

CTO Decision Document PP_Dec_Dir2020065: Urgent amendment of phytosanitary measures for *Potato spindle tuber viroid* (PSTVd) on *Solanum melongena* (eggplant) seeds for sowing

ISSUE:

Previously *Potato spindle tuber viroid* (PSTVd) has not been seen as presenting a biosecurity risk on the *Solanum melongena* seeds for sowing pathway. However, following testing by MPI's Plant Health and Environment Laboratory (PHEL), PSTVd has been detected on three consignments of *S. melongena* seed imported into New Zealand.

Based on this new awareness the current measures are now considered insufficient. An urgent amendment is needed of the Import Health Standard 155.02.05, Seeds for Sowing (IHS) to include measures to manage the risk on this pathway.

It is proposed the Chief Technical Officer (CTO) is to decide whether PSTVd poses a risk on the *S. melongena* seeds for sowing pathway, and whether urgent measures are necessary. The proposed measures are to change the import specification of *S. melongena* seeds for sowing from only general requirements, to include the specific requirements under the *Solanum* schedule on the IHS.

BACKGROUND:

PSTVd has been intercepted twice on the same pathway in consecutive months. The interception details are as follows:

- C2019/507120 *S. melongena* seeds for sowing from USA, 16 December 2019
- C2020/52333 *S. melongena* seeds for sowing from Netherlands (origin China), 9 February 2020

In both instances PSTVd was only detected because the seed was tested for re-export from New Zealand. Following tracing from the USA seed lot, it was also identified that an earlier shipment of *S. melongena* seed had originated from the same seed lot. It was subsequently tested and also found to have PSTVd.

Regarding the risk associated with PSTVd on *S. melongena*, seeds for sowing is the only pathway that is open, because *S. melongena* nursery stock cannot be imported. The requirements on the seed pathway are now considered insufficient for this new risk, because *S. melongena* seed only has to comply with the general requirements of the IHS. This means that no phytosanitary certificate or testing is required to import *S. melongena* seed into New Zealand, and PSTVd is not able to be detected under those conditions.

Previously, *S. melongena* was not generally believed to be a natural host of PSTVd. However, these recent interceptions suggest otherwise. It is worth noting that the PHEL diagnostics report states it is not known whether the detection of PSTVd in these seeds is the result of a natural infection, or of contamination of the seed during processing. The reason urgent measures are considered appropriate is due to the understanding that PSTVd is seed transmissible in other *Solanaceae* species (MAF Import Risk Analysis, 2012).

The purpose of this assessment of measures is to consider whether urgent measures need to be put in place to manage PSTVd on *S. melongena* seeds for sowing pathway. The proposed measures would consist of changing the import specification of *S. melongena* seed on the Plant Biosecurity Index (PBI) from Basic requirements, to requiring this species to meet the specific requirements under the *Solanum* schedule of the IHS. The specific requirements for seed imported under part

2.73 *Solanum* of the IHS include measures to manage the risk of PSTVd. These include the additional declarations to the phytosanitary certificate or specific testing as follows:

- a) “The [*insert species name*] seeds for sowing have been:
 - i) Sourced from an ‘pest free area’ free from *Potato spindle tuber viroid*;
- OR**
- ii) Sourced from a ‘pest free place of production’ free from *Potato spindle tuber viroid*”;
- OR**
- b) “The [*insert species name*] seeds for sowing have been officially tested, on a representative sample and using appropriate methods, and found to be free from *Potato spindle tuber viroid*”.

The *Solanum* schedule was included in the IHS specifically to manage risk from PSTVd, and the same measures are used to manage risk from PSTVd under three other schedules in the IHS. As such, the proposed measures are the same as those previously considered by the CTO to effectively manage risk from PSTVd. Thereby, managing the risk of PSTVd on *S. melongena*.

ASSESSMENT OF MEASURES:

The International Standards for Phytosanitary Measures (ISPM) 1: Phytosanitary principles for the protection of plants and the application of phytosanitary measures in international trade, states “Contracting parties may adopt and/or implement emergency actions, including emergency measures, when a new or unexpected phytosanitary risk is identified”.

Applying the ISPM 1 guidelines on emergency action, it is considered there is risk associated with PSTVd entering New Zealand by the *S. melongena* seed pathway, and urgent measures are needed and justified for the following reasons:

