Ministry for Primary Industries
Manatū Ahu Matua

Risk Management Proposal

Irradiation as a phytosanitary measure for the management of Tephritid fruit flies on fresh melon (*Cucumis melo*), scallopini (*Cucurbita pepo*), strawberry (*Fragaria sp.*), and zucchini (*Cucurbita pepo*) from Australia.

Prepared for public consultation
by Horticulture Imports

16 February 2021.

New Zealand Government

Disclaimer

While every effort has been made to ensure the information in this publication is accurate, the Ministry for Primary Industries does not accept any responsibility or liability for error of fact, omission, interpretation or opinion that may be present, nor for the consequences of any decisions based on this information.

Requests for further copies should be directed to:

Publications Logistics Officer
Ministry for Primary Industries
PO Box 2526
WELLINGTON 6140

Email: brand@mpi.govt.nz
Telephone: 0800 00 83 33
Facsimile: 04-894 0300

This publication is also available on the Ministry for Primary Industries website at http://www.mpi.govt.nz/news-and-resources/publications/

Contents

Submissions

The Ministry for Primary Industries (MPI) invites comment from interested parties on the proposed amendment to the Import Health Standard (IHS) 152.02*: Importation and Clearance of Fresh Fruit and Vegetables into New Zealand* as well as the specific IHS for fresh melon (*Cucumis melo*) and fresh zucchini (*Cucurbita pepo*) from Australia which is supported by this Risk Management Proposal.

An IHS "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" (section 22(1) Biosecurity Act 1993).

MPI therefore seeks comment on the proposed amendments to the import requirements for fresh melon, scallopini, strawberry and zucchini from Australia for the management of fruit flies. MPI has developed this proposal based on assessment of the available scientific evidence.

The following points may be of assistance in preparing comments:

- Wherever possible, comments should be specific to a particular change in IHS requirements or a question asked in this document (referencing section numbers or commodity 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. 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 29 March 2021.

Plant Imports
Animal and Plant Health
Ministry for Primary Industries
PO Box 2526
Wellington 6140
New Zealand

Submissions received by the closure date will be considered during the amendment of the affected import health standards (IHS) which are as follows:

- Import Health Standard 152.02: *Importation and Clearance of Fresh Fruit and Vegetables into New Zealand*; and,
- Import Health Standard Commodity Sub-class: Fresh Fruit/Vegetables Melon, *Cucumis melo* from Australia; and,

- Import Health Standard Commodity Sub-class: Fresh Fruit/Vegetables Zucchini, *Cucurbita pepo* from Australia.

Submissions received after the closure date may be held on file for consideration when the issued IHS are next revised/ reviewed.

Official Information Act 1982

Please note that your submission is public information and it is MPI policy to publish submissions and the review of submissions on the MPI website. Submissions may also 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. Submitters may wish to indicate grounds for withholding specific information contained in their submission, such as the information is commercially sensitive, or they wish their personal information to be withheld.

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

1 Purpose

1. The purpose of this risk management proposal (RMP) is to:
    a. Summarise the known biosecurity risk associated with Tephritid fruit flies on fresh melon (rockmelon and honeydew melon) (*Cucumis melo*), scallopini (*Cucurbita pepo*), strawberry (*Fragaria sp*), and zucchini (*Cucurbita pepo*) from Australia;
    b. Outline the proposed amendments to the import requirements for fresh melon, scallopini, strawberry and zucchini from Australia for the management of fruit flies;
    c. Explain how the proposed phytosanitary measure (irradiation) manages risk and is consistent with New Zealand's domestic legislation and international obligations; and,
    d. Seek stakeholder feedback on the proposed amendment to the import requirements for the fresh melon, scallopini, strawberry and zucchini from Australia.

2 Scope

2. This RMP lists the information and processes used to assess:
    a. Whether irradiation as the proposed phytosanitary measure sufficiently manages the risk of Tephritid fruit flies on fresh melon, scallopini, strawberry and zucchini from Australia.

3. The draft amendment to the 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 IHS amendment 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.

4. The RMP is divided into 3 parts:
    a. Part 1 provides background information on currently approved phytosanitary measures to manage the risk of Tephritid fruit flies on fresh melon, scallopini, strawberry and zucchini.
    b. Part 2 outlines the context for considering irradiation as an effective phytosanitary measure.
    c. Part 3 outlines the risk of Tephritid fruit flies on fresh melon, scallopini, strawberry and zucchini from Australia, and the suitability of irradiation to effectively manage this risk.

