



Submission Form

Information Materials for Commodity Standards

Name of Country/RPPO: New Zealand

[Click here](http://www.ippc.int) to find the IPPC Procedure Manual for Standard Setting on the IPP (www.ippc.int), where you can download this form.

Submission number (2023-019):

Complete the following form, preferably in electronic format, and submit by e-mail to the IPPC Secretariat (ippc@fao.org).

Please use one form per commodity. An electronic version of this form is available on the International Phytosanitary Portal (IPP) at <https://www.ippc.int/en/core-activities/standards-and-implementation/call-for-topics-standards-and-implementation/> and <https://www.ippc.int/en/core-activities/standards-setting/member-consultation-draft-ispms/>. Incomplete submissions will be returned. Please save the completed submission form with the following file name: COUNTRY or RPPO NAME –Title of commodity.doc, prior to submitting to the IPPC Secretariat via e-mail.

(Text in brackets given for explanatory purposes)

Name and description of Commodity	Fresh citrus fruit of the genus <i>Citrus</i> produced for trade and intended for consumption. It may include the calyx attached but not stem, leaves or other plant parts.
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Information materials provided are for the following *Citrus* species based on the Swingle naming system

<i>Citrus</i> species (or hybrids)	Synonyms	Common names
<i>Citrus aurantiifolia</i> (Christ.) Swingle	<i>Citrus limettoides</i>	Lime, Sweet lime, Key lime, Mexican lime
<i>Citrus latifolia</i> (Yu. Tanaka) Tanaka		Tahitian lime, Persian lime
<i>Citrus limon</i> (L.) Burm.f.	<i>Citrus limonia</i> , <i>Citrus meyeri</i>	Lemon, Meyer lemon; Limonia
<i>Citrus maxima</i> (Burman) Merr.	<i>Citrus grandis</i>	Pomelo, Pummelo
<i>Citrus paradisi</i> McFad.	<i>Citrus hassaku</i>	Grapefruit, Hassaku, Ruby grapefruit
<i>Citrus reticulata</i> L.	<i>Citrus unshiu</i> , <i>Citrus deliciosa</i>	Mandarin, Tangerine, Unshu, Satsuma
<i>Citrus sinensis</i> (L.) Osbeck	<i>Citrus iyo</i>	Orange, Iyokan, Valencia orange, Navel orange
<i>Citrus reticulata</i> × <i>Citrus paradisi</i>		Tangelo
<i>Citrus reticulata</i> × <i>Citrus sinensis</i>		Tangor

<p><u>Submitted by:</u> <i>(Name of national or regional plant protection organization)</i></p> <p>Ministry for Primary Industries, New Zealand</p>
<p><u>Contact:</u> <i>(Contact information of an individual able to clarify issues relating to this submission, including pest risk assessment, phytosanitary measures, interception data related to measure etc.)</i></p> <p>Name: Lihong Zhu.....</p> <p>Position and organization: Ministry for Primary Industries.....</p> <p>Mailing address: PO Box 2526, Wellington 6143, New Zealand.....</p> <p>.....</p> <p>Phone:+64 29 894-0261..... Fax:+64 4 894-0733.....</p> <p>E-mail: Lihong.Zhu@mpi.govt.nz.....</p>



List of pests regulated by New Zealand and associated with *Citrus* fruit for trade

Pest type	Family	Species (include authority)	Host(s)	Link to PRA
Fungus (Botryosphaeriales)	Botryosphaeriaceae	<i>Phyllosticta citricarpa</i> (McAlpine) Aa (1973)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Anastrepha fraterculus</i> (Wiedemann, 1830)	Grapefruit, lemon, mandarin, orange, pomelo, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Anastrepha ludens</i> (Loew, 1873)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Anastrepha obliqua</i> (Macquart, 1835)	Grapefruit, lemon, mandarin, orange, pomelo, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Anastrepha serpentina</i> (Wiedemann, 1830)	Grapefruit, lemon, mandarin, orange, pomelo, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Anastrepha sororcula</i> (Zucchi, 1979)	Orange	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Anastrepha striata</i> (Schiner, 1968)	Orange	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Anastrepha suspensa</i> Loew, 1862	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera aquilonis</i> (May, 1965)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera carambolae</i> (Drew and Hancock, 1994)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera correcta</i> (Bezzi, 1916)	Mandarin, orange, pomelo, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera curvipennis</i> (Froggatt, 1909)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera distincta</i> (Malloch, 1931)	Pomelo	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera dorsalis</i> (Hendel, 1912)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)

Pest type	Family	Species (include authority)	Host(s)	Link to PRA
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera frauenfeldi</i> (Schiner, 1868)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera jarvisi</i> (Tryon, 1927)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera kirki</i> (Froggatt, 1910)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera kraussi</i> (Hardy, 1951)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera latifrons</i> (Hendel, 1915)	Lemon, mandarin, Mexican lime, orange, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera melanotus</i> (Coquillett, 1909)	Grapefruit, mandarin, orange, pomelo, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera melas</i> (Perkins & May, 1949)	Grapefruit, orange	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera minax</i> (Enderlein, 1920)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera neohumeralis</i> (Hardy, 1951)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera</i> species near <i>passiflorae</i>	Mandarin, Mexican lime, orange, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera passiflorae</i> (sensu Drew and Hancock, 1995)	Grapefruit, lemon, mandarin, orange, pomelo, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera psidii</i> (Froggatt, 1899)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera trilineola</i> (Drew, 1989)	Grapefruit, lemon, mandarin, orange, pomelo, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera trivialis</i> (Drew, 1971)	Grapefruit, mandarin, orange, tangelo, tangor	MPI (2022)

