AUSTRALIA'S
HONEYBEE NEWS
"The Voice of the Beekeeper"
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Inside:

Cover Photo

Bees on Almonds

Photo E Saxvik

NSW Apiarists' Association Inc. Executive Council

L-R: Candice Clifford - Secretary Treasurer, Matthew Skinner - Vice President, Neil Bingley - President, Zac Alcock,Sam Lockwood, Ray Hull.

New Executive Council

At the NSW Apiarists' Association Inc. AGM held on 18 and 19 May 2023, new members of NSWAA Executive Council were elected by our members. We would like to introduce our new Executive Council for 2023 as follows:

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Matthew Skinner – Vice President – matthew.skinner@nswaa.com.au
Ray Hull – Executive Councillor – ray.hull@nswaa.com.au
Zac Alcock – Executive Councillor – zac.alcock@nswaa.com.au
Sam Lockwood - Executive Councillor - sam.lockwood@nswaa.com.au

Executive Portfolios

Australia's Honeybee News - Neil Bingley
Biosecurity - Matthew Skinner
Conference - All
Finances - Sam Lockwood
Honeyland - Ray Hull
Resourses - Zac Alcock

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PRESIDENT'S REPORT

Presidents Report July 2023

After several years absence I am once again representing NSWAA members.

The varroa incursion continues to be of major concern and on every beekeeper's mind, with those in the Red and Purple zones most affected to date. Although the number of IP's (infected premises) continue to expand, there is still an appetite to proceed with eradication efforts. If all beekeepers strictly follow the biosecurity orders in the various zones, there is still some hope that varroa can be banished from our shores. If on the other hand we as an industry give up on eradication efforts and must deal with this pest forever, then our production costs will skyrocket.

It is estimated that nationally, chemical costs alone would be around 8 to 10 million dollars, hive losses around 30% (currently around 10%) plus substantial increases in labour costs. All this extra effort for no extra reward.

Resource
It is extremely concerning that our industry continues to lose valuable resources through numerous avenues. One of most concern, is the non-recognition of Private land sites that are transferred to National Park estate. Another concerning development is the transfer of public lands to Indigenous groups and the possibility of substantially more lost resource.

I am currently drafting a letter stating our concerns to the NSW Environment minister and will also be requesting a meeting as soon as possible.

We are also trying to establish dialogue with the Werai group with the aim of allowing bee sites to continue on their lands.

Members that learn of potential loss of resource due to impending land tenure changes need to advise your executive council at the earliest opportunity as we cannot work for you with favourable outcomes if the tenure change has already occurred.

Conference 2024
Next year's conference will be held at THE RANGE east Wagga Wagga on May 23 and 24 with the Riverina branch to host a field day on Saturday May 25.

If members have suggestions for speakers at conference 2024, please advise info@nswaa.com.au with your ideas by the end of October 2023.

Almond Pollination
It is concerning having received reports of beekeepers that have organized to pollinate almonds are now being advised they are not required. If this situation is allowed to continue, then it will not only be varroa that inhibits supply of hives but the lack of confidence beekeepers have with both brokers and orchardists.

Next Meeting
The next executive meeting is scheduled for November 3 at Tocal.

Neil Bingley
President

Executive meet with NSW DPI Staff in Orange 28 July 2023

Pictured L-R: Kate Lorimer-Ward - Deputy Director General NSW DPI, Ray Hull, Scott Hansen - Director General NSW DPI, Neil Bingley, Matthew Skinner, Chris Anderson - NSW DPI Varroa Response Coordinator, Zac Alcock, John Tracey - Deputy Director General Biosecurity & Food Safety NSW DPI, Sam Lockwood, Nick Geoghegan - NSW DPI Apiary Sites Program Coordinator

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AHBIC recently held our AGM on the 8th July at Bendigo Victoria. Congratulations to Jon Lockwood on being elected Vice Chair of AHBIC. Congratulations also to Therese Kershaw, Stephen Fewster and Lindsay Callaway on being re-elected onto the executive. I look forward to working with Jon and the executive as we progress a review of AHBIC and our strategic plan.

There were approximately 10 motions for AHBIC out of the AGM. We will be actioning these motions as soon as practical. Our highest priorities are the varroa response and the WA *A. florea* incursion.

An initial Consultative Committee Emergency Plant Pest (CCEPP) meeting was recently held for the Red Dwarf Honeybee (RDH) and the Euvarroa mite that has been detected in northwestern WA. The WA government is the lead agency for this incursion and will investigate to delimit the incursion and will report back to the CCEPP in due course. We know that the RDH will be devastating for the environment and beekeeping in tropical areas of Australia should it not be eradicated.

There is very little peer reviewed literature on the Euvarroa mite except that it is a close relation of *V. destructor* and has similar biology. It has migrated from RDH to European honeybees in other parts of the world and is reported live for two years in its phoretic phase. Prof. Samuel Ramsay who presented at NSWAA conference is studying this mite and stated at the conference that this mite is a huge risk to Australian beekeeping. AHBIC will be lobbying strongly to have both these pests eradicated. This appears achievable as the incursion is on a peninsula and only a small amount of RDH has been detected. However, the CCEPP does not have enough information to make any decisions at this stage.

Back to NSW and the recent varroa mite detection at Gumble NSW in the blue zone which has triggered a review of the current varroa eradication plan. A CCEPP meeting was held recently with no decision confirmed and a request for more information from the lead agency. NSW DPI will therefore be reporting back to the CCEPP after their investigations are completed on the IP at the end of the month.

Many questions are being asked as to the process to change the direction of the response. Ultimately the decision lies with the National Management Group (NMG) who take recommendations from the Consultative Committee for Emergency Plant Pests (CCEPP).

The latest detections trigger a review of the response plan by the CCEPP. At that review affected parties will likely be asked to decide if the 'new information presented changes the technical feasibility of the response plan'. Any decision must be reached by consensus and if no consensus decision can be reached then affected parties must negotiate to reach a resolution. Negotiations could include changes to the response plan or the dissenting affected party leaving the response if in the minority.

AHBIC has one equal vote of the 26 votes at the CCEPP table and one equal vote of the 26 votes at the NMG table. These are biosecurity incidents and once the CCEPP has been raised for that biosecurity incursion due process is followed as outlined in the agreed deed. A lot of what happens in the CCEPP and NMG is confidential and cannot be shared. This is frustrating to AHBIC and other affected parties at times and understandably to industry members.

AHBIC is aware of beekeeper concerns over business viability and continuity with the increasing footprint of varroa. Communications will be able to be released shortly on our industries share of the cost of the varroa incursion. The total cost to our industry for the full 3-year response under the current agreed response plan version 3 is under $1.5 million. To put that into perspective:

NSW has over 300,000 hives – just *one* varroa treatment for every hive will cost $2.4 million collectively in NSW, just to purchase the miticide strips. Not including labour, travel and likely numerous treatments required. NZ treat for varroa twice a year.

There are challenges ahead for our industry. I am confident that with our knowledgeable CEO and passionate executive, industry can rise to these challenges and industry will be placed as best we can be on the other side of those challenges.

Stephen Targett

Chair

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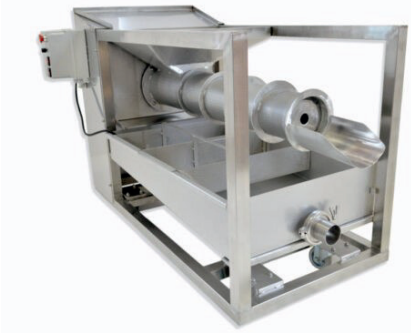

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Plant Profile: Blakely's red gum (*Eucalyptus blakelyi*)

The following plant profile is from *Honey & Pollen Flora of South-Eastern Australia* by Dr. Doug Somerville. This book focuses on the value of plants to nectar and pollen-eating animals, honey bees in particular. The result of over 30 years of research, it brings together scientific knowledge and the experience of hundreds of beekeepers into a valuable reference work. The book can be purchased from Tocal College here: www.tocal.nsw.edu.au/publications/bees

Honey and pollen flora feedback form:

NSW Department of Primary Industries values your experience working plants for honey and pollen. We would love to hear your feedback on the plant profiles republished in the Honey Bee News. Any help you can provide will be considered in the next update of Dr. Doug Somerville's *Honey & Pollen Flora of South-Eastern Australia*. Please submit your feedback here: https://forms.office.com/r/BmT1kFkF0B

Blakely's red gum

Eucalyptus blakelyi

An excellent tree for honey bees, producing both nectar and good quality pollen. The number of Blakely's red gum trees continues to decline due to dieback and lack of regeneration.

