

The Effect of *Beauveria bassiana* on *Lygus lineolaris*

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STEP EMPLOYEE

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My name is Cavishia Roberson. I am a fourth year STEP employee for the Southern Insect Management Research Unit, where I have had the privilege to accompany Dr. Randall Luttrell and Kenya Dixon while addressing major issues of tarnish plant bugs. Since I have begun working for USDA-ARS, I have learned a variety of scientific information that will not only benefit the SIMRU Unit, but also my future endeavors.

This summer we worked on different projects, but my primary focus was the Effect of *Beauveria bassiana* on *Lygus lineolaris*. *Beauveria bassiana* is a fungus that grows naturally in soils throughout the world and acts as a parasite on various arthropod species. This fungus causes white muscardine disease. *Lygus lineolaris* also known as tarnish plant bug, is a major pest in the mid-South. Scientists are looking for effective ways to stop the damage of the tarnish plant bug in cotton.

This experiment consisted of many willing workers and different materials to make the experiment a success. In the beginning of this experiment, cotton, corn, and soybean plots were established in the field. Slides were then placed in the field before the Beauveria and Beauveria plus Diamond was sprayed. The slides were used to obtain field rates of Beauveria spores to address the sporulation and mortality of the tarnished plant bug at different canopy levels and the Beauveria was recorded. Plant tissue samples were also collected, and in the lab we set up the

new home for the tarnish plant bug. During this experiment, there were three plots: the Check, Beauveria, and Beauveria plus Diamond. We then put a leaf from each plot into a small cup followed by a tarnish plant bug. After twenty- four hours, the tarnish plant bug was moved from the plant tissue to a cup of artificial diet. This artificial diet, which is known as evaluation diet, is prepared using a protocol developed by Dr. Maribel Portilla. We recorded the data daily and maybe after a few days we will start to see some Beauveria.

I read an article called "Utilization of Early Soybeans for Food and Reproduction by the Tarnished Plant Bug (Hemipteral Miridae) in the Delta of Mississippi," by Dr. Snodgrass, Dr. Jackson, Dr. Abel, and Dr. O.P. Perera. In this article, soybeans were a main crop where tarnished plant bugs were abundant. Field crops that tarnish plant bugs feed on in the mid-South also include cotton, sorghum, and corn. Corn is an excellent host for tarnish plant bugs. Cotton grown near corn has higher numbers of tarnish plant bugs than grown near any other crop. As told by the article and also working with scientific research, tarnish plant bugs have been a major problem in cotton over time. Scientists work together diligently in order to halt the effect of tarnish plant bugs on this crop.

Working for the Southern Insect Management Research Unit has really been a great experience. I believe this is an awesome program for students who are interested in science. I am eager to learn new things and everything I learned will be used to the best of my ability.