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Amateur
Beekeepers
Association
NSW

THE AMATEUR BEEKEEPER

NEWSLETTER FOR MEMBERS
DECEMBER • JANUARY 2022

WAX BLOOM

What causes it
Why it's good

COOKING
WITH
HONEY
EXPERT HACKS

ANNOUNCING
EXTRA MEMBERSHIP
BENEFIT:
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The *Amateur Beekeeper* is the journal of the Amateur Beekeepers Association of NSW Inc. It is distributed to members six times a year, in December, February, April, June, August and October. Contents are for general information only and should not be taken as legal or medical advice.

The editor will consider adverts from businesses relevant to beekeepers to run free of charge where they contain a discount or special offer to ABA members. Please email editor@beekeepers.asn.au

Do you have a story or photo you'd like to be considered for the next issue. Send it in to editor@beekeepers.asn.au

President's report



Here we all are: another year older, and hopefully another year wiser!

Our period of imposed slow-down seems to have made the remainder of 2021 pass at twice the usual speed. I hope you managed to use the time to paint and repair boxes, read up on biosecurity, and maybe even just sit quietly with your bees.

The easing of COVID-19 restrictions meant that Bruce White and I were finally able to meet face-to-face with the DPI and various other stakeholders at the recent Bee Industry Biosecurity Consultative Council meeting. It sounds dry, but it gives us a great opportunity to talk to the DPI about what's working and what's not for our 4500 members.

As a direct result of this meeting I am having in-depth discussions with the DPI about their beekeeper registration system. If you have any feedback on this system, let me know. This is our chance to take a fresh look at how this system could work best for both beekeepers and the DPI.

I hope you never need to use it, but the ABA has now organised beekeeper's personal accident insurance cover for all our members (see opposite).

The cost of this new insurance has been covered by some serious savings we achieved this year, particularly in delivering the membership packs.

I'd like to take this opportunity to wish you and your family a safe and very happy Christmas from myself and the whole ABA executive team: Ana, Lyall, Sue, Bruce, Kathy and Jacqueline.

Sheila Stokes

president@beekeepers.asn.au

MEMBER RESOURCES

The ABA will shortly be sending Epipen training kits to each affiliated club. These kits contain useful first aid information and a dummy Epipen.

Talk to your club secretary about how you can access this kit so you can practise using an Epipen and know what to do in an anaphylaxis emergency.



ABA MEMBERSHIP BENEFITS

We've got you covered

New and improved insurance services for ABA members

THE ABA IS always striving to provide great services to our members, and insurance is a key feature of our membership package.

As an organisation with over 4500 members, spread across 33 clubs, we have the buying power to negotiate group purchasing discounts. This means access to insurance that could otherwise be prohibitively expensive.

CLUB INSURANCE PROVIDED BY THE ABA

Did you know that around 8 per cent of your ABA membership fees are used to provide insurance for your club? This includes public liability cover, as well as indemnity cover for club office-bearers, and personal accident cover for volunteers at club events.

This personal accident cover applies to injuries sustained by volunteers while involved in activities organised by your club.

NEW! FREE PERSONAL ACCIDENT INSURANCE FOR ALL MEMBERS

We recently arranged personal accident cover to be included as a standard membership benefit for all members. There is no additional cost to you; it is included in the 2021/22 membership fee you have already paid.

This new cover applies to injuries sustained by you in the course of your own beekeeping activities. The range of benefits include medical costs not covered by Medicare or your health insurance.

IMPROVED! BEEKEEPERS' PUBLIC & PRODUCTS LIABILITY COVER (OPTIONAL)

Public liability insurance applies when someone else suffers an injury as a result of your beekeeping actions – it's like the Green Slip insurance you have for your car.

Among the reasons you might want public liability insurance: you sell your honey at a market.

This insurance is optional and costs \$15 in addition to club and ABA membership fees. If you wish to take out this insurance, you'll need to provide us with your registration (hive brand) number as evidence you are registered with your state authority.

This cover is not designed for commercial beekeepers. However our insurer recognises that many of our members owning fewer than 100 hives are running small beekeeping businesses. /continued

If you have a small business, such as selling your apiary products at a market, you can use this policy.

In fact, as long as the business is registered in your name, we can now issue your Certificate of Currency showing your business name. For example if you are Robert Smith and you own a small business called Bob's Bees, we can issue your certificate of currency as *Robert Smith, trading as Bob's Bees*.

HOW TO . . .

PURCHASE PUBLIC & PRODUCTS LIABILITY INSURANCE

Log in to the membership system at beekeepers.asn.au/sign-in, and select insurance in the Optional Extras section on the Payments > To Pay page. You will need to provide your registration number issued by your state authority, ie NSW DPI or QDAF.