Timber from this species is reddish, of medium to good quality and durable.

Habit: Varies in appearance from a small, straggly tree to one of good form about 25 m high and 1 m in trunk diameter. The trunk is short, usually less than one-third of the tree's height. Most well-grown trees have large crowns with drooping branches.

Occurrence: Widespread in NSW throughout the Western Slopes and extends slightly onto the Western Plains in the north. It also occurs in the Northern and Southern Tablelands. Growing range extends into Vic. and Qld. It usually grows on alluvial flats and well-drained hillsides at altitudes of 150–600 metres, but is also found at slightly higher altitudes, particularly in the north. It occurs mainly in areas with an annual rainfall of 450–750 mm, and can tolerate heavy frosts. It prefers fairly rich, heavy loams with good moisture-holding qualities.

Over 70% of the sites worked by beekeepers in NSW are located on private property with the remainder on public land tenure.

Bark: The old bark is usually shed from the trunk in large flakes and irregular patches leaving a smooth, blotched, new bark that varies in colour from mottled grey to blue or white. Old bark may persist on the base of the trunk.

Leaves: Adult leaves are alternate, stalked, lanceolate, commonly partly curved, and 8–18 cm x 1.3–3.8 cm. They are thick, leathery, concolorous and grey-green. Venation is rather conspicuous and at about 40°–45° to the midrib, the intramarginal vein being prominent. Juvenile leaves are opposite for 2 or 3 pairs and then alternate. They have short stalks and are mostly oblong to ovate and slightly pointed.

Buds: Buds are conical to horn-shaped, 6–13 mm x 4–5 mm, and borne on stalks about 6 mm long. The operculum is conical and longer than the broadly conical calyx tube.

Buds appear on new growth during summer and reach maturity the following spring or early summer.

RATING

★★★★★

Flowering period												
Months	J	F	M	A	M	J	J	A	S	O	N	D
Response Level												

Flowers: The inflorescence is axillary and has 7–11 flowers on a rounded peduncle. Heavy flowering may occur every 2–5 years, the frequency depending on the seasonal conditions.

Flowers appear in October with the main flowering period from November through to January.

Fruit: Fruits are hemispherical or ovate and 5–8 mm in diameter. The disc is prominent and slightly convex. Valves are exserted and usually acute, usually 4.

Honey: The honey is amber and slightly turbid with a distinctive flavour. It is usually of good density and granulates readily.

Yields of 24 kg per hive can be expected.

Pollen: Produces large quantities of good quality, rich cream pollen and plays a major role in brood-rearing. Beekeepers rate it from medium to high. The crude protein levels range from 22.4% to 28.8% which is an indicator of very good quality pollen.

Honey Bee Industry Development Officer Report

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Fat Bees – Skinny Bees and their capabilities!

Adequate and good quality nutrition are crucial for the health and productivity of a honey bee colony. Both the quality and quantity of nectar and especially pollen are fundamental. Colonies deprived of sufficient pollen - either in quality or quantity - will use their own body protein to feed larvae. Brood reared on poor quality pollen produces adult bees with reduced longevity and colonies deprived of pollen will eventually cease rearing brood.

"If the colony does not have access to nectar and pollen, the system fails." – Somerville (2005).

Pollen – The bees' major source of protein (amino acids), fats (fatty acids), minerals, vitamins

- Pollen is stored as bee-bread by the addition of enzymes and nectar/ honey
- Mostly consumed by nurse bees for jelly production
- Required for gland development, brood rearing, and egg laying

Bees store about 1kg of pollen as beebread near the brood nest. During storage pollen undergoes a fermentation process whereby bees add enzymes and nectar/ honey to the freshly collected pollen.

Nutritional value of pollen

Pollen from different floral species can vary significantly in relation to protein (amino acids), lipids/ fats, mineral and vitamin content. For this reason, some pollen sources are considered of higher value than others in their contribution to honey bee nutrition. As an example, pollen produced by pine trees is considered to be of low value, with a protein level of around 7%. Paterson's curse and Banksias at 34% are excellent. Pollen needs to have a protein level of 20% to satisfy minimum honey bee dietary requirements.

"A colony would need to collect 3kg of pollen at 20% crude protein to be equal to 2kg of pollen at 30%, a substantial saving to the colony in foraging activity." – (Somerville 2005)

The protein component of pollen is composed of a series of amino acids. DeGroot (1953) identified a number of amino acids that are essential for the normal growth and development of bees.

There are 10 essential amino acids that bees must obtain from pollen. One of the essential amino acids is isoleucine, which is low in many eucalypt species.

Nectar - The bees' major source of carbohydrates

- Converted to honey by enzymatic activity (sucrose => glucose + fructose) and moisture removal
- Required for jelly production
- Has a stimulative effect on a colony

Bees convert nectar into honey for storage in a series of steps. When the nectar is initially collected, it is stored in the honey sac of the returning field bee. An enzyme called invertase is added to the nectar while in the bee's honey sac. Invertase

converts the nectar, primarily a sucrose solution, to a mainly fructose and glucose solution. The ripening nectar is then stored in the beeswax cells where the moisture content is reduced to 13–18% by the manipulation and fanning of the house bees. When honey is ripe, bees cap the cells with beeswax.

The limiting nutrient

Honey bees are limited by the least abundant nutrient in meeting their nutritional needs. For example, some lower levels of nutrients could be compensated for by consuming larger amounts of a pollen source, but an individual is limited by how much pollen it can consume at a given time. So, whether a pollen source is sufficient in meeting a colony's requirements depends on the nutrient that is least abundant in meeting the nutritional needs of bees.

Life is controlled by the limiting nutrient, limiting growth and reproduction.

Lifespan of fat verses skinny bees!

Graham Kleinschmidt conducted several experiments in the 1970's investigating the impact honey bee nutrition has on the lifespan of bees. He found a direct link between the amount of stored body protein of bees and how long bees lived for. The protein content of bees in his study varied between 21% and 67%, with a remarkable impact on longevity. Bees with a body protein content below 40% had a significantly lower lifespan of 20 - 26 days compared to bees with body protein content above 40%, living between 46 - 50 days (Figure 1).

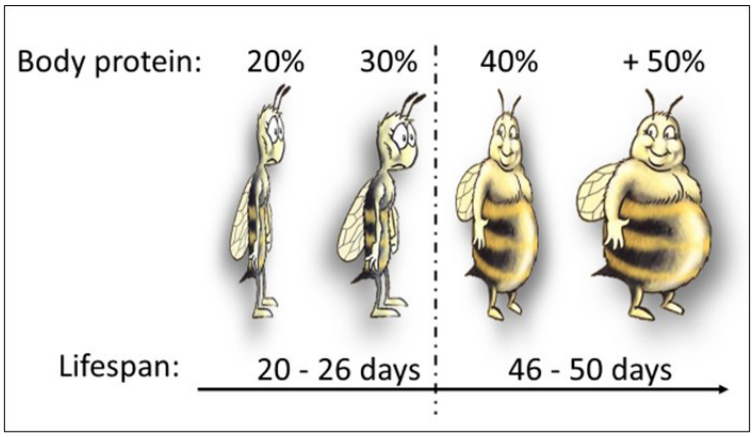

Figure 1: How body protein content relates to a bee's lifespan, based on research conducted by G. Kleinschmidt (1976).

