Townsville and District Beekeepers Association (Inc)

PO Box 1115, Aitkenvale QLD 4814

www.beesnorth.com.au

Newsletter No 6, July 2024

In this Issue

Next Meeting:

Sunday 21 July 2024 @10 am

Michael Hooper Park

Isaac St, Deeragun

Bring a chair - tea coffee and nibbles available.

Free chats with experienced and novice beekeepers.

I'm Baaaaaack!!!!!! *Asian honey bee (AHB) detected in Townsville again*

Check out the TDBAI website for some background and why we need to eliminate this invader again – keep your beeedy eyes open.
https://beesnorth.com.au/asian-bees/

What do Asian Bees look like?

AHB on the left is smaller and more distinctively striped. AHB colony on the right

The QBA have reported that two separate detections have been made in the suburbs of Cluden and Fairfield.
The bees have been genetically tested and results confirm the detection is linked to the endemic population in Cairns.
Laboratory testing has found no evidence of varroa mite or exotic bee viruses.

There is a legal requirement in Queensland to report a sighting of AHB within 24 hours to Biosecurity on 13 25 23 or:
(https://www.daf.qld.gov.au/contact).
See more at:
https://www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/biosecurity/animals/invasive/restricted/asian-honey-bees

Our resident Bee Vet, Dr John Carr had this to say about the recent detection of AHB in Townsville.

"Genetic testing has also confirmed both populations are genetically linked to the endemic Cairns population and unlikely to be the result of a new incursion. With the current known southern extent of the Cairns population being Cardwell, these new detections indicate human assisted movement and not natural spread."

Restrictions ease around Brisbane Port area, due to no new Varroa detections

Movement restrictions have been eased for the entry of bee-related items into the Port of Brisbane area. Beekeepers can now care for hives and move bee-related equipment into and within the movement control order area. Stay informed: http://daf.qld.gov.au/varroa

Keep your eyes peeled and your hives checked for these blighters!

Contact Roger Winton or Rob Stephens immediately if you see any Varroa mites.

Rob Stephens Plant Biosecurity & Product Integrity
M 0407 374 232 **E** robert.stephens@daf.qld.gov.au

6 VDO positions (Varroa Detection Officers) advertised with DAF

To support the transition to management (T2M) for varroa mite in Queensland, we wanted to let you know that six Varroa Development Officer (VDO) positions are currently being advertised by recruitment agencies throughout the state. The VDO advertisements have been published online and/or to subscribers of job agency alerts, with a closing date of 5 July 2024.
PLEASE NOTE: a degree qualification is NOT required, equivalent experience will be considered.

https://cdn.wildapricot.com/272599/resources/Documents/VMPPP announcement for new T2M positions v1.0.pdf?version=1719216395000&Policy=eyJTdGF0ZW1lbnQiOiBbeyJSZXNvdXJjZSI6Imh0dHBzOi8vY2RuLndpbGRhcHJpY290LmNvbS8yNzI1OTkvcmVzb3VvY2VzL0RvY3VtZW50cy9WTVBQUCUyMGFubm91bmNlbWVudCUyMGZvciUyMG5ldyUyMFQyTSUyMHBvc2l0aW9ucyUyMHYxLjAucGRmP3ZlcnNpb249MTcxOTIxNjM5NTAwMCIsIkNvbmRpdGlvbiI6eyJEYXRlTGVzc1RoYW4iOnsiQVdTOkVwb2NoVGltZSI6MTcxOTkwMDY0NX0sIklwQWRkcmVzcyI6eyJBV1M6U291cmNlSXAiOiIwLjAuMC4wLzAifX19XX0_&Signature=JtWFfaWnU0jO97YVYR9ACIAJ5qQqhLzOZct2CYhOlQv5YZ0H5hWulcEb5GQ9c9WcHTB7MtLEOfcmaZ8e-kFkThUEjBJpVSNiIQELBYCLFq0zo2XCLI4G9IpJP76WO~CkE3kU6ifh9YDwBJONcVAUYNHMGzPyZ9hI7RGiKAAQAf3~41CjdCBiikXCS025exDF-9ibXhTML4KsK~HkKf-VRQ1ZPAU9yYSGm4JZ1oeeI1NmoKNcnkoOhUC5QvAIsq~UhN90Ed-YIsboZLPk~M4HcUiZ7JcokKJwcskI-vvF1SBDi3UoBPLwo56tTPBidKW~KdiaAratKXh-W738qbo9rg__&Key-Pair-Id=K27MGQSHTHAGGF

TDBAI Committee is involved in many activities – can you lend a hand?

