Cucumber Mosaic Virus

a. Virus/pathogen name, including accepted acronyms and synonyms

Cucumber mosaic virus (CMV), Cucumber virus 1, Cucumis virus 1, Marmor cucumeris, Spinach blight virus, Tomato fern leaf virus, genus *Cucumovirus*, Family *Bromoviridae*, Order *Martellivirales*

b. Host Range:
Infects plants in over 100 families/1000 species of monocots and dicots including fruits, vegetables, ornamentals and woody plants. Hosts include citrus, hops, grapevine, *Rubus*, strawberry and sweet potato.

c. Symptoms on crop host:

CMV causes symptomatic infection in most hosts and symptomless in others. Symptoms vary depending on the genotype and the age of the plant during the infection. In 'Lloyd George' raspberry light and dark green blotches were observed but plant growth remained unaffected with little or no effect on fruit yield. CMV produces leaf malformations and yellowing on strawberry leaves. In roses it causes chlorotic ringspots and line patterns on leaves whereas on hops in causes twisting, malformation and asymmetry of the leaf blade and leaf splitting and necrosis. CMV causes mosaic symptoms in sweet potato, in most cases in double infections with sweet potato chlorotic stunt virus.

d. Geographic distribution:
CMV is a cosmopolitan and is assumed to be the most widespread plant virus.

e. Means of spread

More than 80 aphid species, including *Myzus persicae* and *Aphis gossypii*, transmit CMV in a nonpersistent, stylet-borne manner. CMV is rapidly acquired by all aphid growth stages yet transmission efficiency depends on aphid species, virus strains, plant genotype and environmental conditions. CMV is easily transmitted mechanically but also by seed and pollen.

f. Recognized diagnostic tests
The virus can be detected by ELISA (Cui et al., 2005, Opiyo et al., 2010, Chen et al., 2012) and RT-PCR (Choi et al., 1999; Chen et al., 2014, Yu et al., 2018).

h. Management strategies for the pathogen and the vector(s) of the pathogen.
Given the prevalence of CMV control may be challenging in areas where the virus is established. The virus has not been studied in depth on most of the National Clean Plant Network crops and thus we do not have a good understanding on the effect of genotype and virus strain in symptom development. The high pollen transmissibility of the virus is of concern given the evidence that pollen can transfer viruses between plant taxa and the prevalence of the virus in many of the common weed species found in fields in the United States. Virus-indexed planting stock is

critical because, as noted, little in known of the virus pathology in most genotypes whereas there have not been studies on the effects of CMV in mixed infections with other viruses in perennial crops.

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Date of last update: August 2024