

# The Waggle

Gold Coast Regional Beekeepers Inc.

*“Furthering knowledge in Beekeeping by assisted learning and practical experience”*

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**Edition: March 2018**

## ***Next Information and Training Meeting***

**Date:** 17 March 2018

**Time:** 10:00am

**Where:** Graham Beech's NT Bees Apiary - 3139 Beaudesert-Nerang Rd, Biddaddaba, 4275

On the Day Graham will have Queen bees (\$35 each) and a couple of Nuc's (\$230 each) available for sale. This is a good chance to install a new queen in your hives and to allow her to over winter and be ready for a good build up during spring.

For all beekeepers the day at NT Bees is a real eye-opener as to what happens in a major Apiary, from the Artificial Insemination of Queens, the Queen bee breeding programme right through to the raising of Nuc hives. It is definitely one of the best meetings you will attend.

A BBQ will be held on site at the end of the meeting so it would be appreciated if members could bring along a salad to share on the day. If you plan on attending could you please advise Roslyn de Boer (Mob: 0417 142 072) for catering purposes.

## ***Regional Report***

Our first meeting of the year was held at the Vietnam Veterans Nerang where the hives were inspected and 6 frames of honey taken, extracted and replaced using the barrier system to ensure that there is no exchange of frames between hives.

Charlie and Leo Rasack supervised the extraction by Peter and Gray to ensure that all was done in a proper fashion.

During the week that was hot and humid that the Coast went through, we received a call from a local Pest Control company to ask if we could assist with the removal of a bee hive in a wall cavity of a house.



Extraction of honey at Vietnam Veterans.

This house was undergoing major refurbishment after white ants were found to have eaten out the majority of the timber studs in-between the inner gyprock lining and exterior brick veneer walls.

Hoping that we could at least save some of the hive Mike Hynes and myself turned up on site at Coombabah before 8am the next morning. With a brood box and wired frames, plus a couple of buckets to gather the any honey or broken gyprock, we set to work to remove what we thought would be a small area of gyprock lining to relocate the hive. For the next hour we removed bucket after bucket of comb honey. Mike kept getting stung, then the woose put gloves on....he must be getting old.

When we eventually struck brood under the window we found that there was only scattered drone brood. This lead us to summerise that the queen had either swarmed recently, so that there was now a Drone layer in the hive. Towards the end of the gyprock lining removal we found a small area of capped brood which we removed and fixed it to the wired frames using elastic bands.



About 1pm we made the decision to leave the frames of brood that we had collected in the brood box on the floor next to where it had been extracted from to try to entice the queen out to the brood overnight. Early the next morning there was very little activity near the brood frames and no evidence of bees balling to indicate the queen was nearby. Therefore, the decision was made to sweep all the bees into the brood box and clean up the room, as the builder had the owner coming to the site at 11am for an inspection.

The hive was then removed to Mikes apiary where a new NT Bees queen was installed 2 days later, the comb extracted of its honey leaving Mike with just over 40kg of honey for his effort. Remember, this was a joint effort - Mike did the work and took most of the stings and I took all the photos and got the credit. :-))

For those members who want to help out on these ventures, you must have:

- a full brood box ready at all times, (i.e. nine frames wired with no foundation and a couple of spare foundation frames )
- be prepared to respond at a phone calls notice
- let me know what areas you are prepared to attends.

Remember, if you come out with your equipment prepared and ready to help do the removal, you get to keep the the hive.

If you are interested email me with your details, availability times etc to [president@gcrb.org.au](mailto:president@gcrb.org.au).

Looking ford to seeing you ALL at our next meeting at NT Bees.

Cheers. JP

## ***How “Bee Safe” Products Can Be Just the Opposite***

What does it mean for a pesticide to be “bee safe”? Most people can picture a honeybee colony killed by highly toxic pesticides — piles of dead bees killed all at once. We know that the pesticides causing this type of acute death are not safe, and their labels generally reflect their toxicity.

