Fall armyworm update

Friday 1 November, 2024

Key points

- **Current status:** No confirmed reports of fall armyworm (FAW, *Spodoptera frugiperda),* across New Zealand this season.
- **Crop vulnerability:** Maize and sweetcorn remain the primary crops at risk. Earlier planted crops are likely to be less vulnerable to FAW as they should be well established potential FAW pressure increases.
- **Natural controls:** *Cotesia ruficrus*, spiders, and other predators remain key allies in managing FAW populations. These are widespread throughout New Zealand.

Regional Overview for 2023/24 season:

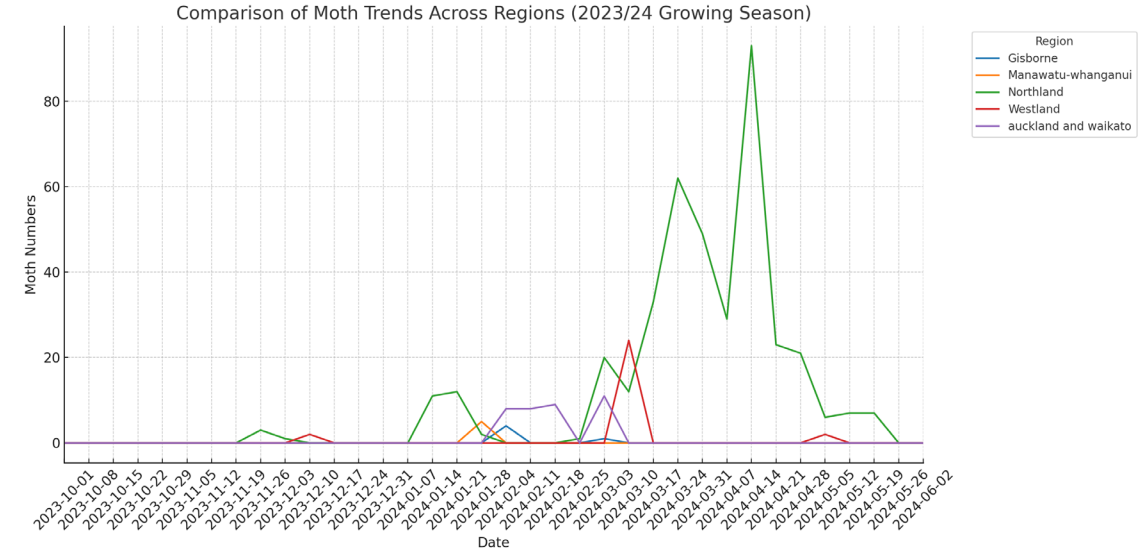

Fig 1. Weekly monitoring of moth populations across regions to track seasonal trends and regional variations.

Northland

No confirmed finds so far this season. The first moth captures last year occurred at the end of November, with larvae populations building through December and an increase in moth numbers from the end of January onwards. Given Northland's climate, it remains the most likely region for successful overwintering of small FAW populations. Growers are encouraged to get maize in the ground as soon as soil temperatures reach 10°C and are rising. Early planting helps ensure crops get a head start before any potential FAW population build up.

Auckland and Waikato

FAW activity last year was primarily recorded in the Auckland region and the very top of Waikato, with no significant finds in central Waikato. Scouting remains critical to ensure early detection and effective management. Beneficial insects such as *Cotesia ruficrus* have been observed, contributing to the suppression of early-stage larvae.

Bay of Plenty

Last season, FAW populations were mainly observed in coastal areas. Remain vigilant, particularly with regard to paddocks adjacent to last season's affected areas. Early planting of maize will help reduce potential FAW impacts.

Gisborne

While Gisborne recorded only a few FAW finds last season, the proximity to other affected regions suggests a need for continued monitoring. Focus on scouting, particularly for any signs of larvae in emerging crops.