3 Part 1: Background

5. Tephritid fruit flies are a pest of concern on fresh melon, scallopini, strawberry and zucchini from Australia.

6. The current options to manage the risk of Tephritid fruit flies on fresh melon, scallopini, strawberry and zucchini from Australia are documented in:
    a. IHS 152.02*: Importation and Clearance of Fresh Fruit and Vegetables into New Zealand*;
    b. IHS Commodity Sub-class: Fresh Fruit/Vegetables Melon, *Cucumis melo* from Australia;
    c. IHS Commodity Sub-class: Fresh Fruit/Vegetables Zucchini (*Cucurbita pepo*) from Australia; and
    d. Export Plan for Fresh Produce from Australia to New Zealand.[1]

7. The Export Plan for Fresh Produce from Australia to New Zealand (hereafter "Export Plan") will take effect on 25 February 2021. On this date, the Export Plan will supersede the previous bilateral arrangement, the Australia-New Zealand Bilateral Quarantine Arrangement Systems Operation Manual 6E (hereafter "BQA").

8. Within the IHSs listed above, references to the BQA have been intentionally retained. MPI and the Australian Department of Agriculture, Water and the Environment (DAWE) have agreed in the Export Plan that:
    a. where a BQA is referenced in an IHS for fresh fruits or vegetables from Australia, the Export Plan will be considered equivalent; and,
    b. the use of numbered appendices to describe treatment pathways will continue to be used in additional declarations.

9. The options in the Export Plan to manage the risk of Tephritid fruit flies on specific commodities are listed in the table below:

Commodity	Pest	Current options to manage the specified fruit fly species
Melon	*Bactrocera cucumis* *Ceratitis capitata*	Rockmelons • Pest free area **OR** • Dimethoate Dip/Spray Dipped or flood sprayed in Dimethoate at 400ppm active ingredient for 1 minute) **OR** • Field Control Programmes **AND** Winter Window (1 May till 1 September) Honeydew melons • Pest free area **OR**

[1] An Export Plan is a bilateral arrangement between MPI and a trading partner which describes the activities that will be undertaken to meet the phytosanitary requirements for the export of fresh fruit and vegetables for consumption from Australia to New Zealand.

		• Dimethoate Dip/Spray (Dipped or flood sprayed in Dimethoate at 400ppm active ingredient for 1 minute) AND • Field Control Programmes **AND** Winter Window (1 May till 1 September)
Scallopini	*Bactrocera cucumis* *Ceratitis capitata*	• Pest free area **OR** • Field Control Programmes **AND** Winter Window (1 May till 1 September) **OR** • Dimethoate Dip/Spray (Dipped or flood sprayed in Dimethoate at 400ppm active ingredient for 1 minute)
Strawberry	*Bactrocera neohumeralis* *Bactrocera tryoni* *Ceratitis capitata*	• Pest free area **OR** • Methyl Bromide Fumigation (48 g/m³ for 3 hrs at a flesh temperature >15ºC at a loading of not greater than 50% chamber capacity)
Zucchini	*Bactrocera cucumis* *Ceratitis capitata*	• Pest free area **OR** • Field Control Programmes **AND** Winter Window (1 May till 1 September) **OR** • Dimethoate Dip/Spray (Dipped or flood sprayed in Dimethoate at 400ppm active ingredient for 1 minute).

10. The Australian Department of Agriculture, Water and the Environment have requested that MPI recognise irradiation as an equivalent phytosanitary treatment option for the management of Tephritid fruit flies on fresh melon, scallopini, strawberry and zucchini. Irradiation treatment would be established in accordance with ISPM 28 Annex 7: *Irradiation treatment for fruit flies of*

the family Tephritidae (generic) at the rate of 150 gray (GY). The application of irradiation as a phytosanitary measure will be applied according to the guidelines for irradiation in Codex/ ASTM and ISPM 18: *Guidelines for the use of irradiation as a phytosanitary measure.*

4 Part 2: Context

4.1 DOMESTIC

11. 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.
12. 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).
13. MPI engages with interested parties and/or affected New Zealand stakeholders, and the exporting country requesting market access, during the development of an IHS.
14. MPI follows MPI policies and procedures for the development and consultation of an IHS.

4.2 INTERNATIONAL

15. 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.
16. 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.
17. Setting the least trade restrictive measure to manage risk to an acceptable level in an IHS includes evaluating alternative or equivalent measures as requested by trading partners (Article 4 SPS Agreement).

4.3 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 can reduce risk to zero. The objective of the system is to reduce the likelihood of entry and establishment of regulated organisms (including pests, diseases and weeds) to an acceptable level.
20. An organism is 'regulated' by MPI if it could cause unacceptable consequences (i.e. likely to cause unacceptable economic, environmental, socio-cultural or human health impacts) if it were to enter and establish in New Zealand, provided the following conditions are met:
    a. it is not present in New Zealand; or
    b. it is present but under official control in New Zealand;
    c. it can establish and spread in New Zealand.

