

# TEXAS MOSQUITO CONTROL ASSOCIATION NEWSLETTER

**Volume 41**

**May**

**2021**



**In May 2021, mosquito larvae were found in this hackberry treehole in Live Oak County. Photo:  
William Sames**

**Editor – William Sames, Ph.D.**

**Contributors – Greg Marciniak, Dr. Megan Wise-de-Valdez, Nina Dacko, Dr. Sonja Swiger**

# Highlights from the National WALS Summit

View video recordings of every summit presentation at:

<https://www.valentbiosciences.com/publichealth/wals-national-virtual-summit-may-21-2020-video/>

WALS, the innovative, biorational application strategy for control of container mosquitos such as *Aedes aegypti*, has been the subject of a tremendous amount of research since its contributing role in breaking the dengue and Zika transmission cycles in 2010 (Florida Keys) and 2016 (Miami-Dade County, Florida) respectively. Co-innovated by mosquito abatement / Public Health professionals around the globe with support from Valent BioSciences, WALs was the topic of a national virtual summit in May of last year.

The entire six-hour program is now available for viewing online through the Valent BioSciences [WALS portal](#).

The WALs Summit was hosted by Dr. Kesavaraju and Leanne Lake. Lake, Kesavaraju helped guide WALs operational implementations, working alongside pioneering mosquito abatement programs in Florida, California, Utah, New York, and New Jersey. Since its introduction, WALs has been adopted in 13 states, including Texas.



## Adulticide Resistance, Operations Info, and Real-World Data

Dr. Isik Unlu, Operations Manager for Miami-Dade County Mosquito Control Division in Florida, kicked off the Summit with a presentation about the inherent challenges associated with container-inhabiting invasive mosquitoes including widespread resistance to adulticides and the cryptic nature of their breeding sites. Unlu reported on her experience in operations and WALs strategy optimization during and since the 2016 Zika

outbreak in Miami-Dade. Next was Casey Parker, Technical Development Specialist from ADAPCO, who dove deeper into the insecticide susceptibility status of mosquitoes. Seleena Benjamin, VBC Manager Asia/India Region, provided background on the origins and evolution of WALs research and strategy in response to endemic dengue.

Andrea Leal, Executive Director of the Florida Keys Mosquito Control District, shared her experiences as part of the team that implemented the first aerial WALs application globally of VectoBac WDG biorational larvicide in 2010 after the Keys experienced its first locally acquired dengue cases in 75 years.

Dr. Keira Lucas, Director of Research at Collier County Mosquito District in Florida, led a presentation on use of unmanned aerial vehicles (drones) in WALs applications. She was followed by Dr. Grayson Brown, Executive Director of the Puerto Rico Vector Control Unit, recapped implementation of the WALs strategy in Puerto Rico.

For those new to WALs, Leanne Lake gave a presentation on parameters to consider when choosing which WALs application approach to pursue and the technical aspects of equipment options and mixing methods/equipment.

Contact Candace Royals at 813-505-8852 or [candace.royals@valentbiosciences.com](mailto:candace.royals@valentbiosciences.com) for more information on WALs.

For her work on WALs, Candace was honored by the Florida Mosquito Control Association (FMCA) Awards Committee with the Fred Stutz Memorial Award at the FMCA's 91st Annual Meeting in 2019. The Stutz Award, established in 1994, recognizes an outstanding contribution to mosquito control by development of procedures that increase effectiveness in mosquito control. Candace was only the ninth recipient of the award in the 25 years since it was established.

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**About the Cover:** A mosquito larvae-containing hackberry treehole in South Texas. Photo by William Sames IV.



### Oct 2020-Oct 2021 Texas Mosquito Control Association Board of Directors

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To contact a Board member, please send an email to [info@texasmosquito.org](mailto:info@texasmosquito.org) and list the person you are trying to contact, present your question or concern, and provide your name and contact information.