Pest type	Family	Species (include authority)	Host(s)	Link to PRA
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera tryoni</i> (Froggatt, 1897)	Grapefruit, lemon, Mexican lime, mandarin, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera tsuneonis</i> (Miyake, 1919)	Grapefruit, mandarin, orange, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera xanthodes</i> (Broun, 1904)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera zonata</i> (Saunders 1842)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Ceratitis capitata</i> (Wiedemann, 1824)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Zeugodacus cucurbitae</i> (Coquillett, 1899) (Virgilio et al., 2015) (<i>Bactrocera cucurbitae</i>)	Mandarin, orange, pomelo, tangelo, tangor	MPI (2022)
Fruit fly (Diptera)	Tephritidae	<i>Zeugodacus tau</i> (Walker, 1849)	Grapefruit, mandarin, orange, pomelo, tangelo, tangor	MPI (2022)
Psyllid (Hemiptera) (vector of <i>Candidatus</i> Liberibacter species)	Liviidae	<i>Diaphorina citri</i> (Kuwayama, 1908)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Psyllid (Hemiptera) (vector of <i>Candidatus</i> Liberibacter species)	Trioziidae	<i>Trioza erytreae</i> (Del Guercio, 1918)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Mealybug (Hemiptera)	Pseudococcidae	<i>Nipaecoccus viridis</i> (Newstead, 1894)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Mealybug (Hemiptera)	Pseudococcidae	<i>Planococcus kraunhiae</i> (Kuwana, 1902)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Mealybug (Hemiptera)	Pseudococcidae	<i>Planococcus minor</i> (Maskell, 1897)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)

Pest type	Family	Species (include authority)	Host(s)	Link to PRA
Thrips (Thysanoptera)	Thripidae	<i>Caliothrips fasciatus</i> (Pergande, 1895)	Navel oranges	MPI (2022)
Thrips (Thysanoptera)	Thripidae	<i>Scirtothrips dorsalis</i> (Hood, 1919)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Thrips (Thysanoptera)	Thripidae	<i>Chaetanaphothrips orchidii</i> (Moulton, 1907)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Mite (Trombidiformes) (vector of Citrus leprosis viruses)	Tenuipalpidae	<i>Brevipalpus californicus</i> (Banks, 1904)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Mite (Trombidiformes) (vector of Citrus leprosis viruses)	Tenuipalpidae	<i>Brevipalpus obovatus</i> (Donnadieu, 1875)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Mite (Trombidiformes) (vector of Citrus leprosis viruses)	Tenuipalpidae	<i>Brevipalpus phoenicis</i> (Geijskes, 1939) <i>sensu lato</i> (s. l.)	Grapefruit, lemon, mandarin, Mexican lime, orange, pomelo, Tahitian lime, tangelo, tangor	MPI (2022)
Mite (Trombidiformes)	Tetranychidae	<i>Eotetranychus lewisi</i> (McGregor, 1943)	Grapefruit, lemon, mandarin, orange, pomelo, tangelo, tangor	MPI (2022)
Mite (Trombidiformes)	Tetranychidae	<i>Tetranychus kanzawai</i> (Kishida, 1927)	Grapefruit, lemon, mandarin, orange, pomelo, tangelo, tangor	MPI (2022)

References:

MPI, 2022. Import risk analysis: citrus (*Citrus* spp.) fresh citrus fruit for human consumption. <https://www.mpi.govt.nz/dmsdocument/48145-Import-risk-analysis-citrus-Citrus-spp.-fresh-fruit-for-human-consumption-1.2>

MPI, 2021. Risk Management Proposal: Fresh citrus fruit (*Citrus* spp.) for human consumption. <https://www.mpi.govt.nz/dmsdocument/48235-Risk-Management-Proposal-Fresh-citrus-fruit-Citrus-for-human-consumption>

Links to NZ regulations:

MPI (accessed April 2023a): Import Health Standard: Fresh grapefruit (*Citrus paradisi*) for human consumption. <https://www.mpi.govt.nz/dmsdocument/50902-Fresh-Grapefruit-Citrus-paradisi-for-Human-Consumption-Import-health-standard>

MPI (accessed April 2023b): Import Health Standard: Fresh lemon (*Citrus limon*) for human consumption. <https://www.mpi.govt.nz/dmsdocument/50896-Fresh-Lemon-Citrus-limon-for-Human-Consumption-Import-health-standard>

MPI (accessed April 2023c): Import Health Standard: Fresh Mexican lime (*Citrus aurantiifolia*) for human consumption. <https://www.mpi.govt.nz/dmsdocument/50890-Fresh-Mexican-Lime-Citrus-aurantiifolia-for-Human-Consumption-Import-health-standard>

