development of an export plan or approval of an offshore facility.
  - b) For plants produced any other way ([Part 1.6.3](#)), the minimum period of post-entry quarantine will be 12 months in a Level 3B quarantine greenhouse.
- (3) The post-entry quarantine period for *P. americana* plants for planting begins after imported plants held in a quarantine greenhouse have started active growth.
  - a) For plants derived from imported cuttings, active growth begins when grafted plants have developed at least two fully expanded leaves.
  - b) For plants imported as plants in vitro, active growth begins after the plants have been deflasked into a quarantine greenhouse.

- (4) For plants imported under [Parts 1.6.1](#) and [1.6.2](#) (plants produced at an MPI-approved offshore facility), the post-entry quarantine period will be determined after there is an established export plan or agreement between an offshore facility and MPI.
- (5) For plants imported under [Part 1.6.3](#) (plants produced any other way), the post-entry quarantine period must be a minimum of 12 months according to [Part 2.4.1](#).
- (6) All leafless cuttings must be dipped in 1% sodium hypochlorite for a minimum of 2 minutes on arrival at the quarantine greenhouse.
- (7) If plants in vitro are sub-cultured in a quarantine tissue culture laboratory before they are transferred to a quarantine greenhouse, the following requirements must be met:
  - a) At least one subculture from each imported plant must be developed to the stage where it can be de-flasked into the quarantine greenhouse and screened for regulated pests as described in [Part 2.3](#):
    - i) This subculture should be taken during the first round of multiplication after plants arrive in New Zealand.
    - ii) If only one plant is obtained during the first round of multiplication, further rounds of multiplication may be undertaken. In this case, a subculture for transfer to the quarantine greenhouse must be taken from the first round of multiplication where more than one plant is obtained.
  - b) Surplus subcultures that are produced as described in [Part 2.4\(7\)\(a\)](#) above may be retained at a Level 3 quarantine tissue culture laboratory throughout the post-entry quarantine period:
    - i) These plants may be sub-cultured and multiplied during the post-entry quarantine period.
    - ii) These plants may also be considered for biosecurity clearance provided that traceability to the plant in the quarantine greenhouse is maintained.

#### **2.4.1 Environmental conditions in post-entry quarantine**

- (1) Specific environmental conditions must be applied in the following order:
  - a) Plants must be held for a minimum four-month period of continuous summer-like conditions. The temperatures must be between  $25\pm 3^{\circ}\text{C}$ .
  - b) Plants must then be held for a minimum two-month period of continuous autumn-like conditions. The temperatures must be between  $21\pm 3^{\circ}\text{C}$ .
  - c) Plants must then be held for a minimum three-month period of continuous spring-like conditions. The temperatures must be between  $19\pm 3^{\circ}\text{C}$ .
  - d) Plants must then be held for a three-month period of continuous summer-like conditions. The temperatures must be between  $25\pm 3^{\circ}\text{C}$ .
- (2) If there are deviations from the requirements in [Part 2.4.1\(1\)](#) while plants are being held in the quarantine greenhouse, the facility operator must inform the MPI inspector as soon as practical.
- (3) The operating manual for the quarantine greenhouse must describe how the environmental conditions given in [Part 2.4.1](#) will be monitored, maintained, and recorded.

## Part 3: Inspection, verification and documentation requirements

### 3.1 Inspection

- (1) The NPPO of the exporting country must:
  - a) visually inspect each sample unit according to official phytosanitary procedures and [ISPM 23](#) for all visually detectable pests that are regulated by New Zealand;
  - b) reconcile that the number of units presented for inspection is consistent with documentation;
  - c) verify that traceability labelling is complete; and
  - d) verify that phytosanitary security is maintained for the consignment.
- (2) A sample unit for the purpose of this import health standard is an individual cutting or an individual plant in vitro.
- (3) If pests are found that are not listed in [Schedule 1](#) or the [Official New Zealand Pest Register](#), the NPPO must contact MPI to establish their regulatory status before issuing the phytosanitary certificate.