DOWNLOAD YOUR CERTIFICATE OF CURRENCY

You can download your certificate of currency at any time by logging in to the ABA Admin Portal at beekeepers.asn.au/portal

REQUEST A CERTIFICATE WITH YOUR BUSINESS NAME

To request a new certificate showing "*trading as [Your Business Name]*", log in to the ABA Portal at beekeepers.asn.au/portal. You will need to provide the ABN of a business registered in the same name as your ABA membership.

FIND OUT MORE ABOUT WHAT'S COVERED

Go to beekeepers.asn.au/insurance

ASK A QUESTION ABOUT INSURANCE

Email us at insurance@beekeepers.asn.au

FAQS

Does the insurance cover my bees and hives against fire/flood/disease?

No. This type of insurance is very difficult to obtain especially since a spate of recent natural disasters (bushfires, floods etc), which resulted in the insurance industry facing unprecedented numbers of property claims.

Does the insurance cover lip balm, soap or other cosmetics?

No. Products liability insurance to cover cosmetics is specialised and expensive due to the relative frequency of claims, so it has not been possible for the ABA to offer a policy to cover members or clubs.

What products does the insurance cover?

For the list of apiary products covered by the public liability policy, refer to the list at beekeepers.asn.au/insurance

Summer buzz quiz

Not your usual bee test

1. Name any country in the top five for honey consumption per person, according to World Atlas.

2 The bubblegum pop 'band' The Archies sang in 1969: "Honey. Ah, sugar, sugar.



You are my ----- girl.
And you got me wanting you."

Fill in the blank

3. If there's a bee in my hand, what's in my eye?



4. *Is a Bienenstich*

a) *a traditional German honey cake*

b) *a tapestry of St Ambrose, the patron saint of beekeepers*

c) *an Austrian chant when bees are swarming?*

5. What do Jimmy Barnes, Angelina Jolie and Prince Charles have in common?

6. *When the dog bites, the bee stings and she's feeling sad, what makes her feel not so bad?*



7. **Neolithic human remains discovered in 1919 show evidence of beeswax used as a medical treatment. What was the treatment?**

8. **Who boasted he could float like a butterfly and sting like a bee? And what was the next (rhyming) line?**

9. *What do Marge Simpson, Amy Winehouse, The Ronettes and Patsy Stone from AbFab have in common?*



10. Who said, "You never can tell with bees"?



ANSWERS PAGE 7

EXPLAINED

Beeswax bloom

What's going on when beeswax develops a milky, whitish film on the surface?

WE'RE ALL FAMILIAR with that dusty coating that appears on leather shoes and bags when stored for a while in cupboards. It's mildew, or mold. But what is that similar looking coating that appears on the surface of beeswax?

Commonly known as bloom, this film isn't contamination. It's a patina that develops over time. It is proof the wax is true beeswax and not adulterated.

Why does it happen? Bloom is caused by oils in the wax – specifically unsaturated hydrocarbons – crystallising on the surface. After beeswax has been warmed to melting point and then allowed to cool – as when a beekeeper refines wax or makes products such as candles – these unsaturated hydrocarbon molecules will remain for months in a highly mobile, liquid-like state. Over time, they surface, where they eventually crystallise, forming a 'bloom'. It's often seen in wax that has been stored over winter.

How do you remove it? Very gentle heat -- a rub with a soft cloth, careful use of a hairdryer, or putting the wax in the sun for a few minutes -- will remove the bloom temporarily. Although some people prefer the fresh, glossy look, wax bloom on products such as candles will not detract from their use (and is unlikely to lose you points in an expertly judged apiary product competition).

What if it happens to sheets of foundation? Foundation that has bloomed is perfectly okay to use in a hive – the bees will not be deterred.

Tips for rendering wax

- **DO NOT** use a galvanised iron pot to hold melted wax. It will give the wax a greenish tinge. Copper pots are traditionally regarded as best, but regular stainless steel saucepans are fine.
- **BEESWAX** has a low melting point (62-63 °C). Be careful not to overheat it. Do not leave wax you are heating unattended as it can easily ignite.
- **IF YOU HAVE** the option, heat the wax with steam. Second best: rainwater. If you use regular tap water, any mineral deposits in the water will affect the wax. Lime will react with oils causing saponification (the chemical process that forms soap) – seen in a grey spongy mixture on the bottom of wax after it has cooled.
- **FRESH CAPPINGS** will render to white wax. Wash cappings and spread them out to dry so you can pick out any pollen or impurities before you melt cappings down.
- **MELT AND POUR** wax through muslin or other fine material to sieve out any particles. Do not use material that will shed fibres into the mix. You may need to melt and sieve several times to produce exhibition quality wax.
- **TO AVOID** cracks appearing in large blocks, you need to slow the cooling process. Insulate the container holding the molten wax by placing a board or lid on the top and wrapping with newspaper or towels. Leave it to cool in a warm area or insulated box.



ABDOMEN OF A WAX WORKER SHOWING THE VENTRAL PLATES WITH WAX POCKETS CONTAINING WAX SCALES.

