



Arbovirus Final Surveillance Report
MMWR Week Oct 3-Oct 9, 2021

Week 40 Summary

- 204 mosquito pools* have been tested in NTRL from week 40
 - Year-to-date NTRL has tested a total of 4185 mosquito pools
- 9 mosquito pools tested positive for WNV this week:
 - Colleyville (2) Grapevine (1) Grand Prairie* (2) Hurst (2) Keller (1) Mansfield (1)
- There has been 1 imported human case of Dengue, and 0 cases of SLE or Zika in 2021.
 - There has been 7 human cases of West Nile disease.
- Average number of mosquitoes/trap include:
 - *Culex* spp: 35.7
 - *Aedes aegypti*: 3.6
 - *Aedes albopictus* 1.5

NTRL– North Texas Regional Lab
WNV= West Nile virus; CHIKV= chikungunya virus; DENV= dengue virus; SLEV St. Louis encephalitis virus * May include data from outside Tarrant County

Cumulative Positive WNV Pools per Municipality

There have been a total of 380 positive in 2021.

Arlington (19) Bedford (4) Benbrook (3) Burleson *(52) Colleyville (16) Crowley (22) DFW Airport*(5) Euless (7) Fort Worth* (65) Grand Prairie* (37) Grapevine (15) Haltom City (2) Hurst (10) Keller (18) Kennedale (2) Lakeside (3) Mansfield* (28) North Richland Hills (30) Pantego (3) Richland Hills (2) Southlake (14) Unincorporated (22) Watauga (1)

* May include data from outside Tarrant County

Table 1. MLE⁽¹⁾ and VI⁽²⁾ for County Quadrants, Week 39 and 40

	County Quadrant	# gravid traps	Ave F <i>Culex</i> spp	Positive pools	MLE (Lower-Upper Limit)	VI
Week 39	Northeast	67	41.7	8.0	4.61 (2.18-75.46)	0.192
	Northwest	14	126.9	0.0	0.00 (0.00-67.19)	0.000
	Southeast	41	33.5	1.0	1.24 (0.07-5.99)	0.042
	Southwest	19	64.1	3.0	4.33 (1.15-126.21)	0.278
Week 40	Northeast	88	36.8	6.0	2.90 (1.19-129.20)	0.107
	Northwest	40	41.8	0.0	0.00 (0.00-79.30)	0.000
	Southeast	48	27.5	2.0	2.52 (0.46-8.27)	0.069
	Southwest	34	34.1	0.0	0.00 (0.00-4.66)	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



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Cumulative Data for the Tarrant County Region, Weeks 37-40

Week	Sep 12- Sep 18	Sep 19- Sep 25	Sep 26- Oct 2	Oct 3-Oct 9	YTD
MMWR Week	37	38	39	40	
Total number of gravid traps set in Tarrant Region	177	174	141	210	3955
Average number of <i>Culex</i> spp per gravid trap	49.1	44.9	50.6	35.7	64.2
Number of mosquito pools tested ¹ (NTRL; non-NTRL)	183;21	175;17	156;13	204;17	4185;390
Number of positive mosquito pools (NTRL; non-NTRL) ¹	29;2	23;1	16;0	7;2	343;37
Confirmed WNV human cases (WNF; WNND) ²	0;1	0;0	0;0	0;0	4;3
WNV infection rate per 1,000 <i>Culex</i> spp ³	6.09	4.26	3.23	1.72	
Weekly vector index ⁴	0.299	0.191	0.163	0.062	
Total BG Sentinel traps set in Tarrant Region	33	33	31	32	833
Average number of female <i>Aedes aegypti</i> per BG trap	3.7	4.7	3.9	3.6	3.1
Average number of female <i>Aedes albopictus</i> per BG trap	2.7	3.3	3.2	1.5	4.6

