



THE AMATEUR BEEKEEPER

DEC-JAN 2025

Api-Bioxal
Now Permitted

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Presidents Report

Vincent Schnyder, ABA President

Dear Members,

As we get closer to the end of the year it's a good time to look back at what happened in 2024 and look forward to 2025.

70 Years – Amateur Beekeepers Association

This month marks the 70th anniversary of the ABA. The association was formed at a public meeting on 3rd December 1954 at the Supper Room of the Masonic Hall in Lindfield. Colonel Guy Pulling sent out letters to all known beekeepers in the Sydney metropolitan area, with 41 amateur beekeepers attending.

The ABA has since grown from a single club to a network of 37 affiliated clubs across NSW, ACT, South East Qld and Alice Springs with currently 3650 members.

Col Pulling / Bruce White Competition

In 1986 the inter-club Col Pulling Competition was initiated to commemorate the life of the Association founder, Guy Pulling. Later the Bruce White Shield for smaller clubs was added to give them a better chance to compete with their limited resources.

Our latest Col Pulling / Bruce White Shield competition was held at our Conference in Mittagong with the Hawkesbury club winning the Col Pulling for the first time with Illawarra close second and the Nepean club winning the Bruce White Shield.

A big thank you to Wayne Hammond from Bathurst club and Michael Syme from Northern Beaches club for travelling to Mittagong to do the judging.

The Schedule for the 2025 competition will be issued in early 2025 so clubs have more time to get ready to enter. Hopefully we will see more clubs participating.

Conference Mittagong

We had four brilliant guest speakers at our one day conference in Mittagong and online for those who could not travel. With Prof Sasha Mikheyev from the Australian National University, Canberra on Evolution of Honey Bee Viruses, Liz Frost from DPI Tocal on Making honey in a Varroa hotspot from a mite-loaded caught swarm, Dr

James Dorey, from University of Wollongong on Understanding Australian native bee biology and diversity to conserve and make use of their pollination abilities and Dr Madlen Kratz from DPI Tocal on Honeybee nutrition, health and productivity. It was a great day with topics for everyone and thank you to the Southern Highland club supporting this event.

Annual General Meeting

We fully understand that AGM's can be boring and we also received feedback that some members didn't even read the full program of the Conference when they saw the three letters "A" "G" "M". It seems it's a very big deterrent. However, as an Association we have to hold one each year and I think with a quick AGM that ran just over 10 minutes to get all the formalities ticked off, was not that painful.

The committee has been reappointed to run the association for another year. However, we are still looking for a secretary to draft the agenda, keep track of the action log and keep the minutes of the monthly committee meetings. If you would like to join the team, please get in contact.

The President's report and the financial report were shared with members with the Notice of the AGM. Some details in relation to the financials were provided at the meeting.

Membership Fees: Income dropped from \$103,930 to \$82,804 as the result of lower membership numbers mainly due to the uncertainty around Varroa.

Events: The Beezeebo trailer acquired from the Central Coast club for \$5,500 during the Varroa emergency was written off during the financial year.

AGM Administration Expenses: The cost for holding the AGM reduced from \$5,366 to \$3,309 as the voting platform was not required. A more cost effective platform has been evaluated should voting and ballots be required in the future.

Insurance: Overall the insurance costs reduced from \$17,753 to 15,877 as the discount on the optional insurance for members was removed.

IT: The increase in IT spending from \$8,570 to

\$20,721 is driven by the implementation costs of \$5,000 for the new membership software and higher annual fees.

Membership Pack/Postage: After a staggering \$72,108 in FY2022/23 the costs for FY2023/24 were reduced by around \$40,000 to \$32,786. This will further reduce as log books are no longer automatically sent out.

Overall the ABA recorded a net loss of \$7,550 in the FY23/24 compared to a loss of \$12,614 in FY22/23. For FY24/25 a surplus is expected.

Conference / Beekeepers Field Day 2025

Based on feedback we received the committee decided that we will aim to run a Conference / Beekeepers Field Day with an informal Members Forum and the Col Pulling / Bruce White Shield Competition in 2025 and hold the AGM at a different time.

Date and location has not been determined yet so stay tuned.

AGM / Club Forum 2025

The AGM 2025 will be held in conjunction with a Club Forum / Training Day most likely in August 2025 at the RSL Hornsby.

Beekeeping Biosecurity Code of Practice

The Beekeeping Biosecurity Code of Practice is currently being reviewed and updated to address changes as a result of Varroa becoming an endemic pest. The ABA is working hard to represent the interest of recreational beekeepers, however, we see some strong interests from commercial beekeeping associations which we believe are not helpful and will just discredit the Code as a whole. Please refer to Mike's Biosecurity update for more detail ■

Happy beekeeping

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www.malaikahoney.com

Biosecurity Buzz

Mike Allerton ABA Biosecurity Officer



Api-Bioxal Now Permitted

The Australian Pesticides and Veterinary Medicines Authority (APVMA) has at last issued a permit for Api-Bioxal. It is one of two oxalic acid (OA) products that are undergoing the process for registration or permit.

Don't rush out to buy it though. It won't be available until the new year due to shipping restrictions. It can't be transported by air due to its corrosive properties, so we must wait for the boat to make its way down under. That could take 12 weeks.

What do we know about Api-Bioxal?

It's a product specifically produced to treat bee colonies for Varroa destructor. It was registered in the United States of America, Europe and the United Kingdom in 2015 with a dosage of 1g for sublimation in the US and 2.3g in the UK. The Australian permit is for the 2.3g dose.

There are two forms with different delivery methods. The solution form requires the apiarist to use a syringe to dribble 5ml of solution per frame covered with bees, between the frames onto the bees with a maximum of 50ml per colony.

It can be applied at any time of year but is most efficacious when applied with no brood present. I know beekeepers in up state New York who apply dribbled OA in the middle of winter when hives are covered in snow. They say it takes ten seconds and ensures their bees make it to spring.