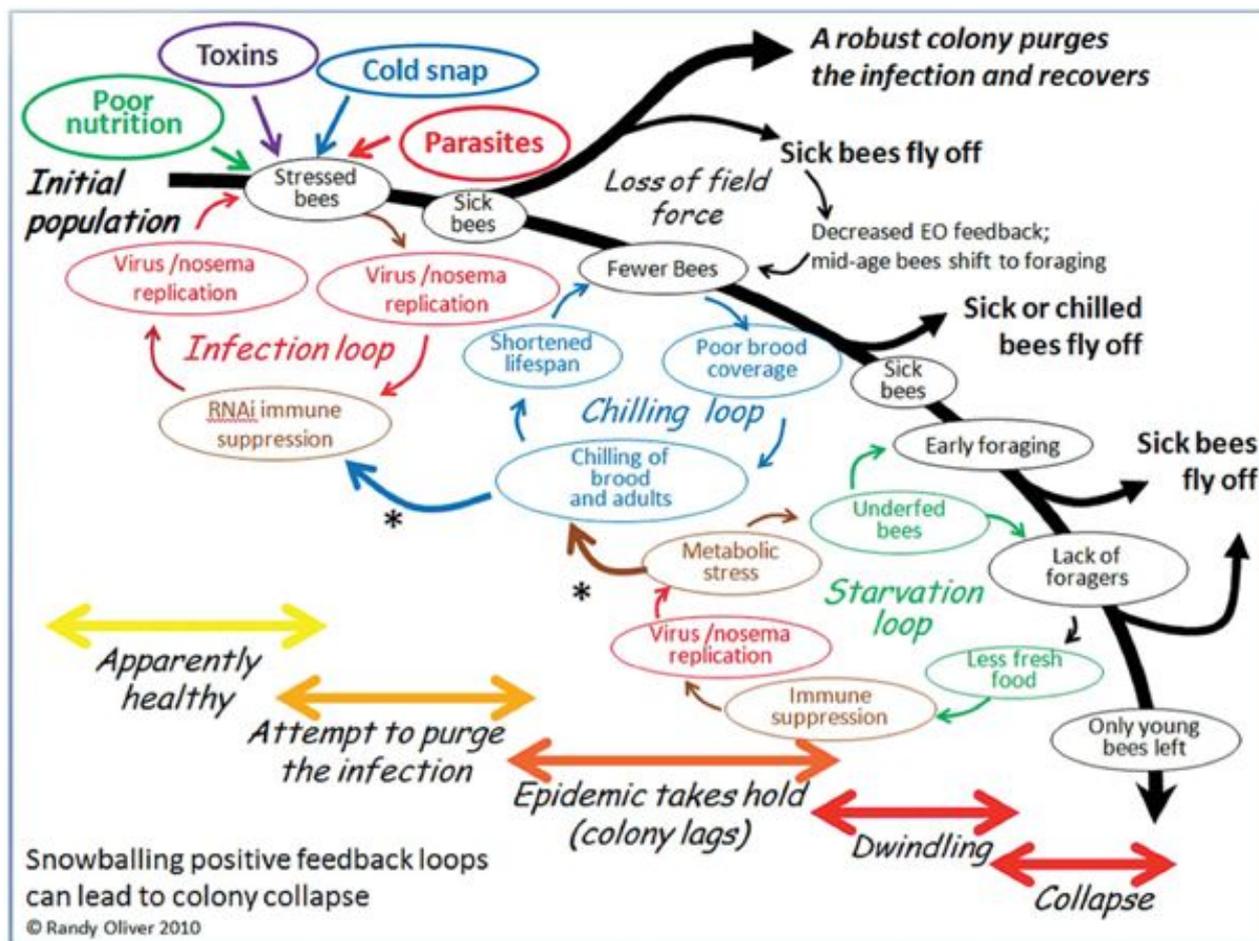
However, these dramatic bee kills are actually quite rare; often pesticide damage to honeybee colonies is more gradual and caused by less toxic chemicals. Many of the products considered “bee safe” can actually be worse for colony loss than chemicals that are labeled as highly toxic to bees, because they initiate a cascade of events that kills an entire colony over time.

