

BEE LINES

Newsletter of The Beekeepers Club Inc. Est. 1998



March 2017



Beekeeping amongst the vines

Next Club Meeting: Thursday 16th March 2017, 7 pm

Venue: Performing Arts Centre (PAC)
Doncaster Secondary College
123 Church Rd Doncaster
Melway 33 G 12

NEW VENUE

***** Guests and Visitors Welcome *****

Enquiries and information: editor@beekeepers.org.au

Next meeting:

Thursday 16th March 2017

7.00 pm for 7.30 pm start

7.30 – 8.00 pm Q&A panel beginners and advanced beekeeping topics

8.00 pm Guest presenters: Associate Professor Adrian Dyer & PhD Student Scarlett Howard

This *promises* to be a really informative and interesting night. We have secured great speakers: Associate Professor Adrian Dyer has worked on bee visual processing for about 20 years including several post-doctoral positions in Germany and the UK. His work has a strong focus on visual ecology principles linked to how bees are very efficient pollinators of important plant flowers. Adrian will be accompanied by Scarlett Howard, a PhD student at RMIT University working on numerical processing in honeybees. She has worked on bees in Australian, Germany and France, and focuses on how free flying bees can learn to solve novel problems that may be encountered in natural environments.

9.00 pm *A short EGM will be held to discuss 2 resolutions referring to the Model Rules. The only business to be conducted at the EGM will be the 2 resolutions as presented, no other business can be discussed.*

9.15 – 9.30 pm Club meeting and door prizes.

For those members who have not yet visited our new venue this meeting would be one to come to. Our meeting auditorium holds 300 so, please consider coming along to support the club and enjoy the new surroundings. We have moved up to this new modern hi-tech meeting place to enable all members to participate in the club with space and comfort. Our newer members are especially invited to become involved.

Upcoming events:

Fundamentals of Beekeeping course.

8 - 9 April 2017 - 2 day course - Cost: \$190 plus membership for non-members

Venue: 33 Saxon Street Brunswick (off Dawson St, opposite Town Hall)

This *Fundamentals of Beekeeping* course is designed to provide new beekeepers with practical skills and the background knowledge to start beekeeping with confidence.

The program encompasses the Langstroth and Flow hives and is suitable for all styles of beekeeping.

No previous experience is required.

The course runs over a full weekend with hive opening exercises each day. All sessions are highly interactive and include hands-on skill building. Included in the course fee are a comprehensive handbook and a textbook (The Australian Beekeepers Manual)

Lunch and refreshments at morning and afternoon tea breaks are provided.

Great learning venue with good facilities, audio visual equipment, on site apiary, Langstroth and Flow hives.



Juniors' Page

Juniors' next meeting: March 18th, 10.00 am, at 33 Saxon St, Brunswick.

Activities: Opening hives and, if stores are sufficient, extracting with the flow hive. If stores are not sufficient, we will show a film depicting the honeybee colony and life of a bee.

The first tapping of the club flow hive
18th Feb, 2017



The middle frames were only about 50% full, but the honey was fully ripened and capped. We tapped two of the frames which yielded around 1kg, but it was a start, and I hold high hopes for another good pour in a few weeks. Even with this low amount of capped honey I was surprised how quickly and cleanly the honey flowed with no wax or other matter in the honey.

It was as clean as if it had been run through sieves. For the ease of robbing honey, the flow hive does exactly what it is advertised to do. We extracted the 2 jars and during that time we only saw one bee which quickly disappeared once the jars were covered.

Note: The lids are only off for photo purposes. They were covered after picture taking to conform to Code of practice. (Exposure of honey (including sticky honeycombs) in the open may encourage robbing and is an offence under Section 53 of the Livestock Disease Control Act 1994. All spilt honey should be cleaned up immediately).

The AGM will be held 21 July 2017

The committee for 2017-8 will be elected at the AGM. With our progressive approach we value fresh ideas. If you feel you can contribute to the club then please consider standing. With the possibility of establishing a club apiary, next year promises to be both exciting and rewarding.

Talk to a committee member. Find out what's involved and help shape the club's future. It's not a closed shop, we can always use new blood.

SOCIAL ACTIVITIES

If you have an idea for a social activity, trip or other function please see Franklin Ness with his board in the foyer before the meeting and get him to register it. Once interest is generated, it will be conveyed to the committee and then can become a club project.