¹ Based on mosquito collection date; NTRL = North Texas Regional Laboratory

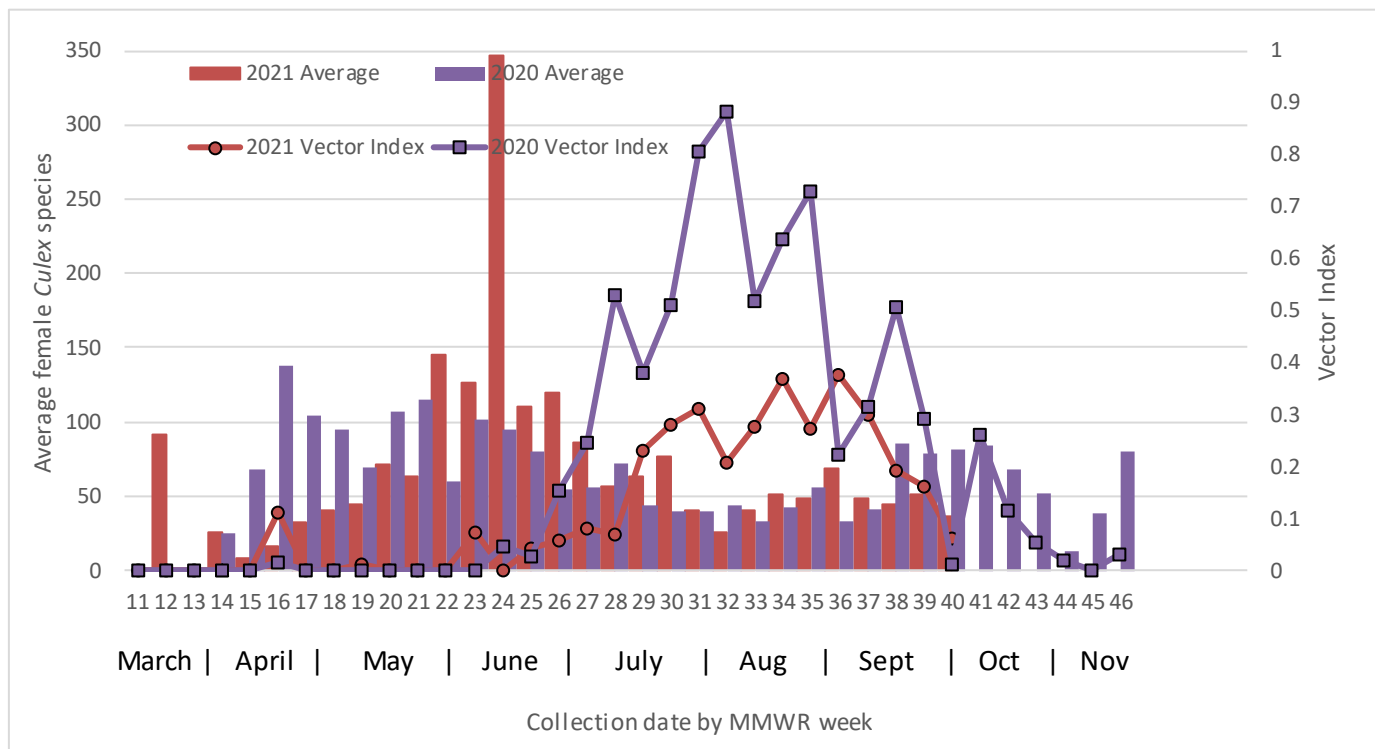
² Based on onset of illness date for cases reported to Tarrant County Public Health; WNF=West Nile Fever; WNND = West Nile Neuroinvasive Disease

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 *Culex* spp includes pools of both *Cx restuans* and *Cx quinquefasciatus*. These MLEs are calculated separately, per species and added together as per instructions by CDC.