How do bees store protein?

Honey bees like humans and other animals can store nutrients in their body tissues. However, honey bees have a specialised 'organ' called the 'fat body' (Figure 2), which is comparable to our liver, that allows them to make and store protein. The molecule that allows protein storage is called *VITELLOGENIN,* a glyco-lipo-protein made up of 2% carbohydrates (glyco -), 7% lipids (-lipo-) and 91% protein (-protein) that is largely found in the fat body of honey bees but also in the hemolymph (bee blood) and the brain.

G. Kleinschmidt (1976) in his study on body protein content of bees therefore indirectly measured protein body content.

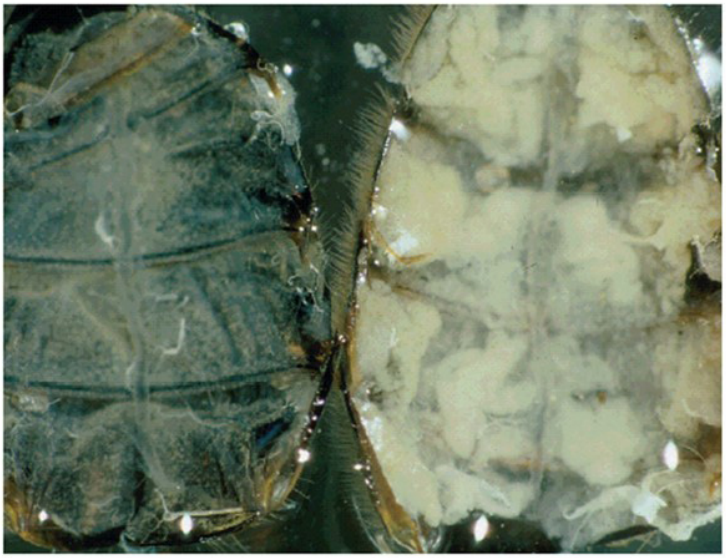

Figure 2. Fat body (white) of a forager bee (left) verses a nurse bee (right). Poorly fed bees have low body stores similar to the image seen on the left. Adapted from Keller and Imdorf (2005).

Why are fat bodies important?
Fat bodies play a crucial role in:

- Immunity – fight against disease
- Longevity
- Detoxification
- Nutrient storage
- Water regulation

Bees that require large fat body stores are in particular nurse bees and 'winter bees'. Nurse bees need to be able to feed developing brood and other colony members with secretions of their head glands and constituents produced by the fat body. Poorly fed larvae result in adult bees with shorter lives, poor waggle dance performance, impaired memory, and increased susceptibility to pesticides. Also 'winter bees' require large fat body stores in order to live through the cooler months and to support increased brood production in early spring. While worker bees may die after 30–50 days, winter bees survive for several months.

Heavy honey flow
When bees are moved onto a heavy honey flow with a limited pollen supply, the bees use their body protein to continue brood rearing. This can cause a body protein decrease from 54% to 27%. Kleinschmidt (1976) states that such colonies would then require at least twelve weeks of adequate nutrition for optimum breeding in order to be restored to full production.

Heavy honey flow ➔ rapid decrease in body protein

Fat bees – skinny bees and hive productivity
It is not surprising then that skinny bees do not have nearly the same capacity as fat bees to:

- collect nectar
- collect pollen
- feed the next generation
- over-winter
- fight disease
- regulate metabolic pathways (detoxification, water regulation)
- show their genetic potential (includes poorly raised worker and drone brood, and queen cells)

Beekeepers can improve all aspects of colony performance and productivity through better management of honey bee nutrition.

'Management should be designed to reduce extreme fluctuations in body protein and to maintain it above 40% whenever possible'. – Kleinschmidt (1976)

Reading material
Fat bees skinny bees – A manual on honey bee nutrition for beekeepers by Doug Somerville (2005) can be downloaded as a free pdf from the AgriFutures website or purchased as a hard copy.

Honey Bee Nutrition Study and Survey

We would love to hear from you. 😊

Please scan the QR code to find out more about one of our current projects on honey bee nutrition and supplementary feeding strategies. The study is supported by the NSW Department of Primary Industries and AgriFutures.

Better Nutrition = Better Bees!

References:

De Groot, A. P. (1953). Protein and amino acid requirements of the honey bee (Apis mellifera L.). *Physiologia Comparata Oecologia*, *3*, 197–285.

Keller, I., Fluri, P., & Imdorf, A. (2005). Pollen nutrition and colony development in honey bees: Part I. *Bee World*, *86*(1), 3–10. https://doi.org/10.1080/0005772X.2005.11099641

Kleinschmidt, G. J., & Kondos, A. C. (1976). The influence of crude protein levels on colony production. *The Australasian Beekeeper*, *78*, 36–39.

Kratz, M. (2022). *The effects of nutrition on honey bee (Apis mellifera) health and colony performance during crop pollination*. University of Western Australia.

Münch, D., & Amdam, G. V. (2010). The curious case of aging plasticity in honey bees. *FEBS Letters*, *584*(12), 2496–2503. https://doi.org/10.1016/j.febslet.2010.04.007

Somerville, D. (2005). Fat bees skinny bees : a manual on honey bee nutrition for beekeepers. In *Australian Government Rural industries Research and Development Corporation* (Issue 05). Rural Industries Research and Development Corporation. http://trove.nla.gov.au/work/12536361?selectedversion=NBD41271570

Wheeler, D. E., & Kawooya, J. K. (1990). Purification and Characterization of Proteins. *Archives of Insect Biochemistry and Physiology*, *14*, 253–267. https://doi.org/10.1128/9781555816827.ch52

Australian Honey Bee INDUSTRY COUNCIL

Imported Honey Fighting Fund

July 2023

Imported honey continues to be a priority issue for beekeeping industry in Australia.

The current threats to the Australian beekeeping industry mean that it has never been more important to **protect and promote our industry** to ensure our long-term viability.

Monitoring imported honey products and gathering authenticity data will strengthen AHBIC's ability to lobby on behalf of industry to increase testing of imported honey and improve current testing protocols.

AHBIC is asking for your donation into the imported honey fighting fund, enabling us to establish the **imported honey testing program**. The program will confidentially gather baseline authenticity data from imported honey on retail shelves building a database of deidentified data to present to government strengthen our voice.

Without the support of industry, AHBIC does not have the funds to facilitate this campaign at the level that is needed. AHBIC will be treating the investigation with integrity and anonymity and will not be naming and shaming adulterated samples as this impacts all honey sales.

By supporting the Fighting Fund AHBIC will be able to randomly test off-the-shelf imported honey for its **integrity**. The results will be used to build a solid, data driven de-identified platform to advocate on behalf of industry to government for policy reform.

Your contribution can be recognised on our website or you can choose to remain anonymous.

Terms and conditions

- You will receive a tax invoice/receipt and notification via email from AHBIC upon successful payment.
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Swarming Update

Swarming is a natural part of the reproductive life cycle of honeybee colonies. Swarming usually occurs in spring or early summer to help the new colony grow large enough to store sufficient honey over summer and autumn to support the colony through winter.

During the Varroa mite emergency response, swarming can increase the risk of Varroa mite spreading further. Therefore, it is important to follow the current Biosecurity (Varroa Mite) Emergency Orders.

NSW DPI has reviewed, and risk-assessed any changes to the management of swarms in the Eradication (red) and Surveillance (purple) zones. This assessment proved any change to the catch-and-kill requirement for swarms in these zones presents too great a risk to the NSW Varroa mite response aim of eradication.

NSW DPI is actively euthanising and baiting for wild European honey bees in the red zones. In the purple zones, NSW DPI is working with contractors to survey and euthanise wild colonies.