LIBRARY

- Take advantage of your library.
- It's great resource to increase your beekeeping knowledge.
- New books have arrived.
- Books are available for a month at a time.
- Remember to return books to allow others a chance to share.
- If you hear about, or come across, good beekeeping reference books, let Helmut know and we may be able to purchase copies.
- Current copies of the Australasian Beekeeper (ABK) and American Beekeeper Journal are also available.

DEDJTR REGISTRATION REMINDER

When club subscriptions fall due in July, we will be insisting you provide your beekeeper registration number.

Registration is a legal requirement under the Livestock Disease Control Act 1994. It is free for beekeepers who have 5 hives or less! As a registered beekeeper a scheme for financial compensation is available for hive loss from AFB if you, as the registered beekeeper, have notified a DEDJTR Apiary Officer of this serious disease.

Members who have not yet registered with the Department as a beekeeper, please do so now. We want all members to be **registered** as beekeepers and encourage you to go to <https://dpi.payments.com.au/BEEKEEPER/NewRegistration.aspx>

We encourage you to register, even if you are still waiting to receive a hive. Some members have notified us of difficulty registering 0 hives, we have contacted DEDJTR Daniel Martin, who in turn has referred the matter to their IT department and it will be fixed in the near future. If you have had trouble retry in a few days.

Mentor Visits

We have now conducted 14 mentor visits and approximately 50 members have enjoyed the experience and practical hands on guidance they have received.

If you are worried about your colonies, and require guidance, email mail@beekeepers.org.au to register your request to hold a mentor visit at your place.

The last visit was to a Flow hive in Research where we tapped the flow hive for our member's first extraction. (Note: Lid was placed after photo taken)



Peter and Deb Thomson think after this extraction they may well have the 2017 honey comp 1st prize in the bag!



If you are having difficulties or unsure of your colony health, contact the club - mail@beekeepers.org.au

We may be able to arrange a mentor visit.

Mentor visits are arranged on a first come first served basis. You may have to wait a short time so, get your name down early.

Australian honey is unlikely to make you sick

Tests carried out on Australian and New Zealand honey samples, sourced from supermarkets in Australia, showed that 41 of the 59 honey samples were contaminated by [Pyrrolizidine alkaloids] PAs, with the mean total sum of PAs being 153 $\mu\text{g kg}$. Echimidine and lycopsamine were predominant and found in 76% and 88%, respectively, of the positive samples. The average daily exposure, based on the results presented in this study, were 0.051 micrograms per kilogram body weight per day ($\mu\text{g kg bw day}$) for adults and 0.204 $\mu\text{g kg bw day}$ for children. These results are a cause for concern when compared with the proposed European Food Safety Authority (EFSA), Committee on Toxicity (COT) and Bundesinstitut für Risikobewertung (BfR – Federal Institute of Risk Assessment Germany) maximum daily PA intake limit of 0.007 $\mu\text{g kg bw day}$.

A recent report carried out by an Irish research team commented on the high levels of PAs in Australian honey as being dangerous and approximately four times the accepted European standards.

Those of us who consume honey as a tastier alternative to refined sugar would have been disturbed to see headlines proclaiming Australian honey could be making us sick. Why, you might wonder, could this wholesome and all natural product be a threat to our health?

It is all because plants, famously, can't run away from predators.

To stop animals eating them plants often use toxic chemicals. An example is

the bitter alkaloid caffeine, which deters or can even kill insects trying to munch on the plants that contain it. A far less pleasant herbivore deterrent is the class of toxic chemicals - pyrrolizidine alkaloids. These are a large group of related compounds that can cause severe liver and lung damage. Long term consumption of pyrrolizidine alkaloids may increase the risk of cancer.



Photo: DEPI/Paterson Curse

Pyrrolizidine alkaloids are present in many plants including Patterson's Curse (Salvation Jane),

In many parts of Australia, especially Southern Australia, the weed Patterson's Curse/Salvation Jane is a significant source of nectar for foraging bees. Patterson's Curse produces high

levels of pyrrolizidine alkaloids. Indeed, it is called Patterson's Curse in part because of its poisoning stock. Honey produced from Patterson's Curse nectar can have high levels of pyrrolizidine alkaloids, and must be diluted with honey from other sources to reduce the levels.

To date no adverse health effects, either acute or chronic, have been attributed to consumption of Australian honey.

