



Risk Management Proposal:

Fresh *Citrus* spp. from the Arab Republic of Egypt for Human Consumption

22 February 2018

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Submissions

The Ministry for Primary Industries (MPI) invites comment from interested parties on the proposed new import health standard (IHS) for Fresh *Citrus* spp. from the Arab Republic of Egypt (Egypt) for Human Consumption which is supported by this Risk Management Proposal (RMP).

The meaning of an IHS is defined in section 22(1) of the Biosecurity Act 1993 as “An import health standard specifies requirements to be met for the effective management of risks associated with importing risk goods, including risks arising because importing the goods involves or might involve an incidentally imported new organism”.

MPI therefore seeks comment on the amended requirements (including measures) in the proposed IHS. MPI has developed this proposal based on the available scientific evidence and assessment of this evidence. If you disagree with the measures proposed to manage the risks, please provide either scientific data or published references to support your comments. This will enable MPI to consider additional evidence which may change how risks are proposed to be managed.

The following points may be of assistance in preparing comments:

- Wherever possible, comments should be specific to an IHS requirement (referencing section numbers or pest names as applicable).
- Where possible, reasons, data and supporting published references to support comments are requested.
- The use of examples to illustrate particular points is encouraged.

MPI encourages respondents to forward comments electronically (to arrive by close of business on 24 March 2018). Please include the following in your submission:

- The title of the consultation document in the subject line of your email;
- Your name and title (if applicable);
- Your organisation's name (if applicable); and
- Your address.

Send submissions to: plantimports@mpi.govt.nz.

However, should you wish to forward submissions in writing, please send them to the following address to arrive by close of business on 24 March 2018.

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Submissions received by the closure date will be considered during the development of the final IHS. Submissions received after the closure date may be held on file for consideration when the issued IHS is next revised/reviewed.

Official Information Act 1982

Please note that your submission is public information. MPI policy is to provide a copy of all submissions received and the review of submission to all parties who lodge submissions.

Submissions may be the subject of requests for information under the Official Information Act 1982 (OIA). The OIA specifies that information is to be made available to requesters unless there are sufficient grounds for withholding it, as set out in the OIA. Anyone preparing a submission may wish to inform MPI if there are grounds for withholding specific information contained in their submission, such as the information is commercially sensitive or they wish personal information withheld.

Any decision to withhold information requested under the OIA is reviewable by the Ombudsman.

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Purpose

- (1) The purpose of this risk management proposal (RMP) is to:
 - a) summarise the proposed amendments to the import health standard (IHS) for Fresh *Citrus* spp. for Human Consumption [previously the import health standard Fresh *Citrus* spp. from the Arab Republic of Egypt for Human Consumption].
 - b) explain how the proposed measures effectively manage the known biosecurity risk.

Proposed amendments include:

 - i) a change to the cold disinfestation treatment rate used to treat fruit flies;
 - ii) the removal of non-regulated pests;
 - iii) changes to the regulatory status of some pests and;
 - iv) updates in terminology from 'RG1, RG2 and RG3' to 'Basic, Targeted and MPI-Specified' pests.
 - c) explain how these measures are consistent with New Zealand's domestic legislation and international obligations.
- (2) The draft IHS is the subject of consultation under section 23(3) of the Biosecurity Act (1993). This RMP provides information to support the consultation on the draft IHS but is not itself the subject of consultation. However, MPI will accept comments and suggestions on the RMP in order to improve future IHS consultations.

Scope

- (3) This RMP lists the information and process used to determine proposed amendments to the pest risk management measures in the current IHS for *Citrus* spp. The RMP includes:
 - an update to pests associated with fresh *Citrus* spp. at the point of export from Egypt to New Zealand; and
 - a description of proposed amendments to pre-export phytosanitary measures considered for managing pests associated with imported fresh *Citrus* spp. from Egypt.
- (4) This RMP is divided into three parts:
 - Part 1 provides the background and context used to inform the draft amendments to the IHS for *Citrus* spp.
 - Part 2 outlines the approach used to determine amended risks to the IHS for *Citrus* spp., and provides information on the types of measures which may effectively manage specific risks associated with importing fresh *Citrus* spp. from Egypt.
 - Part 3 considers amendments to the regulated pests associated with fresh *Citrus* spp. from Egypt, and the appropriate measures to effectively manage these risks.

Background

- (5) The current IHS for *Citrus* spp. from Egypt was finalised in 2006. No trade has occurred to date as an Export Plan (previously Bilateral Quarantine Agreement) was not finalised between Egypt and New Zealand.
- (6) In 2015, Egypt provided MPI with updated technical information regarding pests associated with *Citrus* spp. to support the finalisation of documents to allow trade to commence.
- (7) Fresh *Citrus* spp. is currently approved for import from Australia, Japan, Mexico, New Caledonia, Samoa, Spain, United States of America and Vanuatu into New Zealand under IHS 155.02: *Importation and Clearance of Fresh Fruit and Vegetables*.