MPI (accessed April 2023d): Import Health Standard: Fresh Tahitian lime (*Citrus latifolia*) for human consumption. <https://www.mpi.govt.nz/dmsdocument/50893-Fresh-Tahitian-Lime-Citrus-latifolia-for-Human-Consumption-Import-health-standard>

MPI (accessed April 2023e): Import Health Standard: Fresh mandarin, tangelo and tangor (*Citrus reticulata*, *Citrus reticulata* x *Citrus paradisi* and *Citrus reticulata* x *Citrus sinensis*) for human consumption. <https://www.mpi.govt.nz/dmsdocument/50908-Fresh-Mandarin-Tangelo-and-Tangor-Citrus-reticulata-Citrus-reticulata-Citrus-paradisi-and-Citrus-reticulata-Citrus-sinensis-for-Human-Consumption-Import-health-standard>

MPI (accessed April 2023f): Import Health Standard: Fresh orange (*Citrus sinensis*) for human consumption. <https://www.mpi.govt.nz/dmsdocument/50905-Fresh-Orange-Citrus-sinensis-for-Human-Consumption-Import-health-standard>

MPI (accessed April 2023g): Import Health Standard: Fresh pomelo (*Citrus maxima*) for human consumption. <https://www.mpi.govt.nz/dmsdocument/50899-Fresh-Pomelo-Citrus-maxima-for-Human-Consumption-Import-health-standard>

List of pests regulated by other NPPOs and associated with New Zealand *Citrus* fruit for trade

Pest type	Family	Species (including authority)	Host(s)	Regulated by	Link to PRA
Moth (Lepidoptera)	Carposinidae	<i>Coscinoptycha improbana</i> (Meyrick, 1881)	All citrus	USA	HFRINZ (2005)
Moth (Lepidoptera)	Tortricidae	<i>Cnephasia jactatana</i> (Walker, 1863)	All citrus	USA	HFRINZ (2005)
Moth (Lepidoptera)	Tortricidae	<i>Ctenopseustis obliquana</i> (Walker, 1863)	All citrus	USA	HFRINZ (2005)
Moth (Lepidoptera)	Tortricidae	<i>Planotortrix excessana</i> . (Walker)	All citrus	USA	HFRINZ (2005)
Thrips (Thysanoptera)	Thripidae	<i>Pezothrips kellyanus</i> (Bagnall, 1916)	All citrus	USA	HFRINZ (2005)
Scale (Hemiptera)	Diaspididae	<i>Quadraspidiotus perniciosus</i> (Comstock, 1881)	All citrus	French Polynesia	Not available

¹Although these pests are associated with all citrus, only lemons are exported to the USA.

References:

HFRINZ Horticulture and Food Research Institute of New Zealand (2005) Importation of fresh citrus fruit (*Citrus* spp.) from New Zealand into the United States of America: Qualitative, Pathway-Initiated Risk Assessment <https://www.regulations.gov/document/APHIS-2005-0107-0003>

Additional pests regulated by other NPPOs. For these pests New Zealand has officially declared pest freedom as per ISPM 8 and New Zealand's pest freedom is recognised by trading partners

Pest type	Family	Species (including authority)	Host(s)	Regulated by	Link to PRA
Fungus (Botryosphaeriales)	Botryosphaeriaceae	<i>Guignardia citricarpa</i> (Kiely, 1948)	All citrus	French Polynesia	Not available
Fungus (Capnodiales)	Mycosphaeraceae	<i>Phaeoramularia (Cercospora) angolensis</i> (Carvalho & Mendes) Kirk, 1986)	All citrus	French Polynesia	Not available
Fruit fly (Diptera)	Tephritidae	<i>Anastrepha</i> spp.	All citrus	New Caledonia	Not available
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera cucurbitae</i> (Coquillett, 1849)	All citrus	New Caledonia	Not available
Fruit fly (Diptera)	Tephritidae	<i>Bactrocera dorsalis</i> complex	All citrus	New Caledonia	Not available
Fruit fly (Diptera)	Tephritidae	<i>Ceratitis capitata</i> (Wiedemann, 1824)	All citrus	New Caledonia	Not available
Thrips (Thysanoptera)	Thripidae	<i>Scirtothrips aurantia</i> (Faure, 1929)	All citrus	French Polynesia	Not available
Thrips (Thysanoptera)	Thripidae	<i>Scirtothrips citri</i> (Moulton 1909)	All citrus	French Polynesia	Not available
Bacterium (Xanthomonadales)	Xanthomonadaceae	<i>Xanthomonas axonopodis</i> pv. <i>citris</i> (Hasse, 1915)	All citrus	New Caledonia	Not available
Bacterium (Xanthomonadales)	Xanthomonadaceae	<i>Xanthomonas campestris</i> pv. <i>aurantifolii</i> (Gabriel et al., 1989)	All citrus	French Polynesia	Not available
Bacterium (Xanthomonadales)	Xanthomonadaceae	<i>Xanthomonas campestris</i> pv. <i>citri</i> (ex Hasse 1915)	All citrus	French Polynesia	Not available

