Protecting stingless bees from insecticides on farms

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Kin Kin Native Bees

Macadamia

❖ Using macadamia as an example as this industry is increasingly the biggest user of native stingless bees for pollination and the most studied.

❖ The price for macadamia NIS is at a record high and the industry is rapidly expanding in Bundaberg and central Queensland region
❖ Also have 25 years experience as a pest scout in macadamia.
❖ Record prices have led to growers wanting to see very low levels of insect damage. Virtually no organic macadamia growers left.
❖ Macadamia have numerous major and minor insect pests.
❖ Main pest season runs from July (pre flower) through to about late February (hardened nut).
❖ 3 of what are considered our major pests, fruitspotting bugs, sigastus weevil and macadamia nut borer, occur after flowering and so threats from insecticides are generally less as the bees are not foraging in the trees.

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Flowering from July to early October

❖ But unfortunately at least 3 pests also occur during flowering when bees are often in the orchard.
❖ At the moment when ETL’s are reached, chemical insecticides are the most common form of control used.
Lace Bug

Macadamia Flower Caterpillar
Only a few years ago Lace Bug was a minor pest and only found in NSW. It’s now considered a major pest in the Northern Rivers and has spread as far as Gympie to the north.

Both Lace Bug and Macadamia Flower Caterpillar have the ability to inflict 90 - 100% crop loss.

Thrips have increasingly become a problem with the erratic weather and can also cause significant crop loss in late flower, especially in QLD.
Insecticides

❖ The following insecticides are some of the chemicals which could be used during pre, early or peak flowering when bees are often on macadamia forchards.

❖ Trichlofon, Acephate, Methoxyfenozide, Diazinon, Pyrethrin and Methidathion.

Fungicides

❖ These insecticides can often be also in conjunction with a fungicide.

❖ Husk spot control measures include Pyraclostrobin, Copper or Carbendazim.

❖ Fungicides applied when bulk of the main flower is at match head size and often still late flowers out and bees still on farm.
Protecting your bees

- The macadamia industry is actually quite a low spray industry compared to some. If you are putting your bees on any commercial orchard speak to the grower about their spray program.
- **Communication is the key.** Talk to the grower. Ask them their spray strategies around flowering.
- Ideally growers are using an IPM (integrated pest management) strategy and a pest scout to monitor pest insect levels and help minimise insecticide use.
- If possible encourage the use of bio control agents and ‘softer’ chemicals such as methoxyfenozide or BT’s for pests such as flower caterpillar.
- Apply sprays in late evening or night when bees are not foraging to give time for chemicals to partially break down.
Hives are increasingly being left on farm permanently on communal stands.

Avoid drifting chemicals onto the hives.

Remove or tape and cover hives which are in the orchard during spraying

Provide alternate forage.