Ta r rant Cou nty  P ublic  H ea l th

Arbovirus Surveillance Report
MMWR Week Oct 4-Oct 10, 2020

Week 41 Summary

- 205 mosquito pools* have been tested in DC/DSHS from week 41
  - Year-to-date DC/DSHS has tested a total of 4222 mosquito pools
- 12 mosquito pools tested positive for WNV this week:
  - Arlington (2) Burleson* (2) Grand Prairie* (2) Keller (2) Kennedale (1) North Richland Hills (1) Southlake (1)

- There have been 0 human cases of SLE, Zika, CHIK or Dengue in 2020.
  - There have been 20 human cases of West Nile disease. 4 cases resulted in death
- Average number of mosquitoes/trap include:
  - Culex spp: 83.1
  - Aedes aegypti: 9.0
  - Aedes albopictus: 1.4

DC/DSHS = Dallas County Laboratory Response Network and Department of State Health Services Arbovirus Lab
WNV = West Nile virus; CHIKV = chikungunya virus; DENV = dengue virus; SLEV = St. Louis encephalitis virus * May encompass counties outside of Tarrant County

T a r r a n t  C o u n t y  R e g i o n  W N V  P o s i t i v e  Y e a r  to  D a t e  S u m m a r y

There have been a total of 609 positive in 2020.


* May encompass counties outside of Tarrant County

Table 1. MLE(1) and VI(2) for County Quadrants, Week 40 and 41

| County Quadrant | # gravid traps | Ave F Culex spp | Positive pools MLE (Lower-Upper Limit) | VI
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Northeast</td>
<td>85</td>
<td>72.3</td>
<td>4.0</td>
<td>0.57 (0.36-5.07)</td>
</tr>
<tr>
<td>Northwest</td>
<td>24</td>
<td>132.3</td>
<td>1.0</td>
<td>0.77 (0.04-14.76)</td>
</tr>
<tr>
<td>Southeast</td>
<td>45</td>
<td>143.7</td>
<td>0.0</td>
<td>0.00 (0.00-9.45)</td>
</tr>
<tr>
<td>Southwest</td>
<td>30</td>
<td>52.2</td>
<td>1.0</td>
<td>1.19 (0.07-19.26)</td>
</tr>
<tr>
<td>Northeast</td>
<td>74</td>
<td>70.6</td>
<td>5.0</td>
<td>18.43 (4.20-70.73)</td>
</tr>
<tr>
<td>Northwest</td>
<td>31</td>
<td>113.8</td>
<td>0.0</td>
<td>0.00 (0.00-8.03)</td>
</tr>
<tr>
<td>Southeast</td>
<td>38</td>
<td>84.7</td>
<td>4.0</td>
<td>2.86 (0.94-23.65)</td>
</tr>
<tr>
<td>Southwest</td>
<td>30</td>
<td>61.2</td>
<td>0.0</td>
<td>0.00 (0.00-53.05)</td>
</tr>
</tbody>
</table>

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 weeks. 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 38-41

<table>
<thead>
<tr>
<th>Week</th>
<th>Sep 13-Sep 19</th>
<th>Sep 20-Sep 26</th>
<th>Sep 27-Oct 3</th>
<th>Oct 4-Oct 10</th>
<th>YTD</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMWR Week</td>
<td>38</td>
<td>39</td>
<td>40</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td>Total number of gravid traps set</td>
<td>230</td>
<td>159</td>
<td>220</td>
<td>209</td>
<td>5074</td>
</tr>
<tr>
<td>Average number of <em>Culex</em> spp per</td>
<td>77.0</td>
<td>67.5</td>
<td>81.3</td>
<td>71.3</td>
<td>46.4</td>
</tr>
<tr>
<td>Number of mosquito pools tested</td>
<td>211;26</td>
<td>134;19</td>
<td>212;16</td>
<td>205;18</td>
<td>4222;582</td>
</tr>
<tr>
<td>Number of positive mosquito pools</td>
<td>33;2</td>
<td>17;1</td>
<td>6;0</td>
<td>10;2</td>
<td>586;20</td>
</tr>
<tr>
<td>Confirmed WNV human cases</td>
<td>0;0</td>
<td>0;0</td>
<td>0;0</td>
<td>0;0</td>
<td>3;17</td>
</tr>
<tr>
<td>WNV infection rate per 1,000</td>
<td>5.91</td>
<td>3.71</td>
<td>0.13</td>
<td>3.11</td>
<td></td>
</tr>
<tr>
<td><em>Culex</em> spp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weekly vector index</td>
<td>0.508</td>
<td>0.290</td>
<td>0.012</td>
<td>0.258</td>
<td></td>
</tr>
<tr>
<td>Total BG Sentinel traps set</td>
<td>34</td>
<td>27</td>
<td>30</td>
<td>26</td>
<td>709</td>
</tr>
<tr>
<td>Average number of female <em>Aedes aegypti</em> per BG trap</td>
<td>16.6</td>
<td>5.9</td>
<td>20.4</td>
<td>9.0</td>
<td>4.2</td>
</tr>
<tr>
<td>Average number of female <em>Aedes albopictus</em> per BG trap</td>
<td>2.8</td>
<td>1.5</td>
<td>3.3</td>
<td>1.4</td>
<td>1.9</td>
</tr>
</tbody>
</table>

1 Based on mosquito collection date; DC/DSHS = Dallas County Laboratory Response Network and Department of State Health Services Arboviral Lab
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*
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

Figure 1. Average Number of Female *Culex* Species Per Trap and Vector Index by Collection Date, Tarrant County, 2019-2020

Data Source: Tarrant County Public Health
**Figure 2. Percentage of Mosquito Pools Positive for WNV by Collection Date, Tarrant County, 2019-2020**

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**Table 3. North Texas Arbovirus Activity as Reported by Texas DSHS on October 13, 2020**

<table>
<thead>
<tr>
<th>North Texas Counties</th>
<th>WNV</th>
<th>CHIKV</th>
<th>DENV</th>
<th>SLEV</th>
<th>Zika</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive Mosquito Pools</td>
<td>Human cases</td>
<td>Positive Mosquito Pools</td>
<td>Human cases</td>
<td>Positive Mosquito Pools</td>
</tr>
<tr>
<td>Collin</td>
<td>44</td>
<td>1 WNF; 3 WNND</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Dallas</td>
<td>461</td>
<td>4 WNF; 10 WNND</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Denton</td>
<td>50</td>
<td>0 WNF; 4 WNND</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Johnson</td>
<td>11</td>
<td>0 WNF; 0 WNND</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Non-Tarrant North Texas</td>
<td>566</td>
<td>5</td>
<td>17</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>All Texas Counties</td>
<td>1329</td>
<td>17</td>
<td>42</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

*All reported CHIKV, DENV, & Zika human cases are travel-related.*

**Data Source:** Tarrant County Public Health

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**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](#)

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.centerv15 (18.0, 3.3, 768.0, 106.3)

.center

Figure 2. Percentage of Mosquito Pools Positive for WNV by Collection Date, Tarrant County, 2019-2020

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Data Source: Tarrant County Public Health

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