OVER 300 INDIVIDUAL CHEMICAL COMPONENTS HAVE BEEN IDENTIFIED IN PURE BEESWAX

BEE MANAGEMENT

Nuisance bees? No!

Follow seven tips from DPI's Mark Page and be a responsible beekeeper

WITH A GROWTH in beekeeping especially in dense residential areas, there are a few things to consider so that your bees do not become a problem for you, your family, friends and neighbours. Remember: not everyone loves bees, with some being scared, and a small percentage experiencing life threatening allergic reactions (anaphylaxis).

1. Don't use bees as a weapon

Often neighbours who have been in disagreement for many years decide to place bees right on the boundary fence as revenge.

As an example, a property owner had a right of way for the neighbour to access his property through hers. She decided the best place to locate her bees was alongside the property access easement that her neighbour used, disrupting his access. The property was 160 hectares. Common sense would say there were many better places on her property for her bees.

2. Requeen your hive

Queen breeders look at good traits from their breeder stock and a very important one is gentleness. A less aggressive queen passes this trait to her offspring and the hive as a whole will be less aggressive.

A gentleman called me for advice on his bees. While working them and for several days after, his wife, who loved to garden, could not go out as the bees would chase or sting her. She could not go within ten metres of the hive at other times. When asked about requeen-

DEALING WITH A SWARM IN FLANDERS, CIRCA 1580



MACHINE FOR HURLING BEES AT YOUR ENEMY, CIRCA 1326

ing, he said "I haven't requeened since getting the hive four years earlier".

Letting colonies requeen themselves may be natural to some, but this can result in the bees losing the gentleness trait if the new queen mates with a lot of feral drones. The result can affect you, your family, friends and neighbours.

3. Reduce swarming activity

A swarm can be a scary thing for some.

Tens of thousands of bees swarming over the neighbour's backyard or along the street can be quite upsetting. Minimise this by keeping a young queen at the helm and taking actions to reduce swarming.

4. Pick your times to work bees

What are the neighbours doing? If you see them preparing for a BBQ, and friends rolling up and filling the backyard, pick another time. Bees can be aggressive after working a hive; a fence will not stop them.

5. Provide a clean water source

Bees use water to cool the hive on hot summer days. By providing a water source for them, hopefully they will stay away from the dogs' water bowl, neighbours' swimming pool, and washing drying on the line.

6. Bright lights at night attract bees

Bright backyard lighting or lights above doorways can attract bees. Especially towards the end of summer, this can cause an issue if your bees are going to neighbours' lights. Position your hive so that the entrance is not directed at the lights, or put up a shield.

7. Avoid too many backyard hives

Just because they fit is not a reason to have multiple hives in your residential backyard. Consider the size of your property. Small, high-density residential backyards or courtyards should be limited to one or two colonies. Larger semi-rural blocks may support more colonies, but remember not to let them become a nuisance.

THIS ARTICLE FIRST APPEARED ON [EXTENSIONAUS.COM.AU](https://www.extensionaus.com.au)

SCIENCE

How do bees recognise blooms?

Scarlett Howard and Adrian Dyer explain why a bee knows where to find food

THE CONVERSATION

WE'VE ALL watched a honey bee fly past us and land on a nearby flower. But how does she know what she's looking for?

And when she leaves the hive for the first time, how does she even know what a flower looks like?

Our paper, published in [Frontiers in Ecology and Evolution](#), set out to discover whether bees have an innate "flower template" in their minds, which allows them to know exactly what they are looking for even if they've never seen a flower before.

Plants and pollinators need each other to survive and prosper. Many plants require animals to transport pollen between flowers so the plants can reproduce. Meanwhile, pollinators rely on plants for nutrition (such as pollen and nectar) and nesting resources (such as leaves and resin).

As such, flowering plants and pollinators have been in partnership for millions of years. This relationship often results in flowers having evolved certain signals such as colours, shapes and patterns that are more attractive to bees.

At the same time, bees' reliance on flower resources such as nectar and pollen has led them to be effective learners of flower signals. They must be able to tell which flowers in their environment will provide a reward and which will not. If they didn't know the difference, they would waste time searching for nectar in the wrong flowers.

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ASSOCIATE PROFESSOR, RMIT
UNIVERSITY



Our findings show bees can quickly and effectively learn to discriminate between flowers of slightly different shapes – a bit like how humans can expertly tell faces apart.

Honey bee brains are tiny. They weigh less than a milligram and contain just 960,000 neurons (compared to 86 billion in human brains). But despite this, they demonstrate exceptional learning abilities.

Their learning extends to many cognitively challenging tasks, including maze navigation, size discrimination, counting, quantity discrimination and even simple maths!

So we know bees can learn all sorts of flower-related information, but we wanted to discover how they find flowers on their first foraging trip outside the hive. We also investigated whether experienced foragers developed a bias in their foraging strategies and flower preferences.