When honeybee colonies die from exposure to sub-lethal chemicals, it is not a dramatic, instantaneous death, but a slow dwindling over time. This dwindling death is a direct result of the super-organism structure of the colony.

A healthy colony is composed of a diverse workforce, with each age group fulfilling a distinct role. Pesticide stress disrupts the health of the hive by altering the demographics and social hierarchies that make the hive function as one super-organism.

## Six Stages of Colony Death

Stressors like pesticides can kill a honeybee colony over time, even when they are not highly toxic to individual bees. This concept is elaborated on below.



1. Stress. Most pesticide danger is from sub-lethal effects, when a pesticide does not immediately cause death, but severely disrupts a bee's health and ability to function properly. Examples of sub-lethal effects include behavioral changes, difficulty navigating, increased disease susceptibility, decreased sperm counts, etc. These sub-lethal effects cause bees to become stressed.

2. Infection. A stressed colony is at high risk of developing disease. When a colony experiences disease they can enter an infection loop, creating more disease in the hive. When honeybees are sick they will fly off, rather than die within the hive, causing hive population to be reduced.

3. Chilling. Honeybee larvae and pupae (known as brood) need to be kept warm (90°F-95°F) as they develop. As the hive population is reduced, fewer bees are available keep the brood warm. If hive temperature is too low, the larvae may not properly develop, further reducing the hive population.

4. Early foraging. Foragers are the oldest bees in the colony, and they express a chemical known as ethyl oleate (EO) that restricts younger bees from becoming foragers too early,

allowing each bee to do the jobs appropriate for their age. As the foragers are lost to stress and disease, the reduction of EO prompts younger bees to start foraging. Early foraging causes bees that should be keeping the brood warm and fed (nurse bees) to abandon their posts and head to the field. The brood becomes chilled, stressed, and unhealthy, which means that the newly emerged bees will not be strong enough to support the colony.

5. Starvation. The loss of nurse bees leaves the larvae without adequate care, such as food and warmth, and the young bees starve. As the colony loses foragers, less food is brought back to the hive. As a colony starves, workers begin to withhold food from any older foragers that remain. They then begin to withhold food from larvae, and will instead eat the larvae to retain precious protein resources.

6. Collapse. Although bees remain in the hive, it is no longer a functioning super-organism. These sub-lethal effects from pesticide exposure set off a cascade of negative feedback loops, eventually leading to colony collapse.

### **Why Sub-lethal Formulations Are More Lethal to Hives**

When a pesticide is labeled as “toxic to pollinators,” it is because it is known to kill an individual bee outright. In some cases, these highly toxic pesticides may not kill a colony, because the exposed bee will die in the field and not make it back to the hive.

Bees that are exposed to sub-lethal pesticides will survive the exposure and return to the hive, carrying these pesticides with them on their bodies, or in collected nectar and pollen.

As bees bring pesticides from the field into the hive, the number of bees exposed dramatically increases, even exposing bees and larvae that never left the safety of the hive.

Pesticides can remain in pollen, wax, and honey for a long time, resulting in chronic exposure. For this reason, pesticides with sub-lethal effects can actually be much deadlier for colonies than highly toxic pesticides.

Just because a product is not labeled as “toxic to pollinators” does not mean the product is “bee safe.”

### **How to Reduce Bee Pesticide Exposure on Your Farm**

Because we cannot tell by a label if a pesticide will harm a honeybee colony, it is best to try to reduce overall exposure of pesticides. Every grower, even those that don't directly rely on pollination, can greatly impact bee health when making pesticide applications. Pesticides can drift onto nearby flowers, or contaminate water through runoff, exposing bees.

Here are some tips to help reduce the risk of pesticide exposure for bees on your farm:

- Don't solely rely on the label for all information regarding risk to pollinators. Just because a product is not labeled as “toxic to pollinators” does not mean the product is “bee safe!”
- Make applications at times when bees are inactive, such as after sunset, before sunrise, or when the temperature is below 50°F. This will allow for residues to dry, reducing bee exposure and the likelihood that residues will be carried back to the hive.