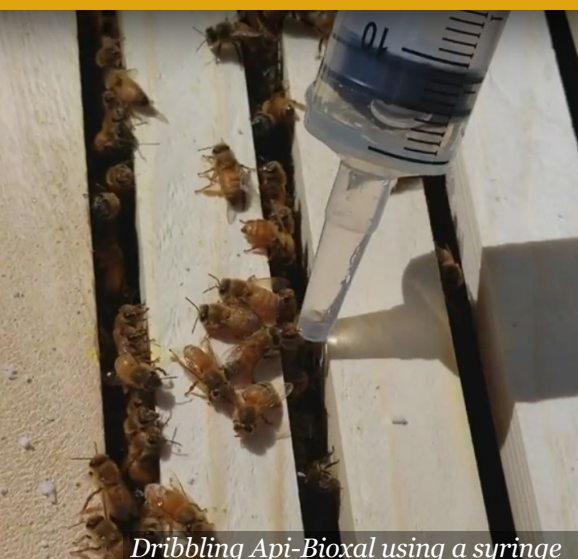
I was stunned when they told me that. Like most Aussie beekeepers, I was taught to never open the hive when its cold, wet or windy. Yet here they are opening the hive at sub-zero temperatures and dribbling liquid onto them apparently with no ill effects.

The solution form consists of the active constituent, oxalic acid dihydrate and the excipients (inactive substance used as a carrier) glycerol and purified water. There's no preparation, mixing or heating to do. It's ready to go straight from the bottle.

The other form is a soluble powder. The label issued by the APVMA indicates that it consists of just the active constituent, oxalic acid dihydrate. The Api-Bioxal used in the UK also lists the excipients silica and glucose.

The powdered form can be delivered either by dribble or sublimation (vaporisation, fogging). To deliver by dribble it must be prepared by dissolving the powder in a 1:1 solution of sugar and water and then dribbled the same way as described above.

Sublimation uses heat to vaporise the powder. It's applied through the hive entrance or a hole drilled into the brood box for that purpose. The hole is plugged between applications. The vapour then rapidly recrystallises on the surfaces within the hive including the bees. Mites that touch the crystals perish.



Dribbling Api-Bioxal using a syringe



Applying OA vapour to the hive entrance with a battery powered sublimator



Sublimators can run on car batteries, butane gas or like this one 240VAC



Think Safe! Wear a mask with a filter for organic vapours

Screened bottom boards and entrances must be closed to keep the vapour within the hive until it recrystallises. You'll need to find a way to cover the meshed bottom board. It could be a sheet of corflute held up to the bottom of the mesh with tape, or you might build a facility to slide it in, similarly to the Classic Flow Hive design. The entrance can be blocked with a damp cloth or towel.

There is a selection of sublimation equipment available ranging from inexpensive Chinese products to high quality precision machines. Some use a gas flame, others a car battery or even mains power. One of the better-quality products I've seen uses a cordless tool battery with options to suit the brand you may already have. Using the device with a 5AH battery, up to 20 hives can be treated on one charge.

Look out for reviews of sublimation equipment in future editions of *The Amateur Beekeeper*.

Safety

While the processes of dribbling and sublimation are simple, there are safety risks that must be considered. Oxalic acid is corrosive. Any contact with your skin and sensitive areas such as your eyes or inside your throat and lungs, could cause discomfort or injury. Appropriate personal protective equipment must be used to minimise the risk and severity of any injury.

One concern I have for the sublimation of Api-Bioxal is whether silica and glucose are in fact present in the product sold in Australia. In the UK, the glucose has been found to caramelize causing a build-up of residues (*burnt sugar*) in the heating

chamber. Think burnt toffee in the bottom of the pot. If the residue is not removed during regular cleaning, a blockage could cause an explosion, potentially leading to cuts from shrapnel, or heat and acid burns.

In a recent conversation I had with Liz Frost from DPIRD/Tocal, I suggested it would be useful to have a short course created as a standalone module, that could also be incorporated into the Certificate III Beekeeping course. I envisage a straight forward training on the safe and efficacious application of Api-Bioxal via both labelled delivery methods. The feedback was positive, so hopefully we will see a training option in the new year.

What About Supers?

Oxalic acid (OA) is a naturally occurring substance already present in honey. It also breaks down within days. Randy Oliver, California based commercial beekeeper and scientist uses a method called titration to determine the concentration of OA on bees. After OA sublimating multiple hives, Randy sampled bees from the hives daily to measure OA concentrations. He found that OA kills mites for up to three days, then degrades rapidly.

This is good news for a couple of reasons. First, it means that the bees are not continuously exposed to high levels of the acid which is better for bee health. Second, the honey in the supers will be unaffected by OA exposure.

The Api-Bioxal label indicates that treatment can be done with supers on and with no withholding period.

Are There Restrictions for OA Use?

Unfortunately, the label has not kept up with the results of research in the ten years since Api-Bioxal was registered. It is expensive to register a product and expensive to amend a label. I suspect the manufacturer is reluctant to commit the funds to update the label when the return on investment is slow.

The label indicates that we can only apply Api-Bioxal a maximum of twice per year at the labelled dose with a minimum of five days between treatments. The reason given is to prevent mites developing resistance and to minimise harm to bees.

There has been no record of mites developing resistance to anything other than the synthetic chemicals. In decades of use, the organic chemicals such as formic acid and oxalic acid have not yet revealed Varroa destructor developing any resistance. There has been recent research indicating that frequent use of OA does not significantly harm the bees and that higher doses are more efficacious.

For those interested in reading the University of Florida 2023 research, click [HERE](#).

In the meantime, we are obliged to comply with the label.

