

Phytosanitary Quality Assurance.

- I. **PATHOGEN:** *Tomato brown rugose fruit virus* (ToBRFV). ToBRFV is one of several Tobamoviruses, that in addition to *Tomato mosaic virus* (ToMV) and *Tobacco mosaic virus* (TMV) and others, is potentially seed transmitted and is able to infect tomato and pepper plants. However, ToBRFV is unique in that it is able to overcome most currently used Tobamovirus resistance sources in tomato.
- II. **HOST:** tomato (*Solanum lycopersicum*) and pepper (*Capsicum spp.*).
- III. **PHYTOSANITARY STATUS:** The seed companies listed in Section V. assure that tomato and pepper seed lots presented to transplant nurseries for services during the term listed in Section IV. have been appropriately sampled, tested and were negative for ToBRFV.

A seed lot's ToBRFV negative status is based on any of the following:

- A. The lot complies with the current requirements of the USDA's ToBRFV Federal Order which requires that a representative sample of an imported seed lot has been officially tested and found free of the virus¹;
 - B. The lot has tested negative for ToBRFV by the USDA-APHIS National Seed Health System's (NSHS) sampling and testing methods²; or,
 - C. The lot has tested negative for ToBRFV by bioassay^{3,4} or pre-screened with available enzyme-linked immunosorbent assays (ELISA) for Tobamoviruses and if needed followed with additional analysis by bioassay^{3,4}.
- IV. **TERM:** 2021.
 - V. **REFERENCES:**

1. United States Department of Agriculture, Animal Plant Health Inspection Service, Plant Protection and Quarantine. November 2019 and June 2020. *Federal Order for U.S. Imports of tomato (*Solanum lycopersicum*) and pepper (*Capsicum spp.*) hosts of Tomato brown rugose fruit virus (ToBRFV).* https://www.aphis.usda.gov/import_export/plants/plant_imports/federal_order/downloads/2019/DA-2019-28.pdf.

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https://www.aphis.usda.gov/import_export/plants/plant_imports/federal_order/downloads/2020/DA-2020-12.pdf.

2. National Seed Health System. 2020. *So 7.1 Method for testing Tomato brown rugose fruit virus (ToBRFV) on tomato (Solanum lycopersicum) and pepper (Capsicum annuum) seeds using TaqMan RT-PCR.*
<https://seedhealth.org/files/2020/11/So-7.1-ToBRFV-tom-pep-ver-1.1.pdf>
3. International Seed Federation. 2007. *Method for the Detection of Tobamoviruses on Pepper seed.*
https://www.seedhealth.org/files/2020/10/Pepper_Tobamo_Jan_2007-ISF.pdf
4. International Seed Testing Association. 2020. *7-028: Detection of infectious tobacco mosaic virus and tomato mosaic virus in Solanum lycopersicum (tomato) seed by the local lesion assay (indexing) on Nicotiana tabacum plants.* Validated Seed Health Testing Methods. International Rules for Seed Testing 2020.
<https://www.seedhealth.org/files/2020/02/ISTA-SH-methods-2020-7-028-opt.pdf>

VI. PARTICIPATING COMPANIES (point-of-contact is provided for each company for inquiries regarding ToBRFV testing status):

Company Name: _____

Contact: _____

Address: _____

Phone: _____

Email: _____

VII. DATE: January 2021 **Date Signed:** _____

****PLEASE FAX, MAIL OR EMAIL SIGNED COPY TO THE CSA OFFICE

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