In addition, for the purple zones, NSW DPI has appointed a Swarm Destruction Coordinator to assist bee clubs in managing swarms. If you see a swarm in a purple zone location that you are unable to catch and kill yourself, you can call the hotline on 1800 084 881. NSW DPI staff will be directed to the location as soon as practicable.

For more information go to https://www.dpi.nsw.gov.au/emergencies/biosecurity/current-situation/varroa-mite-emergency-response/how-to-deal-with-a-swarm

For updated information please visit www.dpi.nsw.gov.au/varroa.

Industry Update – 34

400 days of response

27th July 2023

Varroa Response Update

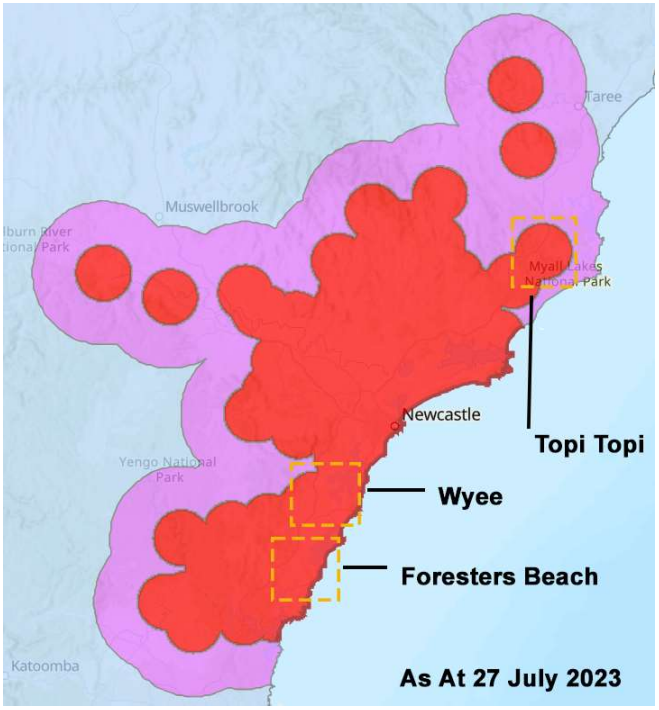
The current infected premises are sitting at 194.

These 4 new IP's are in Topi Topi, Wyee and Foresters Beach.

Two separate cases in Topi Topi were identified through second round surveillance in the PURPLE zone northeast of Bulahdelah. The RED zone is now extended north, with no related change in the PURPLE zone.

The Wyee detection, also a result of second round surveillance, has officially linked the areas of RED zone in the Central Coast with the RED zone of Newcastle.

The Foresters Beach detection is deep within the Central Coast RED zone and does not create any zone changes.



Interstate Movement Guidelines

A recent guideline has been developed to assist beekeepers with reaching all jurisdictional requirements and maintaining correct paperwork and compliance with the current situation. This page will be updated as often as required to include any changes. Beekeepers are reminded to continue to stay abreast of their obligations within the state you are operating. To view the page, click below:

https://honeybee.org.au/ahbic-interstate-movement-guidelines-27-july-2023/?category=Industry%20Hub

Sugar 4 Bees

Beekeepers operating in the emergency PURPLE zones across the state of NSW are encouraged to register for Sugar 4 Bees the program utilises sugar dust generously donated by Sugar Australia. More information is available through our website. **CLICK HERE** to secure a collection if you are impacted by the incursion and your colonies require supplementary feeding to maintain hive health.
AHBIC is working to urgently supply beekeepers in the Gumble PURPLE zone with a delivery in the coming days.

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Non Tamper Proof Pails

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(500gr, 1kg, 1.5kg available in clear as well)

Tamper Proof Pails

1kg, 1.5kg Honey Pails &
2.2L, 5L Pails

10L, 15L, 20L Pails

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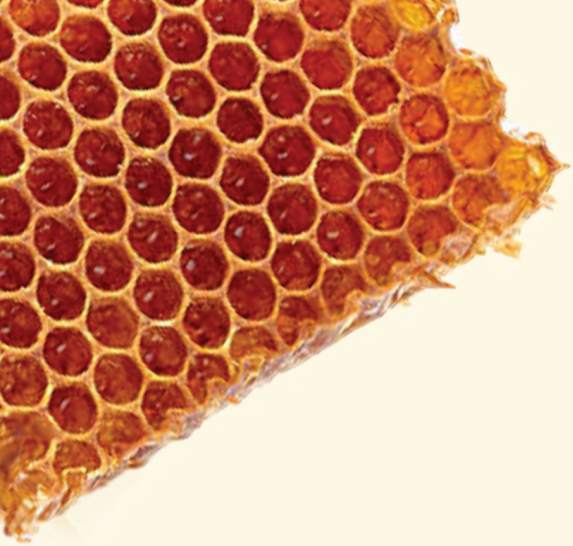
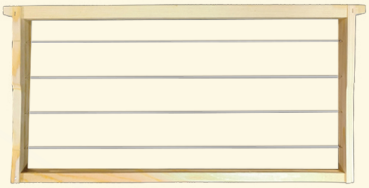
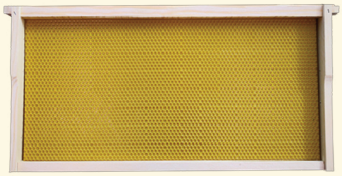


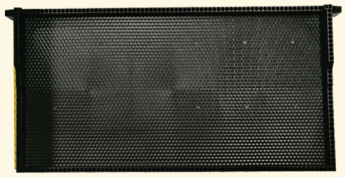
Bee Frames - Wood and Plastic



Wood Frame Full Depth
Assembled With Wire



Wood Frame Full Depth
With Plastic Foundation
(Not waxed)



Plastic Frame Full Depth

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Plastic Beehive with 10 Frames

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YEAR 10: + $0 ... + $24,000 ($248,000)

YEAR 15: + $0 ... + $200,000 ($448,000)

YEAR 20: + $0 ... + $24,000 ($472,000)

YEAR 25: + $0 ... + $24,000 ($496,000)

TOTAL ONGOING MAINTENANCE COSTS
$0
OF 500 NUPLAS PLASTIC HIVES **OVER 30 YEARS**

TOTAL REPLACEMENT OF ORIGINAL HIVES

TOTAL ONGOING MAINTENANCE COSTS
$296,000
OF 500 TIMBER HIVES **OVER 30 YEARS**

TOTAL INVESTMENT (AFTER 30 YEARS) $160,000

YEAR 30

TOTAL INVESTMENT (AFTER 30 YEARS) $496,000

// Assumptions: 1 person labour @ $25.00/hour **// Inclusions:** Purchase price, materials cost.
// Not included: Freight, warehousing and transport of decommissioned hives, recommissioning and transport of hives, disruption of colonies, branding and labelling hives, wax coating foundation or plastic frames as these two cancel one another out.

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Rewarding pollinators with sweet-talking blueberry flowers

Sophie Parks – NSW DPI Research Horticulturist
NSW DPI – Ourimbah
E: sophie.parks@dpi.nsw.gov.au

The team: Sophie Parks (Project Leader), Melinda Simpson, Leanne Davis and Madlen Kratz

Project timeline: 1/08/2019 - 04/03/2023

Introduction

Floral nectar is the main attractant to blueberry crops for honey bees, with the pollen ignored due to its low protein value compared with other pollens. Access to nectar resources, however, can be limited for honey bees in blueberry crops under covers, used to exclude birds and provide protection, since these covers form barriers that affect their flight path. Our research aims to better understand the attributes of nectar from blueberry flowers with a view to increasing the 'attractiveness' of this crop by developing new practices to manipulate nectar and ensure pollination success under protective covers.

One potential intervention to modify nectar production in blueberry flowers is through fertigation. Blueberry crops are often fertigated (irrigation containing fertiliser salts), and we hypothesised that adjusting fertigation strength has the potential to modify nectar production to suit the needs of pollinators.