### Oct 2020-Oct 2021 Texas Mosquito Control Association Standing Committees

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<b>Scholarship &amp; Awards</b>	<b>Jeff Flosi, Chair</b>	R. Duhrkopf, N. Dacko, W. Sames, M. Wise-Valdez

### Oct 2020-Oct 2021 Texas Mosquito Control Association Special Committees

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<b>Constitution, By-laws &amp; Resolutions</b>	<b>William Sames, Chair</b>	W. Becker, M. Nichols, S. Sawlis
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<b>Local Arrangements</b>	<b>Patrick Prather, Chair</b>	S. Swiger, S. Rico
<b>Nominating</b>	<b>Salvador Rico, Chair</b>	R. Duhrkopf, J. Flosi, S. Sawlis
<b>Young Professionals</b>	<b>Van Adams, Chair</b>	E. Chu, K. Dye-Braumuller, K. Haydett, E. Kirkscey, E. Plaisance, S. Peper
<b>Systematics</b>	<b>Jeff Flosi, Chair</b>	R. Duhrkopf, W. Sames
<b>Workshop CEU's</b>	<b>Sonja Swiger, Chair</b>	P. Prather, J. Flosi, M. Nichols



**Greg Marciniak**

## **Message from the President Greg Marciniak**

The interesting times continue. We held a reasonably successful virtual spring workshop in March attended by 38 people plus 7 vendors. We had some informative presentations from some particularly good speakers. There were a few glitches, but they were overcome readily. We are currently planning an in-person Annual Meeting in October in Austin. Hopefully, we will be able to pull this off.

Recent rains across the state provided much needed water to initiate mosquito oviposition and development. Even after the super cold weather in February, mosquito populations seem unphased and they are out there so ready. Already, Tarrant County reported a West Nile virus positive mosquito pool. Stay focused and my best to you in confronting the vector and nuisance mosquito populations this year.

On a personal note, I will be retiring from Jefferson County Mosquito Control at the end of the month. I will be able to fulfill my duties as President, but I will be handing off the Membership Committee Chair to Mark Johnsen in June.

## **TMCA Administrative Notes**

**Publishing in the TMCA Newsletter.** The TMCA newsletter is a medium for getting information to TMCA members. Newsletter content is based upon contributions from TMCA officers and members, and the newsletter subcommittee. If you have information of benefit to TMCA members, please submit that information to the TMCA Editor. There are 4 issues per year with each issue coming out shortly after the quarterly Board of Directors meeting. Newsletters are published in January, May, August, and November. Photos and mosquito related humor are also welcomed. Consider submitting artwork for a cover.

**Advertise in the TMCA Newsletter.** Advertising rates are \$50 for 8.5 x 11 inches page ad. Half page ads are \$30 (8.5 x 5.5) Submit copy ready artwork in MS Word or PDF to the TMCA Editor.

**American Mosquito Control Association Annual Meeting.** The AMCA Annual Meeting is scheduled for 28 Feb-4 March 2022 in Jacksonville, FL. This is currently planned as an in-person meeting, but subject to change. Go to <https://www.mosquito.org/> for more information.

**TMCA Committees.** Interested in serving on a TMCA Committee? If yes, you may contact the Committee Chair **OR** go to the TMCA website and sign up online at <https://www.texasmosquito.org/membership-and-committees>. To join a committee, send a request to [info@texasmosquito.org](mailto:info@texasmosquito.org).

## **TMCA Dues – Please Pay**

Normally dues are paid at the TMCA Annual Meeting or Spring Workshop, but with COVID travel restrictions those events were cancelled. Please contact Greg Marciniak for payment options. Greg's contact information and the membership form is the last page of this newsletter.

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Spotlight**



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2020-2021

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5/19/2021

Greetings TMCA! from Herff Jones,

Thank for the opportunity to mention a few AMCA, LMCA and region activities. The AMCA held the 23<sup>rd</sup> annual Washington Day Conference, May 10-13, 2021 virtually. This was certainly a different but, worthwhile experience. Attendees heard from EPA, CDC, congressional senior appropriations policy advisor and many more during a full Monday program. Tuesday and Wednesday, AMCA members and interested parties held "virtual teleconference" meetings with key Senatorial and Congressional members from their respective states. Though not our usual day on the Hill, all of the meetings proved to be productive. Our message and asks were clear --- provide funding for authorized SMASH act programs and encourage the agencies to remain diligent to the consultation process as well as continue to improve the pesticide assessment process as it relates to ESA determinations. National Mosquito Awareness Week is fast approaching, June 6 - 26. I am excited to see all the different planned public outreach programs planned throughout the week to call attention to the risk of mosquito-borne diseases, simple preventative measures and the need for continued support of local mosquito control efforts.