Biosecurity Code of Practice Update

The Australian Honey Bee Industry Biosecurity Code of Practice is a document published by Plant Health Australia that determines the obligations beekeepers follow to ensure that our livestock (bees) remain healthy and that the hive products (honey, wax etc) are fit for human consumption. It is not a manual on how to keep bees. The Code tells us what to achieve, but not how to minimise the impact of pests and diseases on our bees and those of our fellow beekeepers.

The Code was developed in consultation with beekeepers and government to engage in best practice biosecurity.

With Varroa destructor now declared endemic, industry bodies such as beekeeper associations and pollination dependant crop associations were invited to offer feedback on the proposed expansion of the mite related sections of the Code. I represented the ABA to ensure that the amendments were appropriate for recreational beekeepers.

I considered the amendments as presented in the first round to be acceptable and so I endorsed them. The final draft is now ready for consideration, but there has been a significant proposed amendment that falls outside the Varroa scope.

Part C - 50 or More Hives Reduced to Five or More Hives

Part C of the Code refers to several compulsory requirements for beekeepers with 50 or more hives. Those requirements are:

- The beekeeper must successfully complete an approved pest and disease management course or Beekeeper Biosecurity Training and Assessment Program such as the BOLT course
- The beekeeper must have their hives independently tested for the presence of AFB, typically a honey culture test by an approved lab
- Submit an annual declaration that the beekeeper is fully compliant with the Code.

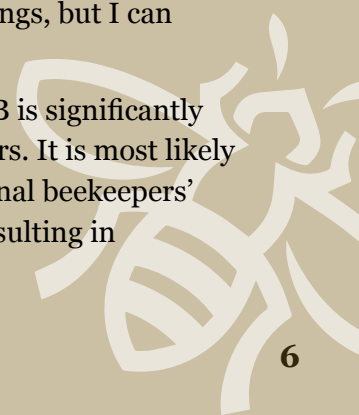
One of the Commercial Associations has proposed that the Part C obligations now include beekeepers with five or more hives.

I recently represented the ABA in the BIBCC meeting in Orange and the online AHBIC meeting. The hot topic for both meetings was this significant proposed amendment to the Code.

The Apiarists' Association presented their case supporting the amendment, stating that in their view the primary cause of the spread of American Foul Brood (AFB) is recreational beekeepers. They believe that forcing more beekeepers to comply with the Part C requirements will reduce the occurrence of AFB. I find it disappointing that the "them and us" mentality still exists.

The ABA executive is against this proposed amendment and I presented our case at both the BIBCC and the AHBIC meetings. I'm not at liberty to discuss the detail of the meetings, but I can present our case.

I have seen no evidence that AFB is significantly spread by recreational beekeepers. It is most likely that any spread within recreational beekeepers' hives will be through robbing resulting in relatively slow migration.



In a commercial operation the spread can be accelerated through mass hive movements. Pollination events involving pallets of hives from different suppliers in proximity open the opportunity for many more hives to rob an AFB weakened hive. Then those loads of bees are relocated to the next crop, potentially spreading to more hives.

There has been a practice by some operators of masking AFB symptoms with the illegal use of Oxytetracycline, a broad-spectrum antibiotic. It does not cure AFB. Recreational beekeepers generally do not have access to such medicine in the volumes required to “treat” AFB symptoms.

The introduction to Part C states “Commercial beekeepers are more likely to move hives around the country and move into areas of high bee density. They pose a greater risk of disease spread to other commercial beekeepers and it is appropriate they should have a higher level of biosecurity.”

The Apiarists Association seeks to remove this obvious statement and replace it with “It became evident during the early stages of the Varroa incursion in 2022 that many beekeepers did not have adequate knowledge of pest and disease identification and management. Many of these beekeepers were located close to other beekeepers and posed a biosecurity threat to beekeeping businesses. Consequently, Part C of the Code has been amended to cover all beekeepers who manage 5 or more hives.”

I’ve requested a copy of the inferred evidence and await the results.

I note that the rapid spread of Varroa destructor to new locations tends to align with commercial hive relocations. I’m not suggesting it was deliberate, but it illustrates that the spread of pests and diseases is most rapidly facilitated by human transportation and that is done at scale by commercial operators.

What are the Ramifications of this Amendment?

If you have four or less hives, you will be unaffected.

Everyone else will have the following obligations:

- Complete an approved biosecurity training within 12 months of initial registration and every three years thereafter.
- Submit a pooled honey sample representing

at least 20% of your hives to a laboratory for microbiological examination every 12 months

- Submit an accurate declaration every 12 months, certifying that the beekeeper has successfully completed the above training, include full details of the honey test and that the beekeeper management and operation is fully compliant with the Code.

I believe the training component should apply to all beekeepers. The BOLT course is undergoing some updates, but still presents information that benefits all beekeepers. More knowledge is better than none.

While honey testing is a useful tool for diagnosis and peace of mind, it only has value if honestly applied. It is very easy to cheat if a negative result is required. Simply keep a bucket of clean honey to sample for annual testing. In an experiment conducted some years ago, random jars of honey were taken from supermarket shelves for testing and a significant number of jars resulted positive for AFB.

In my opinion, forcing us to pay for a test that is easily cheated and therefore lacks integrity wastes our money and the laboratory’s time. With thousands of extra tests to do, can the labs keep up? This is the most onerous imposition on beekeepers.

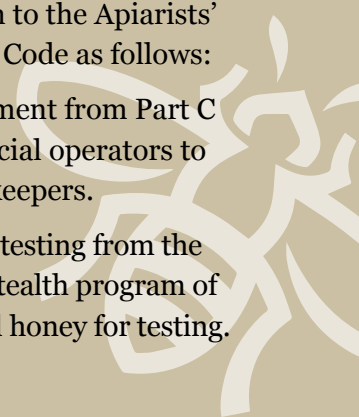
Regarding the declaration. It seems more appropriate for a commercial operator, but if it were to coincide with registration renewal, I don’t believe it would be too much. At the time of registration, it would involve a little extra paperwork every two years for NSW and NT, and every three years for QLD and ACT.

