NEW ZEALAND BIOSECURE

BORDER HEALTH NEWSLETTER – May 2017

WELCOME!

Kia Ora Koutou, as the weather continues a generally downward trend towards winter, sample numbers have continued to decrease across the country. Interceptions have become less frequent over the past month. Zika virus is still the hot topic this month especially after finding that a mosquito species from North America, *Aedes vexans,* has the capability to transmit the virus and some cases of Zika infection have been found in India.

Some of you may have already known, that Matthew Chaplin has moved on to his new job as an accountant. We wish him a very successful career and wish him well for his future.

SURVEILLANCE RESULTS

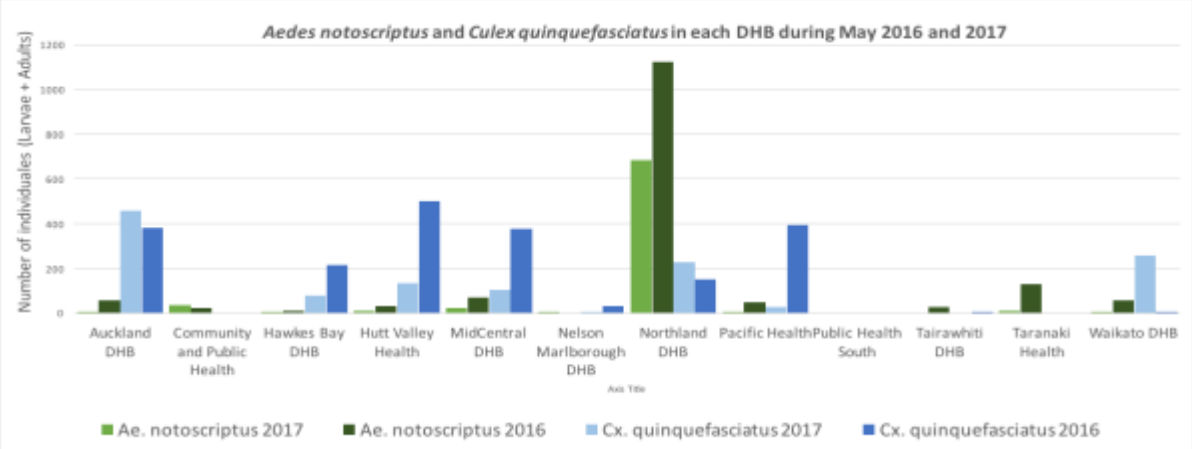
During May 829 samples were collected by staff from the 12 DHBs with 175 positives, which is a significant decrease from last month. The number of *Culex quinquefasciatus* larvae is still high but is showing a 38% decrease in relation with the previous year.
Recently we have been seeing a decrease in the number of *Culex asteliae* compared to last year. The last storms and cold weather could have affected the *Opifex fuscus* population which showed an 80% decrease in relation to last year. Meanwhile *Culex pervigilans* adults and larvae numbers have doubled.

Adults and larvae numbers found by the surveillance program during May of last year and this year.

Species (common name)	Adults		Larvae	
	May 17	May 16	May 17	May 16
Aedes antipodeus (winter mosquito)	18	4	Nil	Nil
Ae. australis (saltwater mosquito)	Nil	Nil	Nil	1
Ae. notoscriptus (striped mosquito)	40	455	743	1132
Coquilletidia iracunda	Nil	Nil	Nil	Nil
Coq. tenuipalpis	Nil	Nil	Nil	Nil
Culex asteliae	Nil	Nil	1	30
Cx. pervigilans (vigilant mosquito)	12	6	276	139
Cx. quinquefasciatus (southern house mosquito)	159	426	1120	1626
Culiseta tonnoiri	Nil	Nil	Nil	Nil
Maorigoeldia argyropus	Nil	Nil	Nil	Nil
Opifex fuscus (rockpool mosquito)	Nil	Nil	25	206
Total	**229**	**891**	**2165**	**3134**

Phone 021 522 476 Email Taxonomy@nzbiosecure.net.nz or Enquiries@smsl.co.nz Website www.smsl.co.nz
BIOSECURITY SPECIALISTS

Aedes notoscriptus numbers have decreased considerably in general and in all the DHBs except for the Community and Public Health (see figure below). Northland shows the highest numbers for *Ae. notoscriptus,* both this year and last year. The numbers of *Cx. quinquefasciatus* increased in three DHBs this year in comparison to last year: Auckland, Northland and Waikato.