The LMCA and TMCA were disappointed to cancel the 2019 joint meeting. Both associations have successfully navigated the "COVID new normal". Now it is time return to normal. The LMCA will hold a hybrid "virtual teleconference" webinar this December 7 - 9, 2021 at Coushatta Casino Kinder, LA. This annual meeting will be in person and broadcast to webinar attendees. The LMCA BOD will reach out to the TMCA leadership, at the appropriate time, to gather feedback and updates on travel restrictions, then begin planning for the 2022 LMCA / TMCA joint annual meeting. The LMCA membership consensus is excited to move forward, we hope our colleagues are as well.

**American Mosquito Control Association**

**One Capitol Mall, Suite 800, Sacramento, California 95814**

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- High synergist content decreases ability of mosquito to detoxify permethrin

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## **TMCA Plans Face-to-Face Annual Meeting in October 2021**

Even though COVID 19 is still circulating in Texas, the TMCA Board of Directors initiated the process of having a face-to-face Annual Meeting in October. It is hoped that increased vaccination rates and continued precautions will significantly reduce the threat of COVID so that the meeting can take place. This will be the first face-to-face Annual Meeting since October 2019. The meeting is scheduled to be at The Hyatt Place Austin Airport, 9532 Spirit Of Austin Lane, Austin, TX on October 12-14, 2021. This event will be like previous Annual Meetings where the 12<sup>th</sup> is for registration, vendor and meeting set up, the fall TMCA Board Meeting, and socials. The opening presentations will begin early on the 13<sup>th</sup> with the Annual Business Meeting being conducted that afternoon. On the 14<sup>th</sup> the presentations will resume and end about noon. The Call for Papers is in this newsletter, so consider presenting at this meeting and sending that information to Nina Dacko, Chair, TMCA Program Committee. Annual Meeting Registration forms (Vendor and Member) will be available in the August TMCA newsletter and on the TMCA website. Scholarship and Award information will be available on the website and in the August newsletter.

A block of rooms has been reserved for the meeting. Room rates will be \$139/night, and reservations can be made through this link:

[https://www.hyatt.com/shop/auszi?location=Hyatt%20Place%20Austin%20Airport&checkinDate=2021-10-12&checkoutDate=2021-10-14&rooms=1&adults=1&kids=0&corp\\_id=G-TMCA](https://www.hyatt.com/shop/auszi?location=Hyatt%20Place%20Austin%20Airport&checkinDate=2021-10-12&checkoutDate=2021-10-14&rooms=1&adults=1&kids=0&corp_id=G-TMCA)

**Group Code is G-TMCA.**

It has been two years since we have had a face-to-face meeting. While information has been coming out in the TMCA newsletter and website, and various other venues, this face-to-face opportunity will provide quality interactions and networking to get caught up on the latest in Texas mosquito surveillance and control. So much has happened!



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**62<sup>nd</sup> Annual Meeting of the Texas Mosquito Control Association**  
**Hyatt Place Airport Austin, Austin, TX; October 12-14, 2021**

**CALL FOR PAPERS**

NAME OF AUTHOR(S):

PRESENTER

PRESENTER'S EMAIL:

AFFILIATION AND ADDRESS:

TITLE OF PAPER:

PRESENTATION MEDIA REQUESTED

POWERPOINT (Default)

OTHER (please specify)

DEADLINE FOR PAPER SUBMISSION IS THE 3RD of September 2021

Preferred presentation day?      Oct 13th      Oct 14th      None (Default)

Submit to e-mail Address:    nmdacko@TarrantCounty.com

\*\*\*Submit Young Professionals student competition abstracts to TMCAYP@gmail.com

\*\*\*Submit Scholarship or Awards submissions to insectdoc.jf@gmail.com





## Texas Mosquito Control Association Young Professionals Third Annual Student Competition Call for Papers and Guidelines

### **Eligibility:**

In order to be considered eligible to enter the competition, each participant must be:

- 1) a TMCA Member. The membership form is available at <http://www.texasmosquito.org/Application.pdf>
- 2) a TMCA YP Member. If you are not a member, please email [TMCAYP@gmail.com](mailto:TMCAYP@gmail.com) and we will put you on the list!
- 3) an undergraduate or graduate student OR have graduated within 12 months of the abstract submission deadline. If the participant has graduated, the research being presented must have been performed while they were still enrolled in either an undergraduate or graduate degree program.
- 4) the presentation's author(s) and presenter(s).

