



BORDER HEALTH NEWSLETTER – MAY 2020

WELCOME!

Kia Ora Koutou,

This month we have prepared a quiz to test how much do you know about mosquitos. Click on the link below to give it ago.

Take the great mozzie quiz

In the news this month, read about how urbanization and climate change can impact mosquito-borne virus transmission in West Africa. Also in Africa, researchers have found that an indoor residual spray made by combining a type of volcanic glass with water is an effective control of mosquitoes. Following that, read about the current situation in South Asia and Latin America where the fight is not just against COVID-19, but against dengue as well. Finally, watch an interview with Timothy C. Winegard, author of *The Mosquito: A Human History of our Deadliest Predator*.

SURVEILLANCE

During May 889 samples were collected by staff from 12 DHBs. The samples included 87 positive larval samples and 31 positive adult samples, leading to a total of 103 adults and 4073 larvae identified over the past month (Table 1). The dominant larval species this month, this year and last year is *Culex quinquefasciatus*.

Compared to this same month last year, the total number of larvae has shown an increase (25%), while the number of adult mosquitoes has shown a 382% decrease (Table 1).

Table 1. Adult and larvae sampled by the New Zealand surveillance program during May 2019 & 2020

Species (common name)	Adults		Larvae	
	May 20	May 19	May 20	May 19
<i>Aedes australis</i> (saltwater mosquito)	-	-	2	-
<i>Ae notoscriptus</i> (striped mosquito)	19	237	1350	1413
<i>Ae subalbirostris</i> (no common name)	-	-	6	-
<i>Coquillettidia iracunda</i> (no common name)	-	1	-	-
<i>Culex pervigilans</i> (vigilant mosquito)	8	12	433	154
<i>Culiseta novaezealandiae</i> (no common name)	-	-	-	3
<i>Cx quinquefasciatus</i> (southern house mosquito)	71	226	2240	1395
<i>Culex</i> sp. (missing their abdomens, likely to be <i>quinquefasciatus</i> or <i>pervigilans</i>)	5	20	-	-
<i>Opifex fuscus</i> (rock pool mosquito)	-	-	42	54
Total	103	496	4073	3019

In total, six mosquito species have been collected this month (Table 1), that is the same number than last month.

Compared to last month, mosquito larval numbers have shown an increase (33%) and adult number a decrease 79% (Table 1).

The highest number of larvae sampled this month was obtained in Northland DHB (3510) followed by Auckland DHB (251 larvae) (Figure 1).

