

Summary of the TPB Project (Alternative Approaches to Tarnished Plant Bug Control) Team Meeting held on Tuesday August 16, 2016.

Meeting started at 10:00 am with participation of Bryce Blackman, Randy Luttrell, Katherine Parys, O. P. Perera, Jeff Willers, and Maribel Portilla.

Current TPB project term: December 4, 2015 to December 3, 2020.

Randy Luttrell welcomed Dr. Jeff Willers who has joined SIMRU as a Research Entomologist. Luttrell made a short explanation on how our current project assignment changed. He mentioned that Jeff Willers will be covered the vacant position and 50% of his time will be assigned to the TPB project, Portilla's time increased 10% and Parys' decreased 24%. Maribel Portilla made a brief summary to inform Jeff Willer about APHIS regulations for experimental plots 10 acres or less and EPA regulations for large-scale experimental plots. Her updates were based on previous information obtained from APHIS, Pest, Pathogens and Biocontrol Permitting. All attendees still agreed that this regulation would consume our project funds. Portilla mentioned that no final information has been obtained yet from EPA about the cost of the permit for large-scale use. She finished her updates stating the total production (7 k) of technical powder of *Beauveria bassiana* that was produced the year of 2016 at SIMRU and NBCL.

Next discussion was focused on the project goals set by milestone tables.

Maribel Portilla is taking the lead in research outlined in the sub-objectives 1A and 1B under the Objective 1 (See Summary TPB Meeting 4-12-16). Several thousand of TPB adults have been collected from different locations within the Mississippi Delta. The impact of biological control (microbial and parasitoids) on TPB seasonal abundance have been identified and quantified for 2015 and 2016. New microbial agents have been isolated from field samples in 2016. Enough data for adults and fifth instar nymph were collected in 2015 and for third and fourth instar nymphs were collected in 2016 for life table constructions. Data for first and second instar will be collected in 2017. Field samples of microbial isolated from feral TPB population from 2015 have been cultured and single spores have been stored for codification. The coded samples will be given to OP Perera who is taking lead on the last part of the research outlined in the sub-objective 1B.

Jeff Willers will take the lead in the research outlined in the sub-objective 1C under the Objective 1, which was led by Katherine Parys. However, Parys will continue working with Dr. David Hall from The Natural Resources Institute, University of Greenwich, UK who is providing the pheromones for her research. No field studies were done for the sub-objective 1C in 2016. Parys will continue leading the stable carbon isotope analysis for 2016. Parys indicated that the data of 2015 was presented in Brazil at the International Cotton Conference in May of 2016. The 2016 population of TPB is being processed.

Bryce Blackman is taking lead on the research outlined in the two sub-objectives under the Objective 2. Blackman mentioned that different host plants have been targeted at different times of the year. Fifteen applications of NI8 with concentrations of 6×10^{12} have been applied on

patches of wild host growing on field borders and ditches and on crops (sorghum, soybean, and corn) during 2016. Sprays (using back sprayers calibrated to deliver 10-20 gpa) have been done on plots paired with untreated plots. Number of plot per application depended upon area availability. Portilla explained that TPB adults and nymphs, in addition to other arthropods collected from 20 sweeps per plot are brought back to the laboratory (0, 5, 10 days after spray) where they were held on artificial diet for observation and survival. Mortality and infection has been analyzed and applications will be continued throughout the end of the year 2016 and January, February, and March of 2017 if possible.

Portilla mentioned that Nathan Little finished the second year experiment of *B. bassiana* application in large sprayed and unsprayed field plots against commonly used insecticide regimes. Portilla provided about 1,200 g of NI8 for 2016.

General ideas about future large-scale field experiments were discussed. It is uncertain at this time if we will be able to complete objective 2B under objective 2. Requirements from EPA about the large-scale application are the main obstacles.

The next meeting for the TPB project will be the second Tuesday of February 2017.