Summary of draft amendments

Cold disinfestation treatment rate change

Current IHS Requirements

- (8) The current cold treatment rates for *Bactrocera zonata* and *Ceratitis capitata* are listed in the table below.
Note: No trade has occurred under this rate for *B. zonata* for any import pathway.

Table 1: Cold disinfection treatment requirements from the 2006 IHS for *Citrus* spp. from Egypt

Fruit pulp temperature (°C)	Exposure period (consecutive days)
0.00 or below	10
0.55 or below	11
1.11 or below	12
1.66 or below	14
2.22 or below	16

Proposed Amendments to the IHS

- (9) The proposed cold treatment rate for the management of *B. zonata* is 1.67°C or below for 18 days (see Table 2)
- (10) The proposed cold treatment rate for the management of *C. capitata* are listed in Table 3.

Regulatory status change

- (11) *Carpophilus mutilatus* and *Pythium debaryanum* from the 2006 IHS for *Citrus* spp. from Egypt have undergone a change in regulatory status, therefore, the risk management requirements of these pests have been reviewed.

Part 1: Context

Domestic

- (12) The New Zealand biosecurity system is regulated through the Biosecurity Act 1993. Section 22 of the Act describes the meaning of an IHS, and requires that the IHS specifies requirements to be met for the effective management of risks associated with importing risk goods (including plants and plant products) into New Zealand.
- (13) The Ministry for Primary Industries (MPI) is the government authority responsible for the effective management of risks associated with the importation of risk goods into New Zealand (Part 3, Biosecurity Act 1993).
- (14) MPI engages with interested parties and/or affected New Zealand stakeholders and the exporting country requesting market access during the development of an IHS.
- (15) MPI follows MPI policies and procedures for the development of an IHS and consultation.

International

- (16) Where possible, phytosanitary measures are aligned with international standards, guidelines, and recommendations as per New Zealand's obligations under Article 3.1 of the World Trade Organisation (WTO) Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement), WTO 1995 and section 23(4)(c) of the Biosecurity Act 1993.
- (17) The SPS Agreement states that phytosanitary measures must not discriminate unfairly between countries or between imported or domestically produced goods, and where there is a choice of phytosanitary measures to reduce risk to an acceptable level, WTO members must select the least trade restrictive measure.

New Zealand's Biosecurity System

- (18) New Zealand operates a biosecurity system for which the phytosanitary aspect (covering plant health) is a key part.
- (19) No biosecurity system is capable of reducing risk to zero. The objective of the system is to reduce to an acceptable level the likelihood of entry and establishment of regulated organisms (including pests, diseases and weeds).
- (20) An organism is 'regulated' by MPI if it could cause unacceptable economic consequences (i.e. likely to cause unacceptable economic, environmental, socio-cultural or human health impacts in New Zealand) if it were to enter and establish in New Zealand, provided the following conditions are met:
 - a) is not present in New Zealand; or
 - b) it is present but under official control in New Zealand; and
 - c) it is able to establish and spread in New Zealand.
 - Entry and establishment is defined as 'introduction' by the International Plant Protection Convention (IPPC).
- (21) The New Zealand phytosanitary system focuses on ensuring that the most significant pests, for example economically important fruit flies, are unlikely to ever establish in New Zealand. The system also manages risk associated with all regulated pests.
- (22) The focus of the IHS for plant-based goods is to manage unacceptable phytosanitary risks identified as being associated with the goods before arrival at the New Zealand border. The expectation is that commercial consignments of plants and plant products meet New Zealand's phytosanitary import requirements on arrival (risk is managed off-shore).

- (23) MPI monitors the pathway performance related to each IHS to ensure it provides the expected level of protection. This is achieved through verification and inspection activities at the border (and where possible, identification of pests detected) and audits of the export systems and critical control points contained in the *Export Plans*.

Importing Fresh Produce

- (24) Fresh produce can only be imported subject to an IHS specifying the commodity, and from a country where MPI has approved the systems, programmes and standards for regulatory oversight by the National Plant Protection Organisation (NPPO). The export system is subject to audit by MPI.
- (25) In circumstances where regulated pests would cause significant harm if they became established in New Zealand are associated with the commodity, MPI requires the exporting NPPO to negotiate an *Export Plan* (see paragraph 29) with MPI. Exports to New Zealand cannot occur until the *Export Plan* has been agreed by MPI.

Strength of measures

- (26) Measures are required for regulated pests (see paragraph 18) where the 'probability of introduction and spread' on a pathway is unacceptable (i.e. if it is able to enter through the pathway, find a suitable host, and able to establish and spread in New Zealand).
- (27) The strength of the measure required should be no more than necessary to manage the risk the organism poses. MPI has classified measures into three categories of increasing strength: *Basic Measures*, *Targeted Measures* or *MPI-Specified Measures*.
- (28) The strength of measure required depends on the risk posed by the organism on the pathway. This risk is determined by a combination of the consequences the pest may cause if it was introduced into New Zealand and the likelihood that the pest will enter and establish from a pathway. For pests that would result in very high consequences, such as economically important species of fruit fly, *MPI-Specified Measures* are required. This is because these pests would cause significant negative consequences to New Zealand, even if the likelihood of them entering and establishing (risk) a transient population is low.
- (29) The greater the risk of a pest, the greater the level of assurance MPI requires that the pest is not present in a consignment unless the pest has been rendered non-viable (dead or sterile from irradiation). For *Targeted* and/ or *MPI-Specified Measure* pests an *Export Plan* will be negotiated with the exporting NPPO, supported by an MPI pathway assessment visit (if required). The *Export Plan* will identify how *Targeted* and *MPI-Specified Measures* will be applied. The *Export Plan* must be approved by MPI, and is subject to audit and review by MPI.
- (30) The proposed IHS for *Citrus* spp. includes all measures accepted for pests assessed as being possibly associated with the commodity.

