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PATHOGENICITY AND LETHAL CONCENTRATION (LC50) OF *Beauveria bassiana* AND *Metahrhizium anisopliae* AGAINST *Ceratitis capitata* (WIEDMANN, 1824) (DIPTERA: TEPHRITIDAE) PUPAE

Maguintontz Cedney Jean-Baptiste
Southwest Bahia State University
Graduate Program in Agronomy
Haiti
magcedneyjeanbaptiste@yahoo.fr

Thamires Francisca de Jesus
Southwest Bahia State University
Graduate Program in Agronomy
Brazil
thamires19@outlook.com

Maria Aparecida Castellani
Southwest Bahia State University
Graduate Program in Agronomy
Brazil
castellani@uesb.edu.br

Aldenise Alves Moreira
Southwest Bahia State University
Graduate Program in Agronomy
Brazil
a.moreira@uesb.edu.br

ABSTRACT

Ceratitis capitata (Wiedmann, 1824) (Diptera: Tephritidae) represents one of the most frequent and limiting pests to fruit production. The larvae feed on the pulp of the fruit, causing rot and premature fruit drop. Among the control alternatives, entomopathogenic fungi (EPFs) stand out, considered as highly promising biological control agents, highlighting *Beauveria bassiana* and *Metarhizium anisopliae* as the most studied and used, mainly in Integrated Pest Management (IPM) programs. The aim of this study was to evaluate the pathogenicity and lethal concentration (LC50) of *B. bassiana* and *M. anisopliae* of *C. capitata* pupae under laboratory conditions. The experiment was carried out in a completely randomized design (CRD), with ten treatments and five replicates, totaling 50 plots. Two commercial products, Boveril®Evo based on *B. bassiana* fungus and Metarril®WPE9 based on *M. anisopliae* fungus were used. Each fungus was analyzed at five concentrations, *B. bassiana* (10, 15, 20 and 25 g L^{-1} or 5 x 10^9, 7.5 x 10^9, 10 x 10^9 and 12.5 x 10^9 conidia mL^{-1}) and *M. anisopliae* (10, 15, 20

and 25 g L^{-1} or 5 x 10^8, 7.5 x 10^8, 10 x 10^8 and 12.5 x 10^8 conidia mL^{-1}), in addition to the control treatment (water only). The fungi were dissolved in 1 L of water. Each experimental unit consisted of Petri dishes (9 cm) with two sheets of filter paper containing 10 *C. capitata* pupae (48 hours old). With a graduated pipette (1 mL), 1 mL of the suspension of each product was inoculated at the recommended concentration. The experiment was maintained in BOD (temperature: 25 ± 1º C, relative humidity: 70 ± 10%, without light). The fungus *B. bassiana* was more pathogenic than *M. anisopliae*, causing mortality of 70.0 and 54.0 %, respectively, at a concentration of 25 g L^{-1}. There was a reduction of approximately 28 % in the average number of live insects for *M. anisopliae* and 34.4 % for *B. bassiana*. The estimated LC50 value of *B. bassiana* for *C. capitata* pupae, eight days after treatment, was 17.79 g L^{-1} or 8.89 x 10^9 conidia mL^{-1}), 4.7 times higher than the LC50 of *M. anisopliae*, which was 23.79 g L^{-1} or 11.89 x 10^8 conidia mL^{-1}. The microorganism's *B. bassiana* and *M. anisopliae* were pathogenic to *C. capitata* pupae, with a lower lethal concentration (LC50) in *B. bassiana*.

KEYWORDS: Biological control, biopesticide, fruit flies.

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