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GMCA Newsletter

Volume 4, Issue 2 **Oct 31, 2023**

GMCA Annual Meeting, 2023

The Georgia Mosquito Control Association (GMCA) holds an educational conference in the fall of each year as a benefit to its membership and any other interested individuals. The conference is an opportunity for members to interact with colleagues, obtain the latest information concerning all aspects of mosquito control and to earn Continuing Education credits required to maintain the State of Georgia Pesticide Applicator's License. We can also request CEUs for adjoining states if you let us know in a timely manner.

This year's meeting was on Jekyll Island at Villas by the Sea. Aside from the combined MAMCA/GMCA meeting in January 2023, this was our first in-person meeting since 2019.

Jekyll Island is beautiful. The weather was wonderful. We had an incredible line up of presentations, lots of vendors providing their expertise, and great participation from members from a wide variety of backgrounds and disciplines.

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Why we adulticide for WNV

The aims of any mosquito control program, municipal or commercial, is to reduce mosquito populations where possible. This measure will prevent mosquito bites and minimize mosquito-vertebrate contact, reducing disease risk.

Integrated Mosquito Management (IMM) is the best way to control mosquitoes. It uses all the tools in the mosquito control toolbox to reduce mosquito populations effectively. It does so with minimal risk to the environment or to non-target species, including people.

Proactive mosquito control includes inspection, identification, source reduction, and larviciding. Adulticiding is a *reactive* mosquito control measure.

It is always better to be proactive. However, it isn't always possible, either because some mosquito species are difficult to control by proactive measures or because funding for the program is insufficient.

Larviciding, where possible, can help reduce mosquito populations, PROVIDING THE BREEDING SITE CAN BE FOUND FOR THE LARVICIDE TO BE APPLIED. In addition, source reduction and larviciding are not able to control mosquito populations unless everyone does their part, and funding is appropriate to the task.

The objective of the larval mosquito control component of an IMM program is to manage mosquito populations before they emerge as adults. This can be an efficient method if the

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The meeting schedule can be found at http://www.gamosquito.org/resources/2023_GMCA_Program.pdf. Most of the presentations are now posted on the GMCA website at http://www.gamosquito.org/Presentations.htm.

Our 2024 meeting will be on Oct 16-18 at Amicalola Falls. Come join us. It will be fun and educational.

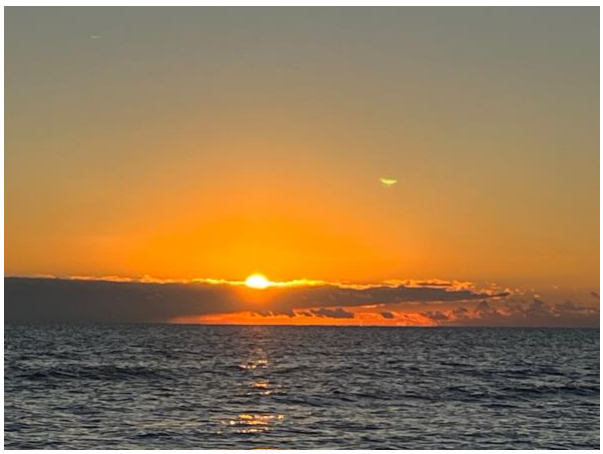
Finally, I would like to introduce our new Board members:

President – Doug Nelson
VP – Caroline Efstathion

Directors
1-year: Natalie Agramonte
2-year: Bryan Boone
3-year: Dan Peach

Sustaining Board member – Mike Riles
Secretary/Treasurer – Misty McKanna
Past President – Tiffany Nguyen

Representative
Cooperative Extension: Elmer Gray
Public Health: Rosmarie Kelly



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mosquito breeding sites are accessible. However, larval control may not attain the levels of mosquito population reduction needed to maintain disease transmission risk at low levels and must be accompanied by measures to control the adult mosquito populations as well. In outbreak situations, larval control complements adult mosquito control measures by preventing new generation of vector mosquitoes from being produced. However, larval control alone is not able to stop outbreaks once virus amplification has reached levels resulting in human infections.

Adulticiding is an especially useful tool to have available when vector species are abundant, and virus is circulating. Source reduction and larvicide treatments may be inadequate to maintain vector populations at levels sufficiently low to limit virus amplification. The objective of the adult mosquito control component of an IMM program is to complement the larval management program by reducing the abundance of adult mosquitoes in an area, thereby reducing the number of eggs laid in breeding sites. Adult mosquito control is also intended to reduce the abundance of biting, potentially infected, adult mosquitoes to prevent them from transmitting virus to humans and to break the mosquito-host transmission cycle. Another effective use of adulticiding is dealing with situations where mosquito populations are economically damaging, as when large populations of mosquitoes emerge all at once.

Adulticiding is THE ONLY WAY TO KILL ADULT MOSQUITOES. Used correctly, adulticides are of low risk to the environment and to non-targets. Care must also be taken to use adulticides correctly to reduce the chance of resistance occurring.

