Tarrant County Public Health

Arbovirus Surveillance Report
MMWR Week April 22nd-April 28th, 2018

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Week 17 Summary

- 121 mosquito pools* have been tested in NTRL from week 17
  - Year-to-date NTRL has tested a total of 368 mosquito pools
- 0 mosquito pool tested positive for WNV this week:
- There have been 0 human cases of CHIK, Dengue, SLE, WN disease, or Zika in 2018.
- Average number of mosquitoes/trap include:
  - *Culex restuans:* 84
  - *Aedes aegypti:* 0.1
  - *Aedes albopictus:* 0.5

NTRL= North Texas Regional Lab WNV= West Nile virus; CHIKV= Chikungunya virus; DENV= Dengue virus; SLEV St. Louis encephalitis virus
* May encompass counties outside of Tarrant County ** Non-NTRL results ***Mosquito species may change based on seasonality

Tarrant County Region WNV Positive Year to Date Summary

There have been a total of 2 positives in 2018.

Grapevine (2)

* May encompass counties outside of Tarrant County

Table 1. MLE[1] and VI[2] for County Quadrants, Week 16 and 17

	County Quadrant	# gravid traps	Ave F *Culex restuans*	Positive pools	MLE (Lower-Upper Limit)	VI
Week 16	Northeast	39	3.8	0.0	0.00 (0.00-7.84)	0.000
	Northwest	21	2.4	0.0	0.00 (0.00-7.74)	0.000
	Southeast	31	1.3	0.0	0.00 (0.00-15.25)	0.000
	Southwest	14	0.4	0.0	0.00 (0.00-24.71)	0.000
Week 17	Northeast	42	5.4	0.0	0.00 (0.00-3.30)	0.000
	Northwest	20	3.4	0.0	0.00 (0.00-5.42)	0.000
	Southeast	29	7.3	0.0	0.00 (0.00-4.76)	0.000
	Southwest	15	1.1	0.0	0.00 (0.00-10.22)	0.000

Data source: Tarrant County Public Health
1. MLE= Maximum Likelihood Estimate or the estimate of the mosquito infection rate per mosquito species. 2. VI= Vector Index which is a measure of infectivity accounting for vector species composition, vector species population density, and proportion of vector population infected with WNV
Averages, MLE, and limits will be given for species with identified infection rates only and only for the latest two week. MLE, Lower and Upper Limits are based on a 95% confidence interval. All data in this table is based on collection date.
Calculated using a Maximum Likelihood Estimation (MLE). Biggerstaff, Brad J. PooledInfRate, Version 4.0: a Microsoft® Office Excel© Add-In to compute prevalence estimates from pooled samples. Centers for Disease Control and Prevention, Fort Collins, CO, U.S.A., 2009