### 3.2 Verification

- (1) For leafless cuttings, the NPPO must verify that the plants comply with all requirements set out in [Part 2.1](#).
- (2) For plants in vitro, the NPPO must verify that the plants comply with all requirements set out in [Part 2.2](#).
- (3) For any *P. americana* plants for planting produced under an Export Plan, the NPPO must verify that they are:
  - a) free from regulated pests listed in the Export Plan; and
  - b) held in a manner to ensure that infestation/reinfestation does not occur following inspection and certification.
- (4) For any plants produced at an MPI-approved offshore facility, the NPPO must verify that they are:
  - a) free from regulated pests listed in the agreement between MPI and the offshore facility; and
  - b) held in a manner to ensure that infestation/reinfestation does not occur following inspection and certification.

### 3.3 Phytosanitary certification

- (1) Each consignment must meet the requirements in [Part 3](#) and be accompanied by a phytosanitary certificate issued by the NPPO in accordance with [ISPM 12](#).
- (2) The phytosanitary certificate must include the following:
  - a) sufficient detail to enable identification of the consignment and its component parts. Information must include country of origin;
  - b) the genus and species of all *P. americana* plants for planting in the consignment;
  - c) all relevant additional declaration(s) as described in [Part 3.4](#);
  - d) full treatment details in the "Disinfestation and/or Disinfection Treatment" section of the phytosanitary certificate (applies to leafless cuttings only, as described in [Part 2.1](#));
  - e) the following declaration, or a variation that is compliant with [ISPM 12](#) and has been approved by a CTO:

- i) “This is to certify that the plants, plant products or other regulated articles described herein have been inspected and/or tested according to appropriate official procedures and are considered to be free from the quarantine pests specified by the importing contracting party and to conform with the current phytosanitary requirements of the importing contracting party, including those for regulated non-quarantine pests.”
- (3) If a consignment of *P. americana* plants for planting is stored in another country in transit to New Zealand or is opened, is split up or has its packaging changed prior to arrival in New Zealand, a phytosanitary certificate for re-export must accompany each consignment from the transiting country, in accordance with [ISPM 12](#).

### 3.4 Additional declarations

- (1) The NPPO must include the following additional declarations on the phytosanitary certificate:
- a) for *P. americana* plants for planting produced under an agreed Export Plan (produced under [Part 1.6.1](#)):
    - i) “This consignment was produced and prepared for export in accordance with the agreed Export Plan.”
  - b) for *P. americana* plants for planting produced at an offshore facility (produced under [Part 1.6.2](#)):
    - i) “This consignment was produced and prepared for export in accordance with the agreement between MPI and [name of approved offshore facility].”

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## Schedule 1: Regulated pest list

Regulated pest	Mandatory testing requirements <sup>1</sup>
<b>Bacteria</b>	
<i>Xylella fastidiosa</i>	PCR
<b>Fungi</b>	
<i>Colletotrichum aenigma</i>	-
<i>Colletotrichum chrysophilum</i>	-
<i>Colletotrichum endophyticum</i>	-
<i>Colletotrichum jiangxiense</i>	-
<i>Colletotrichum nymphaeae</i>	-
<i>Colletotrichum queenslandicum</i>	-
<i>Colletotrichum tropicale</i>	-
<i>Diaporthe perseae</i>	-
<i>Lasiodiplodia pseudotheobromae</i>	Plating onto suitable isolation medium or PCR
<i>Neocosmospora perseae</i>	-
<i>Neofusicoccum nonquaesitum</i>	Plating onto suitable isolation medium or PCR
<i>Pestalotiopsis longiseta</i>	-
<b>Oomycetes</b>	
<i>Phytophthora palmivora</i>	PCR
<b>Viroids</b>	
<i>Avocado sunblotch viroid</i>	PCR
<i>Potato spindle tuber viroid</i>	PCR
<b>Phytoplasmas</b>	
" <i>Candidatus</i> Phytoplasma" spp.	PCR

### Guidance

- The [Official New Zealand Pest Register](#) contains the full list of regulated pests. If detected in imported *P. americana* plants for planting, MPI will identify the causal agent of disease symptoms and confirm the regulatory status by referring to the register.
- If an organism is detected that is not listed in the [Official New Zealand Pest Register](#), the chief technical officer will make a decision on the regulatory status of that organism and will update the register accordingly.

