

Volume 14. No. 1 Jan/Feb 2014



# Buzz Words



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President	Neil Wilkinson
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Change of address:

[BuzzWords@ifas.ufl.edu](mailto:BuzzWords@ifas.ufl.edu)

or

Roxanne Connelly, Editor  
UF/IFAS/FMEL  
200 9<sup>th</sup> Street SE  
Vero Beach, FL 32962

FMCA address:

FMCA  
11625 Landing Place,  
North Palm Beach, FL 33408

Deadlines for submissions to be included in the newsletter:

Jan/Feb	Jan 15
Mar/Apr	Mar 15
May/June	May 15
Jul/Aug	Jul 15
Sep/Oct	Sep 15
Nov/Dec	Nov 15

Send newsletter submissions to:

Nathan Burkett-Cadena, Managing Editor  
[nburkettcadena@ufl.edu](mailto:nburkettcadena@ufl.edu)

*The mission of the FMCA is to promote effective and environmentally sound control of disease-transmitting and pestiferous mosquitoes and other arthropods of public health importance, develop and enhance public interest, awareness, and support for the control of mosquitoes, and provide for the scientific advancement of members through our meetings, training and education.*

## Upcoming Events

### AMCA 2014 Washington Conference

May 5-7, 2014

Holiday Inn & Suites

Alexandria • Alexandria, VA

<http://www.mosquito.org/washington-conference>

### FMCA Fall Meeting

November 9 – 13, 2014

Bonaventure Resort & Spa

Weston, FL (room rate \$125)

### FMCA Dodd Short Courses

Jan 26 - 30, 2015

Hilton Altamonte Springs

### AMCA Annual Meeting

March 29 - April 2, 2015

Hilton New Orleans Riverside

New Orleans, LA

<http://www.mosquito.org/annual-meeting>

## A Warning to Florida Mosquito Control:

### Prepare in Advance for Dengue or Chikungunya in Your District

by Walter J. Tabachnick

Anyone paying attention to recent events would have to bet that Florida will very likely experience an outbreak of dengue or chikungunya in the near future. The primary mosquito vectors of dengue virus (DENV) and chikungunya virus (CHIKV), *Aedes albopictus* and *Aedes aegypti*, are common in many regions of Florida. *Aedes aegypti*-borne transmission of DENV has already caused focal outbreaks of dengue in Key West, Monroe County in 2009 and 2010, and in Rio, Martin County in 2013. In addition there have been isolated cases of dengue in other counties in south Florida in the past several years caused by infected mosquitoes in Florida. Florida transmission has included 3 of the 4 DENV serotypes. *Aedes aegypti*-borne CHIKV caused hundreds of cases of chikungunya on several islands in the Caribbean in 2013-2014. Chikungunya is now being transmitted in the western hemisphere for the first time in recorded history. DENV is in Florida and CHIKV is poised to enter the U. S. and the most likely entry is Florida.

What might Florida expect? Both viruses could cause focal outbreaks similar to Key West and Rio, with a high incidence of cases confined to a small focal area, resulting in a low number of total cases. By comparison, other regions of the world have experienced outbreaks with numbers of cases in the thousands, e.g., dengue in Singapore and Thailand, or even in the millions, e.g., chikungunya in India. Hence, 22 and 66 dengue cases in Key West in 2009 and 2010, respectively, and 23 cases in Martin County in 2013 are cause for concern. Were DENV to take hold in the Florida southeast metropolitan area, West Palm Beach to Miami, population 5 million, with a similar incidence as Rio in 2013 of 800/100,000, there might be 45,000 cases!

What should Florida mosquito control districts do to prepare for dengue or chikungunya? How can a district prepare for the expected focal outbreak in the community? What might districts do to prepare against more widespread outbreaks?

Florida mosquito control districts must take the possibility of dengue and chikungunya seriously and be ready. Mosquito control must not first initiate an anti-*Ae. aegypti* or anti-*Ae. albopictus* campaign after the appearance of the first dengue or chikungunya cases in a county. There is little chance that such a strategy can impact an outbreak that has already started. The message to all Florida mosquito control districts is to start such campaigns now!