Experiment set up

We conducted a glasshouse experiment at Wollongbar Primary Industries Institute with 30 mature blueberry plants (variety 11-11), growing in potted substrate, and applied 3 fertigation treatments of low, moderate and high concentrations of nutrient salts (electrical conductivities of 0.7, 0.9 and 1.2 dS/m), to 10 plants per treatment. Pollinators were excluded. During peak flowering, we extracted nectar with a pipette, from 6 flowers of the same age, per plant. The nectar samples were weighed and analysed for their sugar concentrations. Other measurements included plant canopy area, flower count per plant and temperature and relative humidity during the experiment. Following the experiment, data were statistically analysed.

Can fertigation modify nectar in blueberry flowers?

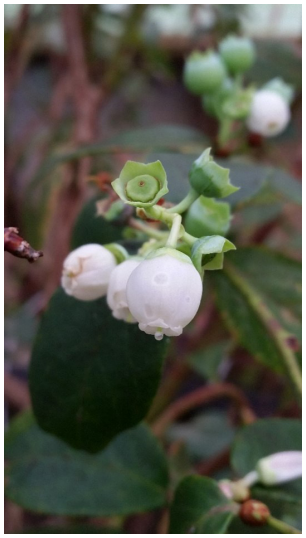
The total amount of sugars in nectar including sucrose, glucose and fructose ranged from 6 to 14 mg per flower with concentrations of between 34 and 86%. The temperature during nectar collection (18 - 23 ^{o}C) was a major factor affecting the weight of nectar (12-23 mg per flower), with a trend of increasing weight from 18-22 ^{o}C, and declining thereafter. However, the temperature and humidity did not relate well to the sugar concentration of nectar, in contrast to other studies.

Further, the fertigation treatments did not affect these nectar characteristics but their effects on the proportions of sugar types in nectar may prove otherwise, and data analysis of these is ongoing. Some studies suggest that honey bees prefer nectar with a high ratio of sucrose relative to glucose and fructose contents, so understanding the role of fertigation on the proportion of sugar types in nectar is of value here.

Following peak flowering, nectar was extracted from blueberry flowers for mineral analysis. Flowers and nectar were limited and only enough nectar was extracted for one sample each of the medium and high fertigation treatments. Nectar volumes were not sufficient to measure nitrogen, but potassium, calcium, manganese, copper and zinc were detected in these nectars, with the other elements being below levels of detection. The potassium concentration in the nectar from the high fertigation treatment was higher than that for the moderate fertigation treatment, and we can speculate that this relates to the greater potassium amounts supplied to the plants in the high fertigation treatment. The potassium concentrations in nectar were low compared with reports for avocado and onion nectar, which can deter honey bees, but higher than those reported in citrus which is highly attractive.

As the fertigation strength increased from the low to high treatments, the number of flowers per plant increased, relative to the canopy area, suggesting that higher fertigation strength is a way of increasing the nectar available for pollinators. Although this appears to be promising, the plant needs to be able to support the development of the extra flowers into fruits following pollination, without limiting fruit size which can occur when resources are limited. This problem can be avoided by using practices that ensure crops are growing optimally, such as conducting leaf mineral analysis in summer after harvest, to evaluate the nutrient status of the crop.

This work has highlighted the important role that microclimate can play in nectar production but also the potential effect that fertiliser practices can have on crop floral resources. We look forward to updating you on the results of this project as it comes to completion.



A blueberry flower with nectar droplets visible on the stigma and inside the floral tube.

Leanne Davis, Technical Officer (NSW Department of Primary Industries) in the experiment at Wollongbar, NSW, where nectar from blueberry flowers was extracted for analysis of sugars, and chemical elements in some samples.

Condolences

NSW Apiarists' Association wishes to extend sincere sympathies to Greg Roberts

"We are saddened to announce the passing of Gwen Anne Taylor. Gwen was the partner of Greg Roberts, former State President of the NSW Apiarist Association and former Chair of the Australian Honey Bee Industry Council.

Gwen lost her long battle against cancer on 17th June 2023.

After cremation a private remembrance is to be held at Wodonga Victoria.

Funding and Partner:

This work is part of the collaborative project *Novel technologies and practices for the optimisation of pollination within protected cropping environments* under the Australian Government Department of Agriculture, Fisheries and Forestry Rural R & D for Profit Program, coordinated by Horticulture Innovation. Partners include NSW Department of Primary Industries, Plant and Food Research Australia, the University of Adelaide, the University of New England, the University of Tasmania and other representatives including the beekeeping and netting industries, and several horticultural industries (Berry, Apple, Onion, Sweet Cherry). It addresses pollination issues that limit the optimal production of some horticultural produce under cover.

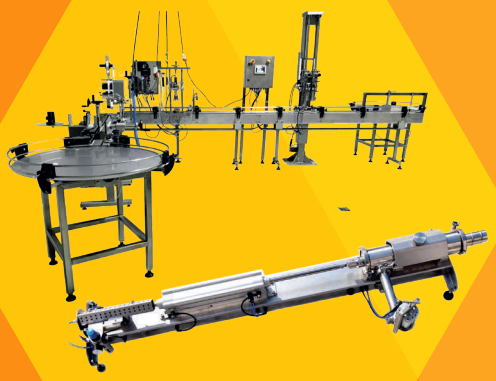
NSW Department of Primary Industries

Australian Government
Department of Agriculture, Fisheries and Forestry

Horticulture Innovation Australia

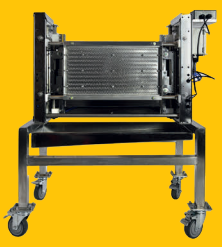
PREMIUM
HONEY EQUIPMENT

EXTRACT



PACK

PROCESS



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Is that a queen in your wood pile?

European wasps (*Vespula germanica* species) have been a problem for Australian beekeepers since the late 1950s, with the first exotic wasp incursion in Tasmania in 1959. By the late 1970s the wasps had spread to Western Australia, South Australia, Victoria and New South Wales, reaching the Northern Tablelands of NSW by 1991. Originally native to Europe, North Africa and Asia Minor, they're also present in New Zealand.

In NZ, European wasps are considered a major pest in bee hives. In the 'Report on the 2022 NZ Colony Loss Survey' in fact, out of the 97,613 bee hives lost, 0.9 per cent (878!) died as a result of European wasp predation. The wasps prey on insects, including bee hives and can consume an entire hive in some cases.

Figure 1. European wasp worker. Credit: Wikimedia Commons.

Beekeepers in Australia, particularly in Tasmania as well as VIC and NSW high country also must take care where wasp populations are at levels high enough to impact the health, production and overall survival of their hives through winter. I n some areas of NZ it's impossible to keep honey bees due to the intense pressure of European wasps.

European wasps range from 1.2 to 1.6 cm in length and have very distinctive bright yellow and black colouration with bright yellow legs. Think of your bright black and yellow cartoon honey bee and you've got your wasp colours. Many a swarm catcher has been called to "free bees" turning out to be free wasps, an unwelcome discovery. Unlike honey bees, European wasps can sting more than once and don't die after stinging. To make matters worse they're also more aggressive than honey bees particularly when their nest is disturbed.

Figure 2. Identification guide. Credit Reddit.

They typically build their communal nests underground or in cavities of logs, trees, or manmade structures. The nests are made from chewed wood fibre and can be found in ceilings, wall cavities, logs, tree trunks and soil. Normally, the nest is only visible as a small entrance hole and quite difficult to find. Most nest detections are only possible in late summer or early autumn when wasp populations are at their peak and lots of forager comings and goings give away their entrance. If you're a good enough bush-tracker to find a nest, the best method for wasp control is to eradicate at the nest, using an insecticide registered for the purpose.

After three La Niñas in a row in the Eastern States, it's not just beekeepers who are noticing the pesky European wasps. With an abundance of water, soil moisture and vegetation comes an abundance of insects, a feast for European wasps. After a long period of building up their populations through spring, summer and into autumn, in late autumn the original wasp queen dies, and usually new queens disperse to find suitable over-wintering sites before starting a new nest in spring.

