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1. Accession 0219171	Agency Identification No. 2. CSREES 3. LAB	5. Work Unit/Project No. LAB03993	6. Status Final Report
7. Title Revising Management Programs for the Rice Stink Bug in Southern Rice			
12. Investigator Name(s) (Last Name and Initials) Stout, M.; Hummel, N.; Groth, D.; Machtmes, K.; Bernhardt, J.; Tindall, K.; Way, M.			
20. Termination Date 08/31/2012		40. Period Covered (mo/da/year): 09/01/2009 TO 08/31/2012	
Outputs: In late 2009, funding for a multi-state collaborative effort to revise rice stink bug management programs was obtained. Arkansas, Missouri, Texas, and Louisiana were involved in the grant; Louisiana was the lead state. Analysis of results is ongoing, but should result in issuance of revised rice stink bug management guidelines by mid-year 2013. In addition, at least three manuscripts will be submitted to refereed journals by mid-2013 based on results from the experiments funded by these grants.			
Outcomes/Impacts: In 2009, results of vial tests to characterize the toxicity of lambda-cyhalothrin against rice stink bugs collected from areas with different histories of pyrethroid use were inconclusive, but suggested resistance. Populations will be re-tested in 2013 to confirm that resistance is developing. Pyrethroid and neonicotinoid insecticides (primarily dinotefuran) were found to have roughly equivalent efficacies against stink bugs in multiple small-plot trials. Evidence for longer residual activity of neonicotinoids and effects of neonicotinoids on stink bug feeding behavior was also obtained. Overall, these data indicate that neonicotinoids are viable alternatives to pyrethroids for rice stink bug control. Three years of cage studies in which rice was subjected to different densities of rice stink bugs and assessed for damage (pecky rice) were completed to examine current thresholds for use of insecticides against stink bugs. Processing of samples should be completed by January 2013; preliminary data indicates current thresholds for use of insecticides are too low. The efficiency of the sweep-net sampling method was assessed over two years. Results indicate that not more than 15-20% of stink bugs in a plot are captured by sweep nets. A two-year comparison of rice stink bug populations on eight commercial varieties over the entire period of grain ripening (anthesis-hard dough) provided information on the temporal patterns of stink bug infestation relative to crop development, varietal differences in susceptibility to infestation, and the relationship between stink bug densities and damage (peck). Progress was made in understanding the factors that attract rice stink bugs to rice fields. Rice stink bug adults were repelled by metathoracic gland secretions at high concentrations but attracted at lower concentrations; significant attraction of females to male dorsal abdominal gland secretions was found. This line of research could be used to develop sampling tools for the rice stink bug.			
Publications: No Publications Reported			
Participants: M. Stout (PI), Bryce Blackman, Srinivas Lanka, K. Machtmes, Don Groth, Natalie Hummel, LSU AgCenter; Mo Way, Texas A&M University; John Bernhardt, University of Arkansas (retired in 2012); Kelly Tindall, University of Missouri (left U of M in 2011).			
Target Audiences:			



Rice growers and consultants; Academics interested in pest management and rice.

Project Modifications:

Departure of several of the project PIs required Stout (lead PI) to assume greater responsibilities for grant completion.

Approved (Signature)	Title	Date
		