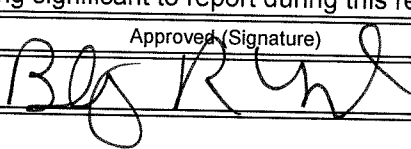


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U.S. Department of Agriculture Accomplishments Report AD-421 U.S. Dept. of Agriculture, State Agricultural Experiment Stations and Other Institutions			Date (Month, Day, Year) 03/22/2012
1. Accession 0217443	Agency Identification No. 2. CSREES 3. LA.B	5. Work Unit/Project No. LAB93967	6. Status Annual Report
7. Title Biochemical and Physiological Mechanisms of Insecticide Resistance			
12. Investigator Name(s) (Last Name and Initials) Ottea, J. A.			
20. Termination Date 12/31/2013		40. Period Covered (mo/da/year): 01/01/2011 TO 12/31/2011	
Outputs: A new study was initiated to examine the susceptibility of larvae of the common house mosquito, <i>Culex quinquefasciatus</i> , to spinosad, an insecticide that is being applied to the aquatic habitat of this life stage. Preliminary results have been shared with the office of the East Baton Rouge Parish Mosquito Abatement. A manuscript describing resistance-associated esterases in adult mosquitoes was published.			
Outcomes/Impacts: Research with adult Culicine mosquitoes collected from urban areas within East Baton Rouge Parish confirmed the occurrence of resistance to the insecticides being used by Mosquito Abatement programs. Widespread and high frequencies of resistance were detected for the organophosphorus compound, dibrom. In current studies with immature mosquitoes, the efficacy of spinosad, a recently registered mosquito larvicide that is a product of bacterial fermentation, is being compared between laboratory- susceptible and field- collected larvae. Results suggest that larvae remain susceptible to this compound. These data provide a valuable baseline for future efforts to monitor and record the development of resistance to this compound.			
Publications: Yang Y , Zhu YC , Ottea J , Husseneder C , Leonard BR , Abel C , Luttrell R , Huang F . (2011). Down regulation of a gene for cadherin, but not alkaline phosphatase, associated with Cry1Ab resistance in the sugarcane borer <i>Diatraea saccharalis</i> . PloS one; 6(10):e25783.			
Participants: J. A. Ottea (PI), Owen Jones, F. Huang and Y. Yang, LSU AgCenter; Matt Yates and Randy Vaeth, East Baton Rouge Parish Mosquito Abatement office.			
Target Audiences: Mosquito Abatement Districts throughout the southeast and U.S.			
Project Modifications: Nothing significant to report during this reporting period.			
Approved (Signature) 	Title	Date	
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