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Begomovirus-DNA betasatellite complexes associated with yellow vein disease of some weeds in Sri Lanka

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A drastic increase in virus-like diseases in weeds and wild plants were observed during the last decade with prominent symptomatic conditions. The most common type had been the yellow vein disease with swollen veins and enations on the under surface of the leaves characteristic of begomovirus infection. Prominent yellow vein symptom was noticed in common garden and agricultural weeds such as *Emilia sonchifolia*, *Ipomoea obscura* and *Mikania cordata* in early 2000 in several regions of Sri Lanka. Leaves from diseased plants were collected from three locations (Gampaha, Colombo and Gampola) and a total of ten individual samples of each species were initially tested by the chloroplast agglutination test to detect the presence of a begomovirus using an antiserum produced against another begomoviral member, namely Sri Lankan cassava mosaic virus. A visual clump in all diseased specimens and the absence of the same in the asymptomatic weeds confirmed the presence of a begomovirus. Subsequently, the identity of begomoviruses in these samples was confirmed by Plate Trapped Antigen - Enzyme Linked Immunosorbent Assay (PTA-ELISA) test. Most of the yellow vein diseases reported to date are caused by a monopartite begomovirus associated with a DNA betasatellite molecule. To ascertain whether the yellow vein disease of these weeds was also associated with the DNA beta satellite molecule, a universal abutting primer pair (beta 01/ beta 02, R. Briddon *et al.,* 2002) was used in PCR to amplify the full length of putative DNA beta. Expected size of the PCR product, approximately 1400 bp was obtained from symptomatic plants but not from asymptomatic plants. This is the first report of the association of DNA betasatellite molecules - begomovirus complex in *E. sonchifolia*, *I. obscura* and *M. cordata* with yellow vein symptomatic condition.

Keywords: Begomovirus, DNA betasaterllite, weeds, yellow vein disease