Florida mosquito control is ill prepared to control domestic mosquitoes like *Ae. albopictus* and *Ae. aegypti* or the pathogens they can transmit. Mosquito control methods, though successful against other mosquitoes, e.g., various species of *Culex* and other *Aedes*, will not be successful against domestic mosquitoes developing in containers and living close to humans.

It is important that Florida's mosquito control and public health professionals understand the explosive nature of *Ae. albopictus*- and *Ae. aegypti*-borne DENV and CHIKV outbreaks. There are no surveillance methods analogous to Florida's surveillance programs for West Nile virus or St. Louis encephalitis virus. The only indication of dengue in a region of Florida will be the reporting of the first human case. Hence, reporting of cases quickly and involving mosquito control becomes even more critical to a successful intervention. Florida's recent dengue outbreaks unfolded quickly within a few weeks of the appearance of the first case. Likely a Florida epidemic could be similar to the *Ae. albopictus* CHIKV outbreak in Ravenna, Italy where 205 cases of CHIKV infection occurred between July 4 to Sept 27, 2007 (Rezza et al. 2007. Infection with chikungunya virus in Italy: an outbreak in a temperate region. Lancet 370: 1840-1846). The origin of this outbreak was an infected traveler who returned from India. The case incidence in Ravenna (pop. 158,000) was 131/100,000. The authors concluded "This outbreak of CHIKV disease in a non-tropical area was to some extent unexpected and emphasizes the need for preparedness and response to emerging infectious threats in the era of globalization."

Here I offer advice to all Florida mosquito control districts. Every district should implement the following immediately, before the appearance of a human case. It is critical to act now and not wait for the first case.

1. Engage local health departments to be certain there will be surveillance and rapid communication of identified dengue or chikungunya cases, especially to mosquito control.
2. Identify those areas in the district with *Ae. albopictus* and/or *Ae. aegypti*.
3. Identify the high priority areas with the greatest numbers of these two species.
4. Identify potential hot spots for transmission that need to be targeted for control now.
5. Identify locations with the greatest number of larval habitats for the two vectors and target these locations for control now.
6. Institute a public campaign to reduce *Ae. albopictus* and *Ae. aegypti* larval habitats in the community.
7. Initiate a campaign that elicits public demand for local government to enforce ordinances prohibiting citizens from allowing *Ae. albopictus* and *Ae. aegypti* larval habitats on their property.
8. Provide a document to the supervising authority over mosquito control that strongly advises that authority on the danger of dengue and chikungunya, and that it is the mosquito control districts' expert advice that local government must be informed of the requirement for government policies that will result in reducing habitat for mosquito larvae in the community.
9. Work with local government and public health authorities to develop and implement policies, ordinances, actions that will result in compelling anyone who maintains *Ae. aegypti* or *Ae. albopictus* larval habitats to destroy these habitats.
10. Initiate a mosquito control, public health and law enforcement campaign to reduce *Ae. albopictus* and *Ae. aegypti* larval habitats and monitor reductions in house indices.
11. Prepare a plan for aggressive anti-*Ae. albopictus* and anti-*Ae. aegypti* mosquito control with consideration to using all means available to reduce transmission in the event of a widespread outbreak. Consider the following methods:
  - a. Adulticiding by ground (truck mounted sprayers)
  - b. Spraying individual houses and businesses as needed using hand held sprayers
  - c. Reducing larval habitats on specific locations through house-to-house inspections
  - d. Enlisting local government to enforce ordinances against productive larval habitats for *Ae. albopictus* and *Ae. aegypti*
  - e. Providing mosquito repellents to citizens
  - f. Campaigning with public service announcements of the danger and precautions against mosquitoes and mosquito larval habitats
  - g. Reduce adult vectors, reduce transmission with consideration for using novel methods, if shown to be safe and effective, in addition to pesticides, source reduction and personal protection, i.e.,
    - i. Replace the transmitting *Ae. albopictus* and *Ae. aegypti* with nontransmitting *Ae. albopictus* and *Ae. aegypti*
    - ii. Reduce adult vectors using GMO's to reduce populations, reduce transmission

Preparing for dengue or chikungunya.