Part 2: Approach

Commodity Description

- (31) “Fresh *Citrus* spp. from Egypt for human consumption” is defined as commercially produced, and harvested individual fruit of *Citrus aurantiifolia*, *C. limon*, *C. paradisi*, *C. sinensis*, *C. reticulata*, *C. paradisi x reticulata*, and *C. maxima* with all vegetative parts removed and have been cultivated, harvested, packed and transported to New Zealand. Fresh *Citrus* spp. may include calyx and a small amount of stem but does not include leaves or larger twigs and shoots.
- (32) “Commercially produced” is defined as the production of export quality fruit sourced from production sites that produce fruit for export under standard cultivation, pest-management, harvesting, disinfestation and packing activities. Infested, infected or damaged fruit must be discarded prior to packing.
- (33) Commercially produced *Citrus* spp. is graded to remove:
 - a) obviously damaged fruit, and plant material (such as peduncle, leaves, stems, flowers and bark) other than the fruit; and
 - b) all plant material from species other than *Citrus* spp.
- (34) Private consignments and products produced through non-commercial systems do not meet the definition of commercially produced *Citrus* spp. and are excluded from the scope of this RMP and the IHS for *Citrus* spp.

Information Sources

- (35) The following information was used to identify amendments to the risk status of organisms associated with fresh *Citrus* spp. from Egypt and the appropriate measures to manage the risk of their introduction (entry and establishment) into New Zealand:
 - a) IHS for *Citrus* spp. from the Arab Republic of Egypt (MPI, 2006).
 - b) ISPM 28. *Phytosanitary treatments for regulated pests* (Annex 24 - 29). Rome, IPPC, FAO.
 - c) MPI (2012). Internal advice.
 - d) Pest information supplied by Egypt’s Central Administration for Plant Quarantine (CAPQ, 2017).
 - e) USDA. (2012) Addition of a Cold Treatment Schedule T107-1 to the Treatment Manual for Peach Fruit Fly *Bactrocera zonata* (Saunders) in Oranges and Tangerines: *Treatment Evaluation Document*.
 - f) Relevant literature and database searches.

Assessment

- (36) The above information sources were used to assess amendments to the organisms’ associated with *Citrus* spp. from Egypt and their potential to enter New Zealand via the fresh produce import pathway, be exposed to a suitable host, and establish and spread in New Zealand. The pest assessment process follows part 2.1 of the International Standard for Phytosanitary Measures (ISPM) 11: *Pest risk analysis for quarantine pests*, MPI import risk analysis procedures and considered:
 - a) presence or absence in the exporting country;
 - b) presence or absence in New Zealand;
 - c) regulatory status in New Zealand;
 - d) association with the commodity and pathway;
 - e) potential for establishment and spread in New Zealand; and
 - f) potential to cause unwanted consequences in New Zealand.

Description of measures

- (37) The biosecurity system in New Zealand operates a series of components or layers (pre-border, border, and post-border) that together provide a high level of assurance that pests are unlikely to establish in New Zealand. No one part of the system is able to achieve the necessary assurance on its own. The main components in the pre-border and border system include:
- a) commercial production and packhouse activities (*Basic Measures*) to reduce pest prevalence on a commodity;
 - b) application of an additional measure to reduce pest prevalence on a commodity (*Targeted* and/ or *MPI-Specified Measure* where required);
 - c) official pre-export inspection and phytosanitary certification to verify that pre-export measures have been undertaken and effective as required by MPI and that the consignment is free from regulated pests;
 - d) on-arrival inspection of documentation in New Zealand to verify compliance with the IHS. Inspection of a consignment may also be conducted in New Zealand to verify pests are not present in a representative sample (e.g. no live regulated visible pests in a 600 unit sample); and
 - e) remedial action (e.g. treatment) if a pest is detected prior to biosecurity clearance being given for a consignment.
- (38) Measures of different strengths (*Basic*, *Targeted*, or *MPI-Specified*) are applied according to the risk of entry and establishment posed by a pest on the pathway and reduce the likelihood of introduction to a very low level on a consignment.