Several European guidelines recommend that people be exposed to no more than 0.007 micrograms pyrrolizidine alkaloid per kilogram body weight per day. While Australian guidelines state that people should consume no more than 1 microgram pyrrolizidine alkaloid per kilogram body weight. Australian guidelines have set the intake limits as one hundred times lower than levels that show no evidence of toxicity or carcinogenicity in animal studies. Thus, there is a substantial safety factor.

European guidelines are more stringent than Australian guidelines, due to a more conservative estimate of cancer risk. While pyrrolizidine alkaloids are able to produce cancer in rats, evidence for cancer in humans is indirect. As well, the human risk is likely lower as the mechanism of carcinogenicity is likely different to that in rats. However, the European guidelines take a "zero tolerance approach" and thus have lower intake limits.

Even with this more stringent approach for most Australian honeys, the risk is low. Australian honey has on average 149 micrograms of pyrrolizidine alkaloids per kilogram honey (compared to 40 micrograms per kilogram for European honeys, to give you an idea of how small that is, a single grain of sugar weighs around 600 micrograms, now imagine a third of a

single grain of sugar dissolved in a kilogram of honey).

For a 70 kg person eating the average amount of honey, around three grams per day, this is around double the average European consumption. Consumption of most of the Australian honeys would be safe at both European and Australian guidelines.

There were a few exceptions where the levels were quite high, and would have exceeded the EU, but not Australian, limits; substantially, out of 59 honeys tested, five had double the EU limit and one had nearly ten times the EU limit (ironically this was an "organic" honey). These honeys are of concern.

While for the average consumer the risk is low, people who are high consumers of honey are at much greater risk. The average Australian may consume only three grams of honey a day, but a small proportion of Australians consume much more.

Around 5% of Australians consume around 57 grams of honey a day. When consumed at these levels several honeys come close to the current Australian limits and substantially exceed the European guideline limits. The impact on children with lower body mass is likely to be greater as well.

On a brighter note the honey that was assayed in the headline-generating study was purchased in 2011 and 2012. Since then there has been a substantial campaign to reduce Patterson's Curse infestation. While Patterson's curse is not the only source of pyrrolizidine alkaloids (e.g. weeds of the *Heliotropium* genus also contribute) this should reduce the amount of pyrrolizidine alkaloids entering into our honeys.

To reiterate, for the average consumer the risk from honey is low. However,

further investigation and assays of more recent honey supplies will be needed to understand the risk to more vulnerable groups.

Pure Paterson's Curse honey is relatively uncommon and is usually bought from specialty markets and online distributors. Most honey processors blend their Paterson's Curse honey with other honey to reduce the pyrrolizidine alkaloids to a safe level.

or New Zealand of poisoning due to PA contaminants from honey.

What is FSANZ doing about this issue?

FSANZ and the honey industries in Australia and New Zealand have made a significant effort to characterize the toxicity of PAs present in honey.

In particular, this work has shown that the predominant PA in Australian and New Zealand honey, echimidine, has a lower



What is FSANZ's (Food Standards Australia New Zealand) response to reports on the high levels of PAs in Australian and New Zealand honey?

FSANZ is aware of the recent reports on total PA levels in Australian and New Zealand honey. However, based on the type of PA present and honey consumption levels in Australia and New Zealand, they are unlikely to pose a health risk.

Although poisoning incidents have occurred in other countries from contamination of PAs in plant products derived from wheat and other crops, there have been no reports in Australia

toxicity than the PA used as a standard by some authorities to set values.

FSANZ is taking account of recent research conducted in Australia and New Zealand on the presence and toxicity of these substances in honey and is waiting on the outcomes of the international risk assessment of PAs by JECFA (the WHO expert group with responsibility for assessing food contaminants).

It is anticipated that the WHO will complete a risk assessment this year and then the Codex Committee on Contaminants in Food will consider if there should be an internationally

agreed maximum level for PAs in honey or other foods.

The news affects varieties of honey sold by many leading brands and widely available on supermarket shelves. While the products do meet more relaxed Australian food safety standards, all but five Australian honeys tested had more contaminants than the European Food Safety Authority would consider safe or tolerable, the research published in the Food Additives and Contaminants scientific journal shows.

The Australian Food Code bans the use of poisonous weeds such as Paterson's curse (also known as Salvation Jane) and Fireweed in human food. Their flowers are laced with chemicals called pyrrolizidine alkaloids that are considered the most common cause of poisoning in humans and livestock worldwide.

