



There were plans to write our first apiculture newsletter much earlier than April!

The mornings are much cooler now and it's not hard to imagine that winter is just around the corner. Just because it's getting colder though doesn't mean that the apiculture jobs slow down.

In this newsletter, we have

- *International & upcoming events*
- *Publication of Foster Method*
- *Lake Sinai Virus*
- *A NEW test for Amitraz resistance*



International Events

June 15-17 Asian Apiculture Assoc. conference & International Apitherapy Forum, Perth, Australia.

September 23-27 2025 Apimondia 2025, Copenhagen, Scandinavia



UPCOMING EVENTS

June 17 Honey Bee Research Symposium, Plant & Food Ruakura

June 18 ApiNZ Summit Day, Waikato University

June 19 NZ Beeswax Day Open Day & Science workshop, Distinction Hotel, Hamilton

June 26 Beekeepers Day Out, Ashburton

August 10-13 Southern North Island Beekeeping Group, Whanganui

Publication of The Foster Method in the Journal of Apiculture Research

At nature, we're proud that we developed the unique swabbing method for detecting American Foulbrood in hives. This year The Foster Method was published in the Journal of Apiculture Research - a well-known, peer-reviewed scientific journal that publishes original research in the field of apiculture.

We want to thank local Tairāwhiti beekeeper Barry Foster for all his support along with John Maynard, another AP2inspector for whom this paper is dedicated too and is sadly missed by the industry.

Thank you also to all the beekeepers locally as well as John Scandrett & the Otago/Southland Discussion Group as well as our lab crew for all their hard work to make this novel technique possible.



Request the journal paper here

Watch the technique here

Lake Sinai Virus

-John Mackay, Technical Director

We always find ourselves working on things that can harbour a lot of different viruses – and bees definitely fall in to that group. It was the published report of Deformed Wing Virus causing major overwintering losses, more than 10 years ago, that got us to set up the first bee virus testing PCR panel in New Zealand.

I'd bore you with the story of how that got me into beekeeping but that's for another time.



We have a few weird and wonderful virus and bacterial assays that we've designed and worked up into tests – many using synthetic controls because the viruses weren't known to be present in NZ (e.g. DWV B and C or Solinivirus-1 reported last year in the USA). One of the virus groups we've been working on for a few years is known as the Lake Sinai Virus group. We say 'group' because a number of different strains have been identified over the past 10 years, imaginatively named LSV-1 to 7.

Many viruses in bees have no obvious (overt) symptoms – they may originate from other species such as wasps or bumblebees and be detected only peripherally in honeybees. While some strains of the LSV group have an unknown effect, LSV-2 has been shown to be linked with (but not necessarily cause) weaker colonies.

Our research assay that we have run across many bee samples detects (but does not differentiate) the strains LSV1 to 5 – we were interested to see the total virus loading from this group (and this was before strains 6 and 7 were reported). Recently reported in Korea last month with high prevalence, the virus group is also prevalent in NZ bees and Korea have also confirmed the linkage of higher levels of LSV-2 with winter losses. We do have research tests for the different strains but these are not amenable to higher throughput testing . . . but we're now going to be looking closer at our test for LSV-2.

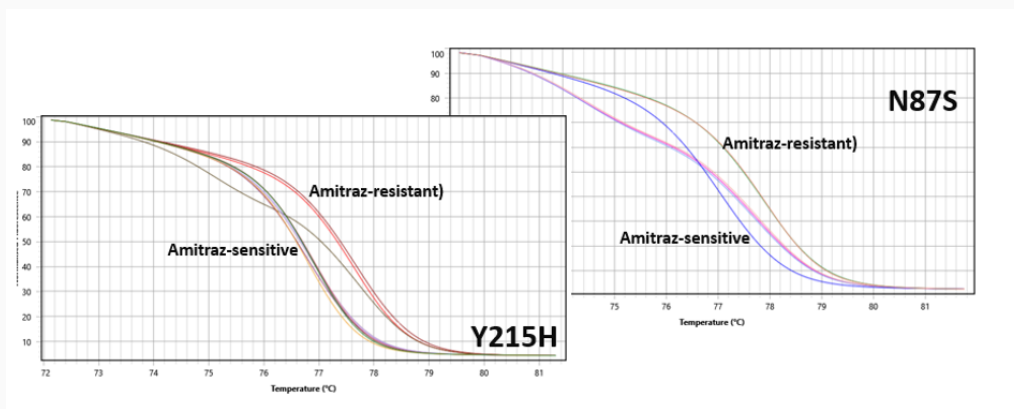
*The nature bees
doing their thing*



A NEW test for amitraz resistance

Recently DNA mutations have been identified in a particular varroa gene that mean the varroa are resistant to amitraz (Apivar and Apitraz in New Zealand registered products). Two independent mutations were reported in 2022 – one found in European varroa and another one in the same gene - one of the octopamine receptor genes – the major target for amitraz (Hernández-Rodríguez et al., 2022).

dnature has developed rapid screening tests for both mutations, down to the level of a single varroa mite.



More recently, a follow-up report has confirmed that the Y215H mutation is indeed the cause of resistance to amitraz in the USA (Rinkevich et al., 2023,) where the presence of the mutation was confirmed in nearly three quarters of all varroa showing resistance when exposed to amitraz chemical in a container test.

These tests - together with our existing tests for pyrethroid resistance (Apistan and Bayvarol) - are now available, only from dnature.

Suspect resistance ?

Our recommendation should you suspect resistance – keep the varroa from your alcohol/sugar/CO2 shake and notify the supplier of the treatment. The manufacturers want to know of any suspected resistance issues. Once you've stored the (labelled) samples, an alternative treatment can be immediately applied.

References

Hernández-Rodríguez, C.S., Moreno-Martí, S., Almecija, G. et al. (2022). Resistance to amitraz in the parasitic honey bee mite *Varroa destructor* is associated with mutations in the β -adrenergic-like octopamine receptor. *J Pest Sci* 95, 1179–1195. doi.org/10.1007/s10340-021-01471-3

Rinkevich, F. D., Moreno-Martí, S., Hernández-Rodríguez, C. S., & González-Cabrera, J. (2023). Confirmation of the Y215H mutation in the β 2-octopamine receptor in *Varroa destructor* is associated with contemporary cases of amitraz resistance in the US. *Pest Management Science*. doi.org/10.1002/ps.7461

We hope you've enjoyed this newsletter. If you have any questions, please don't hesitate to contact us - the dnature team.