Blackberry chlorotic ringspot virus

a. Virus/pathogen name, including accepted acronyms and synonyms
Blackberry chlorotic ringspot virus, BCRV

b. Host range, including resistance or tolerance within the crop hosts, alternate hosts
Rubus spp., Blackberry, red and black raspberry and their hybrids, rose, apple, *Chenopodium spp., cucumber, tobacco, New Zealand spinach (laboratory hosts)*

c. Symptoms on crop host including varietal differences with images of symptoms when available
Virus symptoms differ between species and cultivars and age of infection. The origin description of the virus in blackberry in the UK associate the presence of the virus with diffuse chlorotic spots ringspots and line patterns in Himalaya Giant blackberry. In American blackberry germplasm the virus remains asymptomatic in single infections whereas it can be part of the blackberry yellow vein disease complex. 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. BCRV is widespread in roses in the southern United States and cause chlorotic ringspots whereas it was found co-infecting plants with another three viruses causing leaf rosette symptoms in China. The effect of BCRV in the latter disease complex remains unknown.

d. Geographic distribution: BCRV has been detected in the U.S. (Arkansas, Florida, California, Oregon, Georgia, Illinois, Missouri, North and South Carolina, Tennessee and West Virginia), U.K., China and Korea.

e. Means of spread: BCRV is transmitted very efficiently by seed. All ilarviruses are pollen-transmitted but this has not been tested for BCRV.

f. Recognized diagnostic tests with cited references:
BCRV can be detected readily by RT-PCR and quantitative RT-PCR (Poudel et al., 2014; Kim et al., 2025). The antiserum developed by Jones et al. (2006) is not commercially available

g. Sampling recommendations for each pathogen including timing and tissue to be sampled
Leaf tissue collected in early season (April-May) is ideal for sampling. The youngest leaves are optimal for BCRV detection. Extra precaution need to be taken during flowering periods as pollen from infected material may land on BCRV-free material which would test positive for the virus. A thorough wash with water before extraction is recommended

h. Management strategies for the pathogen and the vector(s) of the pathogen

BCRVR is widespread in the United States and expected to be pollen transmitted (as is seed transmissible). The most important control measure is to start with BCRV-free planting stock, also if planting adjacent to alternative hosts it is advisable to test these adjacent plants for the virus prior to planting to determine if they pose a risk of BCRV infection in the planned planting. This is imperative for BCRV as there are no other way of minimizing virus spread other than avoidance.

i. References

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