Figure 3. Wasp nest ground entrance. Credit: Gideon Pisanty.

With winter upon us, many with woodburning stoves are naturally acquiring wood to burn. My predecessor Dr. Doug Somerville has heard of several cases of South Coast and Southern Tablelands residents, unsuspectingly bringing in a log for the fire and as it warms up in the house come to find out that it's not just a log, but a wasp queen's hibernation

apartment! I hope they did us honey producers a favour and killed these queens, saving themself a sting and beekeepers another hive pest next season.

In areas with warmer climates in Australia, however, not all queens may go forth to hibernate on their lonesome. As healthy wasp colonies raise multiple queens at the end of the season, one of the new queens may stay in the nest and begin laying eggs, without the usual over-wintering period being observed as in cold winter European climates. In Australia, even European wasps may not have a brood break! Over several seasons, this can result in a giant nest of over 100,000 wasps.

The Australian Museum recommends reporting all European wasp nests to the European wasp Hotline which monitors the distribution of this introduced pest through urban and bush land areas and how they are affecting the native species of both prey and predator. To report a nest or seek management advice contact the European wasp Hotline: 02 6258 5551, or website: ewasp.com.au/contact/

Figure 4. Know your native wasps and other bebficial insects. Credit: VIC GOV

All that said, don't go mistaking helpful native wasps and wasp mimics like hoverflies for European wasps. There are many harmless and beneficial native wasp species which are commonly mistaken for European wasps. In particular the European wasp and the native yellow paper wasp are very similar in size. Native wasps, including paper wasps, are beneficial because they assist in pollination by feeding on nectar and moving around a bit of pollen in the process. They also provide free pest control, through feeding pest caterpillars and other species to their larvae. Know your foes and know your friends!

Honeyland Report 2023

Honeyland went well this year. Most of our stock sold out with very little honey left over. Some products we had to restock as we sold out early in the show and then sold out again.

Thank you to the following who supplied honey free of charge honey as without you Honeyland would not have been a success:
Members of the Central Tablelands branch, Mal & Debbie Porter, Goldfields Honey, members of the Western Plains Branch, Ray Hull, Daniel Costa, Ross, Carl & Claye Cooper, Terry Brown, Chris Brown, Zack & Zahn Blackwell, Daryl & Kevin Brenton, David Lord and members of the Southern Tablelands branch.

Thank you to Hornsby Beekeeping Supplies, Beechworth Honey, Rainforest Honey Australia, Berries Australia, Hive and Wellness and R Stephens Apiarist for your donation of product for our promotion bags. They were a success. All profits from Honeyland goes to the Association to continue their work for the industry.

I would like to thank the volunteers and Executives who worked at Honeyland:
Sharon & Bill Gibbons, Dallys & Ed Napiorkowski, Steve Fuller, Justin Wall, Ray Hull, Addyson Vernon, Ted Pennay, Nadine Chapman, Matt & Laura Skinner, Zac & Chelice Alcock, Trevor Romer, Bruce & Lynn White, Laurie, Therese & James Kershaw, Mal Porter, Tim Walsh, Victor, Desley, Sophia & Isabella Croker, Debbie & Jeff Smith, Steve Cunial, Robyn Hawkins, Mark Hawes, Lamorna Osborne, Pho Dimatawaran, Mike Mata, Bela Lara, Josette Dus, Warwick Smith, Karen Smith, Deb Harper, Kay Lockhart, Garth McClay, Ian MacDonald, John Broomhead, Peter Czeti, Penny Downy, Emily Noordyke, Robert Wood, Tanya & Uri Ananin Gabriel Kuryo and Wayne Hammond. It was great to have an executive member on every day of the show. As you can see it takes an army to make Honeyland a success and without you all we would not be able to run the stand.

Our customers were happy to see us again, which was shown by our sales. A lot of them come back year after year to by our honey which is good to see.

Hoping 2024 will be a good year with plenty of donations and volunteers.

Debbie Porter
NSWAA Show Coordinator

This year the Marcus Oldham Rural Leadership Program was held at their campus in Geelong from 14th – 19th May. The course was at capacity, with 38 attendees. I was encouraged to see that of the 38 attendees, 22 were female – and most were in their 20's and 30's, with an age range of 19-55. The future for leadership within Australian agriculture is looking very promising if our industry is training and investing in our future leaders so young.

The focus of the course was varied and touched on not only leadership theoretical principles, but really delved deep into our personal and professional values and belief systems. If we can't identify what is important to us, how can we lead in a way that aligns with our core belief system? We were asked to identify our top 10 values from a deck of 40 cards. Then narrow this down to our top 5, then further to only 3. This task started off as quite superficial and easy, selecting the values without too much thought. When I was asked to halve my values to 5, it prompted me to think about what really drives me as a person, and leader. And narrowing this top 5 down to 3 felt nearly impossible. I would encourage you to think about what your top 3 values are, to the exclusion of all others. Is it happiness, family, health, wealth, success, influence, security, autonomy, trust, honesty, adventure…? The list is endless! Now, I challenge you to stop and think about whether you are living your core values? What are you doing, or not doing, to live by these values?

Over the course of the week we debated the definition of leadership a number of times, but it always came back to these 4 principles.

- Leadership is not preordained – it is not a gene or a trait.
- Leadership is an observable pattern of practices and behaviours and definable set of skills and abilities.
- Leadership can be learned, strengthened, honed and enhanced.
- All that is required is a willingness to be a better leader.

The last point is my favourite. We can all be better leaders if we have the willingness and perseverance to try to make a change. Leaders aren't born, they are made. Leaders aren't necessarily managers nor are managers automatically leaders and leadership takes work and dedication.

One of the most impactful sessions for me was about mental health. Mental health is talked about a lot in the media and at conferences, but the statistics presented really hit home about how important it is to check in with our family, friends, colleagues and neighbours to see how they are going. Suicide rates for agricultural workers are almost 60% higher than that of non-agricultural workers (18.3 per 100 000 vs 11.5 per 100 000) which is equivalent to 1 death every 10 days (ABC, 2021). Agricultural workers continue to be over-represented in suicide and mental health diagnosis statistics - do you know how to spot the warning signs? Check in with those people close to you and ask them how they are going. Your GP is a great starting point to get help.

Lastly, I would like to thank the Tamworth Branch President Ray Hull for nominating me to attend and the executive and broader association for their support, encouragement and sponsorship. This course was a once in a lifetime opportunity and I strongly feel that the skills and networks that I developed and consolidated during the week will be able to be applied to my current and future practice with the aim to ultimately benefit our industry in the future.

Katelyn Wall

Probiotics to help defend crop-pollinating honey bees from common diseases

Georgina Binns, Research Officer, Macquarie University | E: georgina.binns@hdr.mq.edu.au

Researchers plan to provide bees with immunity-boosting probiotics to increase defence against common infections.

Researchers at Macquarie University are developing an economical and chemical-free probiotic treatment to help boost resistance of honey bees – in the hopes of increasing resistance to common bacterial and fungal hive diseases that are the main causes of global population declines. Infectious diseases, such as European foulbrood and chalkbrood, cause devastating impacts on crops and honey production from the loss of pollination services.

Probiotics are made from beneficial microorganisms that have health benefits when ingested – these are found to naturally occur in products such as yoghurt and other fermented consumables. Probiotics have been found to maintain digestive heath and boost the immune system in humans when taken as a dietary supplement. Because these 'good bacteria' are naturally occurring, they will not be dangerous to bee health, with the research team specifically targeting bacteria essential to honey bees.

Existing bee probiotics only target one disease at a time, but the team aims to develop a general probiotic that will raise the overall immunity of bee colonies. "Multiple diseases can infect hives simultaneously, and it is challenging to predict which disease might spread across hives. Our team will create a broad-spectrum approach to disease resistance instead of looking at just one singular infection," said Dr Fleur Ponton, an expert on gut microbial symbionts. Probiotics are chemical-free and cost-effective products for Australian beekeepers and growers that can be easily implemented into their systems.

