Bioassay for *Beauveria bassiana* infection

Breanna Pennington

Summer Student 2011

Supervisor: Maribel Portilla

Beauveria bassiana (Balsamo) is a fast acting fungus which acts as a parasite on various arthropod species causing a white substance known as White Muscardine Disease. The fungus is being used to control a number of pests.

This is my second year at Southern Insects Management Research Unit, as a STEP employee. In 2010 I was assigned to Dr. Portilla to help with experiments in the laboratory, field and green house conditions related to reproduction of Fall Army Worm, FAW in several varieties of transgenics and conventional corn and cotton. This year (2011) I was also assigned to Dr. Portilla to work at the National Biological Control laboratory with the fungus *B. bassiana.* Working in this project has been different, new techniques and methods for evaluation were applied; however, it was easier for me to learn because some experiments involved differentiation of immature stages of FAW, technique that I learned in my last year as a summer student.

I had several activities in this current project, such as planting and keep corn and cotton in environmental chambers, diet preparation, participate in some process of the *B. bassiana* production, spray *B. bassiana* to plants and insects using a the spray tower.

During this work period I learned that there are different techniques to bioassay the infection of *B. bassiana*, but the most common method is keeping the sprayed insects on their host plants, for example green beans (our lab observation) and broccoli (Leland, 2005). The bioassays that I helped to set up were different; several species of insects were sprayed with the insecticide *B. bassiana* as an emulsified suspension under the spray tower using different formulations, then the sprayed insects were placed in cups with diet. The insects on the diet were observed every day until they die and showed the sporulation of the white fungus. I could

observe that *B. bassiana* comes in contact with the skin of the insect; it germinated and grows directly through the skin to the inner body of the *Lygus*. The fungus only takes three to five days to kill the *Lygus* and longer in other insects; in about two days after the insect die the fungus emerged covering the *Lygus* with the white mold.

In all, I have enjoyed studding *B. bassiana* and the effect that this fungus can cause to insects, I find it very interesting. The fungus is very important in controlling pests that eat up the farmer's crops. I hope to study more with *B. bassiana*, seeing how it affects more pests.

References

1. Jarrol. L. 2005. Characteristics of Beauveria bassiana Isolates from Lygus lineolaris Populations of Mississippi. J. Agric. Urban Entomol. Vol. 22, No. 2 (2005).