ABSTRACT

The morphology, genetic diversity and importance of whiteflies in agricultural systems in Jamaica.

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Seven whitefly species from five genera were identified. These include *Bemesia tabaci* (Quaintance and Baker), *Bemisia tuberculata* (Quaintance and Baker), *Siphoninus phillyreae* (Haliday), *Trialeurodes similis* (Russell) and *Tetraleurodes acaciae* (Quaintance) in Jamaica and *Aleurothrixus floccosus* (Maskell) and *Bemisia. tabaci* in Barbados. Eighty six percent of the plants sampled in Jamaica were found to be hosts for *B. tabaci*, these included members of the Euphorbiaceae, Malvaceae, Solanaceae, Cucurbitaceae, Compositae, Cruciferae, Caricaeae, Amaranthaceae, Papaveraceae, and Caesalpiniaceae family. *Euphorbia. glomerifera* and *Solanum melongena* were found to be the breeding hosts for *B. tabaci*. *Punica granatum* was found to be the breeding host of *S. phillyreae* and *Carica papaya* the breeding host of *T. similis*. *Capsicum annuum* was the breeding host of *T. acaciae*.

Non-specific esterases were used to differentiate four whitefly species and also confirm the presence of the B-biotype of *B. tabaci* in Jamaica. A study of the cytochrome oxidase II protein coding gene and the 16S rRNA of *B. tabaci* showed

the presence of two biotypes of *B.tabaci* in Jamaica. These included an non-B biotype and a B-biotype. Phylogenetic analysis based on the gene for the 16S rRNA revealed that the B-biotype of *B. tabaci* is of Old World origin, whereas the A-like biotype is of the New World.

In Jamaica geminiviruses were detected only in the B-biotype of *B. tabaci.* Transmission studies conducted on pepper plants using four different geminiviruses, confirmed the fact that the B-biotype of *B. tabaci* is a vector of the geminivirus.