Cumulative Data for the Tarrant County Region, Weeks 14-17

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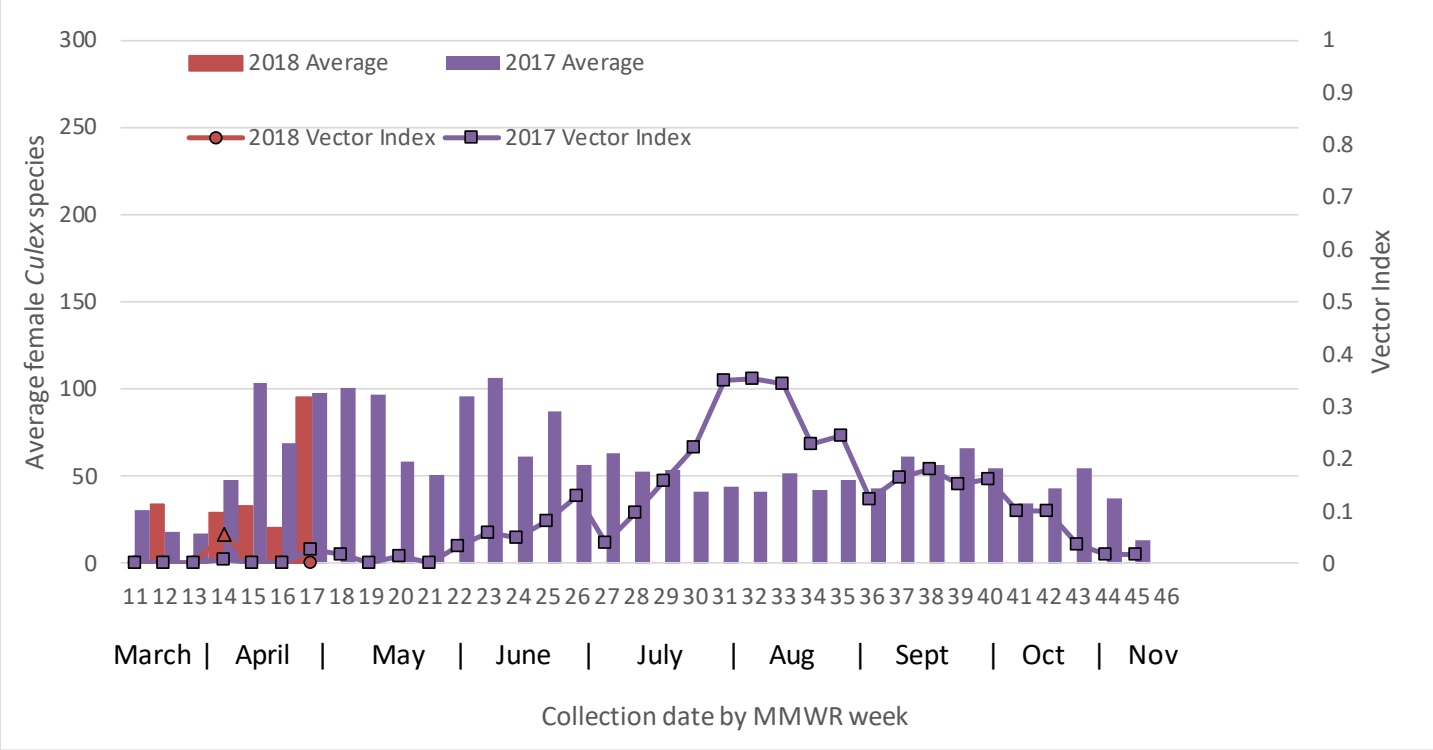
Week	April 2-April 8	April 9-April 15	April 16-April 22	April 23-April 29	YTD
MMWR Week	14	15	16	17	
Total number of gravid traps set in Tarrant Region	77	112	118	120	436
Average number of *Culex restuans* per gravid trap	27.5	30.0	2.3	4.9	12.2
Number of mosquito pools tested[1]	58	93	87	121	368
Number of positive mosquito pools (NTRL; non-NTRL)[1]	2;0	0;0	0;0	0;0	2;0
Confirmed WNV human cases (WNF; WNND)[2]	0;0	0;0	0;0	0;0	0;0
WNV infection rate per 1,000 *Culex restuans*[3]	2.00	0.00	0.00	0.00	
Weekly vector index[4]	0.055	0.000	0.000	0.000	
Total BG Sentinel traps set in Tarrant Region	16	26	36	33	111
Average number of female *Aedes aegytpi* per BG trap	0.0	0.0	0.1	0.1	0.0
Average number of female *Aedes albopictus* per BG trap	0.2	0.0	0.8	0.5	0.2