One potential ramification I predict is that some or many registered beekeepers would stop registering their hives and go off grid. Then, they might lose touch with fellow beekeepers, clubs and training opportunities.

What is Our Response?

We propose a different approach to the Apiarists’ Association’s amendment to the Code as follows:

- Move the training requirement from Part C which is aimed at commercial operators to Part B which is for all beekeepers.
- Remove compulsory honey testing from the Code and replace it with a stealth program of buying random jars of retail honey for testing.



The honey can come from supermarkets, farmers' markets, delicatessens, anywhere that sells honey. Compliance with labelling is immediately checked and AFB positive results can then be followed up in the normal way. This would remove the opportunity to cheat the system.

The details for how the state and territory authorities could conduct random testing would need to be forged, but in my view the concept has much higher integrity than the current compulsory honey testing requirement.

What do you think?

“Own Use Exemption” Update

AHBIC representatives have met with APVMA to discuss chemical registrations and included the “Own Use Exemption” topic. AHBIC published information about the discussions. The following is an excerpt of the Own Use discussion:

4. Own-Use Permits:

In New Zealand, Schedule 2 of the ACVM (Exemptions and Prohibited Substances)

Regulations 2011 provides for an exemption from registration under the ACVM Act referred to as the ‘own use’ exemption. The exemption applies to a substance or compound prepared by a person for use on animals or plants that they own, or on any land, place or water that they own or occupy.

The APVMA was clear that these ‘own use exemption’ provisions that exist in New Zealand are not allowed under Australia’s legislation. Therefore, legislative reform (*which is a lengthy process that is managed by the AgVet Policy branch of DAFF*) would be required to introduce similar provisions here.

The discussion, which was based on published guidance from ACVM, highlighted some significant limitations that would need to be considered including:

- The NZ guidance applies to agricultural chemicals not veterinary medicines. Under the AgVet Code in Australia, varroa treatments are veterinary medicines.
- The exemption only authorises use on their own bees. It does not authorise the sale (*including gifting*), distribution, or promotion of treatments.

- One clause in the NZ own use exemption is that the treatment must not be toxic to animals that are treated or exposed to the treatment. This statement is ambiguous and would need clear definition and supporting data.
- Under the own use exemption, the beekeeper is responsible for managing the risks associated with compounds they have prepared. If beekeepers do not manage the risks, then they could be subject to compliance action under the ACVM Act and its related legislation.

I’m encouraged that AHBIC opened discussions with the APVMA. I see the objections raised as sensible observations, none of which cannot be accounted for.

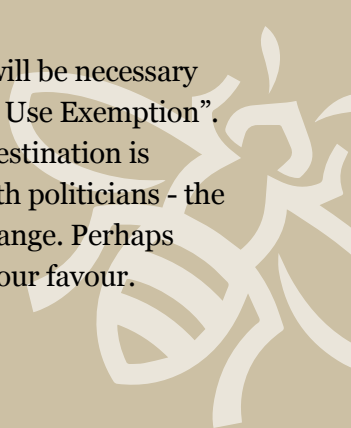
Is the definition of chemicals used as varroa treatment as medicines necessarily an obstacle? Would it be possible to redefine non-synthetic treatments as agricultural chemicals if that simplifies implementing “Own Use Exemption”?

I agree with the requirements of the second point. That’s the purpose of “Own Use”.

Ensuring any treatment is not toxic to animals is the highest priority in my opinion. It doesn’t have to be ambiguous. There is a mass of published studies and ongoing research worldwide dedicated to finding safe effective non-synthetic treatments. The expensive and slow registration/labelling system cannot keep up as illustrated in the recently permitted Api-Bioxal label. The science clearly supports higher doses and frequency of treatment. Yet we are stuck with the outdated requirements. Would it not be a simple requirement that beekeepers only use products/recipes that have been proved safe and effective?

The last point is sensible. The beekeeper is responsible for managing the risks and associations such as the ABA can ensure that members are trained to do so.

We knew that legislative change will be necessary to enable our version of the “Own Use Exemption”. It’s a long road to tread, but the destination is worth it. We’ll continue to talk with politicians - the law makers, to bring about the change. Perhaps next years election could work in our favour.



AFB Minimisation Program

The year is ending, but there is still free honey testing available. Please contact me to arrange your samples. The deadline for submission to the lab is 20 December. I need to receive your sample by 18 December so I can process and deliver them.

Club Visits/Presentations

It's been a busy time. I assisted the Southern Highlands Apiarists with their AGM and talked about varroa. They also hosted the ABA Conference/AGM at Mittagong RSL which was well received. Some wonderful speakers made for a very informative day. Hawkesbury won the Colonel Pulling competition and Nepean won the Bruce White Shield. Well done to both clubs.

Goulburn Beekeepers welcomed me to their club to talk about varroa and other biosecurity issues.

It's good to note that they are taking advantage of the Varroa Development Officers while we have them. They're also hosting a DPIRD sentinel hive.

I spoke at the Bathurst Beekeepers meeting about AFB and there were a few questions about varroa too. Bathurst is steadily rebuilding after a period of inactivity. They're arranging cooperative events with Orange Beekeepers, that I think will strengthen both clubs.

The Orange Beekeepers president, Cynthia Faulkner invited me to speak at one of their meetings that I'm delighted to accept. Cynthia is also proactively engaging Orange Beekeepers with the VDOs.