<sup>1</sup> Mandatory testing requirements identified in [Schedule 1](#) are specific testing requirements that must be completed in addition to growing season inspection (which is required for all regulated pests). Mandatory tests identified above must be done using samples collected in accordance with [Schedule 2](#).

## Schedule 2: Inspections and mandatory testing requirements

### On arrival mandatory testing requirements for cuttings of *P. americana* plants for planting

Timing of sample collection	Sample type	Pests and tests
On arrival in post-entry quarantine	Budwood material, including two buds from each imported leafless cutting.	<b>Oomycetes</b> PCR <ul style="list-style-type: none"> <li>• <i>Phytophthora palmivora</i></li> </ul>

### Post-entry quarantine mandatory testing requirements in post-entry quarantine for *P. americana* plants for planting

Growing conditions	MPI Inspections	Sampling	Pests and tests
Summer-like conditions for a minimum of 4 months according to <a href="#">Part 2.4.1</a>	Two inspections required	Sampling of plants for testing must occur toward the end of the summer growing period.	<b>Phytoplasmas and viroids</b> PCR <ul style="list-style-type: none"> <li>• “<i>Candidatus Phytoplasma</i>” spp.</li> <li>• <i>Avocado sunblotch viroid</i></li> <li>• <i>Potato spindle tuber viroid</i></li> </ul> <b>Bacteria</b> PCR <ul style="list-style-type: none"> <li>• <i>Xylella fastidiosa</i></li> </ul>
Autumn-like conditions for a minimum of 2 months according to <a href="#">Part 2.4.1</a>	One inspection required	N/A	N/A
Spring-like conditions for a minimum of 3 months according to <a href="#">Part 2.4.1</a>	Two inspections required	N/A	N/A
Summer-like conditions for a minimum of 3 months according to <a href="#">Part 2.4.1</a>	Two inspections required	Sampling of plants for testing must occur toward the end of the summer growing period.	<b>Fungi</b> Plating or PCR <ul style="list-style-type: none"> <li>• <i>Lasiodiplodia pseudotheobromae</i></li> <li>• <i>Neofusicoccum nonquaesitum</i></li> </ul> <b>Viroids</b> PCR <ul style="list-style-type: none"> <li>• <i>Avocado sunblotch viroid</i></li> </ul> <b>Oomycetes</b> PCR <ul style="list-style-type: none"> <li>• <i>Phytophthora palmivora</i></li> </ul> <b>Bacteria</b> PCR <ul style="list-style-type: none"> <li>• <i>Xylella fastidiosa</i></li> </ul>

## Schedule 3: Approved insecticide treatments – *P. americana* leafless cuttings

(1) One of the treatment options listed below must be applied.

