

Malus

Note: The entry conditions in this schedule only apply to species in the Plants Biosecurity Index listed under Import Specifications for Nursery Stock as “see 155.02.06 under *Malus*”, and are additional to those specified in sections 1, 2 and 3 of the import health standard.

1. Type of *Malus* nursery stock approved for entry into New Zealand

Cuttings (stem only); plants in tissue culture

Malus can be imported into Level 2 post entry quarantine from MAF-accredited facilities, or into Level 3 post entry quarantine from non-accredited facilities.

2. Pests of *Malus*

Refer to the pest list.

3. Entry conditions for:

3.1 *Malus* cuttings and tissue culture from offshore MAF-accredited facilities in any country

An offshore accredited facility is a facility that has been accredited to the MAF Standard PIT.OS.TRA.ACPQF to undertake phytosanitary activities. For *Malus*, the accredited facility operator must also have an agreement with MAF on the phytosanitary measures to be undertaken for *Malus*. Refer to the “Inspection, Testing and Treatment Requirements for *Malus*”.

(i) Documentation

Phytosanitary certificate: a completed phytosanitary certificate issued by the NPPO of the exporting country must accompany all *Malus* nursery stock exported to New Zealand.

Import permit: an import permit is required.

(ii) Phytosanitary requirements

Before a phytosanitary certificate is issued, the NPPO of the exporting country must be satisfied that the following activities required by MAF have been undertaken.

The *Malus* cuttings / plants in tissue culture [choose ONE option] have been:

- inspected in accordance with appropriate official procedures and found to be free of any visually detectable regulated pests.

AND

- treated for regulated insects and mites as described in section 2.2.1.6 of the basic conditions within 7 days prior to shipment [cuttings only].

AND

- held and tested for/classified free from specified regulated pests as required in the agreement between MAF and the [name of the MAF-accredited facility].

AND

- held in a manner to ensure that infestation/reinfestation does not occur following inspection and testing at the accredited facility, and certification.

(iii) Additional declarations to the phytosanitary certificate

If satisfied that the pre-shipment activities have been undertaken, the exporting country NPPO must confirm this by recording the treatments applied in the "Disinfestation and/or Disinfection Treatment" section [cuttings only] and by providing the following additional declarations to the phytosanitary certificate:

"The *Malus* cuttings / plants in tissue culture [choose ONE option] have been:

- held and tested for/classified free from specified regulated pests as required in the agreement between MAF and the [name of the MAF-accredited facility].

AND

- held in a manner to ensure infestation/reinfestation does not occur following inspection and testing at the accredited facility, and certification."

(iv) Post-entry quarantine

PEQ: All *Malus* nursery stock must be imported under permit into post-entry quarantine in a level 2 quarantine facility accredited to MAF standard PBC-NZ-TRA-PQCON *Specification for the registration of a plant quarantine or containment facility, and operator.*

Quarantine Period and Inspection, Testing and Treatment Requirements: Upon arrival in the post entry quarantine facility, all cuttings must be dipped in 1% sodium hypochlorite for 2 minutes. The nursery stock will be grown for a minimum period of 6 months (active continuous growth) in post-entry quarantine and will be inspected, treated and/or audit-tested for regulated pests, at the expense of the importer. For tissue cultures, the quarantine period begins when tissue cultures are exflasked into the PEQ greenhouse. Six months is an indicative minimum quarantine period and this period may be extended if material is slow growing, pests are detected, or treatments/testing are required.

3.2 *Malus* cuttings and tissue culture from non-accredited facilities in any country

(i) Documentation

Phytosanitary certificate: a completed phytosanitary certificate issued by the NPPO of the exporting country must accompany all *Malus* nursery stock exported to New Zealand.

Import permit: an import permit is required.

(ii) Phytosanitary requirements

Before a phytosanitary certificate is issued, the NPPO of the exporting country must be satisfied that the following activities required by MAF have been undertaken.

The *Malus* cuttings / plants in tissue culture [choose ONE option] have been:

- inspected in accordance with appropriate official procedures and found to be free of any visually detectable regulated pests.

AND

- treated for regulated insects and mites as described in section 2.2.1.6 of the basic conditions within 7 days prior to shipment [cuttings only].

AND

- held in a manner to ensure that infestation/reinfestation does not occur following certification.

(iii) Additional declarations to the phytosanitary certificate

If satisfied that the pre-shipment activities have been undertaken, the exporting country NPPO must confirm this by recording the treatments applied in the “Disinfestation and/or Disinfection Treatment” section [cuttings only]. No additional declarations are required.