To test this, we prompted two groups of bees to discriminate between sets of flower images.

One group was raised in a hive inside a greenhouse with no flowers, and had therefore never been exposed to flowers. We put a colour mark on these bees at birth, so we could track them once they emerged from the hive to forage two weeks later.

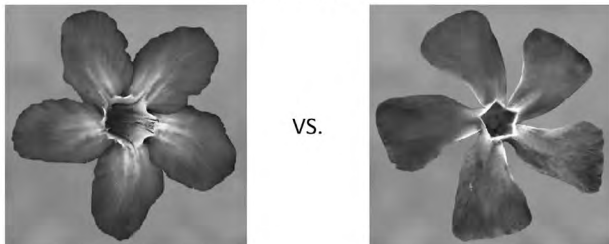
The second group consisted of experienced foragers which had encountered many flowers in their lives.

We trained both groups to discriminate between

QUIZ ANSWERS 1 Central African Republic (9.62 grams per day); New Zealand (5.55); Slovenia (4.4); Greece (4.24); Switzerland (3.87). 2 Candy. 3 Beauty (Dad joke. Work it out!). 4 (a) The original 'bee sting cake. 5 They keep bees. 6 Her favourite things, so sang Maria in the Sound of Music. 7 A tooth filling. 8 Boxer Muhammed Ali (then Cassius Clay) in 1964 taunting heavyweight champion Sonny Liston in a title fight. Ali went on to win. The quote continues, "The hands can't hit what the eyes can't see." 9 Beehive hairdos. 10. Winnie the Pooh



Naïve and experienced bees learn to discriminate between two real flowers



While our findings on honeybees are remarkable, they do tie into similar capabilities in other species.

Different species have evolved brains which tune into important stimuli.

For example,

humans and other primates can detect, process, recognise and discriminate between the faces of other members of their species. Research has shown even human infants can detect and recognise other people's faces very well.

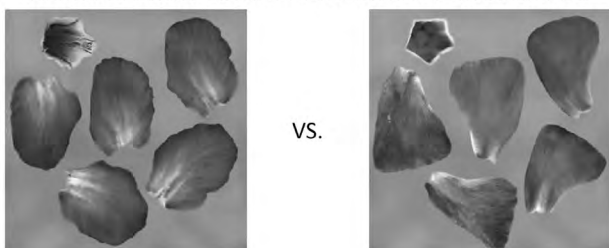
Our preference for faces, and ability to recognise them, has probably evolved due to the importance of needing to discriminate between friends, enemies and strangers. This is akin to the bees needing to process images of whole flower shapes better than scrambled petal images – due to the importance of recognising flower shape for survival.

Similarly, social paper wasps evaluate their relationship with hive-mates based on the different facial markings of friends and foes.

Just like bees, they do this using a combination of innate mechanisms and lived experience.

ADVERTISEMENT

Only naïve bees learn to discriminate between the two flowers when the visual information has been scrambled



WE TRAINED 'FLOWER-NAÏVE' AND EXPERIENCED BEES TO DISCRIMINATE BETWEEN IMAGES OF DIFFERENT FLOWERS, AND ANOTHER SET WHERE THE VISUAL INFORMATION WAS SCRAMBLED. PHOTOS: SCARLETT HOWARD

images of two flowers found in nature, using a reward of sugar water for choosing the correct option when directed. We also trained both groups to discriminate between the same flowers with the petals separated and randomly scrambled.

How well and how quickly the bees learnt to discriminate between the images of whole flowers, versus how long they took to discriminate between the scrambled petals, would tell us which information they preferred to learn.

Both the flower-naïve and experienced foragers learnt to discriminate between the images of whole flowers better, and more quickly, than the scrambled petals.

However, the flower-naïve honeybees appeared to have less bias as they also learnt to discriminate between the scrambled information, while the experienced foragers could not.

The results reveal flower-naïve bees have an innate flower template that aids them with learning new flowers and discriminating between them. At the same time, experienced foragers become biased towards certain flower shapes as they gain foraging experience.

Overall, bees use an innate flower template to first find flowers, and also draw on their past knowledge as they become more experienced.



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Bee gold: Honey as a superfood

The benefits of the sweet stuff go well beyond simply nourishing hardworking insects in the hive, as Berly McCoy explains

IT SHOULD come as no surprise that bees know a lot about honey. They aren't only honey producers, they are also consumers, and pretty sophisticated ones at that. Offer a sick bee different varieties of honey, for example, and it will choose the one that best fights off its infection.

People, on the other hand, have a lot of catching up to do when it comes to the nutritional nuances of honey. Just a few decades ago, most lists of "functional foods" – those that offer health benefits beyond basic nutrition – failed to mention it, says entomologist May Berenbaum. "Even beekeepers — and certainly bee scientists – considered it nothing more than sugar water."