Basic Measures

- (39) *Basic Measures* are required to manage all organisms that could enter and establish in New Zealand. *Basic Measure* pests are pests identified through risk assessment as possibly being on the pathway. These include (but are not restricted to) the following required components:

Commercial production

- (40) All fresh produce for export to New Zealand, regardless of the associated pests, must be commercially produced using a quality system, recognised standard cultivation, pest management, harvest and packaging activities.
- (41) Commercial production of *Citrus* spp. includes:
- a) Recognised standard cultivation;
 - production site management and hygiene practices such as in-field weed control.
 - b) Pest management;
 - pest monitoring; and
 - management of pests and diseases including cultural, biological and chemical controls.
 - c) Harvest activities;
 - sorting of fruit to remove extraneous matter (such as plant material and excess soil) and non-export quality produce.
 - d) Packaging activities;
 - removal of remnant soil and extraneous material;
 - removal of leaves and stem from the fruit;
 - packed into new and clean material; and
 - product security maintained following export certification to prevent pest re-infestation.
- (42) All fresh produce for export to New Zealand must be of export quality to minimise the likelihood of infested or infected fresh produce entering the export supply chain.

- (43) For many pests, *Basic Measures* are sufficient to reduce their prevalence in a consignment to a very low level thus limiting their potential to establish and spread in New Zealand if they entered undetected.

Targeted Measures

- (44) *Targeted Measures* are used to manage the risk of entry and establishment of pests that are unlikely to be sufficiently managed by *Basic Measures*.
- (45) Pests which present a higher risk (consequence and likelihood of introduction) require measures of a greater strength (e.g. *Targeted Measures*) compared with those pests where the risk is lower.
- (46) An *Export Plan* is required for all commodities that may be associated with pests identified by MPI as requiring *Targeted Measures*. The components of an *Export Plan* may differ between countries and commodities because the growing systems and agricultural practices differ but can be similarly effective. The *Export Plan* provides a description of how the agreed *Targeted Measures* will be applied to manage these pests (where required) and is negotiated between New Zealand and the individual exporting country NPPO.
- (47) *Targeted Measures* include a very wide range of options and provide MPI with the assurance that pest populations on the exported product are reduced to a level that will not enable the pest to establish a population in New Zealand
- (48) A *Targeted Measure* may also be efficacious against non-target pests.
- (49) The following measures are some that may be considered for managing pests requiring *Targeted Measures*:
- a) Country freedom;
 - additional measures or an *Export Plan* are not required where 'country freedom' status is recognised by MPI for the export country.
 - b) Pest free area;
 - MPI will audit the management of pest free areas for compliance with ISPM 4: *Requirements for the establishment of pest free areas*.
 - c) Pest free place of production;
 - MPI will audit the management of pest free place of production for compliance with ISPM 10: *Requirements for the establishment of pests free places of production and pest free production sites*.
 - d) Pest control activities (in-field);
 - e) Systems Approaches;
 - systems approach is composed of two or more independent measures, as negotiated between MPI and the exporting country; and
 - independent measures may vary between exporting countries.
 - f) End-point treatment.
- (50) *Targeted Measures* are subject to pathway assurance audit by MPI.

MPI-Specified Measures

- (51) An *Export Plan* is required for all commodities that may be associated with pests identified by MPI as requiring *MPI-Specified Measures*.
- (52) *MPI-Specified Measures* are required when the consequence of establishment of a pest is very high and where entry and establishment is likely as a result of the pathway.
- a) the selection of an appropriate *MPI-Specified Measure* is based largely on quantitative data that supports a high level of phytosanitary assurance. Quantitative data may be supported by qualitative information, especially with respect to approval of a systems approach.

- b) a *MPI-Specified Measure* may also be effective against non-target pests.
- (53) Wherever possible, MPI uses ISPMs (or regional standards if applicable) to identify the appropriate requirements for imported plant commodities.
- (54) *MPI-Specified Measures* are subject to pathway assurance audit by MPI.

Certification and verification

Pre-export inspection and phytosanitary certification

- (55) Pre-export inspection and phytosanitary certification by the exporting NPPO of all commercially produced fresh produce (including cut flowers and foliage) for export to New Zealand is required to provide assurances of freedom from visually detectable regulated pests. Assurance is also required that measures for pests that are not visually detectable have been applied as described in the *Export Plan*.
- (56) The phytosanitary certification process includes:
- a) verification that any *Basic*, *Targeted* and *MPI-Specified Measures* required by MPI have been met;
 - b) sampling and inspection to determine pest freedom;
 - i) The exporting NPPO will randomly sample and visually inspect a minimum of 600 fruit (each variety, species) from each lot of 20,000 fruit or more. Smaller lots will be sampled as per ISPM 31: *Methodologies for sampling of consignments*, Table 1: Table of minimum sample sizes for 95% and 99% confidence levels at varying levels of detection according to lot size, hypergeometric distribution.
 - ii) Inspection will involve an examination of all external parts of the fruit and where necessary, at 10x magnification to ensure detection of cryptic or small pests. The visual inspection may also include cutting the fruit to identify pests located within the fruit. Consistent with international practice, the inspected sample must be free from regulated pests.
 - iii) where any live regulated pest is found in the inspected lot, an appropriate measure must be applied (for example fumigation with an efficacious chemical) or the lot must be rejected for export to New Zealand.
 - c) any remedial action taken as agreed with MPI.