**Measures required by New Zealand for the Import of *Citrus* Fruit**

Irradiation for fruit flies	
Name of Measure	Irradiation treatment for fruit flies
Measure Type	Irradiation
Active Ingredient	NA
Schedule	Minimum dose to prevent adult emergence: 70 Gy <i>Anastrepha ludens</i> 70 Gy <i>Anastrepha obliqua</i> 100 Gy <i>Anastrepha serpentina</i> 100 Gy <i>Bactrocera jarvisi</i> 100 Gy <i>Bactrocera tryoni</i> 100 Gy <i>Ceratitis capitata</i> 150 Gy Fruit flies of the family Tephritidae
Commodity	All citrus
Target Pests	Fruit flies of the family Tephritidae
Reference	See links to NZ regulations above
Other information (Please complete as many fields as possible)	
Is there quantitative or qualitative evidence to indicate the measure is effective?	
Yes, as outlined in the relevant ISPM PTs.	
Does experience from use in international trade indicate that the measure is effective?	
<p>Irradiation is applied to manage fruit flies on multiple commodities and is considered effective at preventing emergence of adult fruit flies (efficacy varies between 99.9968% - 99.999% on citrus as described in the ISPM 28 PTs).</p> <p>Irradiation is a new option (2022) offered as a phytosanitary measure for the import of <i>Citrus</i> into New Zealand. New Zealand has imported irradiated fresh commodities since 2004 without issue.</p>	
Has the measure been successfully used to manage non-compliant consignments?	
Irradiation is not used to manage non-compliant consignments on arrival as it is not available for use in New Zealand.	
Has the measure been successfully used to effectively manage pest risk domestically?	
<p>The measure has not been used domestically in New Zealand because:</p> <ul style="list-style-type: none"> – New Zealand is free from economically important fruit flies – The measure is not available for use in New Zealand 	
Has the measure been used successfully by the private sector or authorized entities?	
Unknown	
Has the measure has been identified as an effective pest risk management option based on a PRA or comparable technical evaluation?	

Yes, refer <https://www.mpi.govt.nz/dmsdocument/48235-Risk-Management-Proposal-Fresh-citrus-fruit-Citrus-for-human-consumption>

Is the measure, relevant to the pest, adopted in an ISPM or regional standard?

Yes, the relevant ISPM 28 PTs are:

- PT 1: Irradiation treatment for *Anastrepha ludens*
- PT 2: Irradiation treatment for *Anastrepha obliqua*
- PT 3: Irradiation treatment for *Anastrepha serpentina*
- PT 4: Irradiation treatment for *Bactrocera jarvisi*
- PT 5: Irradiation treatment for *Bactrocera tryoni*
- PT 7: Irradiation treatment for fruit flies of the family Tephritidae (generic)
- PT 14: Irradiation treatment for *Ceratitis capitata*
- PT 42: Irradiation treatment for *Zeugodacus tau*

Cold treatment for fruit flies #1	
Name of Measure	Cold treatment for fruit flies
Measure Type	Physical (cold)
Active Ingredient	NA
Schedule	1.11 °C or below for 15 continuous days; OR 1.67 °C or below for 17 continuous days
Commodity	All citrus
Target Pests	<i>Anastrepha fraterculus</i> <i>Anastrepha obliqua</i> <i>Anastrepha serpentina</i> <i>Anastrepha sororcula</i> <i>Anastrepha striata</i>
Reference	See links to NZ regulations above
Other information (Please complete as many fields as possible)	
Is there quantitative or qualitative evidence to indicate the measure is effective?	
Refer MPI, 2021. A novel method of determining a cold treatment for fruit flies associated with citrus https://mpi.govt.nz/dmsdocument/48148/direct	
Does experience from use in international trade indicate that the measure is effective?	
There have been no significant imports of <i>Citrus</i> into NZ using this schedule because it was only recently imposed (2022) to manage pest risk for a new market access request. However, the schedule aligns with the USDA treatment manual, schedule T107-a-1, and therefore, it is assumed that <i>Citrus</i> has been successfully treated as per the schedule and imported into the US.	
Has the measure been successfully used to manage non-compliant consignments?	
Cold treatment is not generally used to manage non-compliant consignments on arrival in New Zealand due to operational restrictions.	
Has the measure been successfully used to effectively manage pest risk domestically?	
The measure has not been used domestically in New Zealand because New Zealand is free from economically important fruit flies.	
Has the measure been used successfully by the private sector or authorized entities?	
Unknown	
Has the measure has been identified as an effective pest risk management option based on a PRA or comparable technical evaluation?	
Yes, refer https://www.mpi.govt.nz/dmsdocument/48235-Risk-Management-Proposal-Fresh-citrus-fruit-Citrus-for-human-consumption and https://mpi.govt.nz/dmsdocument/48148/direct	
Is the measure, relevant to the pest, adopted in an ISPM or regional standard?	
No	