Since that time, a large body of research has revealed that honey is chock-full of plant chemicals that influence honey bee health. Components in honey can help bees live longer, boost their tolerance of harsh conditions such as intense cold and heighten their ability to fight off infections and heal wounds. The findings hint at ways to help bees, which have been hit hard in recent years by parasites, pesticide exposure and habitat loss.

"It's just such a remarkable substance, and I think people maybe still don't quite appreciate it," says Berenbaum, of the University of Illinois at Urbana-Champaign.

A dive into the hive

It's tasty on toast or stirred into tea, but honey is much more than a sweetener. Certainly, the viscous liquid is mostly sugar, which hive members use for

sustenance, but it also harbours enzymes, vitamins, minerals and organic molecules that give each honey its uniqueness and confer a slew of health benefits to bees.

A variety of insects can produce honey — bumblebees, stingless bees, even honey wasps — but only honey bees (*Apis* species) produce enough to stock grocery store shelves. This ability didn't happen overnight; it was millions of years in the making.

Bees made the split from wasps around 120 million years ago, during a surge in the evolution and spread of flowering plants. This floral diversity – along with a shift in bee behaviour of feeding pollen, rather than insects, to bee larvae – spurred the evolution of the approximately 20,000 bee species known today.

Becoming an expert honey-maker took a few more behavioural and chemical tricks. Bees started adding a bit of nectar to the pollen, which molded it into more transportable bundles. They also developed wax secretion glands, which provided a way to separately store the liquid nectar and solid pollen.

"The wax allows for a very flexible building material," says Christina Grozinger, an entomologist at Penn State University, who studies mechanisms underlying bee social behaviour and health. When forming a honeycomb, honey bees mold wax into hexagons, which turns out to be the most efficient shape to store something, since hexagons pack tightly together. "It's an engineering feat," Grozinger says.

Constructing many small, uniform cells has another advantage: More surface area means



Berly McCoy is a science writer and producer based in Northwest Montana. Find her on Twitter at twitter.com/travlinscientst

water evaporates faster, and less water means less microbial growth.

The process to yield honey that will fill those comb cells begins as soon as a foraging bee slurps up nectar. Though it might look like she is eating it, the sugary snack doesn't end up in her stomach, at least not in the traditional sense. She stores it in her crop, or honey stomach, where it mixes with enzymes.

One of the first enzymes to go to work is invertase, which snips the nectar's sucrose molecules in half,



yielding the simple sugars glucose and fructose. (Strangely, research suggests that bees don't have the genes to make this sucrose-snipping enzyme – a microbe that lives in bee guts prob-

ably makes it). Upon returning to the hive, the honey bee then regurgitates the payload to the first of an assembly line of bees. The mouth-to-mouth passage that follows lowers the water content and introduces more enzymes, processes that continue the nectar breakdown and stop microbes from growing.

The bees next deposit the mixture into a hive cell, then evaporate more water by fanning their wings. Another enzyme goes to work – glucose oxidase – which converts some of the glucose into gluconic acid that will help preserve the honey.

The chemical reaction also lowers the pH – increasing the acidity – and produces hydrogen peroxide, which prevents microbes from growing but can become toxic at high levels.

Still more enzymes, likely brought in with pollen and yeasts, break down some of the peroxide, keeping its levels in check.

Finally, the cell is ready to be capped with wax. Nurse bees will feed the processed honey to other members of the hive and the remainder will be stored for cold or rainy days.

Sweet medicine

Nectar is what led Berenbaum to honey, an interest that first blossomed in the mid-1990s. She knew that nectar was infused with a tonne of plant chemicals, called phytochemicals: compounds that deter pests and help with plant growth and metabolism. She had a hunch that these phytochemicals were coming along for the ride when bees turned nectar into honey. And if they were, she wanted to know what they might be doing for the bees.

So Berenbaum began probing the diversity of chemicals in honey. In 1998, her team found that different honeys contained different levels of antioxidants depending on the honey's floral origin.

BEEKEEPING APPS

InspectNext



Check the weather to plan your hive inspections

Amateur beekeeper Anthony Drury has created InspectNext, a free beekeeping app that helps users find optimal (and inadvisable times) to inspect their hives.

Users can see details for the weather in their location up to 14 days ahead, based on data generated by meteorological services, and can tweak the settings to fit their climate. For further information, go to inspectnext.com

"That piqued my interest," she says.

Her group later found that honey bees fed sugar water mixed with two honey phytochemicals – p-coumaric acid and the potent antioxidant quercetin – tolerated pesticides better than ones that just got the sugar water.

On top of that, [the bees that received the water laced with phytochemicals lived longer](#) than the bees that did not, she and her colleagues reported in 2017 in *Insects*. Other research has unearthed the effects of additional phytochemicals in honey.

Abscisic acid boosts bees' immune response, improves wound-healing time and tolerance to cold temperatures, studies show.