Verification on arrival in New Zealand

- (57) When a consignment arrives in New Zealand, MPI will conduct a documentation check to ensure the phytosanitary certification conforms to the requirements laid out in the IHS.
- (58) A consignment will normally have a representative sample taken and inspected for the absence of regulated pests. Any reduction in the level of inspection from current on-arrival levels is based on sound evidence of the compliance of a pathway. In a few cases where a pathway is highly compliant, inspections will be conducted on an audit basis to ensure ongoing compliance.
- (59) When a consignment is found to be infested with live regulated pests on arrival in New Zealand, one of the following risk management activities will be applied:
- a) reshipment of the consignment;
 - b) destruction of the consignment; or
 - c) treatment of the consignment. Treatment may include:
 - i) re-conditioning to remove infested or infected fruit; or
 - ii) fumigation to kill regulated pests.

Part 3: Pest Risk Assessment and Management

- (60) A review of the pests identified in the 2006 IHS for *Citrus* spp. from the Arab Republic of Egypt was undertaken. This section only includes those pests that have undergone a change in regulatory status, and/or require a change to the current risk management measures.

Summary of risk

- (61) Fresh *Citrus* spp. is known to be a host of economically significant Tephritidae fruit fly species (*Bactrocera zonata* and *Ceratitis capitata*) (previously Quarantine Risk Group 3, RG3 pests, now pests that require *MPI-Specified Measures*) that are present in Egypt.
- (62) Tephritidae fruit flies are internally feeding organisms and the species listed in Table 2 and 3 are considered high risk, requiring *MPI-Specified Measures*. Any incursions of live fruit fly could disrupt trade and potentially mean significant economic losses for New Zealand growers and exporters of fruit fly host material. The amended measure aims to manage these fruit fly species (Table 2 and 3).
- (63) No other pests were identified as requiring a measure above *Basic Measures*.

Review of measures and pest list

MPI-Specified Measures

Bactrocera zonata

- (64) An amendment to the cold disinfestation treatment rate is proposed in order to sufficiently manage the risk of *B. zonata* for *Citrus* spp. from Egypt (Table 2).
- (65) The proposed cold disinfestation treatment of *Citrus* spp. for *B. zonata* at a fruit pulp temperature of 1.67°C or below for 18 consecutive days is justified and sufficient to manage the risks posed by *B. zonata* for imported fresh *Citrus* spp. because:
- a) the treatment is known to be highly efficacious against *B. zonata*.
 - i) Research conducted by the United States Department of Agriculture (2012) found there were no survivors from an estimated 36,000 third instar larvae of *B. zonata* on *Citrus sinensis* which was treated at 1.67°C for 18 days.

Table 2: Amended cold disinfestation treatment rates for *B. zonata*.

MPI-Specified Measure pest	Proposed cold disinfestation treatment rate
<i>Bactrocera zonata</i> Peach fruit fly	1.67°C or below for 18 days

Ceratitis capitata

- (66) The proposed specification for cold disinfestation treatment of *Citrus* spp. is also considered justified and sufficient to manage the risk from *C. capitata* because:
- a) the treatment rate of 1.67°C or below for 18 days exceeds the rate considered to be efficacious against *C. capitata*.
 - i) as per ISPM 28: *Phytosanitary treatments for regulated pests* (Annex 24 - 28).

Note: As the IHS is a commodity standard, additional cold disinfestation treatment rates are listed for *C. capitata*. However, as Egypt has both *B. zonata* and *C. capitata*, treatment will be required at a rate of 1.67°C or below for 18 days.

- (67) The proposed cold disinfestation treatment options outlined in Table 3 are justified and sufficient to manage the risk from *C. capitata* for identified species of *Citrus* because:

- a) the treatments are highly efficacious against *C. capitata* and are internationally accepted.
- i) ISPM 28: *Phytosanitary treatments for regulated pests* (Annex 24 - 28) are efficacious against *C. capitata* infesting *C. limon*, *C. sinensis*, *C. reticulata*, and *C. paradisi x reticulata*.
- (68) The cold treatment rates for disinfestation of *C. aurantiifolia* and *C. maxima* listed in Table 3 are justified and sufficient to manage the risk from *C. capitata* because:
- a) The treatment rates meet those approved by MPI to disinfest *C. aurantiifolia* and *C. maxima* from *C. capitata*.
- i) The disinfestation rate for *C. aurantiifolia* in Table 3 is approved by MPI for managing *C. capitata* infesting all *Citrus* spp. from Australia. This is outlined in the 152.02: Importation and Clearance of Fresh Fruit and Vegetables into New Zealand Standard.
- ii) The disinfestation rate for *C. maxima* in Table 3 remain the same as specified in the 2006 IHS for *Citrus* spp. from Egypt. These rates were previously consulted on.