South Island (Tasman, Canterbury, Marlborough, Westland)

The earliest FAW finds in the South Island last season were in in Westland, in mid-December. Tasman and Marlborough also recorded some FAW. Coastal climates, e.g. Westland, may support small overwintering populations. Vigilance is key, particularly near previously affected maize paddocks.

Preparing for the growing season

Plant early
Plant asap after when soil temperatures reach 10°C and are consistently rising. This will help ensure robust early growth, providing crops with the opportunity outgrow FAW damage.

Minimise insecticide use
Overuse of chemicals can disrupt beneficial insects that naturally control FAW populations. *Cotesia ruficrus* was identified last year as a key parasitoid, along with generalist predators like spiders, which help manage egg and early larval stages of FAW. Consult with advisors on best practices to balance pest control while protecting beneficials.

Managing similar pests in maize and sweetcorn
In addition to fall armyworm, there are two similar pests that growers need to be aware of: *Mythimna separata* (cosmopolitan armyworm) and *Helicoverpa armigera* (corn earworm). Both pests affect maize and sweetcorn, and can complicate pest management strategies if not properly monitored.

While various insecticides are available and labelled for control of these pests, it is crucial to carefully consider their interactions within the crop. Spraying to target one pest may unintentionally impact another, either by altering pest population dynamics or disrupting beneficial insects.

Last season we observed large infestations of cosmopolitan armyworm following the use of older chemical treatments. This highlights the need for integrated pest management (IPM) strategies that minimise the unintended consequences of chemical use. Growers should consult with their advisors to select the most effective insecticides while balancing the protection Cotesia ruficrus and natural predators, which play an essential role in keeping pest populations under control.

Photo (L). Cotesia spp cocoons. These have been recorded across New Zealand and signify the successful parasitism of a caterpillar. This little wasp has a proven track record against cosmopolitan army worm (Mythimna separata) and can effectively parasitise FAW.

Fall armyworm SFFF project update

The FAW SFFF project has made significant strides in strengthening surveillance networks, integrating soil temperature data into phenological models and refining FAW prediction tools. Last season's data is currently being analysed;updates are expected soon. FAR, Vegetables NZ, Process Vegetables and MPI are supported by Plant & Food Research, AgResearch and HortPlus in this work.

Surveillance success

Last season, the trapping network recorded 399 adult FAW moths, with a notable increase in captures from January 2024 onwards as larvae populations grew. Additionally, reports from growers and agronomists have contributed to a more comprehensive dataset, allowing better understanding of FAW distribution.

Molecular analysis

FAW specimens from different regions have undergone DNA sequencing to verify identification and to be archived for future genomic research. This data will provide valuable insights into population dynamics and possible adaptations in New Zealand's environment.

Recent observations and research

Turf grass findings

A small number of FAW larvae were observed in turf grass in late autumn, these were in close proximity to harvested maize paddocks. If you observe patches of your lawn or grass paddock dying off, it may be worth investigating. It is still unclear which specific host plants may support overwintering larvae, but this is of great importance to understanding its phenology in New Zealand.

Supporting beneficial insects

Preserving natural enemies of FAW is crucial. Encouraging native vegetation around fields can offer refuge for beneficial insects. Resources and guides on enhancing farm biodiversity are available on the FAR website https://www.far.org.nz/resources/far-focus-13-biodiversity .

What to do if you find FAW

1. **Photograph:** Suspected FAW can be easily mistaken for other pests. Take clear photos of the head, body, and rear.
2. **Catch:** Samples are crucial for positive identification and DNA testing.
3. **Trap:** If you would like to monitor a trap, or have FAW in your crop please reach out.
4. **Contact us:** Reach out to the Foundation for Arable Research at FAR@far.org.nz or Biosecurity Officer Ash Mills at ashley.mills@far.org.nz.

Useful links

FAW identification, guides and relevant fact sheets: https://www.far.org.nz/resources/fall-armyworm-identification-and-background