

Beauveria bassiana Project Summer 2014

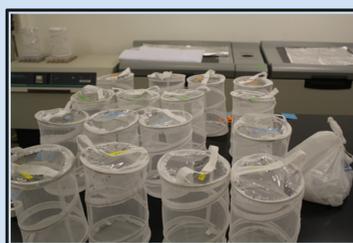
Using solid artificial diet to estimate the lethal effect of several insecticides against *L. lineolaris*.

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INTRODUCTION:

The tarnished plant bug, TPB *Lygus lineolaris* (Palisot de Beauvois), attacks a wide variety of economically important herbaceous plants, vegetable crops, commercial flower plants, fruit trees, and nursery stock. Half of the cultivated plant species grown in the United States are listed as host plants for tarnished plant bugs. Effective management of TPB in cotton is complicated due to its mobility. Its control has been solely based on insecticides, and insecticide-resistant populations of tarnish plant bug have been reported in the Delta region (McGuire, 2006). Utilization of the entomopathogenic fungal, *Beauveria bassiana* to control TPB in cotton is being study. This study was conducted in order to estimate the LC₅₀ of several insecticides alone and in combination to control *L. lineolaris*.



MATERIALS AND METHODS:

Multiple concentrations (125, 100, 75, 50, 25, and 12.5 percent solution) screening assay was carried out to evaluate mortality and growth inhibition of mixed-sex fifth instar and 2D-old adults of TPB. A hundred and eight four groups of 30 insects (54 groups / stage, 6 groups (replicate) / insecticide alone and combined (treatments): Diamond, Rimond, Knack, Belay, Karate, Carbine, Centric, Belay + Knack, Diamond + Centric, and Karate + Centric. Insects of *L. lineolaris* were sprayed with 6 ml of insecticide solution. The application for all treatments used a specially-designed spray tower. After application, adult and nymphs were released in a insect observation cage and knocked down individually into a solo cup with solid diet. Adults and nymphs were examined daily for mortality and for molting. Adults and nymphs of *L. lineolaris* were held in an environmental room at 27°C, 65% RH, and 12: 12 (L:D) h photoperiod. Insects were kept until all were dead.

Mortality and growth inhibition of *Lygus* collected from the diet cups were recorded daily.

Application for all treatments using a specially-designed spray tower and cages with released insects after insecticide application.

RESULTS:

Differences of mortality and growth inhibition on 3, 5, 24, 48, 72 hours were found among concentrations for all insecticides. LC₅₀ will be estimated.

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