



FLORIDA A&M UNIVERSITY

PHEREC NEWS

Volume 8, Issue No 2

June 15, 2007



FDACS Grants for '07/'08

Inside this issue:

FDACS Grants 2007/2008	1
Mosquito Repellents	2
Octenol Analogs	2
Grape Field Day	3
Larvicide Section	3
Bio Control Section	3
Microwave Recipes	4
Southeast Conference	4

The FDACS Research Review Committee announced, on May 31, 2007, the funded projects for 2007/2008. The funded projects are:

- 1—'Using Modeled Water Table Depth to Help Reduce Emergency Mosquito Control Insecticide Applications in Florida', Dr. Jonathan F. Day, PI. Amount \$41,475. FMEL
- 2---'Isolation of Mosquitocidal Bacteria with Improved Efficacy from Various Mosquito Habitats in Florida', Dr. Hyun-Woo Park, PI. Amount \$42,174. PHEREC
- 3---'Examining a Method to Increase Testing Efficiency of Mosquito Pools for Arboviruses', Dr. Christopher Mores, PI. Amount \$24,415. FMEL
- 4---'Non-pesticidal Mosquito Control Pilot Study in St. Andrew State Park', Dr. John Smith, PI. Amount \$32,252. PHEREC
- 5---'Effects of Droplet Size, Air Blast Strength and Application Angle for Barrier Treatment Equipment', Dr. Jane Barber, PI. Amount \$23,837. PHEREC
- 6---'Spread, Larval Habitat, Seasonal Abundance and Vector Status of *Culex coronator*: A New Invasive Species in Florida', Dr. John Smith, PI. Amount \$58,092. PHEREC
- 7---'Describing the External Morphology of *Culex nigripalpus* Female Antennae', Dr. Roxanne Connelly, PI. Amount \$5,806. FMEL
- 8---'Updating and Reprinting the Florida Mosquito Control "White Paper"', Dr. Roxanne Connelly, PI. Amount \$21,000. FMEL

Total amount awarded was: \$249,024. **CONGRATULATIONS to all the AWARDEES!!**

CHECK OUT

the PHEREC Web site
<http://pherec.org>
for more information on
this, and all other sto-
ries.

Previous issues of
PHEREC News have
been archived at our
Web site.

For more information,
contact: Jack Petersen
drjack3@hotmail.com

Eucalyptus Oil and Picaridin Repellents

A poster by Dr. John Smith displayed at the 2006 Annual Meeting of the Entomological Society of America was featured in the January/February issue of "The IPM Practitioner," Vol. XXIX, Number 1/2, 2007, page 12.

"The Centers for Disease Control and Prevention (CDC) recently added two new ingredients, [picaridin](#) and oil of lemon eucalyptus [p-menthane 3,8-diol], to the agency list of recommended repellents." "K&D Plexiglas repellent test modules were used on human skin to compare the repellent efficacy of [picaridin](#) (7%; 15%), oil of lemon eucalyptus (40%) and DEET (7%; 14%) against the southern house mosquito, *Culex quinquefasciatus*, a major southern U.S. vector species."

"According to Smith, "complete protection (i.e. 100% repellency) was provided by both the 15% picaridin (Cutter Advanced Sport®) and 14% DEET (Off! Insect Repellent®) for 6 hours post-treatment." "Repellency was also similar between the 7% formulations of picaridin (Cutter Advance®) and DEET (Off! Skintastic®) although complete protection extended only 2 hours post-treatment. The botanical repellent, Repel Lemon Eucalyptus® 40%, provided complete protection for 4 hours post-treatment."

An electronic version of this poster is available at the PHEREC web site at URL <http://www.pherec.org/DECS/repellents>

Octenol Analogs

This summer, Dr. James Cilek and the Biting Fly and Tick Control Section staff are evaluating a new batch of octenol analogs for their attractiveness to laboratory-reared adult *Aedes albopictus* and *Culex quinquefasciatus* in the Center's large, walk-in field cages.

Also, evaluation of automated mist systems for the application of adulticides against backyard mosquitoes was started in late March and will continue through October. Two residences in Bay County and one residence in south Walton County are cooperating in this project. Each residence is paired with a similar, but untreated area for comparison. Besides mosquitoes, biting gnat (*Culicoides* spp) and yellow fly populations in each area will be recorded to determine if these systems have a positive impact on these pests.

