



Arbovirus Surveillance Report

City of Chicago
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Environmental Health

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West Nile Virus 2020 End of Season Summary

Geography and Population

The Chicago Department of Public Health comprises 234 square miles and approximately 2.7 million residents in an urban environment. Most of the medically significant breeding occurs in backyard containers and catch basins.

Mosquito Abatement Actions

As in prior seasons, pre-season larviciding was conducted in areas that have greater historic prevalence of disease. Pre-season larviciding was a cooperative venture between the Department of Public Health, our sister agencies, and Vector Disease Control International. In total, over 40,000 catch basins were treated with 90 day Fourstar® Briquets. Fourstar® is a sustained release chemical designed to curtail mosquito breeding in treated basins for 90 days.

To evaluate the effectiveness of these efforts, a total of 1140 catch basins were sampled: 8 out of 60 (13%) sampled in June, 136 out of 475 (28%) sampled in July, 78 out of 210 (37%) sampled in August, and 101 out of 369 (25%) had adult emergence. With an average of 71.6% of the adult *Culex* mosquitoes being suppressed by the treatments, the incidence of WNV transmission was significantly reduced in historical “hot spots”.

In addition, adulticiding occurred on 2 separate occasions, covering 4 wards and 33.5 linear road miles, using Zenivex®.

Environmental Surveillance for WNV

Seventy-Seven gravid traps were placed throughout the city and mosquitoes were collected on a twice-weekly basis from June – September. All mosquito species that were collected were identified and recorded, and female mosquitoes of the *Culex* genus were tested for both West Nile virus (WNV) and St. Louis encephalitis (SLE). The total number of mosquitoes collected was 26,544 of which 20,842 were female *Culex*. Of these, a total of 1,775 mosquito pools were prepared and tested, of which 102 (5.7%) were positive for WNV (none were positive for SLE). In comparison, 34,617 mosquitoes were collected during the same period in 2019, of which 24,721 were female *Culex*. Of these, a total of 2,293 mosquito pools were prepared and tested, of which 151 (6.6 %) were positive for WNV (none were positive for SLE). In addition to mosquito surveillance, in 2020, a total of 2 birds were submitted with one tested and confirmed negative.

In addition to WNV surveillance, BG-sentinel traps were placed to monitor for the presence of Aedes species mosquitoes, potential vectors for the Zika virus. In total, 3,277 Aedes albopictus – 2,410 females and 867 males - were collected.

Cumulative Mosquito Testing for WNV from Gravid Traps	
Number of Female Culex Trapped and Tested	20,842
Total Number of Mosquito Pools Tested	2,381
Number of Mosquito Pools Positive	102
Number of Community Areas with Positive Mosquitoes*	32
Cumulative Bird Testing for WNV	
Total Number of Birds Submitted	2
Number of Birds Tested	1
Number of Birds Positive	0
Cumulative Mosquito Collections from all trap types	
Total Number of <i>Aedes albopictus</i>	3,277

Human Surveillance for WNV and Regional trends

WNV trends did see an increase from last year in human cases but a decrease in the percentage of positive mosquito pools tested. However, the numbers are still far below what was reported in 2018 (57 human cases).

11 human cases were reported in 2020 for the City, in comparison to 2019 in which 4 cases were observed.