(iv) Post-entry quarantine

PEQ: All *Malus* nursery stock must be imported under permit into post-entry quarantine in a level 3 quarantine facility accredited to MAF standard PBC-NZ-TRA-PQCON *Specification for the registration of a plant quarantine or containment facility, and operator.*

Quarantine Period and Inspection, Testing and Treatment Requirements: Upon arrival in the post entry quarantine facility, all cuttings must be dipped in 1% sodium hypochlorite for 2 minutes. The nursery stock will be grown for a minimum period of 36 months in post-entry quarantine. For tissue cultures, the quarantine period begins when tissue cultures are exflasked into the PEQ greenhouse. During this time, imported material will be inspected, treated and/or tested for regulated pests as specified in the “Inspection, Testing and Treatment Requirements for *Malus*”, at the expense of the importer. These times are indicative minimum quarantine periods and may be extended if material is slow growing, pests are detected, or treatments/testing are required.

Pest List for *Malus*

*For organisms intercepted that are not listed within this pest list refer to the [Biosecurity Organisms Register for Imported Commodities](#) to determine the regulatory status.

REGULATED PESTS (actionable)

Insect

Insecta

Coleoptera

Attelabidae

Rhynchites caeruleus

apple twig cutter

Bostrichidae

Amphicerus bicaudatus

apple twig borer

Apate monachus

black borer

Buprestidae

Agrilus mali

apple wood borer

Agrilus spp.

bark borers

Chrysobothris femorata

flatheaded apple tree borer

Chrysobothris mali

Pacific flatheaded borer

Chrysobothris spp.

flat-headed borers

Sphenoptera lafertei

flatheaded peach tree borer

Cerambycidae

Aeolesthes sarta

Quetta borer

Apriona germarii

mulberry longicorn beetle

Apriona japonica

mulberry borer

Bacchisa fortunei

pear borer

Batocera rufomaculata

red-spotted longhorn beetle

Phryneta spinator

Curculionidae

Anthonomus piri

apple bud weevil

Eremnus atratus

black weevil

Eremnus cerealis

western province grain worm

Eremnus setulosus

grey weevil

Scolytidae

Hypothenemus obscurus

apple twig borer

Scolytus japonicus

Japanese bark beetle

Scolytus rugulosus

fruit bark borer

Diptera

Cecidomyiidae

Resseliella oculiperda

red bud borer

Thomasiniana oculiperda

red bud borer

Hormptera

Aphididae

Aphis spiraeicola

spiraea aphid

Diaspididae

Chrysomphalus aonidum

Florida red scale

Chrysomphalus dictyospermi

Spanish red scale

Diaspidiotus africanus

grey scale

Lepidoptera

Cossidae

Coryphodema tristis

quince trunk borer

Gelechiidae

Recurvaria syrectis

bud moth

Gracillariidae

Marmara elotella

apple barkminer

Marmara pomonella

apple fruitminer

Oecophoridae

<i>Cryptophasa melanostigma</i>	fruit tree borer
Pyralidae	
<i>Euzophera semifuneralis</i>	American plum borer
<i>Ostrinia nubilalis</i>	European corn borer
Sesiidae	
<i>Thamnosphacia pyri</i>	apple bark borer
<i>Synanthedon scitula</i>	pecan tree borer
Mite	
Arachnida	
Acarina	
Eriophyidae	
<i>Aculops malus</i>	eriphyid mite
<i>Eriophyes mali</i>	Willamette spider mite
<i>Phyllocoptes mali</i>	eriphyid mite
<i>Cenopalpus chitraliensis</i>	bryobia mite
<i>Cenopalpus haqii</i>	banana mite
<i>Cenopalpus orakiensis</i>	Bailey's apple rust mite
<i>Cenopalpus pulcher</i>	flat scarlet mite
Tenuipalpidae	
<i>Brevipalpus lilium</i>	false spider mite
<i>Brevipalpus obovatus</i>	privet mite
<i>Tenuipalpus taonicus</i>	Pacific mite
<i>Rhinotergum schestovici</i>	mite
Tetranychidae	
<i>Eotetranychus carpini</i>	false spider mite
<i>Eotetranychus uncatus</i>	Lewis spider mite
<i>Eotetranychus willamettei</i>	hazel mite
<i>Oligonychus gossypii</i>	tetranychid mite
<i>Oligonychus newcomeri</i>	spider mite
<i>Oligonychus yothersi</i>	avocado red mite
<i>Tetranychus canadensis</i>	four spotted spider mite
<i>Tetranychus kanzawai</i>	Kanzawa spider mite
<i>Tetranychus mcdanieli</i>	McDaniel spider mite
<i>Tetranychus schoenei</i>	Schoenei spider mite
<i>Amphitetranychus viennensis</i>	hawthorn spider mite
Tydeidae	
<i>Tydeus</i> spp.	tydeid mites
Fungus	
Ascomycota: Ascomycetes	
Diaporthales	
Valsaceae	
<i>Diaporthe tanakae</i> (anamorph <i>Phomopsis tanakae</i>)	pear canker
<i>Leucostoma auerswaldii</i>	leucostoma canker
Diatrypales	
Diatrypaceae	
<i>Eutypella sorbi</i>	stem disease
Dothideales	
Mycosphaerellaceae	
<i>Mycosphaerella pyri</i> (anamorph <i>Septoria pyricola</i>)	leaf fleck of pear
<i>Mycosphaerella tulasnei</i>	rot
Schizothyriaceae	
<i>Schizothyrium perexiguum</i>	greasy blotch
Erysiphales	
Erysiphaceae	
<i>Pleochaeta mali</i>	powdery mildew
Heotiales	
Dermateaceae	
<i>Diplocarpon mali</i>	black spot
<i>Pezicula perennans</i>	perennial canker
Sclerotiniaceae	