### **Abstract:**

An abstract must be submitted to enter the competition. The abstract deadline is August 31, 2021. Each abstract should be approximately 100 words long and summarize the main objective, methods, results, and conclusion of the presentation. The abstracts will be judged on grammar, organization, and content. Participants will be notified regarding acceptance in September 2021. Please submit your abstract to [TMCAYP@gmail.com](mailto:TMCAYP@gmail.com) along with a copy of the abstract submission form found at <http://www.texasmosquito.org> (please do not send the submission to Nina Dacko).

### **Presentation:**

Each presentation, including those with multiple speakers, will be allotted 12 minutes. This includes time for questions so the presentation itself should not exceed 10 minutes. (The time slot assigned for each presentation is subject to change due to last minute program changes.)

### **Judges:**

The TMCA YP Committee will select three judges to score the presentations. The judges will not be members of the TMCA YPs.

### **Evaluation:**

The competition will occur during the 2021 Annual TMCA Meeting. The presentations will primarily be judged on organization, delivery, and visual design. The evaluation system for this competition is subjective ranking by the three judges.

### **Awards:**

One presentation will be selected for first prize. One runner-up and two honorable mentions may be awarded at the judges' discretion. If a presentation given by a group is awarded a prize, the entire group will share the award.

**Meeting registration:** <http://www.texasmosquito.org>

## TMCA Virtual Spring Workshop – April 7, 2021

With COVID still deterring face-to-face meetings, the TMCA held a Virtual Spring Workshop on April 7<sup>th</sup>. The virtual meeting was via Google Meets provided by Target Specialty Products. There were 38 attendees, and each earned 5 Continuing Education Credits (CEU) as part of their licensing requirement. The meeting was organized and hosted by Dr. Sonja Swiger and Patrick Prather. After an introduction the TMCA President, Greg Marciniak, were by vector control experts presented on various topics related to mosquito control. Speakers were Nina Dacko, Tarrant County Public Health, Dr. Don Rennie, TAMU AgriLife Extension, Dr. Greg White, Salt Lake City Mosquito Abatement District, Perry Cervantes, Texas Department of Agriculture, and Dr. George Peck, Texas Department of State Health Services.

### Join the TMCA Young Professionals!



The intent of the Young Professionals is to provide professional experiences and networking opportunities for TMCA members who have been involved with vector control and/or research for less than 5 years. Your age does not matter, just your mosquito-related experience and **YP membership is free!** You can join our organization by sending:

- 1) Your name
- 2) The number of years you have been in mosquito/vector control and/or research
- 3) How you became involved with mosquito/vector control and/or research to [TMCAYP@gmail.com](mailto:TMCAYP@gmail.com) OR by joining our Facebook group “Texas Mosquito Control Association Young Professionals”.

The TMCA YPs’ current activities include:

1. Networking with other YPs at the TMCA Annual Meeting, TMCA Spring Workshop, and via our Facebook group
2. A YP dinner at the TMCA Annual Meeting
3. Hosting and participating in a Student Presentation Competition at the TMCA Annual Meeting
4. Representing Texas at the AMCA Annual Meeting

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## Greg Marciniak Retiring from Chair of the TMCA Membership Committee Chair in June

After many years of service to the TMCA as the Chair of the TMCA Membership Committee, Greg Marciniak is retiring from his job as entomologist of the Jefferson County Mosquito Control District and from his position as Chair of the TMCA Membership Committee. Marciniak will continue in his current role as TMCA President until the end of the term in October, then complete his term as TMCA Past President, which expires in October 2022.