Comparison between introduced mosquitoes sampled in each DHB during May 2016 and May 2017.

INCURSIONS AND INTERCEPTIONS

During May, 9 suspected interceptions have been recorded.

Suspected interceptions during May 2017			
Date	**Species**	**Location**	**Circumstances**
23	1 Female *Culex quinquefasciatus*	TF Auckland - Turners & Growers. Monahan Road Mt Wellington.	Dead inside wooden crates from Tonga.
22	1 Female *Culex quinquefasciatus*	Auckland Airport, ITB, MPI Search Bench.	Dead in the Search room.
19	1 Female *Culex quinquefasciatus*	Auckland Airport, ITB, X-Ray Room.	Found alive in X-ray room.
19	1 Female *Culex pervigilans*	40 Ron Guthrey Road, Christchurch.	Found alive in Caravan from UK.
05	1 Female *Culex quinquefasciatus*	Auckland Airport, ITB.	Found alive flying around.
05	1 Female *Culex quinquefasciatus*	Auckland Airport, ITB, MPI Search Bench.	Found alive flying around.
03	1 Male *Culex quinquefasciatus* 1 Female *Culex quinquefasciatus* 1 Female *Culex sp.*	TF Auckland - MG Marketing, Great South Road, Penrose.	Found alive in a box of Bananas from Ecuador.
02	1 Male *Culex quinquefasciatus*	TF Auckland - Turners & Growers. Monahan Road Mt Wellington.	Found alive in pallet of mangos from Mexico.
01	1 Female *Culex quinquefasciatus*	Auckland Airport, ITB, Green lane.	Found alive sitting on a wall.

Phone 021 522 476 Email Taxonomy@nzbiosecure.net.nz or Enquiries@smsl.co.nz Website www.smsl.co.nz
BIOSECURITY SPECIALISTS

NEWS ARTICLES FROM AROUND THE WORLD

The mosquitoes are back and biting

While we are at the end of the Mosquito season, the Northern hemisphere is just starting. If you are traveling to the USA have a look at this news.

Stanford scientists model how rising temperatures may influence mosquito behavior and disease risk

Mosquito season extends past the summer months in many parts of the world, thanks to the rise in temperature with climate change. Researchers modeled how rising temperatures might influence mosquito behaviors and disease risk around the world. Temperature controls several factors that underlie the time it takes for a virus to be transmittable to humans. Knowing the optimal temperature for disease transmission is critical for predicting future disease rates. Read more.

Brisbane researchers synthetically re-create Zika virus to better understand birth defects

Researchers at the University of Queensland School of Chemistry and QIMR Berghofer Medical Research Institute in Brisbane have synthetically re-created Zika virus in the laboratory, a breakthrough which will help to understand the virus and the fetal brain defects it causes. The project showed the synthetized virus could induce a medical condition – microcephaly – in pregnant mice and was able to be transmitted by mosquitoes. Read more.

Phone 021 522 476 Email Taxonomy@nzbiosecure.net.nz or Enquiries@smsl.co.nz Website www.smsl.co.nz
BIOSECURITY SPECIALISTS

Miami is key point for transmission of Zika virus to the US

By studying the viral gene sequences at various points of the outbreak, the researchers at the Scripps Translational Science Institute (TSRI) have been able to identify separate evolutionary paths, from which they mapped routes of transmission of the ZIka virus to the US. This has provided insight into the most likely points of Zika re-entering the country this year. Researchers have mapped the entry of the Zika virus into the US by analyzing its DNA. Miami was found to be a hot spot for transmission of Zika. Read more.