<i>Grovesinia pyramidalis</i> (anamorph <i>Cristulariella moricola</i>)	target spot
<i>Monilinia laxa</i> f. <i>sp. mali</i>	brown rot
<i>Monilinia mali</i>	monilinia leaf blight
<i>Monilinia fructigena</i> (anamorph <i>Monilia fructigena</i>)	European brown rot
<i>Sclerotinia</i> spp.	neck rot
Rhytismatales	
Cryptomycetaceae	
<i>Potebniamyces pyri</i> (anamorph <i>Phacidiopycnis piri</i>)	Phacidiopycnis rot
Sordariales	
Chaetomiaceae	
<i>Chaetomium</i> spp.	fruit rot
Taphrinales	
Taphrinaceae	
<i>Taphrina bullata</i>	leaf blister
Xylariales	
Xylariaceae	
<i>Biscogniauxia marginata</i>	nailhead canker
<i>Daldinia vernicosa</i>	wood rot
<i>Xylaria mali</i>	black root rot
Ascomycota: Saccharomycetes	
Saccharomycetales	
Endomycetaceae	
<i>Endomycopsis mali</i>	rot
Basidiomycota: Basidiomycetes	
Agaricales	
Coprinaceae	
<i>Coprinus psychromorbidus</i>	coprinus rot
Tricholomataceae	
<i>Armillaria mellea</i>	armillaria root rot
<i>Armillaria ostoyae</i>	armillaria root rot
<i>Armillaria tabescens</i>	armillaria root rot
Ceratobasidiales	
Ceratobasidiaceae	
<i>Ceratobasidium stevensii</i>	thread blight
Ganodermatales	
Ganodermataceae	
<i>Ganoderma lucidum</i>	wood rot
Hymenochaetales	
Hymenochaetaceae	
<i>Phellinus pomaceus</i>	white heart rot
Lachnocladiales	
Lachnocladiaceae	
<i>Scytinostroma galactinum</i>	white root rot
Polyporales	
Corticaceae	
<i>Corticium koleroga</i>	thread blight
Cyphellaceae	
<i>Maireina marginata</i>	wood decay
Meripilaceae	
<i>Phlebia radiata</i>	wood decay
<i>Trametes ochracea</i>	wood decay
Poriales	
Coriolaceae	
<i>Ceriporia spissa</i>	wood rot
<i>Corioloopsis gallica</i>	white rot
<i>Fomes fomentarius</i>	wood decay
<i>Fomitopsis pinicola</i>	brown cubical rot
<i>Laetiporus sulphureus</i> (anamorph <i>Sporotrichum versisporum</i>)	brown cubical rot
<i>Lenzites betulina</i>	wood decay
<i>Oxyporus latemarginatus</i>	wood decay