- 1) PSTVd has now been found thrice on the *S. melongena* seeds for sowing pathway. Suggesting that PSTVd on this pathway is now a biosecurity risk that needs managing.
- 2) According to CABI Invasive Species Compendium and EPPO, PSTVd is present in many countries throughout the Americas, Africa, Europe and Australia. And previous *S. melongena* seed imports have many sources of origin.
- 3) The MAF import risk analysis (2012) states that transmission of PSTVd is highly contagious. The viroid can be transmitted by touch, pollen and seed of infected plants.
- 4) While there is still a lack of direct evidence that seed transmission of PSTVd occurs specifically with *S. melongena* seed, the MAF import risk analysis states PSTVd has been confirmed to be seed transmitted on other solanaceae, such as tomato and potato. Following these recent interceptions it can be extrapolated that seed transmission on *S. melongena* seed is a likely risk.
- 5) The *S. melongena* seeds for sowing pathway is currently an open and active pathway. With over 40 lines being imported per year from 2017 to 2019, and 7 lines in 2020 already. At least half of the countries of origin for these lines have PSTVd. It is a possibility that PSTVd may have entered New Zealand on *S. melongena* seed already. There have not been reports of symptoms in the field, but without measures there are many opportunities for introduction of PSTVd on *S. melongena* seed.
- 6) The impact that PSTVd poses to *S. melongena* plants is not known, but the impacts are well known for other hosts of PSTVd which are present and important to New Zealand, e.g. tomato (*Solanum lycopersicum*), potato (*Solanum tuberosum*) and capsicum (*Capsicum annuum*).

- 7) If PSTVd established in New Zealand, the potential impact on industry would be undesirable to the producers of solanaceous crops. The Fresh Facts 2018 report shows the combined value of both domestic and export sales of potato exports was \$280 million, and tomato domestic sales were worth approximately \$200 million. Although the impact of PSTVd on *S. melongena* yield and marketability is unknown, the MAF import risk analysis (2012) states PSTVd has been shown to reduce size of tomato fruit and germination rates of tomato seed. PSTVd also causes changes in potato tuber growth which make them unsuitable for market and reduces yield.
- 8) MPI is currently considering declaring that New Zealand has country freedom for PSTVd. Without a change in measures on the *S. melongena* seed pathway, to prevent PSTVd entering New Zealand on that pathway, the country freedom status would be at risk. Country freedom would be important to the export industry as it would allow easier entry into other countries with PSTVd requirements.
- 9) We are not the only country to consider that PSTVd is a risk needing management on the *S. melongena* seeds for sowing pathway. On 8 January 2020 Thailand's Department of Agriculture and Ministry of Agriculture and Cooperatives submitted draft import conditions for importing *S. melongena* seeds for sowing. These conditions require that *S. melongena* seed must be confirmed to be: either produced in a country where PSTVd is not known to occur; or the *S. melongena* seed must be officially tested using PCR and a sample size of 3000 seeds (or 10% of small seed lots). The Republic of Korea have already implemented measures for PSTVd on *S. melongena* seed back in 2015. The measures require declarations of pest free area, pest free place of production or tested by PCR and found free from PSTVd.

The continuance of the proposed measures, as per ISPM 1, will in time be subject to future assessment as to whether they are technically justified as new information becomes available. As part of this, scientists at PHEL are conducting an experiment using some of the infected seed to check whether PSTVd is seed transmissible on that particular variety of *S. melongena*. Results from this are expected in May 2020.

CONCLUSION:

It is considered that there is a new potential risk of PSTVd on the *S. melongena* seeds for sowing pathway, and that urgent measures are required to manage this risk. The proposed measures would result in a change of the import specification for *S. melongena* seeds from only general requirements, to include the specific requirements under the *Solanum* schedule of the IHS. This results in *S. melongena* seed imports requiring additional declarations or testing to prevent the entry of PSTVd into New Zealand.

LEGAL:

24B Amendment, revocation, suspension, and reinstatement

Amendment and revocation

(1) Sections 23 to 24A apply, to the extent to which they are relevant and reading in any necessary modifications, to—

- (a) proposed amendments to an import health standard:
- (b) a proposal to revoke an import health standard.

(2) However, if a chief technical officer considers that the standard needs to be amended or revoked urgently or that a proposed amendment is minor, the officer is not required to comply with [section 23\(3\)](#).

REFERENCES:

- Horticulture New Zealand, Plant & Food Research (2018) Fresh Facts 20th edition, <https://www.freshfacts.co.nz/files/freshfacts-2018.pdf>
- MAF (Ministry of Agriculture and Forestry) (2012) *Import Risk Analysis: Tomato and Capsicum seed for sowing from all countries* (Draft), <https://www.mpi.govt.nz/dmsdocument/2887/send>

RECOMMENDATION:

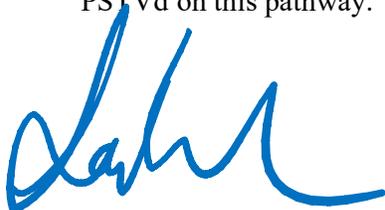
It is recommended that you accept the proposal described below:

1. There is an unmanaged risk of *Potato spindle tuber viroid* (PSTVd) on *Solanum melongena* seed, and urgent measures are required.

AGREED / NOT AGREED

2. That the seeds for sowing import specification for *S. melongena* be changed from only general requirements, to include the specific requirements under the *Solanum* schedule of the IHS. This will be achieved through a change on the PBI from “Basic” to “see 155.02.05 under *Solanum*”. This will apply measures to *S. melongena* seed and manage the risk of PSTVd on this pathway.

AGREED / NOT AGREED



**Sarah Clark, Manager Plant Germplasm Import team
Deputy Chief Technical Officer
Plant & Pathways Directorate
Date:**

27/3/2020