Blackberry yellow vein associated virus

a. Virus/pathogen name, including accepted acronyms and synonyms
Blackberry yellow vein associated virus, BYVaV

b. Host range, including resistance or tolerance within the crop hosts, alternate hosts
Rubus spp., Blackberry cultivated/wild, **no report** on red or black raspberry

c. Symptoms on crop host including varietal differences with images of symptoms when available
The virus is asymptomatic when found in single infections. It is yet one of the major viruses found associated with blackberry yellow vein disease. The symptoms of the disease vary and are usually only found on part of the canopy. Typically, diseased plants develop yellowing along the main veins of the leaf. Later symptomatic areas may turn necrotic. Other symptoms include mottling, vein clearing, ringspots, and blotching. In severe cases the disease may lead to plant death.

d. Geographic distribution: BYVaV has only been detected in the U.S. (Arkansas, Florida, Georgia, Illinois, Kentucky, North and South Carolina, Oklahoma, Tennessee, Mississippi, West Virginia, and California)

e. Means of spread: BYVaV is transmitted quite efficiently in a semi-persistent mode by *Trialeurodes abutilonea* and *T. vaporariorum*

f. Recognized diagnostic tests with cited references:
BYVaV can be detected readily by RT-PCR and quantitative RT-PCR (Poudel et al., 2013)

g. Sampling recommendations for each pathogen including timing and tissue to be sampled
Leaf tissue collected from early May through early September in the northern hemisphere is ideal tissue for sampling. The youngest but fully expanded leaves are essential for BYVaV detection due to the phloem-limited nature of the virus

h. Management strategies for the pathogen and the vector(s) of the pathogen
BYVaV is widespread in the southern United States and there may be additional whitefly species transmitting the virus in the field. At low levels of infection, detection combined with plant removal can limit the rate of virus spread. The most important control measure is to start with BYVaV-free planting stock, also if planting adjacent to other blackberries or close to wild blackberry patches it is advisable to test these adjacent plants for BYVaV infection prior to planting to determine if they pose a risk of virus infection in the planned planting.

i. References

Martin, R.R., MacFarlane, S., Sabanadzovic, S., Quito-Avila, D.F., Poudel, B., and Tzanetakis, I.E. 2013. Viruses and virus diseases of Rubus. *Plant Disease* 97:168-182.

Poudel, B., Wintermantel, W.M., Cortez, A.A., Ho, T., Khadgi, A. and Tzanetakis, I.E. 2013. Epidemiology of *Blackberry yellow vein associated virus*. *Plant Disease* 97: 1352-1357

Poudel, B., Sabanadzovic, S., Bujarski, J. and Tzanetakis I.E. 2012. Population structure of *Blackberry yellow vein associated virus*, an emerging crinivirus. *Virus Research* 169: 272–275

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