

When asked what I am doing for the summer, I simply smile and say, "I'm working for the USDA." Surprisingly, most people think that we only raise cows. I am proud to say that I am not a cow farmer, but I raise bugs instead because I am a part of SIMRU, or Southern Insect Management Research Unit. I pride myself in knowing that my job, no matter how small it may seem, helps the world. My supervisor, Dr. Ryan Jackson, is a group leader of a project that focuses on understanding how different landscapes of crops affect resistance development in various insects, as well as focusing on how to control these pests in order to increase productivity of mid-South row crops. We as a team seek to improve insect pest management and determine the effect of pest ecology on susceptibility to insecticides.

I have encountered various new learning experiences even though it is my second year as a summer worker. What I have learned this year ranges from scientific experiments to life lessons. During this summer, our focuses were soybean, corn and cotton. The two pests that affect these crops are the tarnished plant bug and bollworms. One of my personal focal points was tarnished plant bug testing. We ran dose-mortality tests to establish a baseline for novaluron, and are generating susceptibility data to compare to the baseline. This will tell us if the susceptibility is changing over time in tarnished plant bug populations.

We also run an Adult Vial Tests with bollworms. We use a pyrethroid as the insecticide for this test. Moths are placed in vials coated with the insecticide and are held there for 24 hours. The survivors, the ones that are able to fly afterwards, are called "resistant", and the dead ones are called "susceptible". If a high proportion of insects tested are resistant (>30%), then the

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population may cause problems in the field. This test could also be used to monitor for resistance development over time.

A report by Dr. Snodgrass et al. (2008) discussed development of a vial bioassay to measure susceptibility in tarnished plant bugs to the neonicotinoid insecticides whose activity depends in large part on ingestion by the insect. This bioassay technique was used to generate baseline data for monitoring for resistance development to neonicotinoids and to detect changes in resistance. This was similar to our work with the tarnished plant bug and novaluron, where we developed a baseline of susceptibility to have while monitoring for resistance, as well as to provide a comparison for changes in resistance within the tarnished plant bug populations over time.

Although I'm not a cow farmer, I am a proud SIMRU worker. Working for SIMRU has really been an eye-opening experience. There have been ups and downs, but the good has definitely outweighed the bad. And most importantly, what I learned this summer is that the USDA's SIMRU team is not just people working together to help feed the world, but we are a family.

Snodgrass, G. L., C. Abel, R. Jackson, and J. Gore. 2008. A bioassay for determining resistance levels in tarnished plant bug populations to neonicotinoid insecticides. *Southwest. Entomol.* 33: 173-180.