<i>Oxyporus similis</i>	wood decay
Stereales	
Atheliaceae	
<i>Butlerelfia eustacei</i>	storage rot
Sistotremataceae	
<i>Phymatotrichopsis omnivorum</i>	Texas root rot
Basidiomycota: Urediniomycetes	
Uredinales	
Pucciniaceae	
<i>Gymnosporangium clavipes</i>	quince rust
<i>Gymnosporangium cornutum</i>	rust
<i>Gymnosporangium fuscum</i>	European pear rust
<i>Gymnosporangium globosum</i>	American hawthorn rust
<i>Gymnosporangium hemisphaericum</i>	rust
<i>Gymnosporangium libocedri</i>	Pacific Coast pear rust
<i>Gymnosporangium nelsonii</i>	Rocky Mountain pear rust
<i>Gymnosporangium nidus-avis</i>	rust
<i>Gymnosporangium nootkatense</i>	yellow cypress rust
<i>Gymnosporangium shiraianum</i>	rust
<i>Gymnosporangium</i> spp.	cedar apple rust
<i>Gymnosporangium tremelloides</i>	common juniper gall rust
<i>Gymnosporangium yamadae</i>	Japanese apple rust
<i>Gymnosporangium juniperi-virginianae</i>	cedar apple rust
Unknown Uredinales	
<i>Roestelia fenzeliana</i>	rust
<i>Roestelia levis</i>	rust
Basidiomycota: Ustomycetes	
Platyglloeales	
Platyglloeaceae	
<i>Helicobasidium mompa</i>	violet root rot
Mitosporic Fungi (Coelomycetes)	
Sphaeropsidales	
Sphaerioidaceae	
<i>Cytospora schulzeri</i>	bark disease
<i>Dothiorella mali</i>	fruit rot
<i>Phomopsis truncicola</i>	blight
<i>Phyllosticta solitaria</i>	apple blotch
<i>Phyllosticta</i> spp.	leaf spot
<i>Pyrenochaeta mali</i>	fruit rot
Mitosporic Fungi (Hyphomycetes)	
Hyphomycetales	
Dematiaceae	
<i>Alternaria mali</i>	alternaria blotch
<i>Alternaria</i> spp.	
<i>Helminthosporium papulosum</i>	black pox
<i>Cladosporium</i> spp.	mouldy core
<i>Epicoccum</i> spp.	mouldy core
<i>Stemphylium</i> spp.	
<i>Ulocladium</i> spp.	cladosporium rot
Moniliaceae	
<i>Aspergillus</i> spp.	coloured moulds
<i>Botrytis mali</i>	fruit rot
<i>Cephalosporium carpogenum</i>	fruit rot
<i>Cephalosporium</i> spp.	
<i>Penicillium</i> spp.	rot
<i>Ramularia macrospora</i>	bellflower leaf spot
<i>Verticillium</i> spp.	verticillium wilt
Tuberculariales	
Tuberculariaceae	
<i>Fusarium</i> spp.	

Unknown Hyphomycetes

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Oidium spp.

powdery mildew

Bacterium

Schizomycetes

Pseudomonadales

Pseudomonadaceae

Pseudomonas syringae pv. *papulans*

blister spot

Virus

Cherry rasp leaf virus

Clover yellow mosaic virus

Tomato bushy stunt virus

Tomato ringspot virus

Viroid

Apple dimple fruit viroid

Apple fruit crinkle viroid

Apple scar skin viroid

Phytoplasma

'*Candidatus* Phytoplasma asteris'

Apple sessile leaf phytoplasma

'*Candidatus* Phytoplasma mali'