Treatment	Specification																					
Methyl bromide (option 1)	<table border="1"> <thead> <tr> <th>Temperature (°C)</th> <th>Rate (g/m<sup>3</sup>)</th> <th>Minimum duration</th> </tr> </thead> <tbody> <tr> <td>28–32</td> <td>28</td> <td>2 hours</td> </tr> <tr> <td>21–27</td> <td>32</td> <td>2 hours</td> </tr> <tr> <td>16–20</td> <td>40</td> <td>2 hours</td> </tr> <tr> <td>10–15</td> <td>48</td> <td>2 hours</td> </tr> </tbody> </table>	Temperature (°C)	Rate (g/m <sup>3</sup> )	Minimum duration	28–32	28	2 hours	21–27	32	2 hours	16–20	40	2 hours	10–15	48	2 hours						
	Temperature (°C)	Rate (g/m <sup>3</sup> )	Minimum duration																			
	28–32	28	2 hours																			
	21–27	32	2 hours																			
	16–20	40	2 hours																			
10–15	48	2 hours																				
Hot water treatment followed by chemical treatment (option 2)	<p>All treatments must be applied in the following order:</p> <ol style="list-style-type: none"> <li>1) Immersion in water at a minimum continuous temperature of 24°C for a minimum period of 2 hours;</li> <li>2) Immersion in water at a minimum continuous temperature of 45°C for a minimum period of 3 hours;</li> <li>3) Dipping (with agitation) for a minimum of two minutes in chlorpyrifos dip (2.4 g active ingredient per litre, or label rates) containing a non-ionic surfactant. If bubbles are present on the plant surface after the initial two-minute period, the immersion period must be extended to a minimum of five minutes.</li> </ol>																					
Chemical treatment (option 3)	<p>All plant material must be dipped (with agitation), in a solution containing two active ingredients, one from the organophosphorous chemical group and the second from one of the other approved groups listed below.</p> <table border="1"> <thead> <tr> <th>Chemical group</th> <th>Active ingredient</th> <th>Minimum immersion period</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Organophosphorous</td> <td>Chlorpyrifos (0.8 g active ingredient per litre)</td> <td rowspan="2">2 minutes (Non-ionic surfactant required for dips)</td> </tr> <tr> <td>Pirimiphos-methyl (0.475 g active ingredient per litre)</td> </tr> <tr> <td>Carbamate</td> <td>Carbaryl (label rate)</td> <td>2 minutes</td> </tr> <tr> <td>Diacylhydrazine</td> <td>Tebufenozide (label rate)</td> <td>2 minutes</td> </tr> <tr> <td>Spinosyns</td> <td>Spinosad (label rate; treatment must be applied at room temperature)</td> <td>2 minutes</td> </tr> <tr> <td rowspan="2">Pyrethroid</td> <td>Deltamethrin (label rate)</td> <td>15 minutes</td> </tr> <tr> <td>Fenvalerate (label rate)</td> <td>15 minutes</td> </tr> </tbody> </table> <p>If bubbles are present on the plant surface after the initial two-minute period, the immersion period must be extended to a minimum of five minutes.</p>	Chemical group	Active ingredient	Minimum immersion period	Organophosphorous	Chlorpyrifos (0.8 g active ingredient per litre)	2 minutes (Non-ionic surfactant required for dips)	Pirimiphos-methyl (0.475 g active ingredient per litre)	Carbamate	Carbaryl (label rate)	2 minutes	Diacylhydrazine	Tebufenozide (label rate)	2 minutes	Spinosyns	Spinosad (label rate; treatment must be applied at room temperature)	2 minutes	Pyrethroid	Deltamethrin (label rate)	15 minutes	Fenvalerate (label rate)	15 minutes
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## Schedule 4: Approved miticide treatments – *P. americana* leafless cuttings

(1) One of the treatment options listed below must be applied.