Until next time ■

Mike Allerton ~ biosecurity@beekeepers.asn.au



ONLINE DOCUMENTARY HOW TO USE A VAPORISER



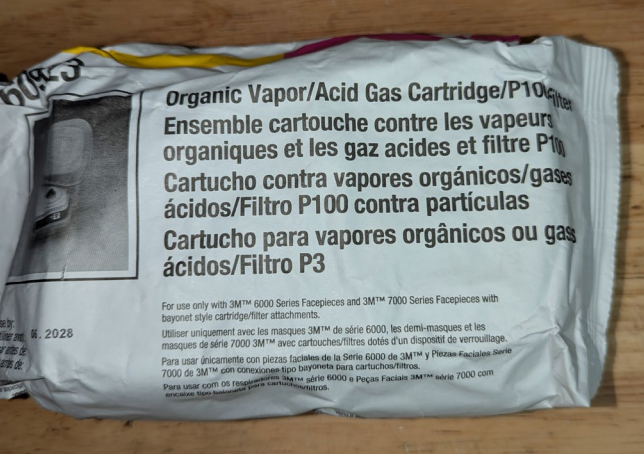
Kamon Reynolds is highly regarded in the beekeeping community for his expertise in hive management, queen rearing, and sustainable beekeeping practices. He also shares his knowledge widely through his YouTube channel and educational content, which is aimed at helping both beginners and seasoned beekeepers improve their practices.

In this video he is demonstrating how to use an oxalic acid vaporiser. A subject that is featured in this month's newsletter ■

LINK:

<https://www.youtube.com/watch?v=zeqinLuiL9s>





Api-Bioxal – Permit 94609

Fiona Fernie

The Transition to Varroa Management continues apace with the first new treatment to receive a permit since we stopped eradication. The importance of this newly permitted treatment is that many beekeepers have asked about an Oxalic Acid Dihydrate option as part of our toolbox of treatments. We now have Api-Bioxal with a permit for use, pending full approval.

Australian Beekeepers have read about this treatment from overseas and now we have one treatment, with at least another, pending a permit or approval. This is not a silver bullet, but it is an effective treatment and it is now one more medication for our toolbox. And, it is a treatment that can be used with honey supers on, although if you can remove them, it is useful.

All of the organic acid treatments are hard on our bees and hard on beekeepers! Api-Bioxal is a toxic chemical and should be viewed with caution. It is toxic – well it kills Varroa Destructor – but it will also harm beekeepers and bees if not used with caution. Protective equipment should be used when dealing with Api-Bioxal – eye protection and chemical gloves, coveralls and closed in shoes – all are essential. Years ago, many agricultural chemicals were used without protective equipment or other precautions and many farmers now live with long term chronic illnesses from their uses.

Api-Bioxal should be used when brood levels are at their lowest – it does not kill Varroa under the cappings – only Formic Pro does that. But, it is a useful treatment after a broodbreak or when collecting a swarm. It does not kill disease, but it does kill the Varroa pest.

Two delivery methods have been included in the permit, trickling and sublimation. A sugar solution containing Api-Bioxal is trickled down the seams

of bees in the brood box. Sublimation is delivered by producing a vapour, with the use of specialist equipment. All of the information is included in the permit – it is an easy read and it includes the recipes for treatment. Please read the permit carefully.

The big caution to use is that if you are using sublimation, it is mandatory to wear a reusable half face respirator and eye protection. The filter cartridges are rated for particulates and ACID GASES. Many hardware/DIY stores sell respirators rated for dust, varnish, pesticides and organic vapours – these filters are not sufficient – the filters are required to be rated for acid gases.

If any beekeepers think they can use Api-Bioxal sublimation without a respirator, they risk their own lives and they run the risk that the permit for sublimation will be withdrawn. If you purchase a good quality respirator it will last for years and is a good investment in with the rest of your beekeeping equipment. The filters have an expiry date on them and are required to be replaced, from time to time. This is life-saving equipment and should not be skimped upon.

For all the beekeepers who have attended to Varroa Workshops, you are all familiar with the rotation of treatments to reduce Varroa building resistance to the toxic effects of chemicals. Api-Bioxal is another treatment to be used in rotation, it can be used with honey supers on and it has a nil withholding period. It has a different mode of action, so it widens the medicinal scope. Residues are nil if you adhere to the instructions in the permit.

Use this treatment with caution, but you will find it an extremely useful addition to your range of options, when treating for Varroa. Your health and well-being are as important as that of your bees. Thoroughly read the permit and you will find Api-Bioxal helpful. Further treatments gaining permits may follow, so watch this space and we shall bring you the information, as it comes to hand ■



RECIPE HONEY CHRISTMAS CAKE

As if this is not the perfect recipe for a beekeeper with a festive heart

INGREDIENTS

- 230g plain wholemeal flour
- 1½ teaspoonfuls bicarbonate of soda
- 1 teaspoonful ground cinnamon
- 240g currants
- 100g raisins or sultanas, roughly chopped
- 2 eggs
- 90ml sunflower oil
- 90ml buttermilk
- 200g runny honey (*it helps to warm it a bit before combining.*)

DIRECTIONS

1. You will need a buttered and lined 8 inch spring form cake tin. Pre heat your oven to 140°C fan forced.
2. In a large bowl, combine the dry ingredients and the fruit, stirring thoroughly. In a separate basin or jug, whisk together the oil, buttermilk, honey, and eggs, then pour this mixture over the flour. Mix until well combined.
3. Transfer the mixture into your prepared tin and bake for approximately 1½ hours, until just firm to the touch. After an hour, check to ensure it is not browning excessively, and if so, reduce the oven temperature to 130°C. Allow the cake to cool in the tin for at least ten minutes before transferring it to a rack. This cake can be stored in a tin for a week or more. It is exceptionally good ■

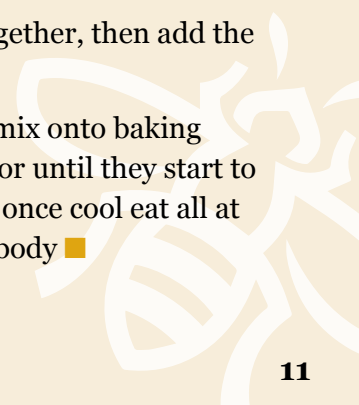
RECIPE HONEY CHEWY BISCUITS

INGREDIENTS

- 230 g softened unsalted butter
- 120g brown sugar
- 170g honey
- 200g plain flour
- 1 egg
- ½ tsp baking soda
- ½ tsp salt
- Dash cinnamon

DIRECTIONS

1. Preheat oven to 180c
2. Mix butter sugar and honey together, then add the remaining ingredients.
3. With a large spoon dollop the mix onto baking sheet and bake for 10 minutes or until they start to brown, place on a cooling rack once cool eat all at once without sharing with anybody ■





Lots of weak bees were observed on the ground near the hive. They were a mix of young and old bees.