    - Entry and establishment are 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, wherever possible, manage unacceptable phytosanitary risks identified as being associated with the goods before arrival/clearance 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 offshore).
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 government-government arrangements (e.g. Bilateral Quarantine Arrangement, Export Plan, etc.).

4.4 EQUIVALENCE

24. For a phytosanitary measure to be approved by MPI as equivalent it must offer the same or greater level of protection to what it is replacing or is currently in place.
25. The assessment of any equivalence request is based on:
    a. international standards for phytosanitary measures (ISPMs); for example:
        i. ISPM 24. *Guidelines for the determination and recognition of equivalence of phytosanitary measures*;
    b. efficacy data relating to a treatment;
    c. the target pest(s); and,
    d. other relevant information (e.g. history of trade).
26. MPI must ensure that any measure approved is consistent with the Biosecurity Act 1993 and, the Sanitary and Phytosanitary Measures (SPS) agreement with regard to scientific justification, non-discrimination and offer transparency in assessment processes and decisions.

5 Part 3: Assessment

27. The proposed irradiation rate of 150 Gy aligns with ISPM 28; Annex 07 *Irradiation treatment for fruit flies of the family Tephritidae (generic)*. Part 3 discusses the risk of Tephritid fruit flies on fresh melon, scallopini, strawberry and zucchini from Australia and the suitability of irritation to manage this risk.

5.1 ASSESSMENT OF RISK

28. Fruit fly species in the family Tephritidae, namely the target species *Ceratitis capitata, Bactrocera cucumis*, *B. neohumeralis* and *B. tryoni*, are pests of concern on fresh melon, scallopini, strawberry and zucchini from Australia because:

    a. They are present in Australia and are associated with the commodities (MPI, 2020).
    b. They are not known to be present in New Zealand. New Zealand has country freedom for all fruit flies of economic significance (MPI, 2020).
    c. The target species are polyphagous or highly polyphagous and there are suitable breeding hosts present in New Zealand (MPI, 2020).
    d. The target species are likely to be able to establish at least in the warmer parts of New Zealand, except *B. neohumeralis* which may only form temporary populations (MPI, 2020).

e. The impacts of establishment of the target species are likely to be high to severe. Even a temporary incursion is likely to be associated with significant impacts caused by trade barriers and eradication costs (MPI, 2020).

29. Measures are justified to manage the biosecurity risk of fruit flies of the Tephritidae family on the fresh melon, scallopini, strawberry, zucchini from Australia pathways because:

    a. It is possible that fruit infested with fruit fly can enter New Zealand, if there are no phytosanitary measures in place to manage the risk offshore.
        i. The fruit fly life stages that are most likely to enter New Zealand with imported fresh fruit are eggs and/or larvae. Eggs are laid under the fruit skin and may be inconspicuous. Larvae feed within the fruit and may not be detected during phytosanitary inspection (MPI, 2020).
        ii. Larvae and eggs may survive cool storage and transit to New Zealand, as evidenced by New Zealand and international border detections of fruit flies on fresh produce (MPI, 2020).

    b. Fruit flies have the potential to establish and spread in New Zealand.
        i. Infested fruit is likely to be disposed of. Most fresh produce is disposed of in low risk ways, but some is disposed of ways that would allow adult flies to emerge from infested fruit in New Zealand, e.g. in home composts (MPI, 2020).
        ii. Potential host plants are available throughout New Zealand in production areas, home gardens and the wider environment (MPI, 2020).
        iii. Some areas of New Zealand would provide suitable environmental conditions for the target species to successfully form temporary or permanent populations (MPI, 2020).

    c. The presence and establishment of Tephritid fruit flies would have a significant impact on the economy.
        i. Fruit flies have the potential to cause economic impacts by directly damaging horticultural crops that are significant to New Zealand and by requiring costly control measures (MPI, 2020).
        ii. Importing countries may impose additional phytosanitary measures on New Zealand fresh produce to obtain assurance that exported produce is free from fruit flies (MPI, 2020).
        iii. The financial impact of a fruit fly incursion into New Zealand is likely to be high to severe. Many horticultural commodities are at risk:
            1. In 2019, Apple exports alone were worth $820 million. Combined, fresh produce exports totalled $6.2 billion (New Zealand Horticulture, 2019).
            2. Kiwifruit Vine Health (2020) estimated that an incursion of Queensland fruit fly could cause losses to the kiwifruit industry of between $2 million and $430 million, depending on the circumstances.