The Australian Honey Bee Health Survey 2019, commissioned by Plant Health Australia, reported that commercial beekeepers lost an estimated 19% of hives during the previous year due to diseases, pests and other events. This loss translates to significant economical deficiencies for Australian growers of pollination-dependent crops, such as macadamias, almonds and avocados, with 65% of Australian agricultural production relying on pollination by bees. "With climate change and invasive bee pests becoming more present, we need to find solutions to protect our honeybees here in Australia. We can't solve everything, but a generic probiotic would be an important boost to Australian honeybees' health," said Dr Théotime Colin.

The research team, led by Dr Fleur Ponton and including insect and bee experts Associate Professor Ajay Narendra, Dr Théotime Colin and microbe expert Dr Sasha Tetu, will look at a variety of ways to deliver the right probiotic mix to hives. "We are aiming to include probiotics into healthy supplemental feeds for bee colonies. Feeding colonies is a common practice already in place in many countries but that is less developed in Australia," Dr Ponton said. "Beekeepers in Europe, Africa and North America often feed supplemental food patties containing pollen, vegetable proteins and sugar mixtures to hives. These mixtures do not usually contain probiotics just yet." Further, this project will assemble a collection of probiotic strains that will be stored in the team's lab at Macquarie University. In the future, these strains could be tested against new emerging diseases.

Stressors such as pesticides, parasites and diseases affect how well bees pollinate crops because it affects their memory. Bees need to navigate from their hive to the food crop and back, which means they need to remember how to find the hive. How well they learn their way back to the hive contributes to the success of their colony and their pollination services. "We know that gut health affects memory and learning abilities in other animals and even humans," said insect neurobiologist Dr Ajay Narendra. "Every day, bees come out of the hive and search for food. Once they are loaded up with nectar or pollen, they must find their way home, otherwise they will die."

Funding Acknowledgement

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BEE BIOSECURITY OFFICER REPORT

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Preparing for the new season.

This season will throw many different things at NSW beekeepers, so it is definitely going to require preparation, a bit of resilience and keeping a clear head if you want to get the most out of it.

The spectre of Varroa still hangs over all of us, with a huge battle occurring in the Eradication (red) Zones that has still not reached a conclusion. Many people have opposing views on the entire Varroa situation, but whilst there is an opportunity to rid our shores of this dastardly pest then that should always remain the number one aim. Almost daily I receive calls from beekeepers who are greatly concerned by the possibility that Varroa may "get away" from the response and then impact their General (blue) Zone hives and businesses too. The sad thing is that the main way the Varroa mite can "get away" any distance from current Eradication (red) Zones is if a beekeeper takes it, so let's all continue to hope that nobody has already done that (again), or that anybody will consider doing it.

Ever since Varroa was first discovered well over 50 years ago there has always been the risk that Australian beekeepers would one day get it in their apiaries too. Thankfully to date we have been very lucky that it has always either been intercepted whilst on ships/containers prior to or upon arrival at our ports, or has been of a small enough scale (such as Townsville on two occasions) that it was able to be eradicated without major adverse effects to beekeepers and their bee hives.

The Newcastle situation is of a larger scale as the mites had already become established within some beekeeping operations before natural spread lead to it being detected in Department of Primary Industry (DPI) port surveillance hives. The area size of the Eradication zones and number of impacted beekeepers in the Eradication and Surveillance (purple) Zone has been significant, although luckily these impacted operators are at present a very small percentage of NSW's beekeepers. Thousands of hives have needed to be euthanised though, and it has been very tough for many.

As of writing this article the Varroa response was facing some challenges with a number of new Infected Premises (IP's) being detected in both the northern part of the Newcastle Eradication (red) Zone and also the southern part of the Calga Eradication zone nearer to Sydney, plus a new detection in the Central West, but the focus of the response is still 100% towards eradication. Every time the Eradication Zone expands means that the work plan being undertaken by baiting, surveillance and hive euthanasia teams changes and increases, so they are working very hard in a constantly changing environment.

A major part of my Bee Biosecurity Officer role has always been preparing for the possibility of undertaking management of Varroa in Australian bee hives, so I have constantly done work in this area for many years. Back in July 2019 Mark Page and I spent some time in New Zealand with our NZ counterparts and commercial beekeepers looking at Varroa impacts and management. The trip was really quite stressful, as we went over there to look at Varroa and did not actually see any live Varroa until the very last day of beekeeping.

NZ MPI ensured we found varroa by skipping a scheduled mite treatment in autumn. This Hive also showed Deformed Wing and Acute Paralysis viral symptoms because of that missed treatment and the increasing mite load.

That was not to say that all the other hives that we looked at and alcohol washed did not have any Varroa mites in them. Please remember that a negative result from an alcohol wash does not mean a hive may not have any mites at all, but it does mean the numbers would be very low and it is not likely to be suffering ill effects from them. Also those particular beekeepers could have managed their mite numbers properly by undertaking the appropriate treatments and hive management at the correct times. By keeping in front of the Varroa mites they could mostly prevent their own mite numbers from getting too high.

What this trip clearly showed me was that beekeeping can still continue in a "post Varroa-world", and that gave me a great boost of confidence. But, just like any

good outcome it takes a lot of hard work, planning and maintaining both your surveillance and treatment schedules on your hives to withstand the constant onslaught from Varroa mites against your bees.

Successful NZ beekeepers regularly undertake varroa monitoring of 15-20% of hives both prior to and also after treating for mites. This is to establish current mite loads (a CRUCIAL step in managing mites) and determine how well the treatments worked, as not everything is always successful in dropping mite levels.

The NZ commercial beekeepers all told us that they mostly had their Varroa under control (meaning the mites that already lived and bred up within their own hives were being kept in check) and their main threats were from "reinvasion" and American foulbrood (AFB).

Reinvasion basically refers to external Varroa mites "invading" an otherwise well managed beehive (that had low mite numbers) from outside sources such as poorly managed or totally neglected colonies in bee boxes, or feral colonies in the environment. These external colonies are either experiencing high mite numbers (and mites are leaving that home hive on its field bees to look for greener pastures elsewhere) so your bees pick up these mites in the field (bees meeting bees), or the colony is failing and your bees are robbing them out. These colonies are often referred to as "Mite bombs", and they are one of the most effective ways that mites will spread out from what may have initially been just one mite in an entire hive, region or country. If beekeepers do not adequately manage hives then they will become mite bombs, so they become part of the problem for everybody else's mite management. Mite bombs are not productive beehives, so generally the operator does not do very well either.

We have always been told that if Varroa becomes established then we will lose all the feral bees, but that does not mean there will be no more feral colonies! There will always be swarms, but with the impacts of viruses most of those swarms will probably not survive for more than one season and they will also not emit other swarms from them to increase the number of feral colonies.

When strong colonies swarm in spring (generally meaning managed colonies where mite numbers have been kept low by the beekeeper and bee health is good) the ratio of Varroa per 100 bees is normally quite low, as the mites are concentrating on reproduction under brood and the bee population is extremely high. If the colony swarms then around half the bees leave the colony but a far smaller percentage of the colony's mites leave with them, so this colony re-establishes elsewhere with a low mite count and it will take all season for the mite numbers to build up towards dangerous levels.

If varroa became established then there would always be a reservoir for reinfestation into managed colonies from feral colonies.

The remaining colony in the swarmed hive will experience a large increase in the Varroa infestation rate (eg. number of Varroa per 100 bees) over the coming weeks after losing half their bee population and having whatever reproductive mites under brood hatching out. The beekeeper would need to either undertake appropriate management to reduce these increasing mite numbers or see the hive quickly slide towards collapse. Good operators quickly prevent a problem from occurring, which is the crux of keeping bees in Varroa country…keep on top of the problem and your beekeeping will be far more productive.

