



Vendredi 27 octobre 2023, 10:30

Grande salle + visioconférence

ADAPTIVE PROCESSES THROUGH TIME IN AN GLOBAL AGRICULTURAL PEST MOTH

par

Angela McGaughran,

Univ. Waikato, Hamilton, New Zealand



- I am primarily interested in combining genomic approaches to examine evolutionary processes, with a special focus on the genomics of biological invasion.
- During this talk, I will focus on my historical DNA research on Australian pest moths (*Helicoverpa armigera*) that were collected over the last 100 years. Using NGS sequencing (exon capture) of ~1300 loci and >250 samples, I have examined three main elements, providing insights from both the wet-lab and dry-lab. For the former, I will discuss: (a) findings relating to the relationship between sample age and several indicators of NGS library/sequencing quality; and (b) insights into evolutionary history using mitogenomic data obtained as bycatch from the targeted capture experiments.
- For the latter, I will describe my work comparing historical, insecticide-free pest genomes to contemporary genomes that are currently exposed to insecticides. In this context, I will present data relating to genomic shifts between pre-, mid-, and post-insecticide sampling points, and discuss how these further our understanding of the mechanisms underlying rapid evolution.

THE FALL ARMYWORM INVASION OF NEW ZEALAND

par

David Teulon,

Better Border Biosecurity, Christchurch, New Zealand

- Fall armyworm (FAW), *Spodoptera frugiperda* (Lepidoptera: Noctuidae) can feed on over 350 plant species and is a pest of corn/maize and other crops. It is native to the Americas and has recently spread to Africa, India, China, Japan, Southeast Asia, Indonesia, Australia and New Zealand.
- In New Zealand it was first found at Tauranga in March 2022, and was assumed to have been wind-blown from Australia. By April 2022 it had been recorded at numerous locations in the upper North Island.
- This paper documents the initial discovery of FAW in New Zealand, the government and industry incursion response, and summaries information on its entry pathway, initial internal spread, overwintering ability, host plants, and potential impact – including to New Zealand indigenous plant species. FAW is a sub-tropical/tropical noctuid insect, and the extent to which it will overwinter and develop damaging populations in New Zealand is still being determined. FAW was unable to be eradicated, is now well established, can survive the winter in northern parts of the country, and is now under long term management.