But Food Standards Australia and New Zealand (FSANZ) permits honey to be sourced from these restricted plants, as long as it is blended with other honey to dilute it.

"Removing source plants is not feasible for many areas where apiaries are kept," a FSANZ spokesperson said. "Contaminants should be kept as low as achievable, therefore blending is the most practical way of reducing the levels of pyrrolizidine alkaloids."

In October 2016, German researchers from the Federal Institute for Risk Assessment found that even low-level exposure to these chemicals can cause gene mutations linked to chronic lung disease and cancers (such as leukaemia and breast cancer).

Australian toxicologist Dr John Edgar, a United Nations registered expert on this issue, said dietary exposure to these poisons could be a significant cause of cancer.

"Reducing the contamination in foods such as honey, teas, salads, flour, dairy and herbal products could result in a significant reduction in cancer cases worldwide," he said.

Writing in the Australian Medical Journal last year, Dr Edgar called for better monitoring of such poisons and for consumers to be better informed when buying food.

FSANZ's level of safe intake for pyrrolizidine alkaloids is set much higher than its European counterparts, who are more concerned with the potential cancer-causing effects.

The European tolerable intake is 0.007 micrograms per kilogram of body weight, per day. The Australian intake is 1 microgram per kilogram of body weight, per day.

The blending approach used in Australia is out of step with other world health authorities such as the European Food Safety Authority, the UK Committee on Toxicology and the German Institute for Risk Assessment who direct against the dilution of contaminated food. The latter has criticised the Australian approach as "counterproductive".

The result is that nearly every Australian honey was contaminated according to Irish researchers, who analysed the level of pyrrolizidine alkaloids in supermarket honeys here and in Europe.

Varieties such as Australian organic, floral blend, rainforest and blue borage had the highest levels of pyrrolizidine alkaloids, according to the researchers from various science organisations such as the Irish Agriculture and Food Development Authority and the Mass Spectrometry Research Centre.

The report comes as the World Health Organisation develops a code of practice to reduce the amount of such contamination in food and stockfeed.

WHO has already identified pyrrolizidine alkaloids, which have been found in high levels in foods such as herbal teas and some herbal medicines, as a serious human health threat.

FSANZ recently acknowledged international research that suggested its daily tolerable intake limits "should be reduced".

A spokesperson said it had sent an expert to the WHO committee in Rome last year and would wait for new international food safety limits before reconsidering its current approach to pyrrolizidine alkaloids.

"FSANZ has not yet determined whether the tolerable intake set in [the year] 2000 is still appropriate, taking into account the subsequent information on the toxicities of different pyrrolizidine alkaloids," she said.

"We are aware of the reports on [pyrrolizidine alkaloids] in Australian and New Zealand honey."

She said FSANZ had not yet reviewed the German paper on the cancer-

causing effects of pyrrolizidine alkaloids on cells.

"However, we note that caution is required in extrapolating from in-vitro results to the risk in humans."

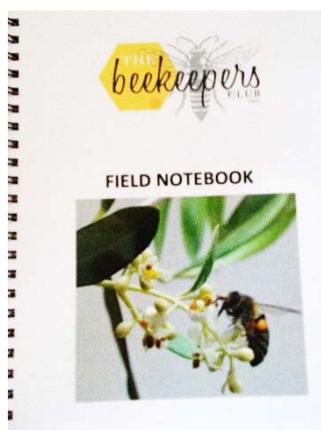
The Australian Honeybee Industry Association said the Irish report exaggerated the likelihood of toxicity by assuming larger honey consumption and lower body weight than is normal in Australia.

It said the amount of honey produced from agricultural weed has declined dramatically over the last decade because of modern farming techniques.

"Industry is fully aware of the problem with Paterson's curse honey and alkaloid content," a spokesperson said. "This honey is not produced in commercial quantities in Australia."

"There is not one single case documented of human health being unfavourably affected as a consequence of the consumption of honey containing very low levels of alkaloids."

"Australian consumers of Australian honey have nothing to fear and they should continue to enjoy our great Australian honeys."..... data from "The Conversation" and FSANZ.



FIELD NOTEBOOK

Members who have not yet received a Field notebook and hive record book, please see door check-in staff at the next meeting for your copy.

One free copy to all current financial members. There is a charge for additional copies.

Indication bees are on a honey flow

Before removing any honey from your colonies, check if the hives contain enough surplus honey. To check whether the bees are on a honey flow, take the following steps.