Table 3: Cold Disinfestation Treatment for *Citrus* species

<i>Citrus</i> species	Maximum fruit pulp temperature (°C)	Minimum exposure period (consecutive days)	Standard/Reference
<i>C. aurantiifolia</i>	0	13	152.02: Importation and Clearance of Fresh Fruit and Vegetables into New Zealand Standard
	1	16	
<i>C. limon</i>	2	16	ISPM 28 PT 26: <i>Cold treatment for Ceratitis capitata on Citrus limon</i>
	3	18	
<i>C. sinensis</i>	2	16	ISPM 28 PT 24: <i>Cold treatment for Ceratitis capitata on Citrus sinensis</i>
	3	20	
<i>C. reticulata</i>	2	23	ISPM 28 PT 28: <i>Cold treatment for Ceratitis capitata on Citrus reticulata</i>
<i>C. paradisi x reticulata</i>	2	23	ISPM 28 PT 28: <i>Cold treatment for Ceratitis capitata on Citrus reticulata</i>
<i>C. maxima</i>	0	10	152.02: Importation and Clearance of Fresh Fruit and Vegetables into New Zealand Standard
	0.55	11	
	1.11	12	
	1.66	14	
	2.22	16	

Regulatory status change

- (69) Two pests [Table 4] identified in the 2006 IHS for *Citrus* spp. from Egypt have undergone a change in regulatory status¹, therefore the risk management requirements of these pests have been reviewed.

¹ These organisms have been determined not to be present in New Zealand and have the potential to establish and cause unwanted harm.

Table 4: Pests identified in 2006 which have had a change in regulatory status.

Pest	2006 requirement	Amended requirement
<i>Carpophilus mutilatus</i>	Non-regulated	Regulated (<i>Basic Measures</i>)
<i>Pythium debaryanum</i>	Non-regulated	Regulated (Not considered to be a hazard)

***Carpophilus mutilatus* Erichson**

- a) The risk from *C. mutilatus* (sap beetle) has been reviewed and found to not be present in New Zealand. Therefore, the status has changed from non-regulated to regulated and now meets criteria to be considered a quarantine pest (BORIC, 2017) [Appendix 1].
- b) Basic measures are justified and sufficient to manage the low risk posed by *C. mutilatus* because:
 - i) commercial production will reduce populations in *Citrus* spp. to low levels.
 - ii) commercial production includes monitoring for plants displaying signs/symptoms of infestation during production. Monitoring will identify obviously affected plants, resulting in pest controls being applied (see [Commercial Production](#)).
 - *C. mutilatus* are pests to ripening fruit. *Carpophilus* sp. eggs are usually laid in fallen fruit or damaged fruit (MPI, 2012). Fallen and damaged fruit will be excluded from export as per standard commercial harvest and packhouse practices;
 - iii) Harvest, grading and packing activities will reduce the likelihood of *C. mutilatus* being associated with *Citrus* spp. at export to a very low level.
 - washing and brushing would likely remove many beetles from the fruit.
 - iv) *C. mutilatus* are likely to be detected and managed during official pre-export inspection by the exporting NPPO (see Pre-export inspection and phytosanitary certification).
 - *C. mutilatus* are around 1.5 to 1.8mm long and are light to dark reddish brown. Adult beetles are unlikely to be detected visually, however, should be detectable due to association with damaged fruit.

(70) ***Pythium debaryanum* R. Hesse**

- a) The risk from *P. debaryanum* has been reconsidered as the status in New Zealand has changed from non-regulated to regulated (BORIC, 2017).
 - i) *P. debaryanum* was previously recorded as established but a later review found that the organism was not established in New Zealand.
- b) *P. debaryanum* is not considered to be a hazard on fresh *Citrus* spp. from Egypt as it is not associated with *Citrus* fruit (USDA, 2007).
 - i) *P. debaryanum* is associated with *Citrus x paradisi* roots (USDA, 2007).

- (71) The following pests identified in the 2006 IHS for *Citrus* spp. from Egypt have undergone a review of regulatory status. This is because of changes in the way regulatory status is recorded in IHSs, in order to better reflect the IPPC guidance on terminology. These pests are all regulated by New Zealand as “potential vectors”. However, none of these species are a risk when associated with *Citrus* from Egypt as the pathogens they vector are either not present in Egypt or not associated with *Citrus* (MPI, 2018). Therefore, the below pests have been removed from the pest list:

- *Aphis gossypii*;
- *Aphis spiraecola*;
- *Brevipalpus californicus*;
- *Brevipalpus obovatus*;
- *Brevipalpus phoenicis*;
- *Planococcus citri*;
- *Pseudococcus longispinus*;
- *Thrips tabaci*; and
- *Trialeurodes vaporariorum*.

- (72) MPI’s emerging risk system will monitor these potential vectors for any change in risk on this pathway.

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DRAFT

Appendix 1: Pest Categorisation

The pest categorisation process (table below) includes pests that have undergone a change in regulatory status since the release of the 2006 IHS and have therefore been reconsidered as hazards on *Citrus* spp. from Egypt. A summary of key conclusions from the risk analysis process is included where a pest has been identified as a potential quarantine pest. Pests that have not undergone a change in regulatory status or treatment requirements are not included in this table.

