# Blackberry virus E/Wineberry latent virus

- Virus/pathogen name, including accepted acronyms and synonyms

  Blackberry virus E (BVE) has an RNA genome and is a member of the *Alphaflexiviridae* family, Genus *Allexivirus.*

- Host range, including resistance or tolerance within the crop hosts, alternate hosts

  BVE has only been identified in Rubus (Poudel, 2015; Sabanadzovic et al., 2011). Recently an isolate of wineberry latent virus was sequenced and was determined to be an isolate of BVE (Genbank accession OQ877124).

- Symptoms on crop host including varietal differences with images of symptoms when available

  BVE was first identified in blackberries showing blackberry yellow vein disease (BYVD) symptoms (Sabanadzovic et al., 2011); a disease known to be caused by mixed infections of a number of different viruses. These symptomatic plants were also co-infected with blackberry virus Y. It is not known whether BVE alone causes symptoms.

- Geographic distribution:

  BVE was first identified in 2011 in northeastern Mississippi, and has also been identified in Arkansas, North and south Carolina and Georgia (Khadgi, 2015; Poudel, 2015; Sabanadzovic et al., 2011). BVE is only known to occur in the USA in the UK (wineberry latent virus).

- Means of spread:

  Other members of the *Allexivirus* genus are transmitted by mites (Kang et al., 2007), however transmission tests have not been done for this species

- Recognized diagnostic tests with cited references:

  RT-PCR primers have been used to detect BVE in infected plants (Sabanadzovic et al., 2011) yet there is no data on virus diversity and thus the ability of the test in detecting all circulating BVE isolates.

- Sampling recommendations for each pathogen including timing and tissue to be sampled
  Spring to early summer (May-June) is the ideal time for sampling. Ideally, the samples should be taken from young but fully expanded leaves. Sampling from different sites of

the same plant increases chances of detection since BVE may not be evenly distributed within plants.

- Management strategies for the pathogen and the vector(s) of the pathogen

Given the lack of knowledge on the epidemiology of the virus the use of certified virus-tested planting material is highly recommended as the virus may be distributed in infected planting material and be asymptomatic.

**References**

Kang, S.G., Koo, B.J., Lee, E.T., Chang, M.U., 2007. Allexivirus transmitted by eriophyid mites in garlic plants. J Microbiol Biotechnol 17, 1833–1840. https://doi.org/10.1007/s10658-020-01959-1

Khadgi, A., 2015. Blackberry Virosome: A Micro and Macro Approach. University of Arkansas MS Thesis.

Poudel, B., 2015. The detection and characterization of some viruses infecting blackberry and cherry in South Carolina. Clemson University PhD Dissertation.

Sabanadzovic, S., Abou Ghanem-Sabanadzovic, N., Tzanetakis, I.E., 2011. Blackberry virus E: an unusual flexivirus. Archives of Virology 156, 1665–1669. https://doi.org/10.1007/s00705-011-1015-y

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