BEMISIA TABACI BIOTYPE B ACQUIRES, BUT DOES NOT TRANSMIT A PASSIFLORA ISOLATE OF *SIDA MOTTLE VIRUS*

Ana Carolina C. N. Alves[1]; Jorge A. M. Rezende[1]; Alice K. Inoue-Nagata[2].

[1]*ESALQ/USP. Av Pádua Dias 11, Piracicaba SP, Zip Code 13418-900; acalves@esalq.usp.br*
[2]*Embrapa Hortaliças, Km 09, BR060, Brasília, DF, Zip Code 70359-970.*

A disease named passion flower little leaf mosaic, caused by a begomovirus (family *Geminiviridae*), was first reported in *Passiflora edulis* f. *flavicarpa* in the State of Bahia, Brazil, by Novaes et al. (Plant Pathology, 648-654,2003). The virus was transmitted from field infected plants to healthy passion flower by an unidentified biotype of *Bemisia tabaci*, which was found colonizing these plants. It is worth to note that passion flower plants are not considered as host of whiteflies, and it is rare to observe them on these plants in Brazil. A begomovirus closely related to tomato-infecting isolates was identified after molecular characterization (Ferreira et al.,Plant Pathology,221-230,2009). Another passion flower plant infected with a begomovirus was later found in São Fidelis County, State of Rio de Janeiro, Brazil. It was infected with an isolate of *Sida mottle virus* (SiMoV), determined by full DNA-A sequence analysis, and referred here as SiMoV-P. The virus could infect *Nicotiana benthamiana*, *Solanum pimpinelifollium*, and *Passiflora morifolia* plants by particle bombardment and grafting. *P. morifolia* is more preferred by *B. tabaci* biotype B than *P. edulis* f. *flavicarpa* (Nunes et al., 2008), and it was chosen for transmission studies. Preliminary attempts to transmit SiMoV-P with *B. tabaci* biotype B failed. Therefore, the purpose of the present work was to further investigate the transmission of SiMoV-P by *B. tabaci* biotype B and to analyze the presence of the virus in the insect. An isolate of *Tomato yellow vein streak virus* (ToYVSV) was used as control for insect transmission tests. Adults of *B. tabaci* biotype B were fed during 24h in *P. morifolia* infected with SiMoV-P. Then, groups of 10 insects were transferred to each healthy *P. morifolia* for a 24 hours inoculation access period. The same procedure was applied for the transmission of ToYVSV to tomato plants. Inoculated plants were analyzed by symptom expression and virus detection by PCR with universal primers for begomoviruses. To improve the PCR detection, total DNA extracted from test-plants was first submitted to rolling circle amplification (RCA). Groups of 10 insects fed on *P. morifolia* and tomato plants infected with SiMoV-P and ToYVSV, respectively, were tested for virus detection by PCR. Other groups of insects were frozen in acetone and immediately dissected to separate their heads and prothoraxes from the rest of the bodies. Total DNA was extracted from each part separately and submitted to RCA followed by PCR for virus detection. None of the 20 *P. morifolia* plants inoculated with SiMoV-P by *B. tabaci* biotype B showed symptoms or tested positive for begomovirus by PCR. Tomato plants inoculated with ToYVSV showed symptoms and the virus was detected in all test-plants. Both begomoviruses were detected by PCR in adult whiteflies that had fed on infected *P. morifolia* and tomato plants, respectively. SiMoV-P and ToYVSV were also detected in the head/prothorax part and the rest of the body of the insects, suggesting that both begomoviruses were acquired and circulated in the body of *B. tabaci* biotype B, but only SiMoV-P

was not transmitted to the inoculated plants. Further studies are necessary in order to identify the reason for the failure of *B. tabaci* biotype B to transmit SiMoV-P.

Financial support: CAPES