The table below follows the risk analysis process and terminology identified in Part 2 of the international standard, ISPM 11: *Pest risk analysis for quarantine pests*. The table includes:

- the identity of the pest (the table is organised by order, then family).
 - conclusions from the risk analysis, including the associated justification and evidence, for:
 - Step 1: Pest categorisation,
 - Step 2: Assessment of the probability of introduction and spread, and
 - Step 3: Assessment of potential economic consequences.
- Note:** if at any step there is insufficient information available to determine that the organism fulfils the criteria of a quarantine pest, then the organism is discounted from the pest list and the pest risk analysis process does not continue.
- conclusion of the pest risk assessment ('Is a measure justified?').
- Note:** the level of measure required, based on the outcome of the pest risk management assessment in Part 3 of this RMP, is included in the table.

It is assumed that if a species associated with fresh *Citrus* spp. is of concern, then the reasons for this concern would be recorded internationally (with interception data (where available), any risk analysis, scientific studies, reports of significant economic impacts). Measures must be supported by technical justification, and measures cannot be applied because there is uncertainty or a lack of available information. MPI may review the pests associated with a pathway (or their management) if new information becomes available, including in the following circumstances:

- a) a change in host status;
- b) pest status prevalence;
- c) frequent interception on arrival in New Zealand; or
- d) a new or changed risk on imported fresh *Citrus* spp. is identified by MPI's Emerging Risks System.

Some organisms may not be included on the *Citrus* pest list, and therefore a measure (e.g. *Basic*, *Targeted*, or *MPI-Specified Measures*) has not been assigned to the pest. However, if regulated organisms are intercepted on the pathway an on-arrival remedial action is required (e.g. fumigation) prior to clearance for entry into New Zealand. If no suitable or approved treatment is available, the consignment will be reshipped or destroyed. Any pests intercepted on the pathway may be retrospectively added to the pest list and will be considered as part of the next review of the IHS.

ISPM 11 requires that "The identity of the pest should be clearly defined to ensure that the [risk] assessment is performed on a distinct organism, and that biological and other information used in the assessment is relevant to the organism in question." It is recognised that a pest may still be clearly defined at genus level, as not all species are described. In this case, genera that are present in Egypt but not in New Zealand would be considered as regulated as they still pose a potential hazard to New Zealand.

Note: ISPM 5 defines 'quarantine pest' as "a pest of potential economic importance to [New Zealand] and not yet present there, or present but not widely distributed and being officially control".

Scientific name	Conclusion	Reason	Evidence to support	Is a measure justified?
<p data-bbox="129 236 159 359" style="writing-mode: vertical-rl; transform: rotate(180deg);">Coleoptera</p> <p data-bbox="174 236 432 323"><i>Carpophilus mutilatus</i> (Erichson, 1843) [Nitidulidae]</p> <p data-bbox="174 363 432 419">(Syn: <i>Carpophilus luridus</i>, <i>Carpophilus pilosellus</i>)</p>	<p data-bbox="472 236 719 323">Have the potential to be quarantine pests on this pathway.</p> <p data-bbox="472 363 719 451">And have the potential to establish and spread if they entered NZ.</p>	<p data-bbox="741 236 999 292"><i>C. mutilatus</i> is associated with the pathway.</p> <p data-bbox="741 363 999 483"><i>C. mutilatus</i> has the potential to enter New Zealand and be exposed to suitable hosts.</p>	<p data-bbox="1021 236 1529 323">- <i>C. mutilatus</i> is present in Egypt (Hagstrum, 2016). - is not recorded in New Zealand (MPI, 2012). - is associated with <i>Citrus</i> spp. (MPI, 2012).</p> <p data-bbox="1021 363 1081 387"><u>Entry:</u></p> <ul data-bbox="1021 395 1977 850" style="list-style-type: none"> - All lifestages (excluding pupae) of <i>C. mutilatus</i> have been reported and intercepted alive (MPI, 2012) <ul style="list-style-type: none"> - Adults are the most commonly reported lifestage, but all stages (including viable eggs but not pupae) have been intercepted live on a wide range of produce (MPI, 2012). Live <i>Carpophilus</i> beetles are commonly intercepted at the New Zealand border on fresh produce (MPI, 2012). - Post-harvest activities such as washing and brushing would be likely to remove many beetles from fruit, and evidence of internal infestation through entrance wounds and subsequent rotting suggests infested fruit may be removed through harvest and packhouse procedures (MPI, 2012). - Adult beetles are unlikely to be detected visually. However, damage caused to fruit by adults is likely to be visually detectable. <ul style="list-style-type: none"> - Adult <i>Carpophilus</i> beetles usually oviposit in fruit; larvae and adults feed within fruit. After pupation adults emerge and burrow into fruit to feed (MPI, 2012). - <i>C. mutilatus</i> adults are relatively small (1.5 to 1.8mm long), conspicuously coloured (light to dark reddish brown) and can be detected under close inspection (MPI, 2012). - Adult <i>Carpophilus</i> beetles retain their association with the fruit post-harvest and transit (MPI, 2012) - The likelihood of entry is considered to be low (MPI, 2012). <p data-bbox="1021 866 1126 890"><u>Exposure:</u></p> <ul data-bbox="1021 898 1977 1169" style="list-style-type: none"> - Live larvae or adults could survive long enough for fruit to be distributed to the point at which they could move onto a suitable host in NZ (MPI, 2012). - Adult beetles are highly mobile and could move off the distribution pathway at any point (MPI, 2012). - <i>C. mutilatus</i> adults are strong fliers and could travel several kilometres to find a host (MPI, 2012). - <i>Carpophilus</i> sp. are relatively polyphagous and there should be no shortage of suitable hosts in New Zealand (MPI, 2012). - The likelihood of exposure is considered moderate (MPI, 2012). <p data-bbox="1021 1193 1283 1217"><u>Establishment and spread:</u></p> <ul data-bbox="1021 1225 1977 1457" style="list-style-type: none"> - <i>Carpophilus</i> species reproduce sexually (MPI, 2012). <ul style="list-style-type: none"> - They would require both sexes of the beetle to establish a reproductive population. - It is likely this species would be able to establish in many parts of New Zealand (MPI, 2012). <ul style="list-style-type: none"> - Adults are able to attack most plant stages. - Eggs are laid in fruit and larvae feed in the fruit. - <i>C. mutilatus</i> is common in parts of Australia where climatic conditions are similar to at least some parts of New Zealand. It is likely this species would be able to establish in many parts of New Zealand. 	<p data-bbox="1989 236 2134 387">Are considered quarantine pests on this pathway.</p> <p data-bbox="1989 435 2134 523">Measures are justified (<i>Basic Measures</i>).</p>