I strongly advise every mosquito control district in Florida to seriously consider each of the above steps. If one thinks this is not something to be concerned about, I suggest that individuals just ask colleagues in the Florida Keys Mosquito Control District and at Martin County Mosquito Control. Failure to prepare, failure to advise those with authority over mosquito control of the danger and the need for implementing government ordinances and policies to enforce public participation in anti-mosquito efforts, is simply avoiding mosquito controls' professional responsibility. Responsible mosquito control professionals must provide correct information to government to

enable elected officials to make sound policy. Our elected officials therefore must be advised about the need for ordinances that will reduce dengue and chikungunya and it is their decision to follow such advice or not. Florida mosquito control professionals have had ample warning. It will be professionally irresponsible if an outbreak occurs in a district that has not considered and taken some of the suggested steps above.

Every Florida mosquito control district must be prepared. I can think of no current higher priority for Florida than to have better information from research on more effective methods to control dengue or chikungunya in Florida. I hope that those with responsibility to provide support for mosquito research in Florida recognize this critical need.

#### Preparing for dengue or chikungunya



Mosquito control is not very good at controlling mosquito-borne DENV or CHIKV. We are not good at identifying the most productive habitats for *Ae. albopictus* and *Ae. aegypti*. With better information we might be able to target the worst areas with maximum benefit in reducing transmission. Where is the research to provide this information? Better tools are needed against container mosquitoes that include novel reagents, pesticides and/or non-pesticide biocontrol to control adults and larvae. Where is the research to provide this? We need messages to the public that will elicit effective government and public pressure that results in the active participation of residents in larval habitat reduction in homes and businesses. Where is the research that will provide the required successful messages?

Florida has a dengue or chikungunya epidemic in its future. Where an epidemic might occur is anyone's guess, however, South Florida seems most at risk based on recent history. The safe bet is for Florida's mosquito control organizations to prepare now and prepare the citizens they serve for whatever is in store for their county. Failure to do what is needed now is unacceptable and, if an epidemic occurs in a county, mosquito control will have to defend any failure on their part to take appropriate advanced steps to protect the public health and well-being. Florida's mosquito control organizations have the responsibility of alerting and engaging government leaders in their counties, and the public at large, about the danger of DENV and CHIKV now, in advance, to prepare their constituents for what will be required should the county experience an outbreak.

Florida has been amply warned.

Walter J. Tabachnick, Director, Florida Medical Entomology Laboratory  
Professor, Department of Entomology and Nematology  
University of Florida, Vero Beach, FL



## FMCA – Reports from your Regional Representatives

### Northwest Region Report by Ben Brewer, South Walton County Mosquito Control

The Northwest Region has experienced colder winter weather than we have in recent years. There were many days of below freezing temperatures and we even had an ice storm. The observed mosquito populations have remained low.

Arbovirus transmission has been detected in two counties in the region. Sentinel chickens in Walton County were exposed to West Nile virus and Eastern Equine Encephalitis virus in November and December. In Bay County, sentinel chickens were exposed to West Nile virus in November and Eastern Equine Encephalitis virus in December.

Several Districts are reporting new hires. Gary Morse was hired by North Walton County Mosquito Control as a mosquito control technician. Norman Pruett was hired by South Walton County Mosquito Control District as a mosquito control technician. Mike Riles was hired by Beach Mosquito Control District as their arbovirus team leader. Okaloosa County Mosquito Control hired David Kyle.

Throughout the region the individual districts have been working on winter projects and attending training meetings. It has been a wet winter and the temperatures are rising and many of us are realizing the need to get out and larvicide.

Bob Betts of Escambia County is working proactively to survey for and track “hotspots” of container breeders across the county to focus larviciding control and biological control methodologies. The looming threat of Chinkingunya manifesting itself in Florida and then spreading has prompted him to take a proactive position of preparedness and professional partnership with local county health officials. Scott Henson of Okaloosa County Mosquito Control is reporting that after several years of tight budgets they had completely depleted their reserve supply of chemical. However, this year their budget has allowed them to purchase enough to allow him the comfort of knowing that he is prepared for the 2014 spray season. James Clauson of Beach Mosquito Control has reported that with the help of their new employee they have remodeled their lab with some improvements.

