

Acquisition, Retention and Transmission Efficiency of Mesta Yellow Vein Mosaic Virus by *Bemisia tabaci* (Hemiptera: Aleyrodidae) in Kenaf

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Abstract—Whitefly, *Bemisia tabaci* (Gennadius), which is a vector of various plant viruses, including Mesta yellow vein mosaic virus (MeYVMV) a bipartite begomovirus. To understand the relationship between MeYVMV and its vector *Bemisia tabaci* (Hemiptera: Aleyrodidae) (Gennadius) a separate glass house trials were completed on, to assess the acquisition efficiency of *B. tabaci* in acquiring MeYVMV, to understand the MeYVMV transmission efficiency *B. tabaci* population in kenaf plant, determine the retention time of the virus by the whitefly and transmission efficiency (MeYVMV) by whitefly on sex basis. The presence of the virus in plants was determined by loop mediated isotherm amplification (LAMP) method. The results showed that *B. tabaci* is an effective vector for MeYVMV acquisition within 48 h and gave 100 percent virus infection on kenaf plants after exposure of whiteflies. In retention study viruliferous whitefly retained and transmitted MeYVMV upto 35 days after removed from the MeYVMV infected plants. A high transmission rate (88.8%) was maintained by whitefly when kenaf plants were exposure to viruliferous whiteflies from 0 to 10 days. While, the transmission rate was strayed after 35 days. In transmission study, at least 30 minutes of exposure to viruliferous whiteflies on healthy kenaf plants were required to detect the MeYVMV infection. When whiteflies inoculation access feeding period (IAFP) was increased the rate of virus transmission in kenaf plants were gradually increased. 100 percent of transmission was observed when 12 h exposer time were gave to assay plants. The transmission efficiency of female whiteflies observed more, 55.60, 42.90 and 50.00 percent in comparison to male 33.30, 14.30 and 25.00 percent respectively. Findings from this study will help to understanding the interaction of insect-plant – virus relationship, epidemiological knowledge and formulating of management strategies.