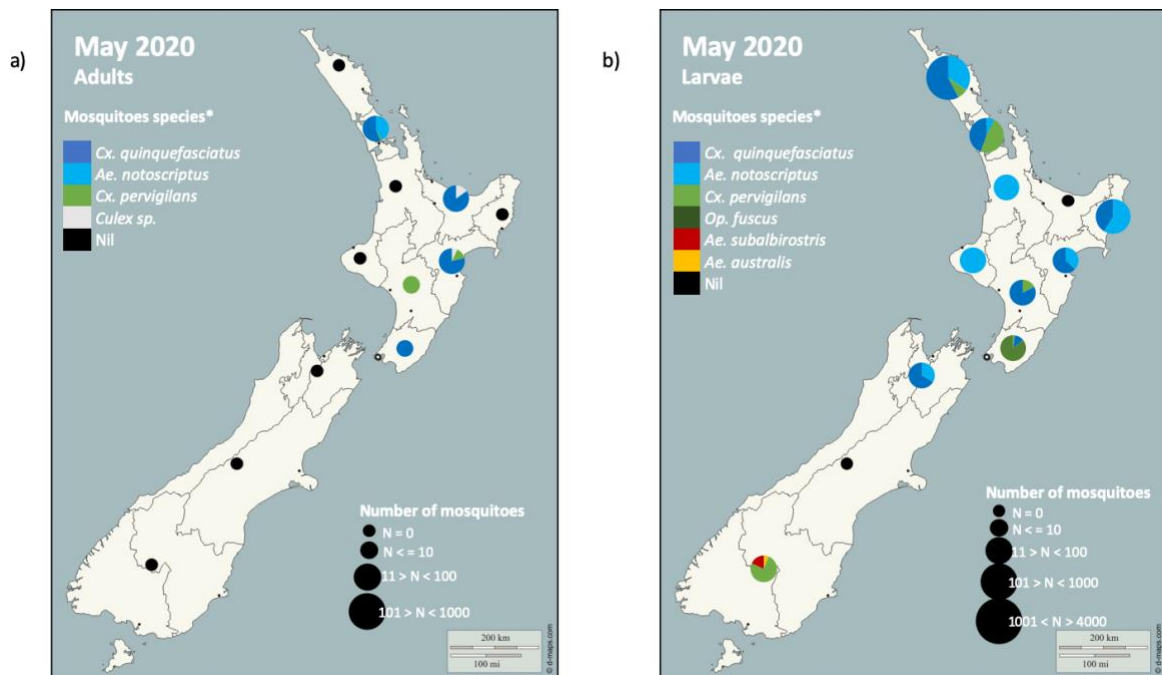


Figure 1. Total mosquito adults (a) and larvae (b) sampled in New Zealand during the May 2020 surveillance period.

* The mosquito species are listed in order from the most abundant to the least abundant.

Please note that the markers represent the DHBs and not the specific sites where the samples have been taken.

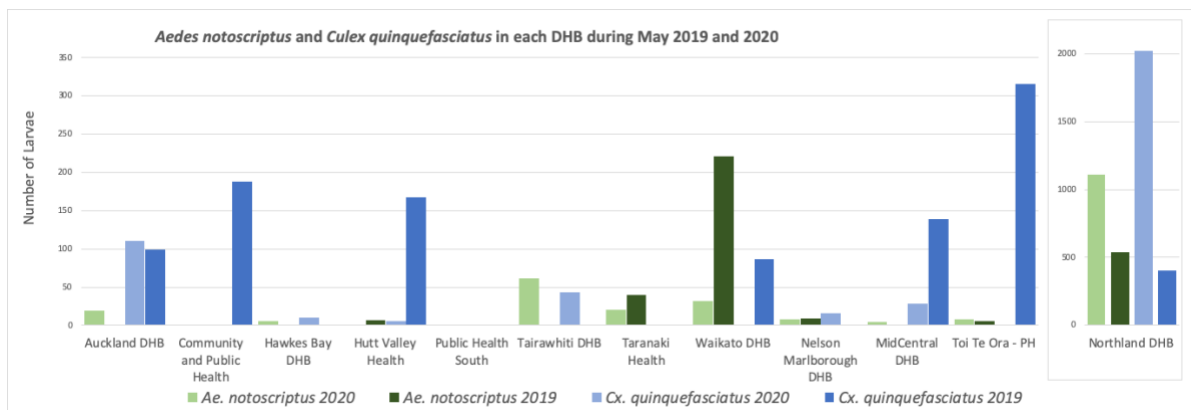


Figure 2. Comparison between introduced mosquitoes sampled in each DHB New Zealand during May 2019 and 2020.

*Please note the different scale for the number of larvae present in Northland DHB in comparison to the other DHBs.

Culex quinquefasciatus larval numbers have shown an increase in five DHBs from this same month last year and a decrease in five DHBs (Figure 2).

As expected *Aedes notoscriptus* has not been recorded this month, this year or last year in Public Health South (Figure 2).

Aedes notoscriptus larval numbers have shown an increase in seven DHBs from this same month last year and a decrease in five DHBs (Figure 2).

Disclaimer: Note that all comparisons made have not been statistically tested and can be due to sampling effort.

INCURSIONS AND INTERCEPTIONS

During May nil suspected interception have been recorded.

NEWS ARTICLES FROM AROUND THE WORLD

Mosquito-borne viral outbreaks pose serious issues in West Africa

In a new study, researchers from the Colorado School of Public Health at the University of Colorado Anschutz Medical Campus call attention to the emergence of mosquito-borne viral outbreaks in West Africa, such as dengue (DENV), chikungunya (CHIKV) and Zika (ZIKV) viruses. The researchers reviewed 50 years of literature on arboviruses in West Africa to evaluate evidence of DENV, ZIKV and CHIKV and the distribution of their *Aedes* mosquito vectors in the region. [Read more.](#)