While adulticiding will reduce populations of floodwater mosquitoes that emerge in large numbers all at once, adulticiding is unlikely to significantly reduce *Culex quinquefasciatus* populations. However, adulticiding will kill off older mosquitoes, keeping the adult female mosquitoes within the population young, as Newly emerged mosquitoes are recruited into the population. Adulticiding may not lead to a reduction in *Culex quinquefasciatus* populations, but it is likely to lead to a reduction in viral transmission, as younger female mosquitoes have most likely not taken a bloodmeal yet, so are not infected or infective. Delaying adulticide applications until numerous human cases occur negates the value and purpose of the surveillance system. Timely application of adulticides interrupts arboviral transmission and prevents human cases.

REFERENCES

Ultra-low volume (ULV) adulticide treatment Kristina Lopez, Patrick Irwin, Gebienna M. Bron, Susan Paskewitz, impacts age structure of *Culex* species (Diptera: Culicidae) in a West Nile virus hotspot, Journal of Medical Entomology, 60(5), 2023, 1108–1116.

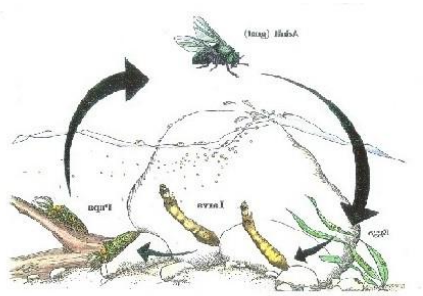
The University of Georgia Black Fly Research and Resource Center

The University of Georgia (UGA) Black Fly Rearing and Bioassay Laboratory has been in operation at UGA since 1999 when Dr. Noblet and the Laboratory Manager, Elmer Gray established the site upon relocating from Clemson University. The black fly colony is a unique resource that was initiated in 1981 at Cornell University. Black flies (Diptera: Simuliidae) require flowing water to complete their life cycle. The colony simulates this environment with 9 aquatic rearing units that create miniature rivers for the larval and pupal stages to develop. Each unit can support approximately 300,000 larvae. Adult flies emerge within the rearing units and are captured, mated, and provided moistened substrates to serve as egg laying sites. A particular advantage of *Simulium vittatum* cytospecies IS-7 is that they can deposit their first batch of eggs without a blood meal. Consequently, no animal resources are required to maintain the colony.

The colony has been used for a variety of research projects through the years including a wide range of vector transmission studies, environmental monitoring, vector control, and larval feeding studies. The initiation of this branch of the colony took place in 1991 when eggs were received from the original colony which Dr. Ed Cupp had relocated to the University of Arizona. The Clemson branch was initiated to provide late-instar larvae to serve as a standardized test subject for the orbital shaker bioassay that was developed in collaboration with Abbott Laboratories at Clemson. Dr. Ray Noblet and Abbott Laboratories had been collaborating on field evaluations of the earliest Vectobac formulations. To improve the product and develop high potency formulations for the World Health Organization's Onchocerciasis Control Program, an extensive research and development effort was ongoing.

The Clemson University laboratory served as Abbott Laboratories primary black fly research site until 1999 when the laboratory moved to UGA where Dr. Noblet was serving as the Department Head of the Entomology Department. The laboratory at UGA has served as a Research and Development site for a variety of Valent BioSciences' black fly research endeavors. Today, the laboratory continues to conduct and collaborate in a wide range of research projects and can provide all stages of the black fly life cycle to collaborating laboratories. Current research being conducted in the laboratory involves larvicidal efficacy evaluations, topical repellent evaluations, and growth studies related to climate change. The laboratory has also served as a preferred site for teaching and educational outreach visits for a wide range of students.

Contact: Elmer Gray at ewgray@uga.edu for information related to black flies and the colony



The sustaining members of the GMCA are any persons or firms interested in the promotion of GMCA's purposes. They provide support and expertise to the association and to the membership. The 2023-2024 Sustaining Members of the GMCA are listed below:

Amguard	Micronair
Azelis	Summit
Central Life Sciences	Target Specialty Products
Clarke	Thermacell Repellants
Co-Diagnostics	Turbine Conversions
Frontier Precision	Valent BioSciences
GroPro	VDCI Mosquito Management
ITB Company, Inc	Veseris
Leading Edge	

Information about the sustaining members can be found at http://www.gamosquito.org/sustmemb.htm.

SPONSORSHIPS

Each year, the GMCA is able to pay the registration and hotel costs for 2 attendees using sponsorship funding given to us by Azelis. We approved 2 sponsorships for the 2023 GMCA meeting, Dr Adrian Vasquez and Kyle Swade.

Dr Vasquez is a new assistant professor at Mercer University in the College of Liberal Arts and Sciences, Department of Biology, as of August 2023. He studies mosquitoes, looking at the effects of climate change on mosquito-borne diseases, the effect of water mites on mosquitoes, and WNV presence in engineered vs natural habitats. Dr Vasquez talked about the Predatory & Parasitic Impacts of Water Mites on Mosquitoes at the GMCA meeting.

Kyle Swade is a graduate student in the Haddow Lab at Kennesaw State University. His research involves identifying key mosquito species in the Kennesaw area and determining which trap types most effectively collect these species. His talk was on the Field Evaluation of the BG-Pro Trap in Kennesaw, GA.

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