Observations of Untreated Hives that have Varroa

Rod Bourke, DPI Bee Biosecurity Officer

As a beekeeper and Bee Biosecurity Officer I like to try out and test various things, so one of this year's projects was that I decided not to treat a hive that had a small number of mites in the wash to "see what happens".

Every other hive had various varroa treatments applied at required times since January, so I was able to get a reasonable idea of how this "neglected" (guinea pig) hive fared compared to the rest. By May I started seeing dopey weak bees hanging on the grass up to 8 meters from the hive. I picked a few of them up and they could not even manage much of a waggle or to present their sting, and they were also too weak to fly (all the ones I tossed up in the air couldn't fly anyway!). A number of them also had feeding varroa visible on them, and one even had 2 mites on it.

Upon opening the hive, it was obvious that it had weakened considerably since it had raised a bar of queen cells in late February. It had filled and capped an empty honey super put on straight after those cells were removed, but there was now

barely a bee up in there, plus uncovered frames down in the edges of the brood box. An alcohol wash gave a result of 212 mites, which did not break any records (only about 70% infestation), but nonetheless this rate was fairly critical for the colony seeing that it was almost the first day of winter and only 3 weeks before the all-important shortest day of the year.

Preparing your hives for winter is a job that is ideally completely finished by Anzac Day/late April, although where I am based near Tocal you



Mite found on a young bee on the ground. This is the most common spot to find mites feeding on a bee.



Two mites found on another young bee on the ground

can normally push it a bit further than that (I did put cells into nucs in mid-April one year that mated and generally survived winter ok).

What had clearly happened was that the colony health had suffered greatly as they were heading into the most critical time of a colony's season, which is surviving winter. The rate of mites feeding on bees had gone up drastically and the bee population was at the same time dropping as the brood rearing rate dropped off and older field bees hung up their wings. That added even more stress upon the bees.

Nosema is a frequent killer of adult bees, but is often unnoticed by the beekeeper as most afflicted bees die away from the hive and except in extreme cases there are few visible signs of illness, apart from colonies not being "as good as they should" (which can also be caused by many other things including genetics, queen quality, brood disease, pesticide exposure, fermented sugar syrup or nectar, or most often by poor nutrition).

As well as poor nutrition being a major factor for increased nosema levels in bees, another major issue is from stress upon the colony. Stress can be caused by many different reasons or activities, including:

- Poor site location (cold, exposed and windy, shaded, extremely hot or wet etc.),
- Poor beekeeping choices or management (including not keeping bees tight in colder seasons, moving bees during very hot weather, ineffective bee pest control or not requeening when you should),
- Undertaking invasive beekeeping and brood-work in poor weather or inappropriate temperatures (which sometimes "needs to be

done", but weeks later you realise that your bees would have been far better off if you had waited a few days for better conditions before doing it).

- Poorly managing all the various bee pests including small hive beetle, ants and now varroa mite also separates the good operators from the rest, as each of these pests can either by themselves or working together with others can impart significant stress upon individual bee colonies, which greatly increases the potential for unhealthy colonies or hive losses.

If you look at the list of possible stressors you can immediately see that most of these stress causes can be completely avoided, as long as you are prepared to prioritise bee health over your own personal convenience or maintaining your beekeeping schedule come hell or highwater. Some operators simply don't have enough spare time on hand to put things off, so if they have to keep on working right through poor conditions this can often result in higher levels of adult and brood disease (European foulbrood and chalkbrood etc.) than those able to wait it out and catch up later.

What is now being noted in the Hunter, Central Coast, Sydney Basin, Kempsey and now the Shoalhaven area is that hives with significant varroa infestation rates are indeed showing major negative health impacts. Symptoms that look similar to Parasitic Mite Syndrome (PMS) have also been observed by Varroa Development Officers (VDO) and BBOs out in the field. PMS is thought to mainly be caused by Deformed Wing



When you get a wash like this you know the hive is definitely struggling (even if you cannot see it)



Nuc entrance fall-out one hour after adding a synthetic miticide strip



Nuc with synthetic miticide strip added May-July - no mite count

Virus (DWV), and thankfully significant amounts of testing by DPI has not detected any DWV in hives afflicted with our PMS-like symptoms or in any other bee samples, suggesting that here in NSW there are other factors causing this malady to present itself.

High on the list is a domino effect caused by the combination of poor nutrition, high stress levels, increased nosema rates, suppressed immunity, plus effects from the various viruses and brood diseases that are already present in NSW (maybe even Sac brood) all working together on colonies where large numbers of the bee population have been fed upon by mites, and have lost their shine and vitality. At certain times of the season a colony may (or may almost) be able to “shrug off” reasonably high mite rates and appear to be doing quite ok, but as a colony prepares for the most important overwintering portion of its life that is not always the case.

Right now, there are likely thousands of feral and unmanaged/poorly managed bee colonies around various parts of NSW where the mite numbers have or are building up to significant

levels, with colonies on the brink of total collapse or absconding. At the end of June, I saw a small colony of bees sitting in the local “swarm tree” that attracts most of the swarming colonies nearby. Whilst strong colonies can start drawing cells in early July around Maitland this was not a colony in that situation, and it was there out of desperation. It was likely highly infested with varroa and left behind an unguarded resource in a tree or hollow (or unmanaged hive) somewhere that will get robbed or slimed out at some point this season. As varroa moves through the landscape many of those situations will arise, and beekeepers will need to work particularly hard to maintain good colony health.

