Strawberry Virus 2

a. Virus/Pathogen Name:
Strawberry virus 2 (StrV-2), Genus *Alphacytorhabdovirus*, family *Rhabdoviridae*

b. Host Range:

StrV-2 was discovered in Fragaria species, specifically in an accession from the Fragaria virus collection of the National Clonal Germplasm Repository (NCGR). The host range appears to be limited to strawberry, with no alternative hosts identified in this study.

c. Symptoms on Crop Host:

Currently, specific symptoms associated solely with StrV-2 have not been detailed. The source plant was asymptomatic for at least 25 years, and the aphid transmission studies failed to induce symptoms on test plants. However, since many viruses in strawberries can contribute to a general decline in plant health, the potential symptoms could include overall reduced vigor or virus-like symptoms, but these are not yet confirmed for StrV-2.

d. Geographic Distribution:
StrV-2 was identified in the United States, specifically in a Fragaria accession from Maryland, now part of the NCGR collection in Corvallis, Oregon.

e. Means of Spread:
Initial attempts to identify aphid vectors (*Chaetosiphon fragaefolii* and *Aphis ruborum*) for StrV-2 were unsuccessful. The study suggests that either the aphid species tested are not capable of transmitting the virus, or transmission rates are too low to detect under current experimental conditions.

f. Recognized Diagnostic Tests:
StrV-2 can be detected using a multiplex RT-PCR assay. This test amplifies specific fragments of the nucleocapsid (N) and replicase (L) genes, along with an internal control targeting a host gene. The full genome of StrV-2 is available under GenBank accession number MW480851, which can be used for further diagnostics development.

g. Sampling Recommendations:
Samples for StrV-2 detection should ideally be taken from the youngest fully expanded leaves. Since the virus was detected in an asymptomatic plant, thorough sampling across different tissues and seasons may increase the likelihood of detection. A triplex RT-PCR protocol is recommended for accurate diagnosis.

h. Management Strategies:
Due to the lack of confirmed vector transmission and symptom expression, management strategies focus on the use of virus-tested planting stock, particularly at the foundational (G1) level. Nurseries should screen for StrV-2 along with other known strawberry viruses to mitigate

the risk of introducing infected plants into production fields. Integrative pest management strategies will be considered once a vector is identified.

References:

Medberry, A.M. and Tzanetakis, I.E. 2022. Identification, characterization, and detection of a novel strawberry cytorhabdovirus. *Plant Disease* 106: 2784-2787

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