

SOUTHERN INSECT MANAGEMENT
RESEARCH UNIT
USDA-ARS
Mid South Area

Mission

- *The mission of the Southern Insect Management Research Unit (SIMRU) is to generate new knowledge of arthropod pest biology, ecology and management and integrate this knowledge into contemporary farming systems that will promote economical and environmentally stable pest management practices for the southern U.S.*
- *The vision of SIMRU is to be a recognized center of innovation for negating agricultural pest problem through deployed scientific knowledge of pest biology, ecology and management options.*

CRIS PROJECT

Insecticide Resistance Management and New Control Strategies for Pests of Corn, Cotton, Sorghum, Soybean, and Sweetpotato

PROJECT INVESTIGATORS

- **Clint Allen (Project Leader)**
- Randall Luttrell
- Katherine Parys
- OP Perera
- Yu Cheng Zhu

CRIS PROJECT

Control of Tarnished Plant Bugs by Biocontrol and Other Methods

PROJECT INVESTIGATORS

- Randall Luttrell
- **Maribel Portilla (Project Leader)**

CRIS PROJECT

Effect of Resistance on Insect Pest Management in Transgenic Cotton

PROJECT INVESTIGATORS

- Clint Allen
- Nathan Little
- Randall Luttrell
- Katherine Parys
- **OP Perera (Project Leader)**
- Maribel Portilla

Congratulations

Dr. Randall Luttrell On Five Years of Service



The image contains two side-by-side photographs. Both show a woman in a dark jacket presenting a certificate to Dr. Randall Luttrell. In the left photo, they are shaking hands. In the right photo, Dr. Luttrell is holding the certificate. Behind them is a presentation screen with the text 'Best practices' and a bulleted list: 'Ensure leaders are visible', 'Provide opportunities for stakeholder participation', 'Create coalitions', and 'Ensure communication'. The text is partially obscured by the people in the photos.

**MVSU hosted
18th Annual Women in Science and Technology
(WIST) Conference**

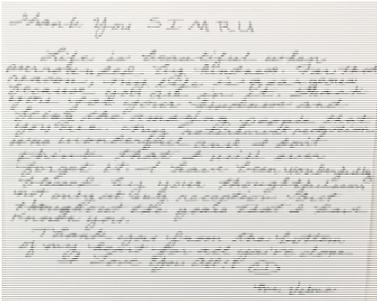


Yolanda Harvey presented at the 18th Annual WIST conference at Mississippi Valley State University

SIMRU's participation toward Mrs. Velma's Retirement



Thank you



**Mississippi Sweetpotato News
Spring 2015**

Updates from Stoneville
Larry Adams

Entomologist, USDA-ARS Southern Insect Management Research Unit- Stoneville, MS USDA-ARS, Southern Insect Management Research Unit and Alcorn State University organized an informal meeting with the sweetpotato farmers in the Mound Bayou, Marks and Moorhead areas on April 14, 2015 at the Alcorn State University Research Facility in Mound Bayou, MS. Ten farmers and our Alcorn State University collaborators attended. Chris Johnson and I presented two presentations: Mississippi Delta On-Farm Evaluation of Yield Response to Recommended Insecticide, Nematicide and Herbicide Applications and 2014 USDA-ARS, Southern Insect Management Research Unit Sweetpotato Variety Trials and 2015 Entries. Dr. Tahir Rashid, ASU, presented a presentation: Comparison of Yield and Insect Damage to Organic Sweetpotatoes in the Mississippi Delta. Dr. Randy Luttrell spoke with the group concerning USDA-ARS, SIMRU's 2015 research plans to continue sweetpotato research plot studies, sweetpotato variety trials and to initiate studies with cotton, corn and soybean on the Alcorn State University research farm this season.

**NEW PUBLICATION
CONGRATULATION
Dr. O.P. Perera**

Expression profiles of astakine-like transcripts in the tarnished plant bug, *Lygus lineolaris*, exposed to fungal spores of *Beauveria bassiana*

Kent S. Shelby, Omalthage P. Perera and Gordon L. Snodgrass
Insect Molecular Biology (2015) 00(00), 00-00 doi: 10.1111/imb.12175

ABSTRACT: Astakines are hematopoietic cytokines originally isolated from crustaceans. We identified three astakine-like transcripts in the tarnished plant bug (*Lygus lineolaris*), LIAst-1, LIAst-2 and LIAst-3, containing prokineticin domains. Quantitative real-time PCR showed variation in expression patterns of astakines in different tissues and between sexes. Relative expression levels of LIAst-1 were highest in the fat bodies of females, while LIAst-2 expression was highest in the fat bodies of both males and females. LIAst-3 expression was higher in male legs compared with the female legs, but lower in all other tissues. Infection with the entomopathogenic fungus *Beauveria bassiana* slightly elevated LIAst-1 expression 48 h after infection in both males and females. In contrast, the expression levels of LIAst-2 and LIAst-3 were not significantly changed in males and females. Compared with 12:00 h, LIAst-1 level was higher in both sexes at 18:00 h and 00:00 h (midnight). By 6:00 h, the LIAst-1 level in females was significantly reduced while that in males remained high. LIAst-2 and -3 had highest relative expression levels in females at midnight but were significantly lower than in males at midnight and in both sexes at 18:00 h and 6:00 h. This is the first report of expression of astakine-like cytokines from insects.

Keywords: *Lygus lineolaris*, real-time PCR, hematopoiesis, circadian, photoperiod.

**MAY
BIRTHDAYS CELEBRATION**

- Michelle (May 6th)
- Mi'Shayla (May 17th)