In times like these prioritizing bee health is far more important than achieving your desired maximum hive numbers that stretch your resources and ability to manage them all, so please make running healthy colonies your main aim for this season. That includes regularly washing adequate hives at each apiary to detect mite presence and numbers, so don't put that off.

Don't bother using a sugar shake to do that critical monitoring, as we have recently done trials that showed them to give highly variable and sometimes inaccurate results versus an alcohol or soapy water wash. One very thorough sugar shake gave 2 mites, and when alcohol washed it gave another 17! Another that gave 9 in a sugar shake then supplied another 19 in a soapy water wash. Don't risk your entire hives health (20-50 000 bees) by trying to save half or two-thirds of the 300 bees that you sugar shake (the rest will likely die slowly over a 1-3-day period after shaking them), just use alcohol or low-suds soapy water and get an accurate count.

Once the feral and unmanaged colonies start being impacted by high mite numbers there will be a spike in robbing opportunity, and it is logical that some of the robber colonies will also break down with American foulbrood (AFB), so expect that infection rate to increase. Be on the lookout this season and ensure that you take appropriate precautions to limit its spread through your apiary. Undertake at least 2-3 more thorough brood inspections before winter (shaking all the

bees off the frame first) and be on the lookout for any suspect cells, and test any you find.

If you or a beekeeper you know is having issues with AFB (many are, so you would not be alone) then please send an email to bee.biosecurity@dpi.nsw.gov.au so that one of the NSW DPIRD Bee Biosecurity Officers (Sam, Dan or myself) can contact you for a confidential discussion about your situation and ways that the disease can be cleaned up without ruining absolutely everything.

If you would like to talk with a NSW Varroa Development Officer then please request this via dave.fairhall@dpi.nsw.gov.au or 1800 084 881 and one will get assigned to talk with or visit you, your branch or a group of beekeepers to discuss your varroa concerns. The VDO's are here as part of the National Varroa Mite Management Program until early next year to assist NSW beekeepers with varroa, so get in touch with them if you would like specific varroa assistance ■



Tales of The Bee Club Hive

If your not checking your guessing

Doug Purdie Vice President

I talked about the Sydney bee club hive in the last issue, here is a recap for those that missed the last article and follow up.

About three months ago I had to relocate the Sydney Bee Club hive in Randwick due to some construction taking place nearby. When it arrived in its new location, I checked for eggs, to make sure the queen survived the move, and to make sure that the hive was in good health overall. (I always do this about a week after a move.)

I was in for a shock! As soon as I started looking for eggs, I saw visible varroa on the bees. Yet - I'd done an alcohol wash that returned zero mites only a day before I'd moved the hive. "How could this be?!" I said with a few choice unpublishable words thrown in. The short answer is: feral and managed hives collapsing nearby causing a varroa bomb.

I treated the hive immediately with a chemical treatment as the count in the wash was about 60 mites (a catastrophic number) with hive collapse or absconding imminent. Fast forward to six weeks later and the treatment was removed with a zero-count alcohol wash recorded.

Then, some four weeks later, with the hive safely ensconced back in Randwick, we were doing an alcohol wash at a field day and to our dismay, 20 mites were found in the wash and the hive needed treating again! It seems it's a two-month rotating cycle of treatments needed in the initial phase.

Why am I telling you this? My first point is: varroa is among us and if you're not monitoring for mites, you're likely to lose your hive.

My second point: if you're not sure how to go about monitoring and treating a hive then get along to a club meeting or seek out training, varroa needs to be taken seriously, or your hive and those around you are at risk of collapse. So get monitoring and keep on top of the little devils ■



Making a bee line for bees

Frewoini Baume

On one of my last days of school, my teacher asked me “What are you going to do?” I replied, “I don’t know, probably go to uni or something but I’d love to just travel and work with beekeepers.” In 2022 this came to fruition after being awarded a Global Footprints Scholarship. This provides funds for young people who haven’t been to university but have completed a cert 3 in either horticulture, agriculture, or a trade, to travel overseas and experience their industry.

I couldn’t write the feeling better than Dr. Zeus does when he wrote “You’re off to great places. Today is your day. Your mountain is waiting, so get on your way!” The mountains that waited were grander than I ever could have imagined.

My first two trips took me to spend an eye opening and laughter filled couple of months between Fiji and the Solomon Islands. Here I worked on different agricultural development programs including Bees For Sustainable Livelihoods which I’d looked up to for many years. However, in this article I’ll focus on my most recent travels to Taiwan and Central Asia with Dr. Samuel Ramsey, Dr. Maddison Sankovitz and their team at Boulder Bee Lab. You might remember Dr. Ramsey spoke at our 2023 conference about tropilaelaps mites and his PhD finding that varroa mite feeds primarily on the bee’s fat bodies. Sammy’s team is on a mission to better understand and monitor the spread of all honey bee parasites in hopes of find a sustainable varroa control.

To collect samples of different honeybee species and their parasites means that most research trips

are to a part of the world I read described as “the center of honey-bee mite diversity” - Asia. Asia is where many of these bees and their parasites originate from.

TAIWAN

Filled with excitement and curiosity on July 23rd I flew to Taiwan to meet the team.

We visited some incredible beekeepers in Taiwan. Supplementary feeding appeared to be well practiced across Taiwan. All the beekeepers we visited had pollen supplements in their hives and trays ready for syrup. Most beekeepers appeared to run on average between 150-300 hives. A combination of mechanical controls, namely brood breaks, and non-synthetic treatments seemed to be the most common varroa control practices used in this subtropical climate where there isn’t a natural brood break.