			<ul style="list-style-type: none"> - If this species were to establish, it would spread quickly due to its multi-voltine life cycle and highly mobile adult stage (MPI, 2012). - The likelihood of establishment and spread is considered to be high (MPI, 2012). 	
	<p>And have the potential to cause negative economic consequences which are sufficient to justify phytosanitary measures on this pathway.</p>	<p><i>C. mutilatus</i> is capable of causing low level economic impacts if they established in New Zealand.</p>	<ul style="list-style-type: none"> - Many <i>Carpophilus</i> species are already present in New Zealand (MPI, 2012). <ul style="list-style-type: none"> - It is uncertain whether the addition of another species to the existing fauna would have any significant direct economic impact. - There have been reports of <i>C. mutilatus</i> causing severe damage to cycad palms (MPI, 2012). - <i>Carpophilus</i> sp. have been recognised as vectors of fungi (MPI, 2012). - The economic consequences of establishment of <i>C. mutilatus</i> have previously been assessed as low (MPI, 2012). 	
	<p>And have the potential to cause negative economic consequences which are sufficient to justify phytosanitary measures on this pathway.</p>	<p><i>C. mutilatus</i> is capable of causing a very low level economic and environmental impacts if they established in New Zealand.</p>	<ul style="list-style-type: none"> - The potential environment impact is considered to be very low (MPI, 2012). 	

Appendix 2: Description of the different measures used in IHS

	Previous Approach			New Approach		
Category	Previous description	Pre-export measures	Actions on arrival (if pest are detected)	New description	Pre-export measures	Actions on arrival (if pests are detected)
'Low' risk pest	RG1	<ul style="list-style-type: none"> Phyosanitary inspection Certification 	<ul style="list-style-type: none"> Treat and release 	'Basic Measures' (commercial production)	<ul style="list-style-type: none"> Commercial production (e.g. GAP) Phyosanitary inspection Certification. 	<ul style="list-style-type: none"> Treat and release
'Medium' risk pest	RG2	<ul style="list-style-type: none"> Phyosanitary inspection Additional declaration Certification 	<ul style="list-style-type: none"> Treat, re-ship or destroy 	'Targeted measures'	<ul style="list-style-type: none"> Commercial production Export system in place (with audits if required) Targeted measures Agreed <i>Export Plan</i> Phyosanitary inspection Additional declaration Certification. 	<ul style="list-style-type: none"> Treat, re-ship or destroy Review measures Review <i>Export Plan</i>
'High' risk pest	RG3	<ul style="list-style-type: none"> Pre-harvest measures (if required) Post-harvest measures (treatment) Treatment parameters documented on PC Treatment certificates (if required) Phyosanitary inspection Additional declaration Certification. 	<ul style="list-style-type: none"> Re-ship or destroy Suspend pathway Review pathway 	'MPI-Specified measures'	<ul style="list-style-type: none"> Commercial production Export system in place (with audits if required) <i>MPI-Specified</i> pre-harvest measures (if required) <i>MPI-Specified</i> post-harvest measures (treatment if required) Treatment parameters documented on PC Treatment certificates (if required) Agreed <i>Export Plan</i> (audited as required) Phyosanitary inspection/ Certification Additional declaration 	<ul style="list-style-type: none"> Re-ship or destroy Suspend pathway Review measures Review <i>Export Plan</i> Review export system