Efficacy of Selected Biopesticides against the Sweet Potato Whitefly, Bermisia tabaci (Genadius) Biotype B on Tomato under Laboratory and Greenhouse Conditions

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The sweet potato whitefly, Bermisa tabaci (Genadius) has become a major pest of economically important crops worldwide. Especially in vegetable crops in the lower Rio Grande Valley. In this research, three experiments including 8 treatments were conducted under both laboratories (25± 1 oC, 65±5% relative humidity (RH) and a photoperiod of 14:10 h (Light: Darkness) and greenhouse conditions to evaluate and screen the best biopesticide in B. tabaci control. Four week old tomato plants were used for the experiments and were propagated in the greenhouse. Under the laboratory conditions, the precision spraying tower was used to spray the leaflet and Petri dish under selected pesticide residue effect. Twenty B. tabaci adults were placed per treatment. Under the greenhouse conditions, a hand sprayer were used to spray selected pesticides on 4-week-old tomato plants growth in 1 L pot and twenty adults were placed in a leaf bag, which was enclosed on one of top 3 leaflets. Data was collected after 72hrs and analyzed with SAS statistics. The results indicated that all 8 selected biopesticides showed a significant potential to control the whitefly under controlled conditions, especially Imidacloprid. Other selected biopesticides showed similar or less control to Imidacloprid which is being applied by farmers and growers. Future research including additional biological pests and biopesticide evaluations and comparisons will be conducted.

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