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 now includes pools from outside laboratories; Data subject to change due to on-going case investigations, mosquito collection, and testing. Data source: Tarrant County Public Health

Figure 1. Average Number of Female *Culex* Species Per Trap and Vector Index by Collection Date, Tarrant County, 2020-2021

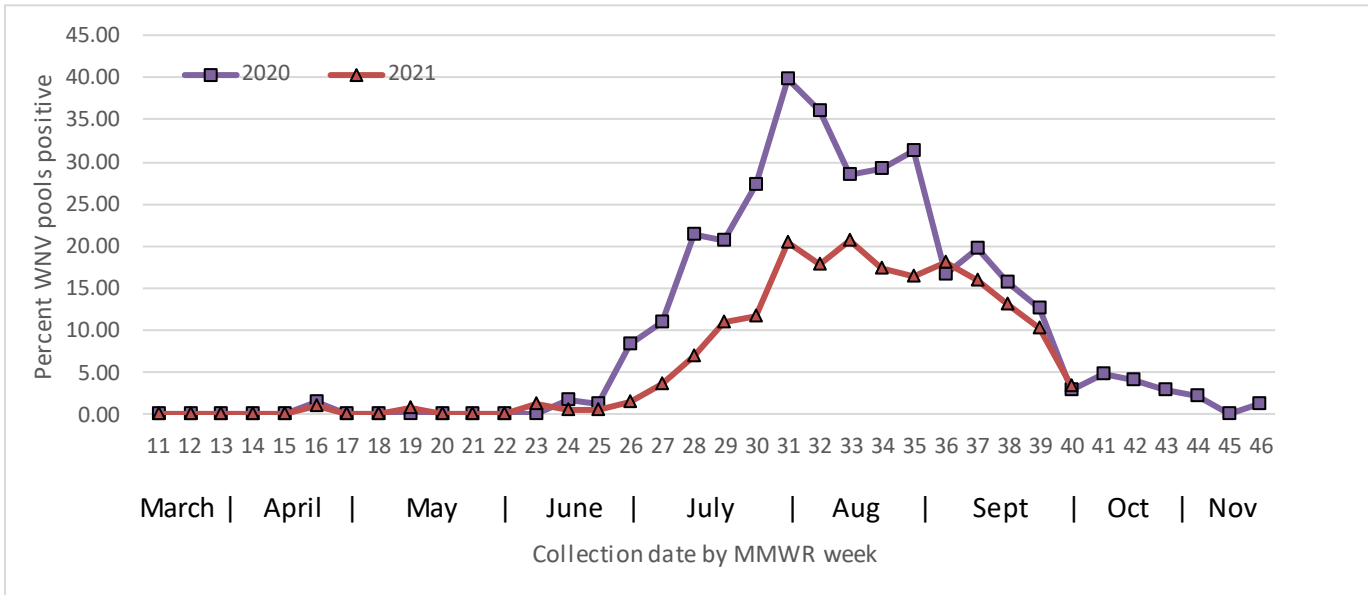


Data Source: Tarrant County Public Health



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Figure 2. Percentage of Mosquito Pools Positive for WNV by Collection Date, Tarrant County, 2020-2021



Data Source: Tarrant County Public Health

Table 3. North Texas Arbovirus Activity as Reported by Texas DSHS on October 12, 2021

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	45	0 WNF; 0 WNND	0	0	0	1	0	0	0	0
Dallas	331	3 WNF; 12 WNND	0	0	0	0	0	0	0	0
Denton	52	0 WNF; 1 WNND	0	0	0	0	0	0	0	0
Johnson	56	0 WNF; 0 WNND	0	0	0	0	0	0	0	0
Non-Tarrant North Texas	484	3 13	0	0	0	1	0	0	0	0
All Texas Counties	1484	7 26	0	0	0	4	32	0	0	0

*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](#)
- [WNV Interactive Mapping Tool](#)

Environmental Protection Agency:

- [Insect Repellent Information](#)

Center for Disease Control and Prevention:

- [Zika Travel Information](#)