ABSTRACT

The Molecular Characterisation Of The Begomoviruses Infecting *Sida* Spp. In Jamaica

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Begomoviruses pose a global threat to food security and it is the intention of the author to determine the diversity of these viruses in Jamaican *Sida* with a view to assessing their role in local agriculture. DNA was extracted from *Sida* and screened for begomovirus using a begomovirus probe under low stringency conditions. The majority (80%) of the 64 samples subject to hybridisation gave positive signals. Amplicons were obtained with degenerate primers, cloned and sequenced. The sequence data for the partial clones revealed the presence of five putatively unique begomoviruses: *Sida golden mosaic Braco virus* (SiGMBV), Sida golden mosaic Buckup virus-[Jamaica: St. Elizabeth:2004] (SiGMBuV-[JM:SE:04]), *Malvastrum yellow mosaic Jamaica virus* (MaYMJV), Sida golden mosaic Liguanea virus-[Jamaica:1:2008] (SiGMLigV-[JM:1:08]) and Sida golden yellow vein virus-[Jamaica:2:2008] (SiGYVV-[JM:Lig2:08]).

The complete genomes of SiGMBuV-[JM:SE:04] and SiGYVV-[JM:Lig2:08] and the DNA-A of SiGMLigV-[JM:1:08] and SiGMBV were cloned and sequenced. Sequence analysis of the full length clones confirmed three unique

species (Sida golden mosaic Braco virus-[Jamaica:Liguanea:2008]; SiGMBV-[JM: Lig:08]), SiGMBuV-[JM: SE:04] and SiGMLigV-[JM:1:08]) and one strain of a previously characterised virus (Sida golden yellow vein virus-[Jamaica:Liguanea2:2008]; SiGYVV-[JM:Lig2:08]). SiGMBV-[JM:Lig:08], SiGMLigV-[JM:1:08] and SiGYVV-[JM:Lig2:08] were involved in mixed infection and, with MaYMJVand SiGMBuV-[JM:SE:04], may have arisen via recombination events involving Jamaican, Floridian and Mexican weed infecting begomoviruses. SiGMBuV-[JM:SE:04] and SiGMBV-[JM:Lig:08] were infectious in *Nicotiana benthamiana*.

Keywords: Cheryl Simone Stewart; begomovirus diversity; *Sida*; recombination; mixed infection.