Beauveria bassiana Project Summer 2013

Determine the effect of solar radiation on the effectiveness of *B. bassiana* infection in *L. lineolaris* using two surfactants.

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INTRODUCTION:

Temperature is one of the principle factor that affect entomopathogenic fungi. Conidial germination is the first step in establishing infection of insects by most entomogenous fungi (Luz and Fargues, 1997). Tarnished Plant Bug, TPB, *Lygus lineolaris* (Palisot de Beauvois), across the word impart significant economic damage to a wide range of crops including cotton, seed alfalfa, strawberries, and other. Currently, this pest is controlled through the use of chemical pesticides. Research to discover specific and effective controls for TPB has increased. Laboratory tests have identified several isolates of *Beauveria bassiana* that perform better that the commercial strain. This study was conducted in order to determine the effect of solar radiation on the effectiveness of *B. bassiana* infection in *L. lineolaris* using two surfactants.

MATERIALS AND METHODS:

Two isolates of *Beauveria bassiana* (Balsamo) Vueillemin including the commercial strain GHA and the Mississippi Delta native NI8 strain were evaluated in the field for pathogenicity and infectivity against tarnished plant bug (TPB). Branches of cotton plants were cut after spray and placed in cages with 30 2-d old TPB adults from a laboratory colony. A total of 150 cage were used in 50 plots per each day (o day, 1 day and 2 days after spray). Plots were sprayed with four treatments: NI8+Bio-plastic, NI8+Tween-80, GHA + Bio-plastic, GHA +Tween-80 and a control (5 plots / treatment, 3 branches / plot / day). The sprayed concentrations (spores / acre) was 4.0×10^{12} for both strains. Released insects were collected from the cages and placed individually on Lygus solid diet and observed for ten days under laboratory conditions. Mortality and sporulation from Lygus collected from the cages of the plants were recorded daily.

RESULTS:

Differences of mortality and sporulation on day 0, 1 and 2 were found among treatments for both isolates and surfactants. No sporulation was found at day 2.

REFERENCES:

Fargues, J. and Luz, C. 1997. Temperature and moisture requirements for conidial germination of an isolate of Beauveria bassiana, pathogenic to *Rhodnius prolixus*. Mycopathologia 138: 117-125.

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