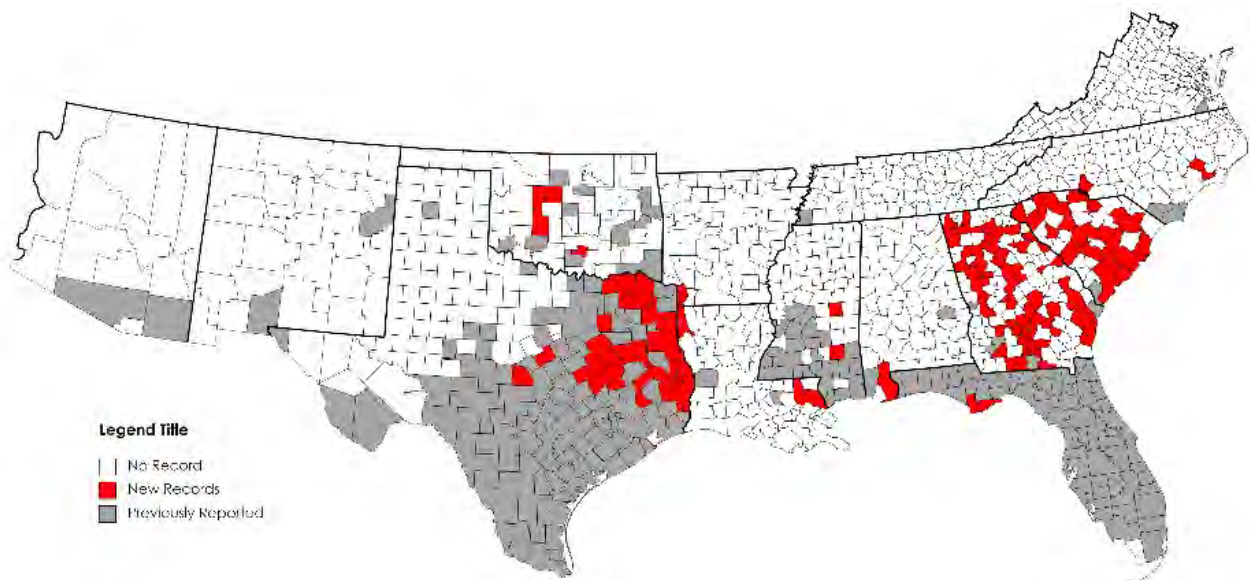
Dr. Mark Johnsen will take over the duties as Chair of the TMCA Membership Committee upon Marciniak's departure. Dr. Johnsen has worked with Marciniak at previous Workshop and Annual Meeting registrations, so he is familiar with the process and will help to ensure a seamless transition.

## Wanted: Person to Chair the TMCA Auditing Committee

After multiple years as Chair of the TMCA Auditing Committee, Mike Nichols is stepping aside to allow another person to chair this committee. Nichols will continue to as the Chair of the TMCA Legislative Committee. If you are interested in Chairing the TMCA Auditing Committee, please contact TMCA President Greg Marciniak at [info@texasmosquito.org](mailto:info@texasmosquito.org).

## Distribution of *Culex coronator* in the USA

The March issue of the Journal of the American Mosquito Control Association updated the distribution of *Culex coronator* in the USA. Currently, there are 386 US counties that have reported this species. In Texas, 162 counties have records of *Culex coronator*, which is an increase of 35 over what Sames et al. (2019) reported. You can download a free copy of this article at [Distribution of \*Culex coronator\* in the USA | Journal of the American Mosquito Control Association \(allenpress.com\)](https://www.allenpress.com/journal-article/doi/10.1111/j.1937-5408.2020.00711.x). In the same issue is a second article about *Culex stigmatosoma* and *Culex thriambus* in Texas. Check it out!



# Protecting Public Health with Science-Based Solutions



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## Research Update – Texas A&M University-San Antonio



Dr. Megan Wise de Valdez at Texas A&M-San Antonio is currently working with a group of undergraduate biology majors to study *Dirofilaria immitis*, the dog heartworm, in mosquitoes this summer in San Antonio, TX. Dr. Wise's group aims to establish which mosquito species are the primary vectors of heartworm in San Antonio, as well as to evaluate whether the socioeconomic status of neighborhoods plays a role in the prevalence of *D. immitis* in mosquitoes. This work is supported by a Research Council Grant from A&M-SA and specifically funds undergraduate researchers.

Dr. Wise de Valdez said that San Antonio, TX is an ideal location for the study of heartworm parasites and their mosquito vectors as she and undergraduate researchers have been studying mosquitoes in San Antonio for the past six years. They found the most prevalent mosquito species within the city limits are *Aedes aegypti*, *Aedes albopictus*, and *Culex quinquefasciatus*, all of which are reported vectors of *D. immitis*. They also identified a difference in mosquito species abundance and distribution along an urban-rural gradient as well as between high and low-income neighborhoods in San Antonio. Because of this, and because San Antonio is considered one of the most economically segregated cities in the U.S, she indicates that they can ask questions about spatial distribution of heartworms and their mosquito vectors between high and low socioeconomic neighborhoods. Finally, heartworm prevalence in Bexar County is among the highest in the nation and the dog population in San Antonio reaches at least 34,636 unrestrained dogs present at any given time and most of these “roaming” dogs are found in low-income areas like the West-side, East-side, and South-side. This will be the first study to evaluate spatial dynamics of heartworm and their mosquito vectors in a large economically diverse urban setting and the first study of *D. immitis* in mosquitoes in San Antonio, TX.