Cold treatment for fruit flies #2	
Name of Measure	Cold treatment for fruit flies
Measure Type	Physical (cold)
Active Ingredient	NA
Schedule	0.56 °C or below for 18 continuous days; OR 1.11 °C or below for 20 continuous days; OR 1.67 °C or below for 22 continuous days
Commodity	All citrus
Target Pests	<i>Anastrepha ludens</i> <i>Bactrocera carambolae</i> <i>Bactrocera correcta</i>
Reference	See links to NZ regulations above
Other information (<i>Please complete as many fields as possible</i>)	
Is there quantitative or qualitative evidence to indicate the measure is effective?	
Refer MPI, 2021. A novel method of determining a cold treatment for fruit flies associated with citrus https://mpi.govt.nz/dmsdocument/48148/direct	
Does experience from use in international trade indicate that the measure is effective?	
There have been no significant imports of <i>Citrus</i> into NZ using this schedule because it was only recently imposed (2022) to manage pest risk for a new market access request. However, the schedule aligns with the USDA treatment manual, schedule T107-b, and therefore, it is assumed that <i>Citrus</i> has been successfully treated as per the schedule and imported into the US	
Has the measure been successfully used to manage non-compliant consignments?	
Cold treatment is not generally used to manage non-compliant consignments on arrival in New Zealand due to operational restrictions.	
Has the measure been successfully used to effectively manage pest risk domestically?	
The measure has not been used domestically in New Zealand because New Zealand is free from economically important fruit flies.	
Has the measure been used successfully by the private sector or authorized entities?	
Unknown	
Has the measure has been identified as an effective pest risk management option based on a PRA or comparable technical evaluation?	
Yes, refer https://www.mpi.govt.nz/dmsdocument/48235-Risk-Management-Proposal-Fresh-citrus-fruit-Citrus-for-human-consumption and https://mpi.govt.nz/dmsdocument/48148/direct	
Is the measure, relevant to the pest, adopted in an ISPM or regional standard?	
No	

Cold treatment for fruit flies #3	
Name of Measure	Cold treatment for fruit flies
Measure Type	Physical (cold)
Active Ingredient	NA
Schedule	1.67 °C or below for 14 continuous days
Commodity	All citrus
Target Pests	<i>Anastrepha suspensa</i>
Reference	See links to NZ regulations above
Other information (Please complete as many fields as possible)	
Is there quantitative or qualitative evidence to indicate the measure is effective?	
Refer MPI, 2021. A novel method of determining a cold treatment for fruit flies associated with citrus https://mpi.govt.nz/dmsdocument/48148/direct	
Does experience from use in international trade indicate that the measure is effective?	
This is a new phytosanitary measure, imposed in 2022, for the import of <i>Citrus</i> to NZ for a new market access request.	
Has the measure been successfully used to manage non-compliant consignments?	
Cold treatment is not generally used to manage non-compliant consignments on arrival in New Zealand due to operational restrictions.	
Has the measure been successfully used to effectively manage pest risk domestically?	
The measure has not been used domestically in New Zealand because New Zealand is free from economically important fruit flies.	
Has the measure been used successfully by the private sector or authorized entities?	
Unknown	
Has the measure has been identified as an effective pest risk management option based on a PRA or comparable technical evaluation?	
Yes, refer https://www.mpi.govt.nz/dmsdocument/48235-Risk-Management-Proposal-Fresh-citrus-fruit-Citrus-for-human-consumption and https://mpi.govt.nz/dmsdocument/48148/direct	
Is the measure, relevant to the pest, adopted in an ISPM or regional standard?	
No	

Cold treatment for fruit flies #4	
Name of Measure	Cold treatment for fruit flies
Measure Type	Physical (cold)
Active Ingredient	NA
Schedule	1°C or below for 16 continuous days
Commodity	All citrus
Target Pests	<i>Bactrocera aquilonis</i> <i>Bactrocera frauenfeldi</i> <i>Bactrocera jarvisi</i> <i>Bactrocera kraussi</i> <i>Bactrocera melas</i> <i>Bactrocera neohumeralis</i> <i>Bactrocera trivialis</i>
Reference	See links to NZ regulations above
Other information (Please complete as many fields as possible)	
Is there quantitative or qualitative evidence to indicate the measure is effective?	
Refer MPI, 2021. A novel method of determining a cold treatment for fruit flies associated with citrus https://mpi.govt.nz/dmsdocument/48148/direct	
Does experience from use in international trade indicate that the measure is effective?	
Yes, New Zealand imports large volumes of cold treated citrus from Australia where these fruit flies are present. This measure has been in place since before 1999.	
Has the measure been successfully used to manage non-compliant consignments?	
Cold treatment is not generally used to manage non-compliant consignments on arrival in New Zealand due to operational restrictions.	
Has the measure been successfully used to effectively manage pest risk domestically?	
The measure has not been used domestically in New Zealand because New Zealand is free from economically important fruit flies.	
Has the measure been used successfully by the private sector or authorized entities?	
Unknown	
Has the measure has been identified as an effective pest risk management option based on a PRA or comparable technical evaluation?	
Yes, refer https://www.mpi.govt.nz/dmsdocument/48235-Risk-Management-Proposal-Fresh-citrus-fruit-Citrus-for-human-consumption and https://mpi.govt.nz/dmsdocument/48148/direct	
Is the measure, relevant to the pest, adopted in an ISPM or regional standard?	
No	