Apple proliferation phytoplasma

Disease of unknown etiology

Apple blister bark agent

Apple brown ringspot agent

Apple bumpy fruit agent

Apple bunchy top agent

Apple dead spur agent

Apple decline

Apple freckle scurf agent

Apple green dimple and ring blotch agent

Apple junction necrotic pitting agent

Apple McIntosh depression agent

Apple narrow leaf agent

Apple Newton wrinkle agent

Apple pustule canker agent

Apple red ring agent

Apple rosette agent

Apple rough skin agent

Apple russet wart agent

Apple star crack agent

Apple transmissible internal bark necrosis agent

Inspection, Testing and Treatment Requirements for *Malus*

ORGANISM TYPES	MAF-ACCEPTABLE METHODS
Insects	Visual inspection AND approved insecticide treatments as described in section 2.2.1.6 of the Basic conditions [cuttings only]
Mites	Visual inspection AND approved miticide treatments as described in the section 2.2.1.6 of the Basic conditions [cuttings only] or binocular microscope inspection in PEQ [plants in tissue culture only]
Fungi	Growing season inspection in PEQ for symptom expression
Bacteria	
<i>Pseudomonas syringae</i> pv. <i>papulans</i>	Growing season inspection for symptom expression AND PCR
Viruses	
<i>Cherry rasp leaf virus</i>	Woody indexing ('Golden delicious') or herbaceous indexing (<i>Chenopodium quinoa</i> and <i>Chenopodium amaranticolor</i>) AND PCR
<i>Clover yellow mosaic virus</i>	Growing season inspection
<i>Tomato bushy stunt virus</i>	Herbaceous indexing (<i>Chenopodium quinoa</i> and <i>Chenopodium amaranticolor</i>)
<i>Tomato ringspot virus</i>	Herbaceous indexing (<i>Chenopodium quinoa</i> and <i>Chenopodium amaranticolor</i>) AND ELISA or PCR
Viroids	
<i>Apple dimple fruit viroid</i>	Woody indexing ('Red delicious') AND PCR
<i>Apple fruit crinkle viroid</i>	Woody indexing ('Golden delicious') AND PCR
<i>Apple scar skin viroid</i>	Woody indexing ('Golden delicious' and 'Red delicious') AND PCR
Phytoplasmas	
' <i>Candidatus</i> Phytoplasma asteris' (Apple sessile leaf phytoplasma)	Nested PCR using universal phytoplasma primers
' <i>Candidatus</i> Phytoplasma mali' (Apple proliferation phytoplasma)	Woody indexing ('Golden delicious') AND nested PCR using universal phytoplasma primers
Diseases of unknown etiology	
Apple blister bark agent	Growing season inspection
Apple brown ringspot agent	Growing season inspection
Apple bumpy fruit agent	Growing season inspection
Apple bunchy top agent	Growing season inspection
Apple dead spur agent	Woody indexing ('Golden delicious' and 'Red delicious')
Apple decline	Growing season inspection
Apple freckle scurf agent	Growing season inspection
Apple green dimple and ring blotch agent	Growing season inspection
Apple junction necrotic pitting agent	Growing season inspection
Apple McIntosh depression agent	Growing season inspection
Apple narrow leaf agent	Growing season inspection
Apple Newton wrinkle agent	Growing season inspection
Apple pustule canker agent	Growing season inspection
Apple red ring agent	Growing season inspection
Apple rosette agent	Growing season inspection
Apple rough skin agent	Woody indexing ('Golden delicious')
Apple russet wart agent	Woody indexing ('Golden delicious')
Apple star crack agent	Woody indexing ('Golden delicious' and 'Red delicious')
Apple transmissible internal bark necrosis agent	Growing season inspection

Notes:

1. **Pest free area or Pest free place of production** endorsements for regulated viruses, viroids, phytoplasmas, and diseases of unknown etiology must be assessed by MAF prior to permit issue. The exporting NPPO must endorse additional declarations on the phytosanitary certificate, to be considered equivalent to testing in post entry quarantine.
2. **Unit for testing** is an individual imported tissue culture plantlet or cutting. Each single plantlet or cutting must be labelled individually and tested separately. Samples from up to five plants may be bulked for testing provided that either:
 - a) the imported cuttings were sourced from a single mother plants and/or the plants were derived from a single imported cutting which was split into separate cuttings upon arrival in New Zealand, AND traceable records are maintained by the operator of the post entry quarantine facility; or
 - b) in the case of tissue culture where plants are clonal, and this is confirmed by evidence from the NPPO in the exporting country, AND traceable records are maintained by the operator of the post entry quarantine facility.
3. **Tissue culture plantlets** must be deflasked and grown in a post entry quarantine greenhouse, only material from the greenhouse is to be selected for testing.
4. **Growing season** is defined as an extended period of plant growth that includes environmental conditions equivalent to spring (longer wetter days and colder temperatures), summer (longer dryer days and warm temperatures), and autumn (shorter wetter days and warm but cooling temperatures).
5. **Virus testing** is to be conducted on new spring growth.
6. **Phytoplasma and bacteria testing** is to be conducted at the end of the summer growth period.
7. **Woody indexing** is to occur on susceptible *Malus* cultivars growing in Level 1 post entry quarantine. Woody indexing can only occur at the completion of all herbaceous indicator, molecular, and serological testing. Plants must remain in Level 3 post entry quarantine for the completion of woody indicator testing.
8. **Testing protocols** for tests completed in New Zealand are described in the MAF Malus (Apple) Post-Entry Quarantine Testing Manual, which can be viewed on the website:
<http://www.biosecurity.govt.nz/files/regs/imports/plants/high-value-crops/malus-testing-manual.pdf>
9. **Inspection** of the *Malus* plants by the operator of the PEQ facility for signs of pest and disease must be at least twice per week during periods of active growth. A record of inspections carried out by the Operator is to be kept and made available to the MAF Inspector on request.
10. **Other internationally recognised testing methods** may be accepted by MAF with prior notification.