



BE MOSQUITO FREE
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Arbovirus Surveillance Report
MMWR Week Nov 5th-Nov 11th, 2017
Final Report

Week 45 Summary

- 56 mosquito pools* have been tested in NTRL from week 45
 - Year-to-date NTRL has tested a total of 5257 mosquito pools
 - 1 mosquito pool tested positive for WNV this week:
Crowley(1)
 - There have been 0 human cases of Zika or SLE in 2017. There has been 1 case of Dengue and 1 case of CHIK in 2017. There have been 20 human cases of West Nile disease thus far in 2017.
 - Average number of mosquitoes/trap include:
 - *Culex quinquefasciatus*: 12.4
 - *Aedes aegypti*: 0.6
- 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

Tarrant County Region WNV Positive Year to Date Summary

There have been a total of 351 positives in 2017.

Arlington(49) Azle(2) Bedford(8) Burleson*(8) Colleyville(23) Crowley(2) DFW Airport*(6) Edgecliff Village(7) Euless(21) Everman(1) Fort Worth*(62) Grand Prarie(8) Grapevine(14) Haltom City(4) Haslet(4) Hurst(12) Keller(10) Kennedale(1) Lake Worth(1) Lakeside(2) Mansfield(9) North Richland Hills(21) Pantego(13) Richland Hills(10) River Oaks(17) Southlake(6) Unincorporated(26) Watauga(1) Westover Hills(2) White Settlement(1)

* May encompass counties outside of Tarrant County

Table 1. MLE⁽¹⁾ and VI⁽²⁾ for County Quadrants, Week 44 and 45

	County Quadrant	# gravid traps	Ave F <i>Culex quinq</i>	Positive pools	MLE (Lower-Upper Limit)	VI
Week 44	Northeast	53	36.3	1.0	0.81 (0.05-3.94)	0.029
	Northwest	38	15.9	0.0	0.00 (0.00-7.57)	0.000
	Southeast	33	48.1	0.0	0.00 (0.00-6.73)	0.000
	Southwest	17	61.1	0.0	0.00 (0.00-10.82)	0.000
Week 45	Northeast	31	25.7	0.0	0.00 (0.00-6.01)	0.000
	Northwest	10	3.8	0.0	0.00 (0.00-74.10)	0.000
	Southeast	27	1.8	0.0	0.00 (0.00-63.54)	0.134
	Southwest	8	11.5	1.0	11.63 (0.69-57.95)	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. PooledInRate, 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



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**Cumulative Data for the Tarrant
 County Region, Weeks 42-45**

Week	Oct 15- Oct 21	Oct 22- Oct 28	Oct 29- Nov 4	Nov 5- Nov 11	YTD
MMWR Week	42	43	44	45	
Total number of gravid traps set in Tarrant Region	181	172	142	76	5572
Average number of <i>Culex quinquefasciatus</i> per gravid trap	39.4	52.7	36.0	12.4	51.7
Number of mosquito pools tested ¹	165	157	126	56	5257
Number of positive mosquito pools (NTRL; non-NTRL) ¹	6;0	3;0	1;0	1;0	343;8
Confirmed WNV human cases (WNF; WNND) ²	0;0	0;0	0;0	0;0	10;10
WNV infection rate per 1,000 <i>Culex quinquefasciatus</i> ³	2.37	0.64	0.40	1.35	
Weekly vector index ⁴	0.101	0.035	0.015	0.017	
Total BG Sentinel traps set in Tarrant Region	48	44	28	23	1280
Average number of female <i>Aedes aegypti</i> per BG trap	4.2	2.6	0.3	0.6	2.6
Average number of female <i>Aedes albopictus</i> per BG trap	1.5	1.3	0.2	0.1	2.5

¹ Based on mosquito collection date NTRL = North Texas Regional Laboratory, non-NTRL includes Tarrant County only