Treatment	Specification																																														
Methyl bromide (option 1)	<table border="1"> <thead> <tr> <th rowspan="2">Minimum initial concentration (g/m<sup>3</sup>)</th> <th colspan="3">Minimum concentration-time product (CT) / achieved dose (g·h/m<sup>3</sup>)</th> <th rowspan="2">Minimum temperature over duration of treatment (°C)</th> <th colspan="3">Minimum concentration over duration of fumigation (g/m<sup>3</sup>)</th> </tr> <tr> <th>2 h</th> <th>2.5 h</th> <th>3 h</th> <th>2 h</th> <th>2.5 h</th> <th>3 h</th> </tr> </thead> <tbody> <tr> <td>68</td> <td>56</td> <td>48</td> <td>120</td> <td>10</td> <td>51</td> <td>41</td> <td>34</td> </tr> <tr> <td>57</td> <td>48</td> <td>40</td> <td>100</td> <td>16</td> <td>43</td> <td>35</td> <td>28</td> </tr> <tr> <td>48</td> <td>40</td> <td>34</td> <td>85</td> <td>21</td> <td>36</td> <td>29</td> <td>24</td> </tr> <tr> <td>40</td> <td>32</td> <td>28</td> <td>70</td> <td>28</td> <td>30</td> <td>23</td> <td>20</td> </tr> </tbody> </table>	Minimum initial concentration (g/m <sup>3</sup> )	Minimum concentration-time product (CT) / achieved dose (g·h/m <sup>3</sup> )			Minimum temperature over duration of treatment (°C)	Minimum concentration over duration of fumigation (g/m <sup>3</sup> )			2 h	2.5 h	3 h	2 h	2.5 h	3 h	68	56	48	120	10	51	41	34	57	48	40	100	16	43	35	28	48	40	34	85	21	36	29	24	40	32	28	70	28	30	23	20
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<p><b>Guidance</b></p> <ul style="list-style-type: none"> <li>The shaded area suggests the minimum initial methyl bromide concentration that can achieve the required CT values at the optional temperature and treatment duration combinations.</li> </ul>																																															
Chemical treatment (option 2)	<p>All plant material must be dipped (with agitation) using either option 1 or option 2 described below. For dipping, minimum treatment time is two minutes, extended to five minutes if bubbles remain present on the plant surface.</p> <p><b>Option 1: one acaricide treatment</b></p> <table border="1"> <thead> <tr> <th>Active ingredient</th> <th>Chemical group</th> <th>Rate (g/L water)</th> <th>Formulation type</th> <th>Re-treatment period</th> </tr> </thead> <tbody> <tr> <td>Spiromesifen</td> <td>Tetronic and tetramic acid derivatives; group 23</td> <td>0.152</td> <td>Suspension concentrate</td> <td>7–10 days</td> </tr> <tr> <td>Milbemectin</td> <td>Avermectins, milbemycins; group 6</td> <td>0.012</td> <td>Suspension concentrate</td> <td></td> </tr> <tr> <td>Fenpyroximate</td> <td>METI acaricides and insecticides; group 21A</td> <td>0.025</td> <td>Suspension concentrate</td> <td></td> </tr> <tr> <td>Bifenazate + abamectin</td> <td>Bifenazate; group 20D avermectins, milbemycins; group 6</td> <td>0.135 0.007</td> <td>Suspension concentrate</td> <td>7–10 days</td> </tr> </tbody> </table>								Active ingredient	Chemical group	Rate (g/L water)	Formulation type	Re-treatment period	Spiromesifen	Tetronic and tetramic acid derivatives; group 23	0.152	Suspension concentrate	7–10 days	Milbemectin	Avermectins, milbemycins; group 6	0.012	Suspension concentrate		Fenpyroximate	METI acaricides and insecticides; group 21A	0.025	Suspension concentrate		Bifenazate + abamectin	Bifenazate; group 20D avermectins, milbemycins; group 6	0.135 0.007	Suspension concentrate	7–10 days														
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<p>The rate is the concentration of active ingredient, not the amount of concentrate solution. Retreatment must be applied according to the NOVACHEM agrichemical manual or label.</p>																																															