The URLs of Web sites mentioned in this issue will be clickable hypertext in the online version of PHEREC News!

Grape Growers Field Day 2007

Dr. Jane A.S. Barber presented an illustrated talk on pesticide applications in vineyards at the annual Grape Growers Field Day on Wednesday, May 23, 2007 at the FAMU Center for Viticulture. Dr. Barber's talk focused on how to apply pesticides in an efficient manner that minimizes off-target pesticide movement and provides maximum pest control. Efforts in this regard not only save money by reducing the amount of chemical insecticide used, but also reduce non-target effects and contribute to the "greening" of our industry.

Mosquito Larvicide Section

Keith Marshall, Jr. is working as a summer intern with the Mosquito Larvicide Section. Keith began work on May 1, 2007 and will be employed until the Fall semester begins at FAMU. Keith will be a senior at FAMU this coming academic year.

This summer Keith will be conducting bioassays to establish dose response curves of several insecticides used to control adult mosquitoes. Data from the dose response curves will be used to estimate the diagnostic dose for bottle bioassays used by Florida mosquito control districts to measure the response of field mosquitoes to "off the shelf" insecticides. The data Keith has provided this summer has been useful in training workshops that have recently been conducted in Jacksonville and East Flagler mosquito control districts.

Protocols that are outcomes of this work have been posted to: <http://www.pherec.org/memoranda/>

Mosquito Biological and Alternative Control Section

Christopher Hanson, a human biology-major freshman at Stanford University will join the Mosquito Biological and Alternative Control Section (MBACS) as a summer intern student from July 2 to August 30. During this time, Chris will be working on novel mosquitocidal bacteria isolation project with the Section's laboratory technician, Sabrina Hayes who has been working on this project. Chris will screen sediment samples and analyze candidate bacterial isolates for their potential to be used for mosquito control. He is expected to learn basic microbiological techniques including phase contrast microscopy, SDS-PAGE and mosquito bioassay. Depending on the results that he will obtain, he will perform bacterial plasmid DNA extraction and toxin gene cloning.

PHEREC News is an outreach effort intended to inform our clientele of our activities and accomplishments.

*We're on the
Web!
PHEREC.org*

John A. Mulrennan, Sr.
Public Health Entomology
Research & Education Center
Florida A&M University
4000 Frankford Avenue
Panama City, Florida
32405-1933

Dr. John P. Smith,
PHEREC Director
Tel: (850) 872-4184 ext 23
FAX (850) 872-4733
E: smith_j@popmail.fim.edu

IMPORTANT NOTICE!!

Southeast Regional
Public Health Pest &
Vector Management
Conference:

Feb. 19-21, 2008

My Favorite Mosquito Microwave Recipes

I am not joking. These are my favorite mosquito microwave recipes.

We used to place 250 ml Wheaton bottles in the freezer after bottle bioassays. We did that to kill the surviving mosquitoes so that we could count every last one of them. After freezing, the bottles removed from the cold frosted over and the condensation created problems. So, we don't do that any more!

Now, we **microwave** our bottles. They come out clean and a little warm. The mosquitoes are dead and easy to count.

So, here are the recipes:

For CONTROL bottles, microwave 10 seconds on high power for each bottle: 10 sec for 1, 20 sec for 2, 30 sec for 3, etc.

For TREATMENT bottles, microwave at the minimum that kills the mosquitoes. Careful, the caps get hot! Adjust according to microwave.

For laboratory glassware AFTER triple rinsing with acetone, one minute on high power. NOTE: BE SURE TO EVAPORATE OFF ALL ACETONE BEFORE PLACING GLASSWARE IN THE MICROWAVE. When heating Wheaton bottle after triple rinsing, **remove the caps**. High heat will destroy the teflon-lined caps.

Every microwave is different, so you have to experiment. Obey the cautions listed here, but give it a try! Use a microwave dedicated to lab work. Don't use a microwave that is used for food or to heat beverages.

I would like to know your experiences with these recipes. Try out these ideas. Let me know how it worked for you. Email me, Jack Petersen, at drjack3@hotmail.com

If these microwave recipes work, well, there's an expression that covers that: If they fail, the same expression applies:

Success has a thousand fathers; failure is an orphan.

Jack Petersen, Editor of "PHEREC News"