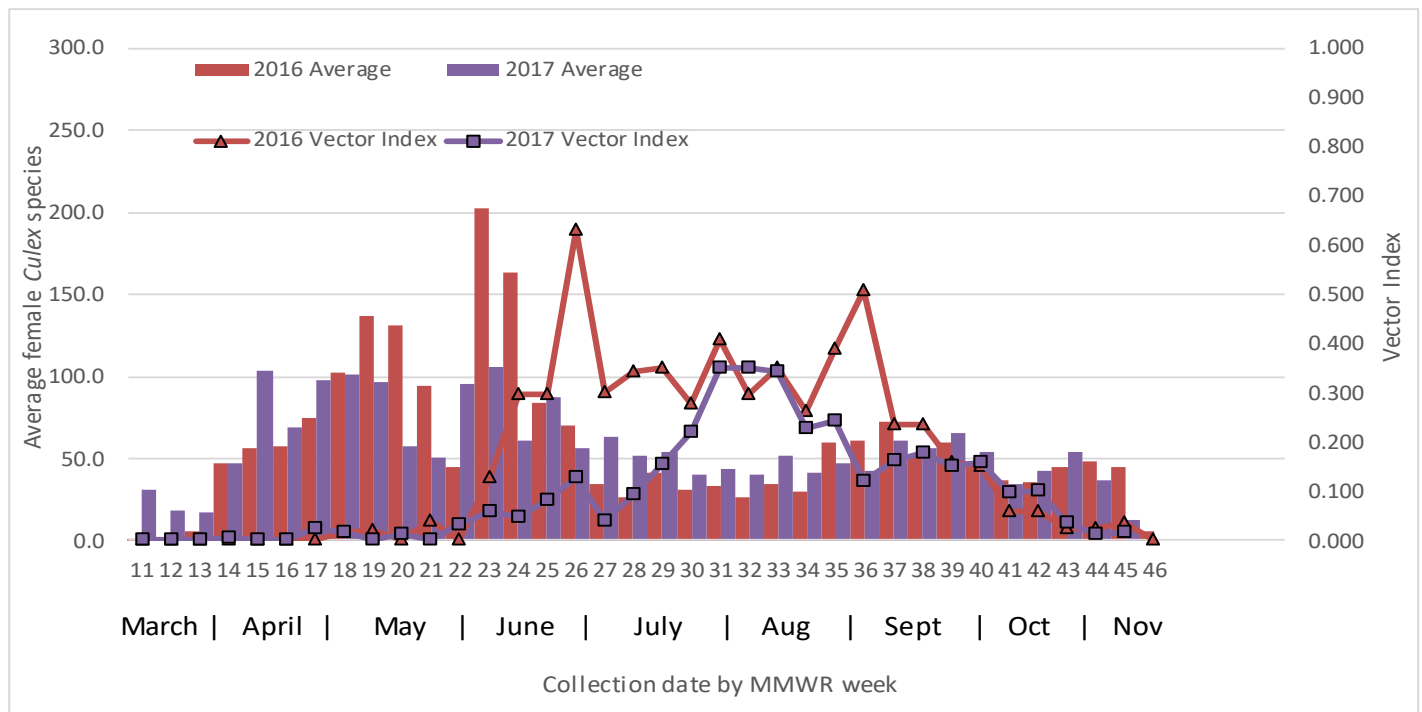
² Based on onset of illness date for cases reported to Tarrant County Public Health; WNF=West Nile Fever; WNND = West Nile Neuroinvasive Disease

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 Collection Date, Tarrant County, 2016-2017

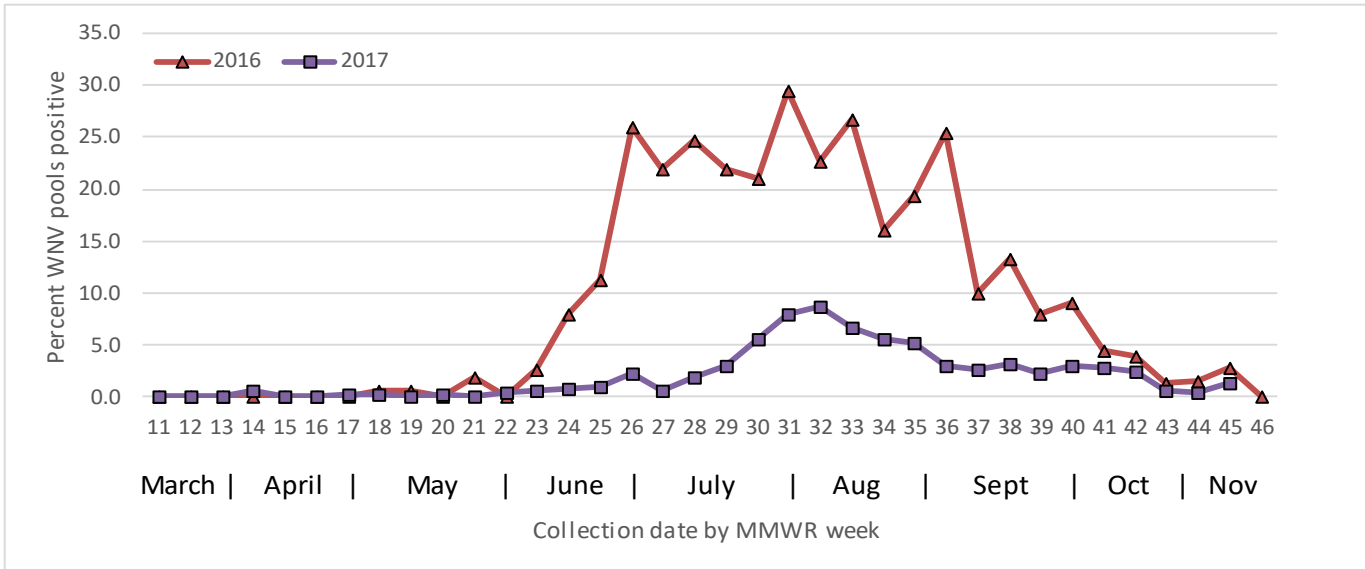


Data Source: Tarrant County Public Health



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Figure 2. Percentage of Mosquito Pools Positive for WNV by Collection Date, Tarrant County, 2016-2017



Data Source: Tarrant County Public Health

Table 3. North Texas Arbovirus Season Activity as Reported by Texas DSHS on November 10th, 2017

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	23	4 WNF;	8 WNND	0	5	0	3	0	0	0	2
Dallas	389	11 WNF;	14 WNND	0	1	0	5	0	0	0	2
Denton	93	6 WNF;	4 WNND	0	1	0	3	0	0	0	1
Johnson	8	1 WNF;	0 WNND	0	0	0	0	0	0	0	0
Non-Tarrant North Texas	513	22	26	0	7	0	11	0	0	0	5
All Texas Counties	1041	45	80	0	11	0	22	1	0	0	41

*All reported CHIKV, DENV, & Zika human cases are travel-related
WNV- West Nile virus; WNF- West Nile fever; WNND- West Nile neuroinvasive 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](#)