Cold treatment for fruit flies #5	
Name of Measure	Cold treatment for fruit flies
Measure Type	Physical (cold)
Active Ingredient	NA
Schedule	1.7°C or below for 15 continuous days
Commodity	All citrus
Target Pests	<i>Bactrocera dorsalis</i>
Reference	See links to NZ regulations above
Other information (<i>Please complete as many fields as possible</i>)	
Is there quantitative or qualitative evidence to indicate the measure is effective?	
Refer MPI, 2021. A novel method of determining a cold treatment for fruit flies associated with citrus https://mpi.govt.nz/dmsdocument/48148/direct	
Does experience from use in international trade indicate that the measure is effective?	
This is a new phytosanitary measure, imposed in 2022, for the import of <i>Citrus</i> to NZ for a new market access request.	
Has the measure been successfully used to manage non-compliant consignments?	
Cold treatment is not generally used to manage non-compliant consignments on arrival in New Zealand due to operational restrictions.	
Has the measure been successfully used to effectively manage pest risk domestically?	
The measure has not been used domestically in New Zealand because New Zealand is free from economically important fruit flies.	
Has the measure been used successfully by the private sector or authorized entities?	
Unknown	
Has the measure has been identified as an effective pest risk management option based on a PRA or comparable technical evaluation?	
Yes, refer https://www.mpi.govt.nz/dmsdocument/48235-Risk-Management-Proposal-Fresh-citrus-fruit-Citrus-for-human-consumption and https://mpi.govt.nz/dmsdocument/48148/direct	
Is the measure, relevant to the pest, adopted in an ISPM or regional standard?	
No	

Cold treatment for fruit flies #6	
Name of Measure	Cold treatment for fruit flies
Measure Type	Physical (cold)
Active Ingredient	NA
Schedule	Mexican lime (<i>C. aurantiifolia</i>), Tahitian lime (<i>C. latifolia</i>), mandarin, tangelo, tangor (<i>C. reticulata</i> , <i>C. reticulata</i> x <i>C. paradisi</i> , <i>C. reticulata</i> x <i>C. sinensis</i>); orange (<i>C. sinensis</i>), pomelo (<i>C. maxima</i>) 3°C or below for 16 continuous days
	Grapefruit (<i>C. paradisi</i>), Lemon (<i>Citrus limon</i>) 3°C or below for 14 continuous days
Commodity	As described above
Target Pests	<i>Bactrocera tryoni</i>
Reference	See links to NZ regulations above
Other information (Please complete as many fields as possible)	
Is there quantitative or qualitative evidence to indicate the measure is effective?	
Refer MPI, 2021. A novel method of determining a cold treatment for fruit flies associated with citrus https://mpi.govt.nz/dmsdocument/48148/direct	
Does experience from use in international trade indicate that the measure is effective?	
Yes, New Zealand imports large volumes of cold treated citrus from Australia where this fly is present. This measure has been in place since before 1999. This treatment schedules also aligns with the USDA treatment manual i.e. T107-d-2, T107-d-3 for the import into the US of citrus from Australia.	
Has the measure been successfully used to manage non-compliant consignments?	
Cold treatment is not generally used to manage non-compliant consignments on arrival in New Zealand due to operational restrictions.	
Has the measure been successfully used to effectively manage pest risk domestically?	
The measure has not been used domestically in New Zealand because New Zealand is free from economically important fruit flies.	
Has the measure been used successfully by the private sector or authorized entities?	
Unknown	
Has the measure has been identified as an effective pest risk management option based on a PRA or comparable technical evaluation?	
Yes, refer https://www.mpi.govt.nz/dmsdocument/48235-Risk-Management-Proposal-Fresh-citrus-fruit-Citrus-for-human-consumption and https://mpi.govt.nz/dmsdocument/48148/direct	
Is the measure, relevant to the pest, adopted in an ISPM or regional standard?	

PT 16: Cold treatment for *Bactrocera tryoni* on *Citrus reticulata* x *C. sinensis*
PT 17: Cold treatment for *Bactrocera tryoni* on *Citrus reticulata* x *C. sinensis*
PT 18: Cold treatment for *Bactrocera tryoni* on *Citrus limon*

Cold treatment for fruit flies #7	
Name of Measure	Cold treatment for fruit flies
Measure Type	Physical (cold)
Active Ingredient	NA
Schedule	1.7°C or below for 18 continuous days
Commodity	All citrus
Target Pests	<i>Bactrocera zonata</i>
Reference	See links to NZ regulations above
Other information (Please complete as many fields as possible)	
Is there quantitative or qualitative evidence to indicate the measure is effective?	
Refer MPI, 2021. A novel method of determining a cold treatment for fruit flies associated with citrus https://mpi.govt.nz/dmsdocument/48148/direct	
Does experience from use in international trade indicate that the measure is effective?	
There have been no significant imports of <i>Citrus</i> into NZ using this schedule. However, the schedule aligns with the USDA treatment manual, schedule T107-L, and therefore, it is assumed that <i>Citrus</i> has been successfully treated as per the schedule and imported into the US.	
Has the measure been successfully used to manage non-compliant consignments?	
Cold treatment is not generally used to manage non-compliant consignments on arrival in New Zealand due to operational restrictions.	
Has the measure been successfully used to effectively manage pest risk domestically?	
The measure has not been used domestically in New Zealand because New Zealand is free from economically important fruit flies.	
Has the measure been used successfully by the private sector or authorized entities?	
Unknown	
Has the measure has been identified as an effective pest risk management option based on a PRA or comparable technical evaluation?	
Yes, refer https://www.mpi.govt.nz/dmsdocument/48235-Risk-Management-Proposal-Fresh-citrus-fruit-Citrus-for-human-consumption	
Is the measure, relevant to the pest, adopted in an ISPM or regional standard?	
PT 41: Cold treatment for <i>Bactrocera zonata</i> on <i>Citrus sinensis</i>	