For the swarm that established as a feral colony life starts off pretty easy, but as the season progresses the mite infestation rate really starts to increase, so by the end of the season the colony is heading into winter with high mite numbers. One of the golden rules in "existing with Varroa" is getting your mite numbers very low before your colonies hit winter, so whereas managed colonies can achieve this (if the beekeeper undertakes it) the unmanaged colonies will not achieve that critical milestone. Colonies that enter winter with high mite numbers normally fail in early spring, becoming mite bombs and also allowing any honey stores to be robbed out.

Therefore, once Varroa is established in an area there will always be the chance that your hives may experience reinvasion, and the exact same situation already applies with AFB. The traditional pathways for spreading AFB includes through robbing of either exposed honey sources (extracting sheds, exposed honey boxes and hives etc.) or through direct robbing of a weakened colony. This can happen at any time, so the beekeeper must always be on the lookout and always undertake appropriate surveillance within their apiaries to keep in front of AFB.

The worst scenario in NZ is when an AFB hive that was also heavily infested with Varroa was robbed out, as both "gifts" were taken back into the better managed hives. The mites could be managed, but the AFB would take out the hive soon after.

The "feral colony mite bomb" situation is outside of everyone's control, so beekeepers need to anticipate it occurring and monitor/treat hives accordingly during spring, summer and autumn (basically do it all season). The situation that really impacts good beekeepers mite management because it makes the problem far worse is VBB (very bad beekeeping).

A perfect example of VBB where the beekeeper never finished the job and everything was left exposed. Also many dead-outs in this load, so you wouldn't want your bees anywhere near this.

This is a real big frustration for many good NZ operators as VBB is often being undertaken by others around them. The issue was worsened because there was often no real solution to that problem except when the AFB and mites killed out all the VBB's hives, but all others around them really suffered and saw disease problems escalate before those VBB hives did finally die out. There are many reasons as to why VBB occurs and why they are not able to keep on top of their mite management, such as running too many hives, laziness, lack of training, an unprofessional, unplanned or uneducated approach towards their beekeeping, financial pressures or various lifestyle/other factors that meant they were not capable of attending their hives regularly enough (or at all). Another problem area was the personal beliefs of some beekeepers regarding what treatments (if any) they would consider using, or not using in their colonies, and how often. Saying that you will only use "organic" mite treatments or only do "natural" beekeeping may be particularly bold statements when faced with the continual onslaught from Varroa, so if your aim is to keep bees (alive and healthy) then you need to have a more practical approach and open mind to assist you with actually keeping those bees alive. What works in some places (especially those countries with a very cold winter) probably will not be enough in NSW and beyond.

Australian beekeepers do not yet need to undertake any management of Varroa mites (and thankfully also not experience the devastating mite-associated viruses) in hives, so in their absence you should be aiming to FULLY manage your AFB instead. If you have an AFB issue that you cannot get on top of (because you are not doing everything that you really could or should) then it's pretty fair to assume that you would also not survive as a beekeeper if we lived in a Varroa infested Australia, so now is the time to evolve your beekeeping and improve your game.

I'm here to help you, so if you require AFB management assistance for your operation then contact me for a confidential chat about your situation (many already have). MOB 0438 677 195 or rod.bourke@dpi.nsw.gov.au

NATIONAL BEE BIOSECURITY PROGRAM

The National Bee Biosecurity Program is funded by the honey bee industry through a component of the agricultural honey levy, with state governments contributing in-kind resources. Plant Health Australia manage the program on behalf of Australian Honey Bee Industry Council.

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NEW RESEARCH REVEALS A QUITE INTERESTING FACT ABOUT HOW HONEY BEES FIND THEIR WAY HOME – WITHOUT A GPS

ANIMAL STUDIES

BY KAMAL SAINI

Researchers have known for a century that honeybees are exceptional navigators. They can find their way around using their sense of smell, the sun, the pattern of polarized light in the sky, vertical landmarks that stand out in the view, and maybe even the Earth's magnetic field.

They are also smart learners who can make connections between different memories to figure out rules.

A recent study published in Frontiers in Behavioral Neuroscience has demonstrated that honeybees, like early pilots, rely on the dominant linear landscape features to navigate and find their way back home. This finding suggests that bees use similar strategies as humans when it comes to orientation and spatial navigation.

"Here we show that honeybees use a 'navigation memory', a kind of mental map of the area that they know," explains lead author Dr. Randolf Menzel, "to guide their search flights when they look for their hive starting in a new, unexplored area.

"Linear landscape elements, such as water channels, roads, and field edges, appear to be important components of this navigation memory."

Menzel and his colleagues gathered 50 seasoned forager honeybees in late summer of 2010 and 2011 in the town of Klein Lüben in Brandenburg and affixed a 10.5-mg transponder to their backs.

They then set them free in a new test area that was too far away for the bees to remember. In the test area, there was a radar that could pick up on the transponders from up to 900 meters away.

The most remarkable feature of the testing location was a pair of parallel irrigation ditches that ran from southwest to northeast in a direction parallel to one another.

When honeybees are in an area they don't know well, they fly in loops in different directions and over different distances, all centered on where they were released.

The researchers used a radar to follow each bee's precise exploratory flight route for anything between 20 minutes and three hours. Throughout the experiment, the bees soared up to nine meters above the ground.

Foragers were taken from five hives, and their native environment surrounding hives A and B was similar to the experimental region in regards to the number, width, length, and angle of linear landscape components, mainly irrigation channels.

The areas around hives D and E were quite different from the test region, whereas the area surrounding hive C was in the middle.

In the test location, there were no vertical components that stood out or other markers that honeybees are known to use to navigate.

Menzel et al. began by simulating two distinct sets of random flight patterns, each of which was centered on the location of the release place and was produced using a unique technique. Since the flight patterns the researchers saw were very different from these, they decided that the honeybees didn't just fly around randomly looking for food.

After that, the researchers employed sophisticated statistics to examine the flight direction and frequency throughout each 100 × 100 meter block inside the test region.

They demonstrated that honeybees spend an excessive amount of time swarming around the irrigation channels. Analyses showed that these kept guiding the bees' flights even when they were more than 30 meters away, which is the farthest such landscape features can be seen by honeybees.

This suggests that the bees remembered them for a considerable amount of time.

"Our data show that similarities and differences in the layout of the linear landscape elements between their home area and the new area are used by the bees to explore where their hive might be," adds Menzel.

Crucially, machine learning techniques revealed that the test area's irrigation channels were most useful for forecasting the exploratory flights of bees from hives A and B, less helpful for bees from hive C, and least helpful for bees from hives D and E.

This indicates that the bees sought to generalize what they observed in the test region to their navigational memory of their home area, which was likely based on linear landscape components.

The authors concluded that elongated ground structures are significant features of honeybees' navigation memory, as flying animals, including bats and birds, recognize such structures in a map-like aerial view and consider them highly appealing as guiding structures. This finding underscores the importance of linear landmarks for navigation across multiple species.

New research reveals a quite interesting fact about how Honeybees find their way home – without a GPS
Image Credit: E Bullinger, U Greggers, R Menzel

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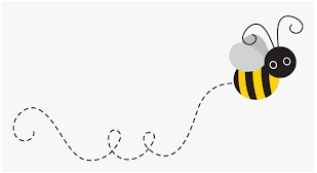

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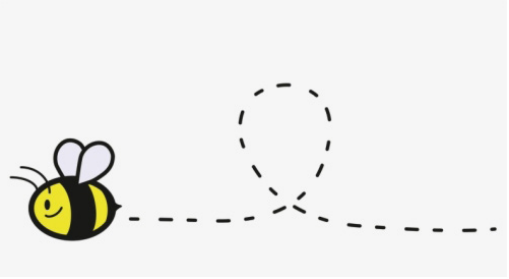

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P: *0419 431 652* ***E:*** *s.covey@hivewell.com*

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