A key highlight in Taiwan was seeing *Apis Florea* for the first time. Commonly referred to as the dwarf bee, you can imagine just how excruciatingly cute they were! Their open-air nest consists of a single vertical comb often built off a branch or shrub. *Florea* communicates in such fascinating ways including piping which is, well, exactly as it sounds! Unlike *A. mellifera*, *A. florea* interestingly perform their waggle dance on the horizontal, on top of the crown (the crown is where the comb is attached to the branch and honey is stored).

Apis Florea (*the Red Dwarf Bee*) and *Apis Andreniformis* (*the Black Dwarf Honey Bee*) are the original hosts on euvarroa.



Recently landed Apis Florea colony beginning to build its nest



Since its initial detection in 2017 in Kaohsiung city Taiwan, *A. florea* has been spreading across Taiwan. Taiwan was believed to be the most westerly location with *Florea* until it was detected in Malta this year. With the additional detection of *tropilaelaps* mite now as far west as Georgia, it's clear that the impacts of operating on a global scale heightens the risk and rate of pest and disease spread. While *varroa* is here to stay, there are still other things we need to keep our eyes out for.

state's population making it the least densely populated country in the world. In robust ex-soviet ambulances, we drove from the capital Ulaanbaatar, to the north eastern mountain forest steppe, where most beekeepers are located. Goats, cows, horses and gers spotted the otherwise seemingly endless green hills and vast blue sky with sweeping clouds.

With only mud tracks to follow a few hours out of the capital, we were relieved to be in the capable hands of no ordinary driver, but ex-race car



MONGOLIA

We left Taiwan at the crack of dawn and arrived in Mongolia at night leaving me itching for the morning sun to rise and see what awaited. Mongolia is a landlocked country in Central Asia with Russia to the north and China to the south. Mongolia is the second largest landlocked country in the world. While being nearly double the size of New South Wales, it has approximately one-third of the

drivers - you can imagine the fun we had and the nervous glances we exchanged at times!

Apis Mellifera was introduced to Mongolia so beekeeping has a relatively short history. This is largely due to their nomadic lifestyle and the fact most crops were pollinated by the roughly 30 bumble bee species they have. Many of the beekeepers we worked with were introduced to the practice through a 2010 World Vision project. Since the late 1950's numerous honey bee

subspecies have been introduced to Mongolia. We worked primarily with *A. m. vostoca*. This line emerged as a natural hybridization of *A. m. caucasia*, *A. m. linguistica* and *A. m. mellifera* colonies that were introduced from Russia. *A. m. vostoca* is favored for its low aggression, hygienic behavior, overwintering and ability to forage in extreme temperatures. 'Extreme' is sure one way to describe the -35 degrees that Mongolia can experience! Beekeepers frequently stated the cold to be the biggest stressor to hives, beyond varroa, diseases, bears and wasp impacts. To accommodate for this, many of the boxes are built with two layers of timber and when you open the lid you're often greeted by layers of vibrantly coloured pillows and blankets used to retain heat in the hive. The Mongolian beekeeping season is generally from April to September. In some parts of the country, the end of October marks the time to feed and move colonies into winter houses located both above and underground - securely and warmly tucked in for the winter.

naturally. By collecting and then comparing and contrasting the landmarks on the bees' wings, they were able to confirm that pure strain *A. m. pomonella* does still exist.

The research institute has monthly bee meetings which are available to all beekeepers in person or via Zoom. In August their meetings invited queen breeders and beekeepers from Kazakhstan, Russia and Ukraine to discuss ways they can conserve this local *A. m. pomonella* line.

Another standout in Kazakhstan was the beautifully diverse ways honey was presented and the public's knowledge of it. Even when chatting to ordinary people on a train or bus they could name me their favourite honey. After visiting a few markets and honey shops I began to understand why. Honey shops were just as, if not finer than, wine shops. Some had special timber and paintings specific to the region the honey was from. There was so much detail, care and pride in the products they produced and



KAZAKHSTAN

After Mongolia, I traveled to Kazakhstan where I spent time with the Kazakhstan Research Institute of Livestock and Feed Production.

Kazakhstan is the homeland of apples, tulips and *Apis Mellifera Pomonella*. *A. m. pomonella* is also known as the Tien Shan Mountain Bee because it originates from the Tien Shan Mountains bordering Kazakhstan and China. While *A. m. pomonella* was identified in 2003, it was unknown if any pure strains existed

sold. I'd never seen anything like it and found it inspiring. It was a similar scenario when I traveled next to Kyrgyzstan.

KYRGYZSTAN

The transitional period between seasons is one of my favorites. While living in a village south of Kyrgyzstan, winter preparations were well underway. This meant harvesting and stacking hay to dry in pyramids or on top of trees where the livestock couldn't reach it before being stored in the hay lofts. Herding the cows, goats,

sheep, donkeys and horses back to the village from their summer pastures in the mountains.

Normally donkeys would carry the hives down but recent bear activities meant the cousin's emergency truck needed to be used to get the hives back down quicker. The seasons honey is kept in barrels that we heaved to their respective place in the kitchen by the fire. It was unfortunately a poor season for beekeepers in this region with most hives producing between 10-15kg. The local Kyrgyz bee is known to be aggressive so most beekeepers work with Buckfast bees which was interesting to see.

There was so much to learn and see everywhere I went, shop I entered and person I met that it felt like I could have stayed for years at each

place. Friends messaging asking if I was ever coming back or had I decided to join a nomadic tribe and not return marked the time to book a ticket home... this time anyway!

I, and think even Dr. Zeus may have trouble adequately encapsulating my recent experiences and learnings. It's been some of the most extraordinary few months of my life and I am so grateful for every moment of it. I also want to thank my family and industry mentores that have supported me along the way.

I've found that traveling with a focus allows you to connect with the people and their places in a more meaningful way. If ever you have the opportunity I'd recommend it! ■

