In vitro and in vivo Efficiency Assessment of Selected Biopesticides against the Sweet Potato Whitefly, Bemisia tabaci (Genadius) Biotype B on Tomato Plants

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The sweet potato whitefly, Bermisa tabaci (Genadius) has become a major pest of economically important crops worldwide. In this research, two experiments including 8 treatments were conducted under laboratory conditions (25± 1 oC, 65±5% relative humidity (RH) and a photoperiod of 14:10 h (Light: Darkness) to evaluate and screen the best biopesticide in B. tabaci control. Commercially grown (Lycopersicum esculentum) tomato plants were used for the experiments. Central Texas regional wild type variants of Bermisa tabaci were collected with sticky traps and transported within glass collection tubes to local laboratories for testing. Additional samples of regional wild type variance were collected for each test. Under the laboratory conditions, a hand sprayer was used to spray selected pesticides on eight tomato plants. Each tomato plant was enclosed on one of its top 3 leaflets, using a mesh bag. An aspirator technique was used to introduce twenty adult whiteflies to each plant specimen. Bagged tomato plants were placed in groups of four each in aerated vinyl enclosures. Data was collected after 24hrs and analyzed with SAS statistics. In the second trial under laboratory conditions, leaflets were cut, sprayed with selected biopesticides, and placed in petri dishes. Twenty B. tabaci adults were introduced per petri dish treatment. Data was collected after 24hrs and analyzed with SAS statistics. The results indicated that all tested biopesticides showed a significant potential to eliminate whiteflies under laboratory conditions, and selected biopesticides showed similar pest control results as compared to commercial pesticides.

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