Cold treatment for fruit flies #8	
Name of Measure	Cold treatment for fruit flies
Measure Type	Physical (cold)
Active Ingredient	NA
Schedule	Orange (<i>C. sinensis</i>) 1.11 °C or below for 14 continuous days; OR 2.00 °C or below for 16 continuous days; OR 2.22 °C or below for 18 continuous days; OR 3.00 °C or below for 20 continuous days
	Grapefruit (<i>C. paradisi</i>), Mexican lime (<i>C. aurantiifolia</i>), Tahitian lime (<i>C. latifolia</i>), mandarin, tangelo, tangor (<i>C. reticulata</i> , <i>C. reticulata</i> x <i>C. paradisi</i> , <i>C. reticulata</i> x <i>C. sinensis</i>); pomelo (<i>C. maxima</i>) 1.11 °C or below for 14 continuous days; OR 1.67 °C or below for 16 continuous days; OR 2.22 °C or below for 18 continuous days; OR 3.00 °C or below for 20 continuous days
	Lemon (<i>Citrus limon</i>) 1.11 °C or below for 14 continuous days; OR 2.00 °C or below for 16 continuous days; OR 3.00 °C or below for 18 continuous days
Commodity	As described above
Target Pests	<i>Ceratitis capitata</i>
Reference	See links to NZ regulations above
Other information (Please complete as many fields as possible)	
Is there quantitative or qualitative evidence to indicate the measure is effective?	
Refer MPI, 2021. A novel method of determining a cold treatment for fruit flies associated with citrus https://mpi.govt.nz/dmsdocument/48148/direct	
Does experience from use in international trade indicate that the measure is effective?	
<p>Yes, schedules for cold treatment at 3°C for various times have been used for trade in <i>Citrus</i> from Australia for fruit sourced from outside of PFAs. Large tonnages have been treated with cold and no live <i>Ceratitis capitata</i> have ever been intercepted.</p> <p>Some treatment schedules align with the USDA treatment manual e.g. T107-a, T107-a-2, T107-a-3</p>	
Has the measure been successfully used to manage non-compliant consignments?	
Cold treatment is not generally used to manage non-compliant consignments on arrival in New Zealand due to operational restrictions.	
Has the measure been successfully used to effectively manage pest risk domestically?	
The measure has not been used domestically in New Zealand because New Zealand is free from economically important fruit flies.	
Has the measure been used successfully by the private sector or authorized entities?	
Unknown	

Has the measure has been identified as an effective pest risk management option based on a PRA or comparable technical evaluation?

Yes, refer <https://www.mpi.govt.nz/dmsdocument/48235-Risk-Management-Proposal-Fresh-citrus-fruit-Citrus-for-human-consumption>

Is the measure, relevant to the pest, adopted in an ISPM or regional standard?

Yes, refer:

PT 24: Cold treatment for *Ceratitis capitata* on *Citrus sinensis*

PT 25: Cold treatment for *Ceratitis capitata* on *Citrus reticulata* × *Citrus sinensis*

PT 26: Cold treatment for *Ceratitis capitata* on *Citrus limon*

Pest Control Activities for various pests	
Name of Measure	Pest control activities
Measure Type	Chemical, cultural, biological, physical
Active Ingredient	NA
Schedule	Pest control activities effective against target pests applied pre-harvest or, at harvest or, post-harvest; OR Systems approach
Commodity	All citrus
Target Pests	<i>Brevipalpus californicus</i> <i>Brevipalpus obovatus</i> <i>Brevipalpus phoenicis</i> <i>Caliothrips fasciatus</i> <i>Chaetanaphothrips orchidii</i> <i>Diaphorina citri</i> <i>Eotetranychus lewisi</i> <i>Nipaecoccus viridis</i> <i>Planococcus kraunhiae</i> <i>Planococcus minor</i> <i>Phyllosticta citricarpa</i> <i>Scirtothrips dorsalis</i> <i>Tetranychus kanzawai</i> <i>Trioza erytreae</i>
Reference	See links to NZ regulations above
Other information (Please complete as many fields as possible)	
Is there quantitative or qualitative evidence to indicate the measure is effective?	
The effectiveness of the measures is determined by the exporting NPPO. Measures could include IPM systems with action thresholds for target pests, the application of specific pesticide treatments, fruit bagging to exclude pests, removal of infested fruit at harvest or, a post-harvest treatment.	
Does experience from use in international trade indicate that the measure is effective?	
Measures for the above pests were recently imposed (2022) following a review of existing importing requirements for <i>Citrus</i> and new requests for market access. The review of existing imports identified multiple interceptions of <i>B. californicus</i> , <i>B. lewisi</i> , <i>C. fasciatus</i> , and <i>P. minor</i> .	