- Do not apply foliar pesticide applications during crop bloom. Do not apply systemic pesticides prior to the flowering period of your crop, as these products can accumulate in the flower's pollen and nectar resources.
- Use drift reduction practices and always spray when the wind is low. Remove any flowering weeds from crop plantings that may be contaminated during applications.
- When filling spray tanks, be sure not to leave behind contaminated puddles. Bees regularly drink from shallow water sources and can be exposed to high levels of pesticide from messy tank-filling. Ensure that all products are stored properly.
- If renting honeybee hives for crop pollination, don't place the hives directly in crop rows. Place hives in a sheltered location behind a tree line or hillside where they will be protected from sprays and other stress.

Meghan Milbrath is an Academic Specialist, Honeybees and Pollinators, Michigan State University.

Article by Meghan Milbrath | Jacquelyn Albert | February 13, 2018

Jacquelyn Albert is a masters student working with Dr. Meghan Milbrath, Academic Specialist, Honeybees and Pollinators, Michigan State University.

### ***Sentinel beehives provide coastal defence against catastrophic varroa mite invasion***

Stationed near the major ports of Australia's coastal cities are a group of closely monitored beehives designed to detect the varroa mite parasite that has the potential to decimate bee populations.

Surrounded by thousands of new cars, a coal loading plant, numerous shipping berths and smoke stacks in Port Kembla is a calm area of green space with one of Australia's most important hives.

It is a sentinel hive — a closely monitored colony ready to raise the alarm should a bee carrying the varroa mite arrive in a shipping container and join the swarm.

**"It's not if, but when [the mite arrives], and it's going to come in a container of food," beekeeper and sentinel hive custodian John Crouchley said. "We're the only country in the world that hasn't got the varroa mite problem."**

"It's in New Zealand and it's in New Guinea. It's a small mite like a tic that sits on the neck of the bee, sucks its blood and decimates the hive."

More than 65 percent of horticultural and agricultural crops produced in Australia require honey bees for pollination, meaning the destruction of beehives would be catastrophic for the country's food production.



*PHOTO: John and Justine Crouchley inspect sentinel bee hives at Port Kembla. (ABC Illawarra: Justin Huntsdale)*

Organisation Bee Aware said for every year Australia remains free of the varroa mite, industries that rely on honey bee pollination receive a benefit of \$50.5 million per year.

"Bees are the absolute epicentre of good things on a cherry orchard because without them, we would be stuffed," Central West New South Wales cherry, apple and grape grower Borry Gartrell said.

The Orange-based farmer contracts a beekeeper to bring in hives each year to pollinate his crops, providing an invaluable service to the livelihood of his farm on Mount Canobolas in Orange.

"It would be a tragedy if varroa mite comes to Australia because the rest of the world are in serious trouble," he said.

"There are lots of areas where they're hand-pollinating crops and [on our farm] we've planted areas that are dependent on something to come in and move pollen from one stage to another."

## How the sentinel hives work



*PHOTO: The varroa mite attaches itself to the back of the neck of bees. (Flickr: Randy OHC)*

Inside each sentinel hive is a pest strip that will kill the varroa mite. The hive has a mesh bottom board so any mite that is killed will drop onto sticky paper underneath.

"We take those out every six weeks and send them to the DPI and they monitor it," Mr Crouchley said.

"We've been doing it three years and, touch wood, we've had none [varroa mite]."

The National Bee Pest Surveillance Program is an early warning system run by Plant Health Australia, and delivered in New South Wales by the Department of Primary Industries (DPI), and beekeepers like Mr Crouchley and his daughter Justine.

