

Chris Morris

To: Dr. Randy Luttrell
Research Leader
USDA, ARS, SIMRU
From: Chris Morris
Biological Science Aid
USDA, ARS, SIMRU

Hello my name is Chris Morris. I am an entering senior at Mississippi State University and will graduate in May with a degree in biological sciences with intention of furthering my education in medical school. During my 3 summer tenure as a STEP employee in the Southern Insect Management Research Unit (SIMRU) I have assisted Entomologist Larry Adams in the field of pest control of sweetpotatoes. At SIMRU, "We provide leadership on food, agriculture, natural resources, and related issues based on sound public policy, the best available science, and efficient management." Everyday we attempt to further our knowledge in row crop pest control to maximize yield and quality in order to help the United States better feed our people.

My job as a STEP employee under Larry Adams entails many different studies which are necessary in the expansion of knowledge in the sweetpotato industry. The studies which we were apart of this year included: variety trials, nematode trials, corn rotation trials, and sugarcane beetle research, which are located at three different locations in Stoneville and in Mound Bayou. In the variety trials we plant and maintain 11 different varieties of sweetpotatoes, some of which are presently on the market and others which need to be further studied to determine if it is feasible to have them on the open market. In the corn rotation study we not only study the yield and quality of sweetpotatoes planted one and two years after corn; we are also in our second year of a three year wireworm study. Bait traps are set and allowed to attract wireworms for 10-12 days,

after which we dig up and sift through the dirt with a wire screen to check for wireworms that we preserve in the lab.

Our unit has also been taking moth counts at five various locations in and around Stoneville. Our goal has been to study the effects before and after the introduction of BT corn and cotton in this area. BT corn and cotton is genetically engineered to produce the toxin *Bacillus Thuringiensis* which upon ingestion kills *Zea* and *Virescent* larvae. Through these counts we have seen a significant decrease in the presence of both *Zea* and *Virescent* moths in this area.

It was necessary to familiarize myself with the many types of sweetpotato insect pests in order to conduct weekly insect counts. These counts are used to determine when an application of insecticide is needed. We identify many different insects, some of which include: twelve spot beetles, sugar cane beetles, click beetles, leaf hoppers, alfalfa hoppers, lep larvae, stink bugs, and tortoise beetles.

The Effect of Valor on Sweetpotato by M.W. Shankle, J.L. Main and T.F. Garrett helped me further understand the effects of valor on sweetpotatoes. When Valor+Command were applied pre emergence there was no observed damage to the plants or potatoes that were harvested. When Valor was applied 18 days after transplant there was as much as 50% damage to the plants. So in conclusion Valor applied PRE plant will not harm sweetpotatoes and will control pigweed and morningglory species.