In the field

- Observe bees on the blossoms - the longer they stay on a flower the better it is yielding nectar and pollen. Check how long the flora will flower for, by checking the number of flowers and relate this back to the number of unopened flowers.
- Observe the activity of the bees at the hive entrance - Active flight, with many worker bees landing short of the hive entrance is an indication the workers are returning to the colony with their honey sacs full of nectar. You can also smell fresh nectar when you walk near your colonies.
- Bees can also be observed fanning at the entrance of the hive ripening the nectar. Some strong colonies have bees clustering at the entrance. Evidence of comb being drawn is also a good indication it's time to consider removing the honey crop.
- Feel the weight of the hive by lifting from the back. If heavy, the hive contains surplus honey.
- Open the colonies and observe how much honey has been capped - Remove the frames from the super. If around 80% or more of the cells are sealed with a wax cap, this indicates the bees have ripened the nectar into honey and it is suitable for removing.
- Shake a frame holding the frame on its side, fresh nectar should shake out. There is usually a lot of nectar in the centre frames and less in the outer ones. If there is no nectar (honey flow), the frames will have either sealed honey or lots of empty cells and combs.
- At night, the fanning of the bees may be heard as they ripen the fresh nectar.



Perfectly capped for extraction Photo: Don Muir

When should you remove honey?

The decision whether to extract honey is always a tricky one. When you're making the decision, always:

- Be cautious
- Don't be greedy
- Only take combs full of ripe honey. This is indicated if at least 80% of the cells are capped.
- Always leave some capped frames in the hive.

Extracting the hives really depends on the season, time of the year and how much honey the colony has stored up. If the colonies are nearly full, ask yourself these questions:

- Are the bees on a nectar and pollen flow together? This is an ideal situation as colonies collect surplus nectar and pollen.
- Is there plenty of flight activity? Bees on nectar and pollen flows are very active.
- Will the colonies collect plenty of nectar and replenish for winter if I remove the honey? Bees on a honey flow often collect more water. Check watering places for bees' drinking water.

Management

- Management consists of comb manipulation to encourage the bees to breed.
- Removing surplus combs and boxes when conditions are poor.
- If necessary feeding sugar to provide stores and pollen to provide protein at certain times of the year depending on the expected field conditions and time of the year. You should not have to feed simply because you extracted too much honey too late in the season.

Acknowledgement and thanks to Bruce White for content

AFB Test

If you have not submitted a test specimen to Gribbles Veterinary Pathology for your annual AFB test, please consider doing so and get your test kit from Helmut at the library table at the next meeting.

The club reimburses the full cost on presentation of your invoice to treasurer.

AFB is characterized by larvae or pupae that have melted down into a pool of light to dark brown liquid lying flat on the cell bottom. During this stage, the rope test can help identify it as AFB. Carefully insert a toothpick or twig etc. into the infected bee. Gently stir, then slowly withdraw. If the diseased material can be pulled out of the cell 2 cm or more before snapping back in, AFB is most likely the cause. Unfortunately, a negative rope test does not always guarantee that AFB is not present, so test several cells.

The only way to positively identify the disease is to send a sample for laboratory identification. The presence of a smooth, light to chocolate brown pupa in the cell with its tongue adhering to the roof of the cell is considered to be diagnostic for AFB. Eventually, the infected individual dries down to a black scale that adheres tightly to the bottom of the cell. The tongue may or may not be visible. A single scale may contain over 2.5 billion reproductive spores.

ANNUAL HONEY COMPETITION

MAY 18TH MEETING - ENTRIES CLOSE

JUNE 15TH MEETING - WINNERS ANNOUNCED

This year the competition has been expanded to include these categories:

- HONEY (includes traditional and flow hive entries)
 - Dark
 - Light
 - Medium
 - Creamed
 - Comb
- HONEY CAKES AND BISCUITS
- MEAD/LIQUEURS
- PHOTOS (digital submission as well as printed copies)
- WAX MODELLING, CANDLES AND SCULPTURES

Entries close 18th May to allow judging to be done in a timely way.

Prizes and presentation of judges' commentary will be on 15th June.

Jars for the honey categories will be available at the March and April meetings.

Entries will be stored by the club in a safe and secured area and non-food entries will returned to exhibitors at the June meeting. All efforts will be made to protect entries from damage but entrants acknowledge that no guarantees can be made.

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