<p><b>Option 2: two acaricides combined treatment</b></p> <ul style="list-style-type: none"> <li>• Option 2A: etoxazole + one of the chemicals selected from group a</li> <li>• Option 2B: fenazaquin + one of the chemicals selected from group b</li> </ul>			
Active ingredient	Chemical group	Rate (g/L water)	Formulation type*
<b>OPTION 2A (non-dormant material only)</b>			
Etoxazole	Etoxazole; group 10B	0.038	Suspension concentrate
<b>Group a</b>			
Abamectin	Avermectins, Milbemycins; group 6	0.012	Emulsifiable concentrate
Chlorfenapyr	Pyrroles; group 13	0.087	Suspension concentrate
<b>OPTION 2B</b>			
Fenazaquin	METI acaricides and insecticides; group 21A	0.352	Suspension concentrate
<b>Group b</b>			
Acequinocyl	Acequinocyl; group 20B	0.150	Suspension concentrate
Dicofol	Dicofol; group UN	0.694	Emulsifiable concentrate

Consultation

## Schedule 5: Definitions

Unless defined below special terms have the same definition as given in [ISPM 5](#) or the [Biosecurity Act 1993](#). Derived forms of terms (inspect from inspection) have the same meaning as the defined term.

### **Active growth**

A plant on which at least two fully expanded leaves, which have developed from dormant buds in the current growing season, are present

### **Cutting**

A commodity subclass of “plants for planting” for propagation material from the stem only (no roots)

### **Dormant**

Temporarily inactive/suspended growth (cuttings of deciduous species should have no leaves; bulbs should have no leaves or roots)

### **Export Plan**

An Export Plan is a document negotiated between MPI and the NPPO of the exporting country that details how the exporting country will meet the import requirements (Targeted Measures and/or MPI-Specified Measures) for New Zealand

### **FAO**

Food and Agriculture Organization of the United Nations

### **In transit**

Refers to risk goods (consignments) in the process of being shipped to New Zealand

### **IPPC**

International Plant Protection Convention

### **International Standard for Phytosanitary Measures (ISPM)**

The list of ISPMs is available from: <https://www.ippc.int/en/core-activities/standards-setting/ispm/>

### **Mandatory testing**

Specific testing for pests and diseases as stated in the import health standard

### **MPI**

Ministry for Primary Industries

### **Official New Zealand Pest Register (ONZPR)**

The [Official New Zealand Pest Register](#) is the site for official information about pests and disease-causing organisms in New Zealand, authorised by the Ministry for Primary Industries

### **Offshore facility**

A production site approved by MPI to the [MPI Standard: Standard for Offshore Facilities Holding and Testing Plants for Planting](#) (or any subsequent version of that standard) for the export of *P. americana* plants for planting to New Zealand

### **Pests that are regulated by New Zealand**

When used in this standard “pests that are regulated by New Zealand” has the same definition as “regulated pest”.

### **Plants Biosecurity Index (PBI)**

MPI database that lists plant species that have been approved for import into New Zealand as plants for planting or seed for sowing. The PBI is available at <https://www1.maf.govt.nz/cgi-bin/bioindex/bioindex.pl>

**Quarantine greenhouse**

A greenhouse that is approved by MPI as a transitional facility under the [MPI Facility Standard: Post Entry Quarantine for Plants](#) for the purpose of holding any plant material imported as plants for planting or seed for sowing that requires post-entry quarantine before the plants can be given biosecurity clearance

**Quarantine tissue culture laboratory**

A tissue culture laboratory that is approved by MPI as a transitional facility under the [MPI Facility Standard: Post Entry Quarantine for Plants](#) for the purpose of holding any plants imported as plants in vitro that require post-entry quarantine before the plants can be given biosecurity clearance

**Regulated pest**

A pest identified as a regulated pest in the Official New Zealand Pest Register or the MPI Schedule of Regulated (Quarantine) Weed Seeds

**Tissue culture**

Plants in vitro that have been prepared as tissue culture from one parent by asexual reproduction (clonal techniques) under sterile conditions

**Viable regulated pest**

Any regulated pest that is capable of reproduction and development, including insects, plants, seeds and other organisms

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## Schedule 6: Document history

Version Date	Section Changed	Change(s) Description
	All	First issuance of standard

Draft for  
Consultation