Has the measure been successfully used to manage non-compliant consignments?
No, as the measures are generally applied prior to export.
Has the measure been successfully used to effectively manage pest risk domestically?
Yes
Has the measure been used successfully by the private sector or authorized entities?
Unknown
Has the measure has been identified as an effective pest risk management option based on a PRA or comparable technical evaluation?
Yes, refer https://www.mpi.govt.nz/dmsdocument/48235-Risk-Management-Proposal-Fresh-citrus-fruit-Citrus-for-human-consumption
Is the measure, relevant to the pest, adopted in an ISPM or regional standard?
No



Importing requirements for *Citrus* fruit to various countries from New Zealand

Importing Country	Citrus type	Botanical name	Importing Country Requirements (Additional Declarations to PC)
USA	Lemon	<i>Citrus meyeri</i>	Fruit is free from <i>Cnephasia jactatana</i> , <i>Coscinoptycha improbana</i> , <i>Ctenopseustis obliquana</i> , <i>Pezothrips kellyanus</i> , and <i>Planotortrix excessana</i> ."
Japan	Lemon	<i>Citrus meyeri</i>	Phytosanitary certificate only
China	Lemon	<i>Citrus meyeri</i>	Phytosanitary certificate only
New Caledonia	Citrus	<i>Citrus</i> spp.	<p>"Area of origin free from <i>Bactrocera cucurbitae</i>, fruit flies of dorsalis complex, <i>Ceratitis capitata</i>, fruit flies genus <i>Anastrepha</i> spp. or other fruit flies of economic importance."</p> <p>AND</p> <p>"Area of origin is free from <i>Xanthomonas axonopodis</i> pv <i>citri</i>" (Citrus canker)"</p>
French Polynesia	Citrus	<i>Citrus</i> spp.	<p>"The country or zone of origin must be officially free of <i>Xanthomonas campestris</i> pv. <i>aurantifolii</i>, and <i>Xanthomonas campestris</i> pv. <i>citri</i>".</p> <p>AND "Free from <i>Quadraspidiotus perniciosus</i>, <i>Scirtothrips aurantii</i> and <i>Scirtothrips citri</i>"</p> <p>AND "The country or zone of origin must be free of <i>Guignardia citricarpa</i> and <i>Phaeoramularia (Cercospora) angolensis</i>"</p> <p>OR "No signs of <i>Guignardia citricarpa</i> and <i>Phaeoramularia (Cercospora) angolensis</i> have been observed in the production zone or in its immediate surroundings (last growing season), and none of the fruit harvested in the production zone has shown any signs of <i>Guignardia citricarpa</i> and <i>Phaeoramularia (Cercospora) angolensis</i>"</p> <p>AND "New Zealand is free from <i>Bactrocera</i> spp. and <i>Ceratitis capitata</i>."</p>
Tonga	Citrus	<i>Citrus</i> spp.	Phytosanitary certificate only



New Zealand is free from several of the major pests of citrus regulated by importing countries such as fruit flies and citrus canker. Other pests are managed by commercial post-harvest processing

Commercial post-harvest processing for various pests	
Name of Measure	Commercial post-harvest processing
Measure Type	Physical
Active Ingredient	NA
Schedule	Post-harvest processing (for example, washing, brushing, sanitizing dips, waxing, and drying of fruit followed by inspection). Culling of damaged and infested fruit.
Commodity	All citrus
Target Pests	<i>Cnephasia jactatana</i> <i>Coscinoptycha improbana</i> <i>Ctenopseustis obliquana</i> <i>Pezothrips kellyanus</i> <i>Planotortrix excessana</i> <i>Quadraspidiotus perniciosus</i>
Reference	Refer to importing requirements for citrus from New Zealand to the USA
Other information (Please complete as many fields as possible)	
Is there quantitative or qualitative evidence to indicate the measure is effective?	
<p>There is evidence that wax treatments, when used in combination with the other post-harvest processes discussed provides significant control of adult arthropods in fruit crops (e.g., <i>Brevipalpus chilensis</i> in cherimoyas and citrus).</p> <p>Refer https://www.federalregister.gov/documents/2005/12/22/E5-7690/importation-of-fruits-and-vegetables</p>	
Does experience from use in international trade indicate that the measure is effective?	
<p>Yes, 3,035 tonnes of citrus were exported in the 2021-22 season (April 2021 – March 2022). Lemons are the major citrus fruit exported from New Zealand and small quantities of limes and non-satsuma mandarins. No non-compliances have been notified to MPI regarding interceptions of the listed regulated pests.</p>	

Has the measure been successfully used to manage non-compliant consignments?
No, as the measures are generally applied prior to export.
Has the measure been successfully used to effectively manage pest risk domestically?
Commercial post-harvest processing is used to maintain fruit quality for domestic sale.
Has the measure been used successfully by the private sector or authorized entities?
Commercial post-harvest processing is used by the private sector and many are private sector entities authorised by MPI to conduct phytosanitary activities.
Has the measure has been identified as an effective pest risk management option based on a PRA or comparable technical evaluation?
<p>Yes,</p> <ul style="list-style-type: none"> – HFRINZ Horticulture and Food Research Institute of New Zealand (2005) Importation of fresh citrus fruit (<i>Citrus</i> spp.) from New Zealand into the United States of America: Qualitative, Pathway-Initiated Risk Assessment https://www.regulations.gov/document/APHIS-2005-0107-0003. – https://www.federalregister.gov/documents/2005/12/22/E5-7690/importation-of-fruits-and-vegetables
Is the measure, relevant to the pest, adopted in an ISPM or regional standard?
No