South Walton Mosquito Control District reports that the sentinel chickens were removed from the field due to the cold weather. The District has put a lot of time into maintaining and improving their facilities and grounds and also developing new standard operating procedures and policies.

### **Southeast Region Report, by Eric Cotsenmoyer, Lake County Mosquito Control**

The southeast region, like the majority of the State of Florida, is experiencing above normal rainfall for this time of year. However, for Lake County the rainfall is a welcomed relief from long periods of extreme to moderate drought conditions not yet reaching normal pool levels in lakes and associated wetland/marsh areas. We continue experiencing shorter day lengths and temperatures not reaching sustainable levels conducive for mosquito productivity.

Lake County Mosquito and Aquatic Plant Management Programs is preparing our mosquito abatement program for potential dengue fever arrival by including procedures developed by the Indian River Mosquito Control District's staff (thanks Doug Carlson). The new procedures fit into Mosquito SOP's for addressing the potential arrival of dengue virus. Two of our mosquito management program staff members, Mr. Craig Scott, Entomologist/Supervisor, and Mr. Russell Cheatham, Biological Technician, are working together to develop a low-cost, quick and easy method for identifying the presence or absence of *Ae. aegypti* and *Ae. albopictus*. The “new” Isolate Dengue Surveillance System (IDSS) is designed to be deployed quickly and easily to locations of suspected dengue transmission, baited with CO<sub>2</sub>, and specifically to collect *Ae. aegypti* and *Ae. albopictus*. So far, two system prototypes have been constructed and are ready for location deployment and analysis. I am excited about our staff's enthusiasm, impressed with their abilities, and anticipate the outcome of the results.

Mr. Jim David, Director of Mosquito Control & Coastal Management Services in St. Lucie County, retired on January 31, 2014 after 31 years of service with the District. Jim's strong dedication and commitment resulted in numerous accomplishments, including awards from the national and state levels for mosquito control and coastal ecosystem management. His contributions to the District were varied and included the following: maximizing grant funding opportunities to acquire over 3,000 acres of privately owned mosquito impoundments; acquiring, restoring and managing 246 acres of upland preserves while providing public access and recreational opportunities; establishing the Bear Point Mitigation Bank on Impoundment 1; initiating several dune restoration/beach re-nourishment projects; and ensuring protection of the health and safety of the public. Jim was greatly influenced by the work of Dr. Provost and Dr. Reaves. He began managing impoundment water levels, not only to control salt marsh mosquito populations, but also to improve the fisheries, wildlife habitat and water quality by increasing circulation and exchange with the Indian River Lagoon, based upon works performed by Dr. Provost. St. Lucie County Mosquito Control District issues thousands of keys to residents each year to provide access for fishing on the impoundments. With Dr. Reaves work, Jim David implemented sequential aerial treatments following epic rainfall events to reduce *Culex* mosquitoes and potential virus transmission risk. He will be missed by all who worked with him. Everyone who knows Jim wishes him the very best in his retirement!

The Indian River Mosquito Control District's Commitment to Excellence includes training, defined as organized activity aimed at imparting information and/or instructions to improve the recipient's performance or to help him or her attain a required level of knowledge or skill. All full-time IRMCD employees are certified in Public Health Pest Control. IRMCD believes in continuing to train its employees and to expose them to training opportunities. In November, a number of employees made presentations at the annual Fall FMCA meeting, including Director Emeritus, John Beidler, speaking about "Head lice control: implications for mosquito control". Other topics included: "Florida's participation at the AMCA's 15th Annual Washington Conference and current Federal issues" by Doug Carlson; "Far from bored on the board of directors for FMCA" by Judy Avril; "Effect of aerial larvicide treatments on an inland population of *Aedes sollicitans* in Indian River County" by Bruce Peery; "*Aedes tormentor* in Indian River County, FL and comments on adult identification" by Don Shroyer; and "Addressing Haiti's worst nightmare: The importance of educating citizens about mosquito control" by Morel Jules. Also in November employees were offered 1 CEU for attending the AMCA webinar on "Effective Presentations: A Primer". In January employees were again offered 1 CEU for attending the AMCA webinar, "Surveillance and Control of Dengue Vectors." Also in January a number of employees attended the FMCA's Dodd Short Courses in Ocala, while the District also contributed Doug Carlson, John Beidler, Judy Avril, Morel Jules, and Diane Richards as moderators, instructors, guest speakers, or volunteers. Indian River Mosquito Control District thanks its Commissioners for their support of the District's policy of continuing training for all employees.