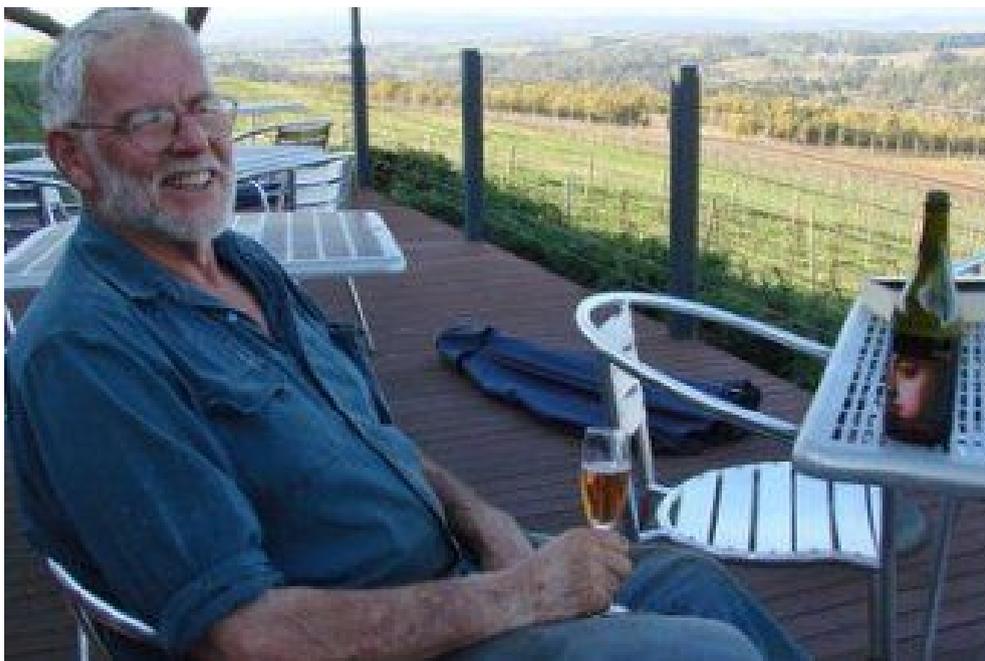
"We may not have that time [to operate the program], so enlisting them as volunteers certainly helps the cause," DPI's NSW Bee Biosecurity Officer Surveillance Mark Page said.

"These people are passionate about keeping bees and in looking after the hives they have the added benefit of collecting honey so it works both ways for everyone."

He said Australia should be proud to have the strongest honey bee biosecurity program in the world, but agrees with Mr Crouchley that the arrival of the varroa mite to Australia is inevitable.

"Varroa tends to take out wild colonies so only managed hives would remain, and it certainly puts an on-cost onto managing hives which would then filter down the chain so pollination events may incur a higher price."

### A coastal defender helping out inland farmers



*PHOTO: Orange fruit grower Borry Gartrell relies on a contract beekeeper to help pollinate his crops. (ABC Western Plains: Justin Huntsdale)*

Nestled into Mount Canobolas on his winery and fruit farm, Mr Gartrell is grateful for the work being done hundreds of kilometres away on the coastline to ensure he and other farmers have healthy bee populations to pollinate their crops.

"It reminds me of the home guard defending the shores of Britain," he said.

"It makes me feel confident the department is on top of this aspect of our production of fruit and vegetables in Australia."

A varroa mite invasion that attacks wild bee populations would significantly increase demand on the beekeepers he pays to provide pollinators for his crops.

"It wouldn't matter what the cost was [of the sentinel beehive program] — even if it was expensive — the cost if we get that mite in will be tens of millions, if not billions of losses if our bees fall on hard times."

*Article written by Justin Huntsdale, [ABC Illawarra](#) . Posted 23 Feb 2018, 7:10am*

# Notice Board

## Need new equipment?

New Equipment is available for your convenience from John and Roslyn de Boer, 0417 142 073. Please call to check on supply and arrange a convenient time for pick up. Postage can also be organised if required.

## Mark in your calendar

- ❖ Mudgeeraba Show - June 23rd and 24th.
- ❖ The Australian Bee Congress 27 - 30 June. Our President, John Polley, is one of the speakers at this event. Go to <http://australianbeecongress.com.au> for pricing and further details.

## Contacts

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