Other phytochemicals blunt the impact of parasites, one of the major causes of honeybee decline: for example, giving fungus-infected honeybees a syrup containing thymol, a phytochemical from thyme plants, cut the number of fungal spores by more than half.



Phytochemicals have even been shown to inhibit the bacteria that cause European and American foulbrood, the latter of which is so devastating and contagious that burning whole hives is recommended to prevent its spread.

Some phytochemicals seem to do their stuff by enhancing the [activity of genes related to detoxification and immunity](#). When bees are fed nectar phytochemicals such as anabasine, for example, a gene in charge of making antimicrobial proteins dialed up production, a team reported in 2017 in the *Journal of Economic Entomology*.

And phytochemicals might confer health by keeping happy the microbial communities that live in and on honeybees: their microbiomes. Caffeine, gallic

acid, p-coumaric acid and kaempferol all [improve the diversity and quantity of honeybee gut microbes](#), researchers reported last year in the *Journal of Applied Microbiology*.

Healthy gut microbiomes in honey bees have been linked to lower intensities of multiple parasitic infections.

Honey bees even choose a health-improving variety of honey when they're sick. Entomologist Silvio Erler and his team presented parasite-infected honey bees with four honey types. "We simply gave them a choice," says Erler, now at the Julius Kühn-Institut in Germany. The [sick bees preferred sunflower honey](#), which was also the best medicine for the infection and had the highest antibiotic activity, the team reported in *Behavioral Ecology and Sociobiology*.

Honey bee, heal thyself?

Despite the immunity boost and other health benefits of honey, bees are still in trouble. US [beekeepers lost 45 per cent of their colonies](#) between April 2020 and April 2021, the second-to-worst year since the survey by the non-profit Bee Informed Partnership began in 2006.

While beekeepers often leave some honey in the hive, having a variety of honey seems to matter: research suggests that different honeys, derived from bees foraging on black locust tree flowers, sunflowers or a mix of flowers, [ward off different types of bacteria](#).

Erler likens this variety to a pharmacy. "We go to the pharmacy . . . and say we need this for the headache and this for stomach pain. And in the pharmacy, we have all these together."

But bees are able to build up their honey pharmacy [only if the right flowers are available](#) – not just in numbers and diversity, but throughout the growing season, says Berenbaum, who co-authored an overview of [honey's impact on bee health](#) in the *2021 Annual Review of Entomology*.

This biodiversity is lacking in the large crop fields that bees are shipped to each year to pollinate staples like almonds, apples, pumpkins and pears.


Improving the floral diversity does make for healthier bees, says Arathi Seshadri, an entomologist at




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the United States Department of Agriculture (USDA) Honey Bee Health Lab in Davis, California. And the USDA incentivizes landowners to convert sections of crop land into wildlife areas through the Conservation Reserve Program. "Agriculture has to go on," Seshadri says. "But it also has to sustain pollinators."

Better bee nutrition won't solve all the problems bees face. But making sure honey bees have access to their own medicine may help, Erler says. Beekeepers, he suggests, could leave portions of the honey made from various blooms in the hive so that bees have a well-stocked honey pharmacy all year long.

And Berenbaum, who began her investigations years ago because she didn't think honey was getting nearly enough research respect, says that the accumulating knowledge is a step in the right direction. "I'm glad," she says, "to see it's finally attracting some attention."

THIS ARTICLE ORIGINALLY APPEARED IN [KNOWABLE MAGAZINE](#),



CLUB NEWS

Club Grants

Affiliated clubs tell us how they are spending their 2021-22 grant of \$1000 from the ABA

Central Coast The grant will be used to defray the costs incurred (and ongoing) by a major AFB outbreak at the club's apiary, and the subsequent decision to relocate the club's hives.

In May 2021, the club identified a possible AFB outbreak at its apiary site at the Gosford Agriculture High School, the third outbreak in three years. Five of the club's seven hives were eventually identified with AFB. A new site is now being established at the Mount Penang Parklands complex. Part of the agreement to use the site includes the club providing guided education/inspection activities for visitors to the Parklands.

Hastings Valley Hastings Valley ABA officially opened its club apiary in May this year. It has already completed its first harvest and has run its very first 'Beginning in Beekeeping' training course there. The grant will go towards training materials and supplies for the apiary.

Southern Highlands The funds are being used to set up a Warré hive for member instruction and to buy the necessary extraction equipment.

Wagga Wagga The club is purchasing a Flow hybrid hive. The Flow hybrid allows broad possibilities for hive and bee management in areas where canola is present. A club member has already demonstrated a small customisation to the system to allow Flow frames to be swapped out and replaced with normal frames during canola flowering. The club is also purchasing several full bee suits to allow prospective members who may not yet have appropriate attire to attend hive inspections.

Mid North Coast The club is looking to buy educational materials such as a 3D bee model, and promotional materials.

Orana The grant to Orana will be put towards books for its library and the running expenses of member meetings (utilities, tea, coffee, a door prize etc).