## **The Annual Fly-in and The Dodd Short Courses: What FMCA Does Best!**

The New Year is a busy time of year for the FMCA. During the second week of January the FMCA Aerial Training Committee organized the annual Aerial Short Courses Fly-in at the Lee County MCD in Fort Myers, Florida. The Fly-in occurred a week earlier this year because the Dodd Short Courses had to be moved a week earlier because the American Mosquito Control Association held their annual meeting earlier this year. Keeping up? Coming so soon after the winter break meant the planning and organization by the many FMCA members and volunteers involved had to be well in place before the holiday began. And make no mistake, there were plenty of FMCA members working hard over the holiday to make these events successful. A major concern was that the attendance would suffer at the Aerial Fly-in because for some it began the first week many employees came back to work. And the earlier start date for Dodd meant some employees – volunteers, instructors, and students - would have to work on the Martin Luther King Holiday.

Both events were hugely successful in spite of the earlier starts. The success is due to the organization by the chairs, committee members, and volunteers for these events. The chair for the Aerial Training Committee is Mark Latham. Mark had assistance from Chris Lesser in organizing and implementing the Fly-in and from John Gardner, who coordinated the pilot section. The weather was rainy and the organizers had to reschedule some events but the speakers and attendees patiently went with the flow. Organizing 23 speakers and 26 presentations is a huge undertaking. Mark and team, thanks for the effort.

Shelly Redovan organized the crew at the Fly-in meeting site including handling registration and planning and shopping for meals. Keith Lowe stepped up to oversee the I.T. and A.V. demands for presentations. Pat Ferrara, Nathan Sousa, and Brian Cotterill offered invaluable assistance and the following crew from the Lee County Mosquito Control District cooked, served, and cleaned up after all the meals (three lunches and two breakfasts) for the attendees: Dave Johnston, Jake Sluski, James Amici, Dewey Shelton, Rick Pardo, William Colon, and Chuck Herzog. Thank you all for making this year's Fly-in such a success.

The Dodd Short Courses held in Ocala, Florida January 20 – 24, 2014 celebrated their 30th anniversary and were dedicated to the memory of Glenn Dodd's mother, Mrs. Ella Dodd, who passed away in 2013. Glenn Dodd passed away in 1991, while he was the assistant director of the Indian River MCD. He, along with Bill Opp and Jim Robinson, came up with the idea for an annual state-wide series of training sessions that would promote the sharing of knowledge and understanding for mosquito control professionals throughout the state, and beyond, and stimulate innovation in the industry. Thirty years later the Dodd Short Courses are the envy of our profession.

