

To learn by definition is to acquire knowledge or understanding. So with that said, there are a number of things that I acquired knowledge about while working for SIMRU. This summer was a big summer for me on a personal level due to the fact that my work load and overall responsibilities increased significantly. First and foremost I was able to use the John Deere 6700 and make applications to our cotton plots. I learned the importance of plot maintenance. Dustin and I were given the task of overseeing our crop plots. We spent countless hours hand-pulling weeds; however, as a result, our plots look very good. I learned how to scout wild hosts for tarnished plant bugs as I was given the task to find tarnished plant bug colonies for laboratory testing. I had this task last year, but I was not always successful. Just as years before, we planted cotton and corn. I also did work with OPIA and *Beauveria bassiana*. *Beauveria* is a fungal entomopathogen. *Beauveria* is broken down by sunlight, so tarnished plant bugs must come into contact with materials within hours after an application.

The tarnished plant bug is a serious pest of cotton in the United States. This insect can reduce cotton yields by causing square shed, aborted terminals, and damaged bolls. Adult tarnished plant bugs are highly mobile and feed on a variety of plants. Due to increasing resistance, the effectiveness of insecticides for control of this pest has declined resulting in control failures. However, current insecticides appear to provide better control of tarnished plant bugs than *Beauveria* when applied at the same time. According to Barton (1987), the introduction of Bt (*Bacillus thuringiensis*), in conjunction with boll weevil eradication programs in the United States may have resulted in increased tarnished plant bug problems. According to an article written by D.C. Steinkraus and N.P. Tugwell (1997), in the early to mid 90's a study was done in Arkansas to determine the effects of *Beauveria* on *Lygus*. Results indicated that *Beauveria* could be an effective control agent for tarnished plant bugs in cotton if rapid kill (<5

days) was not an important factor. Use of *Beauveria* may be more beneficial when applied during fall and spring (times of shorter day length and reduced temperatures) to improve potential control. Current studies are also being conducted in weed hosts during the fall because of this.

I have learned that I am not one hundred percent sold on the use of *Beauveria*. We have made applications but *Lygus* numbers appear to be considerably higher than in plots with standard insecticides in my opinion. Now having worked with *Beauveria* I understand that the temperature and ultra-violet light play an important role in its activity against tarnished plant bugs.