### He Used a Mosquito Dipper for What?

During the February 2021 Texas Winter Spectacular, the newsletter editor got stuck in the slick slushy snow-mud from the storm. He and his wife were in a cell phone dead zone and 5 miles from a shovel or help. Fortunately, he had his trusted mosquito dipper behind the seat of his pickup. The dipper as a shovel/scooper worked just fine and they were out of there in no time!





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High output ULV machine.  
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### 9-10

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# Treehole Species in Texas

Bill Sames



In the last newsletter, I asked for members to look in their treeholes during the winter and see what is there. Unfortunately, my treeholes were dry due to continued drought so they were a bust. I did not hear from anyone else, so here is what I know about treeholes in Texas. If you are not looking in treeholes, you are missing a big and very interesting part of the mosquito ecosystem.

Texas has plenty of trees and plenty of mosquitoes that routinely, almost exclusively, inhabit holes in trees that fill with water after some form of precipitation. In my collection area, I tend to find the most treeholes in oaks and hackberry trees but have found them in other tree species and all seem to be fine for mosquito larvae.

Common treehole species include *Aedes triseriatus*, *Aedes hendersoni*, *Aedes zoosophus*, *Anopheles barberi*, *Orthopodomyia alba*, *Orthopodomyia signifera*, *Orthopodomyia kummi*, and *Toxorhynchites rutilus septentrionalis*. Occasionally, these species may be found in artificial containers that are under trees. *Toxorhynchites r. septentrionalis* is commonly found in tire piles, too.

Other species have been reported to inhabit treeholes but are normally found in other habitats. These include *Aedes aegypti*, *Aedes albopictus*, *Culex quinquefasciatus*, and *Culiseta inornata*.

Some treeholes are easily sampled with a baster, which you can purchase at your local grocery store. A couple of years ago, a friend gave a siphon device to me and I have found it to be far superior to using a baster. The siphon device is nothing more than a long plastic tube with a squeeze bulb on one end. The device I received had two sizes of tubing so that one could be inserted over the other, which created a longer tube for reaching treeholes above my head and for reaching into deep crevices. BioQuip sells these devices and if you are collecting treehole species, a device like this will greatly enhance your collection efforts. I am not aware of any other vendors who offer this product.

A word of caution, whichever method you use, there is a tendency for larvae to get stuck in the bulb portion of the baster or siphon. I recommend that immediately after sampling a treehole, do a triple rinse of the device with fresh, clear water. Otherwise, your next sample may get larvae in it from the previous treehole.

The water from treeholes is normally very dark and most of the time you cannot see the larvae or pupae. Back in the lab, I will run my sample through a tea strainer, then put the contents of the strainer into a pan of clear water.

With recent rains this May, I have been collecting from treeholes. In my region west of San Antonio, *Aedes zoosophus* and *Aedes triseriatus* are present in about equal numbers. Sometimes one species inhabits a treehole by itself and on other occasions, I find both species in the same treehole. Thus far, one treehole contained *Aedes albopictus* and *Orthopodomyia signifera*. On a recent trip to far east Texas, I collected *Aedes albopictus*, *Aedes hendersoni*, *Aedes triseriatus*, and several *Toxorhynchites r. septentrionalis*. Also, persons living in East Texas should look for *Anopheles barberi*, the only treehole anopheline in Texas. Treehole mosquitoes are already active, see if you can find them!



## Week 21, 2021 Mosquito-Borne Disease Update



**TEXAS**  
Health and Human  
Services

**Texas Department of State  
Health Services**

2021 DSHS Arbovirus Activity Report  
Week #21 (ending May 29, 2021)  
Report Date: June 1, 2021

**Table 1. 2021 Arbovirus Activity Summary, Texas, Week 21.**

Arbovirus	Positive Mosquito Pools	Avian	Equine	Sentinel Chicken	Human					
					Febrile Illness	Neurologic Illness	Severe Dengue	TOTAL (HUMAN)	Deaths	PVD <sup>2</sup>
California Serogroup <sup>1</sup>								0		
Chikungunya								0		
Dengue					2			2		
Eastern Equine Encephalitis								0		
St. Louis Encephalitis								0		
West Nile	4							0		
Zika								0		
<b>TOTAL REPORTS</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>

<sup>1</sup>California Serogroup includes California encephalitis, Jamestown Canyon, Keystone, La Crosse, snowshoe hare, and trivittatus viruses.  
<sup>2</sup>PVD - Presumptive viremic blood donors are people who had no symptoms at the time of donating blood through a blood collection agency, but whose blood tested positive when screened for the presence of West Nile virus or Zika virus. Unless they meet the case reporting criteria, they are not counted as a case for official reporting purposes and are not included in the "Total (HUMAN)" column.