T cells can counteract dangerous phenomenon of mosquito-borne viruses



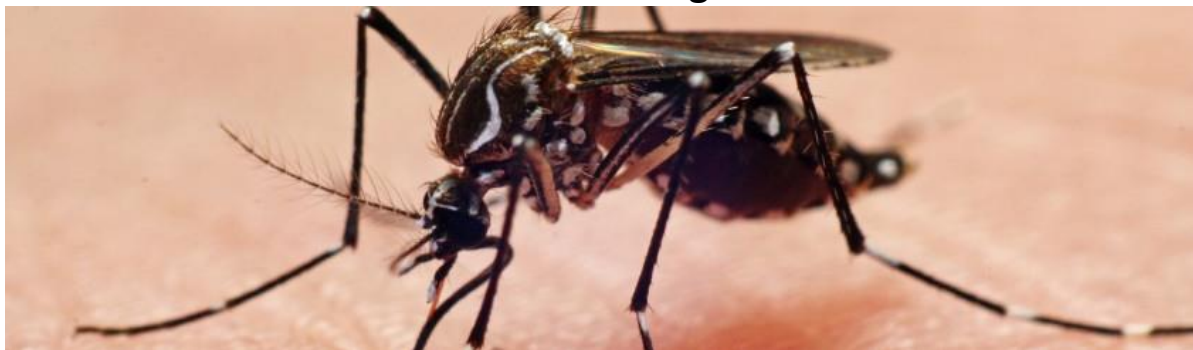
Every year, more than 68,000 people end up with a clinical case of Japanese encephalitis. One in four of these patients will die. The mosquito-borne virus, which is most common in Southeast Asia, also causes severe neurological damage and psychiatric disorders. There is no cure for Japanese encephalitis, but there are effective vaccines against Japanese encephalitis virus (JEV). The problem is that JEV's range is spreading, and more and more people at risk of the disease also live in areas where viruses like Zika are prevalent. [Read more.](#)



Mosquitoes' taste for human blood may grow as African cities expand

In most of the world, the *Aedes aegypti* mosquito is notorious for biting humans and spreading dengue, Zika, and other viruses. But in Africa, where the mosquito is native, most *Aedes* prefer to suck blood from other animals, such as monkeys and rodents. A new study suggests, though, that their taste for humans may rapidly expand—and with it their ability to spread disease. By surveying the range of *Aedes* biting preferences across Africa, the study shows that dryness and dense populations favor strains that target people. Those conditions are likely to intensify in Africa with climate change and increasing urbanization, though not everywhere. [Read more.](#)

Coronavirus overshadows another dangerous viral outbreak



SINGAPORE — The first of Yuli Irma's children to fall ill with a fever was her 6-year-old girl. The next day it was her 13-year-old daughter, followed by her 12-year-old son. Living on the outskirts of Jakarta, the Indonesian capital, Irma feared her children were stricken with the coronavirus. But blood tests revealed they had dengue fever, another viral disease that's in the throes of an outbreak but has been overshadowed by COVID-19. [Read more.](#)

'Dengue kills too': Latin America faces two epidemics at once



As the coronavirus kills thousands and dominates government attention across Latin America, another deadly viral infection is quietly stalking the region. Dengue - colloquially called breakbone fever for the severe joint pain it causes - is endemic in much of Latin America, but the spread of COVID-19 has pulled crucial attention and resources away from the fight against it, doctors and officials say. [Read more.](#)



Mosquitos: Pests or deadly predators?



The mosquito is a well-known carrier of a wide array of diseases that are harmful to humans. While the coronavirus pandemic paralyzed the world in the last year, mosquitos have caused suffering to populations and civilizations throughout history. Michelle Miller speaks to Timothy C. Winegard, author of "The Mosquito: A Human History of our Deadliest Predator," about the dangerous pest's effect on humanity. [Watch the video.](#)

Volcanic glass spray effective in controlling mosquitoes



An indoor residual spray made by combining a type of volcanic glass with water showed effective control of mosquitoes that carry malaria, according to a new study. The findings could be useful in reducing disease-carrying mosquito populations - and the risk of malaria - in Africa. [Read more. Check the original article.](#)

DISEASE OUTBREAKS

To find out where the latest disease outbreaks have occurred visit:

[Epidemic and emerging disease alerts in the Pacific region](#) - Produced by the Pacific Community (SPC) for the Pacific Public Health Surveillance Network (PPHSN).

[Disease Outbreak News](#) - World Health Organization.



NEW ZEALAND BIOSECURE



[Public Health Surveillance](#) - Institute of Environmental Science and Research (ESR) - Information for New Zealand Public Health Action.

[Communicable disease threats report](#) - European Centre for Disease Prevention and Control

RISK MAPS

[Dengue Map](#) – Centres for Disease Control and Prevention

[Zika Map](#) – Centres for Disease Control and Prevention

[Malaria](#) – Centres for Disease Control and Prevention
