

# Department of Entomology Profile



Report to Stakeholders

August 2010

## About the LSU AgCenter

The LSU AgCenter is dedicated to providing innovative research, information and education to improve people's lives. Working in a unique statewide network of parish extension offices, research stations and academic departments, the LSU AgCenter helps Louisiana citizens make the best use of natural resources, protect the environment, enhance agricultural enterprises and develop human and community resources.



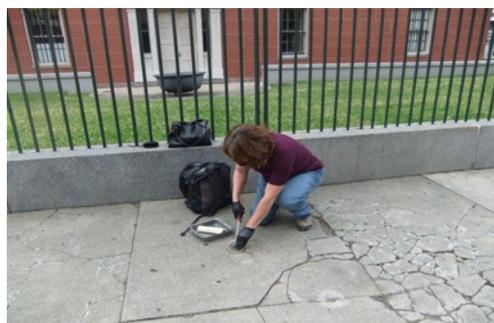
## Academic/Research/Extension Highlights

— Development of a cost-effective screening method that permitted the landmark discovery of a major Bt-resistant allele in a Louisiana field population of the sugarcane borer. This is the first major resistant allele to commercial Bt corn hybrids in any corn stalk borer species to be found worldwide. This led to state, national and international steps to prevent spread of resistant insects in Louisiana.



— Identification of several hundred arthropod specimens by Louisiana State Arthropod Museum staff provides critical information for effective agricultural pest management in La. New invasive species such as Mexican rice borer, diaprepes root weevil and Asian citrus psyllid requiring emergency pest management responses are identified by museum staff.

— The French Quarter Program (part of Operation Full Stop), an LSU AgCenter Entomology-led program in cooperation with the USDA-ARS Southern



Regional Research Center termite lab and the New Orleans Mosquito and Termite Control Board, has reduced termite abundance in the French Quarter by 50-75 percent. Area-wide management techniques developed by this program are being adopted by other neighborhoods in Louisiana and the southern United States.

— Bugs Rule! An interactive, educational exhibit developed by the Entomology Department provides interactive, educational exhibits at AgMagic, held in Parker Coliseum on the LSU Campus. At AgMagic, K-12 school students and the public learn about the insects, food and fiber products, used every day and produced in Louisiana.



## Department of Entomology Office

**Address:** 404 Life Sciences Building, LSU campus  
**Phone:** 225-578-1634  
**Fax:** 225-578-2257

**Website:**  
LSUAgCenter.com/  
departments/Entomology

**Office Hours:**  
8 a.m.-4:30 p.m.  
Monday-Friday

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**Academic Focus:**  
Addresses questions and concerns involving insects and related arthropods, ranging from management of pest species to assessment of insect roles in natural ecosystems.

**Research Focus:**  
Departmental research addresses basic and applied ecology, agricultural and forest pest management, urban entomology, medical and veterinary entomology and toxicology and molecular biology.

**Extension Focus:**  
Responsible for educational programs, service and outreach activities at AgMagic, public and private schools, for people of La., including farmers, homeowners and pest control operators.

**Significance of Programs**

- Crop protection programs have reduced insecticide applications in sugarcane and cotton, increased soybean yields and led to cheaper insecticide options for sweet potato growers.
- In the past three years, the sugarcane industry has saved nearly \$3.2 billion because of the delayed introduction of Mexican rice borer.
- Operation Full Stop has reduced termite population by 75 percent in the New Orleans French Quarter.
- Evaluation has been done on the potential role of termites in levee failures following Hurricane Katrina.
- Early detection and identification of Asian citrus psyllid and greening disease resulted in the suppression of the destructive pests.

**Future Plans**

Research supported by the Department of Defense, Deployed War-Fighter Research Program has targeted rodent hosts of the sand flies that vector *leishmaniasis*. Adult female sand flies that feed on blood of rodents are also targeted by using baits containing insecticides that circulate in the rodents' blood stream.

Research supported by the U.S. Army Medical Research Unit–Kenya has started a six-month field trial of new control methods by developing a rodent bait containing a dye and insecticide that is attractive to target rodents. This technique could be applied in buffer zones around military installations or villages protecting people within these zones from insect-vectored pathogens that are transmitted from animal reservoirs to people with minimum impact on the surrounding ecosystems.

Research on sugarcane pest management is developing pest-resistant sugarcane varieties and minimizing plant stress to enhance resistance. Research is also under way to evaluate the use of environmentally friendly insecticides.

Storm surge flooding from Hurricane Rita caused a significant reduction to the red imported fire ant, a natural enemy of the sugarcane borer. Research is under way to develop pest management recommendations for sugarcane farmers to use to reduce the sugarcane borer populations in field that were flooded.

**Department of Entomology Facts**

- One of the largest graduate programs in the nation with 32 graduate students.
- 20 tenured faculty and 30 associates and post-docs.
- The Entomology Department has been one of the most successful departments in securing grants from state and federal agencies and private industry.
- Research is conducted to address insect problems through fundamental and applied approaches.
- Houses the Louisiana State Arthropod Museum with nearly 1 million specimens.



**LSU AgCenter Departments and Schools**

Maximizing the potential for the state's agricultural industries and improving the quality of life for all Louisiana citizens are the major initiatives of the LSU AgCenter.

To achieve its mission of serving the people of Louisiana and providing them with the latest research-based information on a vast variety of topics, the LSU AgCenter operates 11 academic departments/schools in Baton Rouge in conjunction with the LSU College of Agriculture. In addition, four other specialized departments also contribute to the mission. These 15 units are an integral part of the LSU AgCenter's research and outreach activities.

Faculty members in the LSU AgCenter's on-campus units are involved in a variety of efforts, including research, classroom teaching and extension education. They cover topics ranging from agricultural economics to human ecology and from entomology to experimental statistics.

The LSU AgCenter has the most successful record of commercialization of intellectual property in the LSU System. Since 2000, nine new companies have been started based on licensed technology from LSU AgCenter. The income is distributed among the LSU System, the inventors and more research.



For the latest research-based information on just about anything, visit our website: [LSUAgCenter.com](http://LSUAgCenter.com)