Study finds Native North American mosquito can transmit Zika

A new study from researchers at the University of North Dakota found that *Aedes vexans,* a mosquito species indigenous to North America, has the capability to transmit Zika. This is the first native North American mosquito species shown to be able to transmit the virus. *Ae. vexans* could serve as a potential vector for Zika virus in northern latitudes because of its wide geographical distribution, extreme abundance and aggressive human biting activity. Read more.

Aedes vexans, which is native to North America, can transmit the Zika virus.

Zika virus: Brazil says emergency is over

Brazil has declared an end to a national emergency over the Zika virus after cases dropped 95% between January and April. The chairman of the World Health Organization's emergency committee said that what appears to have happened is there is now herd immunity in the population because so many people were infected. So now the virus can't find enough people who don't have protection, to circulate in. Read more.

Phone 021 522 476 Email Taxonomy@nzbiosecure.net.nz or Enquiries@smsl.co.nz Website www.smsl.co.nz
BIOSECURITY SPECIALISTS

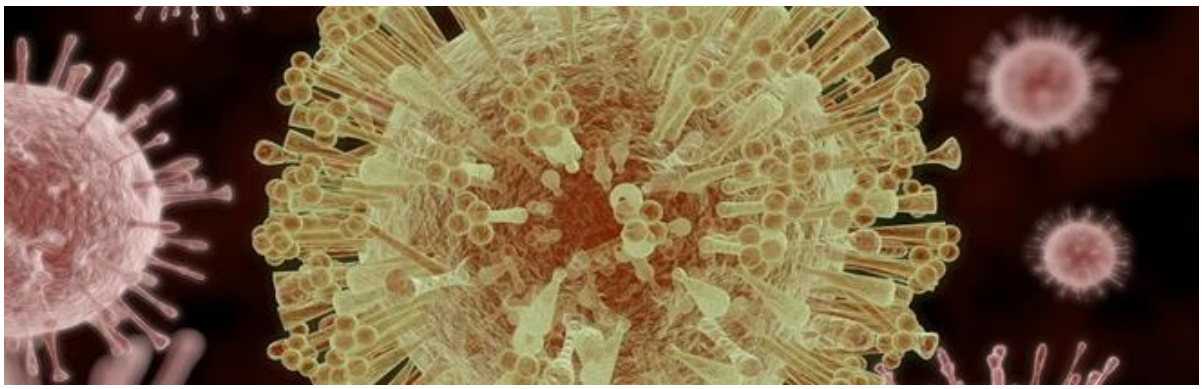
The Zika virus has been linked to microcephaly, or abnormally small heads.

Brazil declares end of Zika state of emergency but UK urges caution

The Brazilian government may have declared the end of the state of emergency related to the Zika virus, but UK health authorities still warn travellers of a "high risk of Zika virus transmission". Read more.

Zika entry into India – cause for concern

The Zika virus has finally landed in one of the largest and most populated countries in the word, India. The World Health Organization reported that surveillance efforts should be strengthened here to curb the menace and prevent its spread. Three confirmed cases of Zika virus infection were reported from the state of Gujar, according to reports these three confirmed cases have never travelled outside the country. Read more.



An illustration of the Zika Virus. Image Credit: AuntSpray / Shutterstock.

Phone 021 522 476 Email Taxonomy@nzbiosecure.net.nz or Enquiries@smsl.co.nz Website www.smsl.co.nz
BIOSECURITY SPECIALISTS

Cheap test might pinpoint where Zika mosquitoes lurk

An existing DNA-screening technology may help determine whether Zika-transmitting mosquitoes are present in local population, and may help reduce the reliance on harmful chemicals to control them. The technology is called loop-mediated isothermal amplification (LAMP), it easily detected Zika virus in human and mosquito samples. Read more.

DISEASE OUTBREAKS

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

World Health Organization

Public Health Surveillance- Information for New Zealand Public Health Action

---

Phone 021 522 476 Email Taxonomy@nzbiosecure.net.nz or Enquiries@smsl.co.nz Website www.smsl.co.nz
BIOSECURITY SPECIALISTS