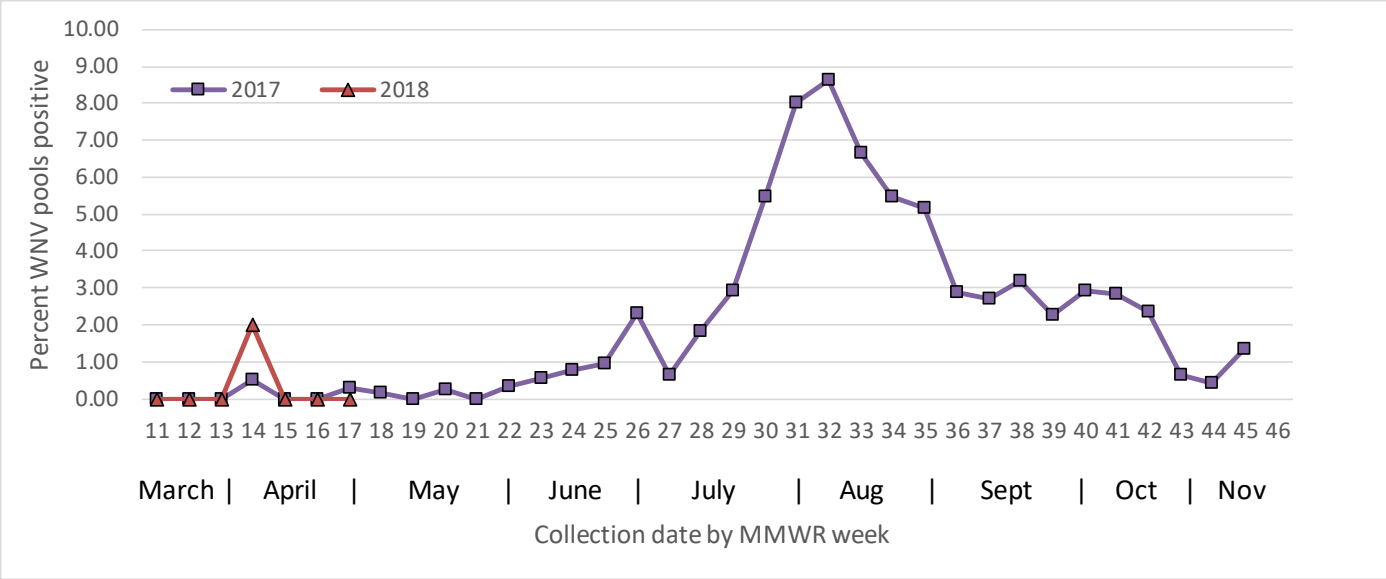
1 Based on mosquito collection date NTRL = North Texas Regional Laboratory, non-NTRL includes Tarrant County only
2 Based on onset of illness date for cases reported to Tarrant County Public Health; WNF=West Nile Fever; WNND = West Nile Neuroinvasive Disease
3 Calculated using a Maximum Likelihood Estimation (MLE). Biggerstaff, Brad J. PooledInfRate, Version 4.0: a Microsoft® Office Excel© Add-In to compute prevalence estimates from pooled samples. Centers for Disease Control and Prevention, Fort Collins, CO, U.S.A., 2009
4 Vector Index is a measure of infectivity accounting for vector species composition, vector species population density, and proportion of vector population infected with WNV
Note: Infection rate and vector index calculations may not include positive pools from Non-NTRL laboratories; Data subject to change due to on-going case investigations, mosquito collection, and testing

Figure 1. Average Number of Female *Culex* Species Per Trap and Vector Index by



Data Source: Tarrant County Public Health

Figure 2. Percentage of Mosquito Pools Positive for WNV by Collection Date, Tarrant County, 2017-2018



Data Source: Tarrant County Public Health

Table 3. North Texas Arbovirus Season Activity as Reported by Texas DSHS on April 30th, 2018

North Texas Counties	WNV					CHIKV		DENV		SLEV		Zika	
	Positive Mosquito Pools	Human cases				Positive Mosquito Pools	Human Cases	Positive Mosquito Pools	Human Cases	Positive Mosquito Pools	Human Cases	Positive Mosquito Pools	Human Cases
Collin	0	0	WNF;	0	WNND	0	0	0	0	0	0	0	0
Dallas	0	0	WNF;	0	WNND	0	0	0	0	0	0	0	0
Denton	0	0	WNF;	0	WNND	0	0	0	0	0	0	0	0
Johnson	0	0	WNF;	0	WNND	0	0	0	0	0	0	0	0
Non-Tarrant North Texas	0	0		0		0	0	0	0	0	0	0	0
All Texas Counties	2	0		0		0	0	0	0	0	0	0	2

**All reported CHIKV, DENV, & Zika human cases are travel-related*
WNV– West Nile virus; WNF– West Nile fever; WNND– West Nile nueroinvasive disease; CHIKV– Chikungunya virus; DENV– Dengue virus; SLEV– St. Louis encephalitis virus

For Additional Information Please Visit The Links Below:

Department of State Health Services:

- Arbovirus Activity Reports
- Texas Zika

Tarrant County educational videos and documents:

- Eliminating Mosquito Breeding Sites
- Barrier Treatments for Mosquitoes
- Mosquitoes Love Water
- Mosquito Prevention Tool Kit

Tarrant County web pages:

- Be Mosquito Free
- Zika
- Vector Control

Environmental Protection Agency:

- Insect Repellent Information

Center for Disease Control and Prevention:

- Zika Travel Information