

First Report of Cucurbit Aphid-Borne Yellows Virus Infecting Groundnut in Kenya

Abstract: Cucurbit aphid-borne yellows virus (CABYV, genus *Polerovirus*, family *Luteoviridae*) causing cucurbit aphid-borne yellows disease (CABYD) in groundnut (*Arachis hypogaea*) is characterized by interveinal yellowing symptoms in leaves. CABYV is transmitted by *Aphis gossypii*, *Myzus persicae*, and *Macrosiphum euphorbiae*. CABYV causes up to 80% yield loss, but there is no information available on its occurrence and serological and molecular characteristics in groundnuts. Two disease diagnostic surveys were conducted during the short and long rains seasons of 2020 and 2021 in Bungoma, Busia, Kakamega, and Siaya counties growing groundnut. Disease incidence and severity were scored, and collected data were analyzed using R software. Serological bioassays were performed using TAS-ELISA, and positive samples were pooled and processed with the transposon-based chemistry library preparation kit (Nextera XT, Illumina). Phylogenetic analyses and comparisons were performed using the MEGA X software. In the short rains season higher incidence (73.61%) was recorded than in the long rains season (42.65%). The CABYV isolates from Kenya clustered with other poleroviruses variedly. CABYV6-2 showed 94.5% nucleotide identity with CpPV2 isolate KX599164.1 from Burkina Faso and 83.4% identity with CABYV isolate MG257902.1 from Korea. This research provides evidence for the first report of CABYV infecting *A. hypogaea* relevant for development of better plant health management technologies for increased groundnut yield.

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