Note: Human mortality from arboviral conditions is aggregated and reported monthly once documentation has been received and verified.

For more detailed information about West Nile virus, including past weekly and annual reports, please visit <http://www.dshs.texas.gov/idcu/disease/arboviral/westNile/>

For more detailed information about Zika, please visit <http://www.texaszika.org/>

**Table 2. 2021 Aedes-Associated Arbovirus Activity by County†, Week 21**

County	CHIKV		DENV*		ZIKV		
	M	H	M	H	M	H	PVD
Montgomery				1			
Travis				1			
Total Number of Reports	0	0	0	2	0	0	0

M - mosquito H- human

CHIKV - Chikungunya Virus

DENV - Dengue Virus

ZIKV - Zika Virus

\* All reported cases are imported.

†County level data is not reported for conditions with <5 cases reported in a year.

### West Nile virus and Dengue Fever virus Detected in Texas.

For 2021, the first case of West Nile virus was found in a mosquito pool from Tarrant County, and a case of travel-related Dengue Fever virus was found in Montgomery and Travis Counties. This is similar to the situation in May 2020, so not unusual. Texas counties that conduct surveillance usually begin in May, so remain vigilant. For by-county distribution of cases and more information go to:

<https://dshs.texas.gov/idcu/disease/arboviral/westNile/reports/weekly.aspx?terms=arbovirus%20weekly%20summary>



# Texas Mosquito Control Association

## Membership Application

**Purpose:** To assist in promoting public health and comfort through the control of disease transmitting and pestiferous mosquitoes, to provide for the scientific advancement of Association members, and to stimulate public interest in mosquito control activities.

**Publications:** A Newsletter is published quarterly and emailed to active members. The Association web site is located at <http://www.texasmosquito.org>

**TMCA Annual Fall Meeting:** Held each year during October at an announced site within the state. Papers presented at this meeting are primarily technical reports dealing with new and improved methods of mosquito control, new insecticides, and application techniques. Basic research related to mosquito life cycles, bionomics, diseases, and natural histories are also presented. Distributors are present to display and answer questions about their equipment and chemicals. A registration fee is required to attend.

**TMCA Spring Workshop:** Held each year during February or March at an announced site within the state. This is a basic training workshop on the operational aspects of mosquito control. Topics include general mosquito biology, mosquito borne diseases, sampling and surveillance techniques, methods of mosquito control, public relations, equipment maintenance, chemicals and chemical safety, record keeping, administrative problems, and advanced operational training in calibration, droplet size determination, mosquito identification, and surveillance devices and techniques. Distributors are present to display and demonstrate their products. Registration is free, and several meals are usually provided by the TMCA to help reduce costs to attendees.

**CEU's:** CEU's for the Texas Department of Health Vector Control Certified Applicator License are offered at the Spring Workshop. Fees are \$20 per hour of CEU requested for non-members, free to all TMCA members. A copy of the TDA regulations can be downloaded from the TMCA web site at <http://www.texasmosquito.org>

**Annual Dues:** Dues are payable on a calendar year basis. Active Memberships are \$30 per year, and Supporting Memberships are \$60 per year.

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

Affiliation: \_\_\_\_\_ Position: \_\_\_\_\_

Work Mailing Address: \_\_\_\_\_

City & State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

Membership type applied for: Active (\$30): \_\_\_\_\_ Sustaining (\$60): \_\_\_\_\_

Make check payable to:

Texas Mosquito Control Association

Return application & remittance to:

Greg Marciniak, Membership Chairman  
Jefferson County Mosquito Control District  
8905 First Street  
Beaumont, Texas 77705

Phone: 409-719-5927 Fax: 409-727-4176 Email: [membership@texasmosquito.org](mailto:membership@texasmosquito.org)