Manning Valley This club is putting its grant towards a range of educational initiatives to support members, since recent local fundraising has been hampered by COVID health restrictions.

New England The club will be purchasing beekeeping supplies and updating field day signage

Northern Rivers The club is considering using the grant to offset a number of expenses, including funding bus trips to field days, and subsidies for freight and irradiation at Steritech. Macadamia honey is thick and very difficult to extract, so it may spend the money to upgrade club extraction facilities with a motorised extractor and an electric uncapping knife.



Bega Valley Bega intends to buy a projector to be used in presentations to club members and beekeeping course participants.

Yass The club is getting two new Langstroth hives; inspection kits for each hive; swarm boxes; and improving its apiary grounds with gravel pads around hives and repairs to fencing.

Hunter Valley The club is putting its ABA grant towards a large all-weather picnic table with bench seats. It will be placed outside the club's extraction shed, which is located in the local botanic gardens.

SPOTLIGHT ON

Hastings Valley

A close-up look at one club's 2021 activities. Club president Charles Watkins writes:

THE GRAND OPENING of the Hastings Valley Amateur Beekeepers Association apiary finally happened on 2 May, after the March floods had subsided. It was a wonderful occasion, made possible by the grant obtained from Charles Sturt University and the tireless work of club members.

Since then the apiary has been host to many activities, weather and COVID notwithstanding.

The first of three training days, in May, was spent mostly indoors due to rain. Arthur Garske's articles on using our senses before going into the hive were explored at length. We were fortunate that the weather cleared enough, just before the end of the session, to allow us to go to the hives and act on newfound knowledge.

The next training field day was in August and covered spring checks and a demonstration of the sugar shake test. AFB and EFB were discussed; sterilised AFB frames were examined.

These frames were used again in the October, when we taught making a smear slide. Chalkbrood was visible in one hive and made it easy for participants to investigate this fungus in situ and discuss control measures.



Our training field days are very important for both less and more experienced beekeepers, and we are delighted they are well received by our members.

A 'Beginning in Beekeeping' two-day weekend course was offered for the first time.

Of the six workshops, two were conducted at the apiary hives and one covered the extraction process. We also explained hive assembly and frame making.

Simulated activities let participants take a smear

AT THE OFFICIAL OPENING IN MAY, (FROM LEFT) KATE WOOD FOYE, CSU; PAULINE BRYANT CLUB VP; CHARLES WATKINS, CLUB PRESIDENT; SHEILA STOKES, ABA PRESIDENT; DR ALEXANDRA KNIGHT CSU



and conduct a sugar shake, and they also learnt how to light a smoker.

Biosecurity obligations, diseases, exotic pests, swarming, seasonal management and bee biology are all part of the course.

Six of our attendees had never had bees and, most



admirably, wanted to learn about them first. The others had managed bees for a short time. All considered themselves very inexperienced.

The evaluation of the weekend was quite clear. The most popular activities were the biology of beehive organisation, inspecting hives, and requeening. All practical components were rated highly.

Interestingly 'brood diseases' raised the most comments. It is always a challenge to get the right balance between the 'need to know' and 'need not despair'.

Discussions that thrilled us the most were those concerning the internet and the misinformation now able to be dismissed or reconsidered with the light of new knowledge.

It is heartening to know that all the hard work enabled a few more beekeepers to start the journey with a firm foundation of best practice and some depth to the understanding of honey bees.

We are now planning our calendar for next year and we have plenty of field days and training programmes scheduled. Although we are a young club, the growth has been extraordinary, and the benefits of having our own apiary, along with the internal training and development of our members, has no doubt contributed to our ongoing success."

RECIPES

Sweet and spicy honey popcorn

Easy to make and moreish to eat

INGREDIENTS

- 10 cups of plain popped popcorn (no salt, no butter) made from 1/3 cup unpopped kernels
- 2 tablespoons butter
- 2 tablespoons honey
- pinch of cayenne pepper (or more to taste)
- 1/4 teaspoon of cinnamon
- 1/4 teaspoon of sea salt (or to taste)

- Pop popcorn according to instructions
- Mix honey, butter, cayenne and cinnamon, heating in a microwave in increments of 20 seconds until just combined
- While popcorn is still hot, sprinkle with sea salt and drizzle honey mixture on top
- Toss, making sure popcorn is coated
- Serve immediately



- Remove from heat and cool to room temperature, then strain
- Label, date, and store refrigerated for up to 10 days

TIP Add a touch of fresh lemon juice for a tarter flavour

This recipe was created by Kathy Casey for the National Honey Board, USA

Recipes courtesy of honey.com/recipes

Blueberry lavender honey syrup

Stunning summer flavour in a bottle

Florals are a trending flavour in food and beverages, and what better pairing than to combine fragrant lavender, blueberry and honey in this delicious syrup. Pour it over French toast, puffy pancakes, porridge, ice cream, or as a plate drizzle for desserts.