5.2 ASSESSMENT OF RISK MANAGEMENT

30. Irradiation at 150 Gy manages the risk of Tephritid fruit flies on imported fresh melon, scallopini, strawberry and zucchini from Australia because:
    a. ISPM 28; Annex 07 *'Irradiation treatment for fruit flies of the family Tephritidae (generic)'* states that irradiation of fruit and vegetables at 150 Gy minimum absorbed dose prevents the emergence of adult fruit flies at the stated efficacy.
        i. There is 95% confidence that this treatment would prevent the emergence of not less than 99.9968% of adult fruit flies.

ii. Irradiation may not cause out right mortality of fruit flies. Live but non-viable larvae and/or pupae may be encountered during inspection. This does not imply a failure of the treatment.

b. Irradiation at 150 Gy exceeds the species-specific irradiation rate of 100 Gy specified for *B. tryoni* (ISPM 28; Annex 05) and *C. capitata* (ISPM 28; Annex 14).

31. The treatment should be applied in accordance with the requirements of ISPM 18; *Guidelines for the use of irradiation as a phytosanitary measure*. This will be captured in the Australian export plan which is subject to audit.

5.3 FEASIBILITY AND PRACTICALITY OF MEASURES

32. Irradiation is currently an approved measure for the export of capsicum, lychee, mangoes, tomatoes, papaya/pawpaw and table grapes from Australia for management of Tephritid fruit flies.

33. The irradiation facilities, managed by Steritech, are currently certified by DAWE as compliant with international and Australian domestic requirements. The irradiation plants are located in Brisbane and Melbourne are used to treat for export to other international destinations.

5.4 SUMMARY

34. MPI considers irradiation at 150 Gy to effectively manage the risk of *Bactrocera cucumis, Ceratitis capitata, Bactrocera tryoni* and *Bactrocera neohumeralis* on fresh melon, scallopini, strawberry and zucchini imported from Australia.

35. MPI proposes that the following IHSs are amended to include irradiation at 150 Gy as a phytosanitary measure to manage Tephritid fruit flies on fresh melon, scallopini, strawberry and zucchini from Australia:
    a. Import Health Standard 152.02: *Importation and Clearance of Fresh Fruit and Vegetables into New Zealand*; and,
    b. Import Health Standard Commodity Sub-class: Fresh Fruit/Vegetables Melon, *Cucumis melo* from Australia; and,
    c. Import Health Standard Commodity Sub-class: Fresh Fruit/Vegetables Zucchini, *Cucurbita pepo* from Australia.

36. All measures contained in IHSs are subject to regular review based on pathway compliance, emerging risk assessment, new information/intelligence, and results of audit of the Export Plan or other bilateral agreement.

37. MPI monitors interceptions of all regulated pests (and hitchhikers) and the appropriateness/ effectiveness of phytosanitary measures during trade.

6 References

Kiwifruit Vine Health (KVH), 2020. Fruit flies. Retrieved August 30, 2020, from https://kvh.org.nz/fruitflies.

International Standard for Phytosanitary Measures (ISPM) 18. 2019. *Guidelines for the use of irradiation as a phytosanitary measure.* Rome, IPPC, FAO.

International Standard for Phytosanitary Measures (ISPM) 28, Annex 5. 2009. *Irradiation treatment for Bactrocera tryoni*. Rome, IPPC, FAO.

International Standard for Phytosanitary Measures (ISPM) 28, Annex 7. 2009a. *Irradiation treatment for fruit flies of the family Tephritidae (generic)*. Rome, IPPC, FAO.

International Standard for Phytosanitary Measures (ISPM) 28, Annex 14. 2011. I*rradiation treatment for Ceratitis capitata (2011)*. Rome, IPPC, FAO.

Ministry for Primary Industries (MPI), 2018. *Import Health Standard 152.02: Importation and Clearance of Fresh Fruit and Vegetables into New Zealand*. Wellington, New Zealand.

Ministry for Primary Industries (MPI), 2018a. *Import Health Standard Commodity Sub-class: Fresh Fruit/Vegetables Melon, Cucumis melo from Australia*. Wellington, New Zealand.

Ministry for Primary Industries (MPI), 2018b. *Import Health Standard Commodity Sub-class: Fresh Fruit/Vegetables* Zucchini, *Cucurbita pepo from Australia*. Wellington, New Zealand.

Ministry for Primary Industries (MPI), 2019. *Export plan for fresh produce from Australia to New Zealand*. Wellington, New Zealand.

Ministry for Primary Industries (MPI), 2019a. EPest. Retrieved August 04, 2020, from https://www.mpi.govt.nz/importing/food/fresh-fruit-and-vegetables/requirements/epest/

Ministry for Primary Industries (MPI), 2020. Technical advice: Assessment of risk of tephritid fruit flies on fresh melon (Cucumis melo), scallopini (Cucurbita pepo), strawberry (Fragaria sp.) and zucchini (Cucurbita pepo) from Australia. Wellington, New Zealand

New Zealand Horticulture, 2019. Fresh Facts. Retrieved August 30,2020, from https://www.freshfacts.co.nz/files/freshfacts-2019.pdf