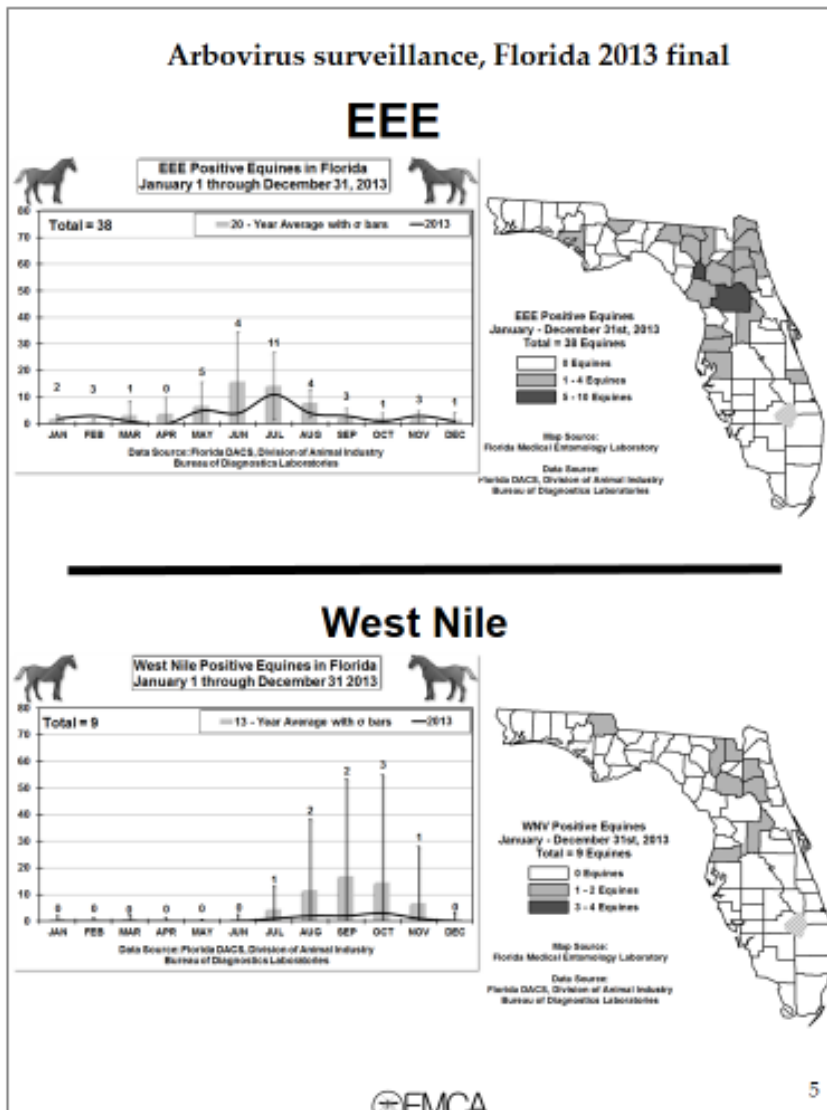
Ella Dodd was a big supporter of the Dodd Short Courses. Glenn's sister, Chantal Atnip, attended the opening ceremony on the first night and delivered a touching testimonial of her appreciation of this event memorializing her brother. John Beidler also provided a well-prepared tribute to Mrs. Dodd that helped those in attendance appreciate the dedication that goes into the Dodd Short Courses and their history.

The Dodd Short Courses are co-chaired by Dr. Roxanne Connelly, Sue Bartlett, and Flo Jones. Over 30 courses were offered this year by well over 40 instructors. Imagine for a moment you are in charge of organizing and planning this event ... then join me in thanking the co-chairs, the committee (including Janice Broda, Dr. Jonathan Day, Steve Harrison, Eric Jackson, Morel Jules, Chris Lesser, Aaron Lloyd, Ed Northey, Dr. Jack Petersen, and Gregg Ross), and the dozens of instructors who went above and beyond to provide this quality educational offering. And lastly a shout out to two of our newest members, recent Florida Gulf Coast University graduate Ed Foley for driving across the state and Ambyr Marsicano from Manatee MCD. We appreciate Gregg Ross and Kim Feagley for handling the A.V., and Debra Smith for handling the registration.

This is what the FMCA does best. We dream big and work together for the good of the industry to bring quality programs to our members. Already we have had a busy year and it is only February.



Neil Wilkinson, FMCA President  
Florida Gulf Coast University  
Fort Myers, FL



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Dr. Roxanne Connelly, Editor-in-Chief  
Dr. Nathan Burkett-Cadena, Managing  
Editor  
200 9<sup>th</sup> Street SE  
Vero Beach, FL 32962

**UF** UNIVERSITY of  
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*Florida Medical Entomology Lab*



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