Makes 2 cups

INGREDIENTS

- 2 cups of fresh or frozen blueberries, pureed
- 1/2 cup water
- 1 cup honey
- 8 fresh lavender sprigs, unsprayed and rinsed (or 2 teaspoons of dried flowers)

- Combine the blueberries and water in a blender and process until smooth
- Place blueberry mixture, honey, and lavender in a heavy saucepan. Bring to a simmer and let cook for about 5 minutes (Increase time a bit if making a larger batch). Set a timer





TIP Honey is slightly sweeter than sugar, so you can actually use less to achieve the same sweetness intensity

Honey hacks

Helpful cooking tips to make the most of your harvests

Courtesy of honey.com

SO WHY should you consider adding honey to your favourite cookie recipe (which may have been handed down in your family for generations)?

Because honey does so much more than just add the perfect touch of sweetness; as a humectant, honey naturally draws in and retains moisture to ensure that your cookies come out of the oven with the perfect mouthfeel and crumble.

This humectant quality has also been proven to help extend the shelf life of your baked goods, including your cookies (that is if you can keep your hands out of the cookie jar).

Nervous about making the switch to baking with honey? Don't fret – these honey hacks will help you become a baking-with-honey master!

When you substitute honey for granulated sweetener in recipes

– begin by substituting honey for up to 1/2 of the sugar called for in the recipe.

When substituting honey for sugar in baked goods

- Reduce the volume of liquid in the recipe by a quarter of a cup for each cup of honey used
- Add about 1/2 teaspoon baking soda for each cup of honey used
- Reduce oven temperature by 10 to 15 degrees to prevent over-browning
- For easy measuring and clean-up, coat measuring cup or spoon with cooking spray before adding honey

Bees Knees Cocktail

1 tablespoon honey

1/2 jigger of gin

1 tablespoon freshly squeezed lemon juice

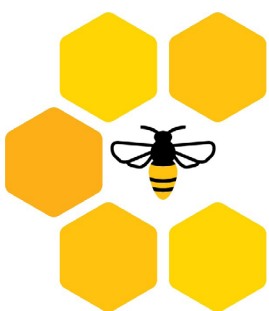
Optional: 1 tablespoon freshly squeezed orange juice

Combine all the ingredients and shake well with ice.

Strain into a glass.

Note: When made as directed, the honey often forms into a giant ball in the middle of the shaker. To avoid this, combine three parts honey to one part hot water and stir together until completely mixed, then continue with the recipe.

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EDUCATION

Pick up extra skills

WATCH Time for some reality bee TV? Follow the adventures of Texan bee rescuer Charlie Agar as he removes nuisance colonies from buildings, attempts queen rearing, fumbles with a Flow Hive, and shows off his honey producing exploits. (Some of this methods may raise a few eyebrows here, particularly when it involves feeding bees.) The show is fast-paced, entertaining and packed with drama.  The Bee Whisperer is an eight-part series, no available via SBS On Demand.

LEARN If you're ever in an anaphylactic emergency and need to use an EpiPen, it pays to know what to do. Although it's easy, and instructions are printed on the device, knowing beforehand what's involved will give you a lot of confidence when you need to act fast. A collection of watchable training videos, are available in 26 languages. Go to myepipen.com.au and see page 3



COOK Why not take advantage of that store of crystallised honey or the uncapped harvest that needs to be used quickly? Online recipe sites have hundreds of tried-and-tested honey cakes and biscuits for all levels of baking skill. Start with honey.com, allrecipes.com or taste.com.au and bake away! See story in this issue for simple recipes and tips on baking with honey 

DIG If you've been meaning to put in some plants as extra bee forage at your place, take a look at the excellent resources created for ACT gardeners, particularly the [native and exotic urban plant calendar](#)

produced by the ACT government with help from ACT For Bees. It lists flowering times so you can plan 12 months of blooms in your garden.



FEEDBACK

We're listening!

DO YOU have comments on how the ABA is run? Want to share your ideas? Think you could contribute to your association? The ABA is run by volunteers who give their time, energies and expertise to assist members.

Our organisation has grown rapidly and needs volunteers to help implement our next wave of projects. Email us at feedback@beekeepers.asn.au



WHAT'S YOUR STORY?

DO YOU HAVE A CONTRIBUTION OR IDEA FOR A FUTURE ISSUE OF THE AMATEUR BEEKEEPER?

SEND YOUR DETAILS and suggestions to editor@beekeepers.asn.au

YOUR ABA

The Amateur Beekeepers Association represents recreational beekeepers in industry forums, and provides a range of services to affiliated beekeeping clubs and members.

Do you have skills and some spare time to help run the association? We'd love to hear from members who are keen to lend a hand either on a regular basis or when we are running special projects. Contact us if you are interested.

ABA EXECUTIVE

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