Contact any of the Committee Members to find out how to get involved

St Benedict's Ecofiesta, 18 July

As per previous years, several members attend and manage a bee club display table.

QBA Conference, 10-12 July

TDBAI Members encouraged to attend and learn about the state of the art of beekeeping.
50% Club Members discount applies, see the rego form at
https://members.qbabees.org.au/event-5629389

Mates4Mates – 5 August

Townsville Homeschooling Group - 7 August

Rollingstone Pineapple Festival – 31 August

Grants

A number of grants have been advertised, we need a dedicated member or three to make application for these as they arise

Special event at this year's QBA Conference

And…..yes I know it's not honey,…….
but it was as smooth as velvet,….no sting at all in the tail

Royal Sydney Show honey prizewinners

The Ed's daughter, Carla, attended the honey section of the Sydney Show and purchased this yummy jar of unique creamed honey for me – 2nd prize winner in a tight competition. I was impressed with the unique flavour and the detail of the source of the honey, where the trees species were identified. The honey came from a bunch called "The Honey Library". Well done.

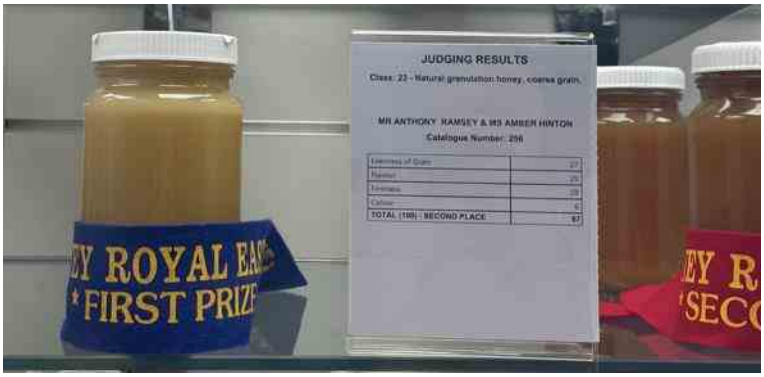
And…..

I reckon I could win a trophy in this section (you might have to expand the photo to see it). This is the 1St Prize winner in the "Natural granulation, coarse grain" section.

Oh, yeah!!!!!! all my honey problems are solved. This is my section that I can really revel in. Coarse grain granulated or crystallised honey is my specialty, unfortunately.

Does your honey crystallise on storage???? I will include an article soon on why that happens, and why it's natural, and why it's not the end of the world.

The Ed



Bees on the internet

A roundup of interesting articles on the internet about bees.

Why is my honey like a gel and hard to extract? - because it's thixotropic

This article first appeared in ***American Bee Journal***, Volume 164 No. 2, February 2024, pp. 153-155.

From Rusty at: Honey Bee Suite Abbreviated by **The ED**

Here's a quiz: What do ketchup, yogurt, gelatin, and heather honey have in common? You got it! They are all thixotropic liquids. Thixotropic materials are thick and viscous when motionless but become thinner when agitated.

At my home, we always keep a humongous bottle of ketchup on the kitchen counter. After sitting untouched for several days, you can invert the bottle over your plate and nothing happens. The thick red glob remains pasted to the bottom as your fries get cold. But shake it hard, or give the bottom a sharp rap, and the ketchup will flow like thick syrup. Depending on the recipe, some brands will continue to flow for several hours, others for only minutes before you need to shake them again.

Newtonian vs non-Newtonian fluids

Ketchup is called a non-Newtonian fluid because its viscosity depends on the amount of shear stress applied to it.[1] This is not "normal" behavior. Most liquids are called Newtonian fluids and behave more like water.

Most Newtonian fluids like soy sauce, grape juice, or a cold brew do not need to be encouraged out of their container. Turn them over and gravity does all the work. If you add pressure, they flow faster (think of water in a garden hose), but they do not change consistency: Water standing in a pool is just as liquid as water from a faucet. However, the viscosity of Newtonian fluids is strongly dependent on temperature, with colder fluids being more viscous than warm ones.

But in undisturbed thixotropic fluids like ketchup, neighboring molecules form weak bonds with each other. These may be hydrogen bonds, van der Waals bonds, or even electrostatic bonds that hold the ketchup together in a gelatinous state. The bonds form over time as long as the fluid remains motionless. But once we break those bonds by shaking or stirring, the flow returns, covering your fries with tomatoey goodness.

The secret in the sauce

To get a thixotropic liquid, something must be present in the mix that encourages weak bonds to form. In food items, it is often a type of protein or other complex molecule such as dextran.[2] If one or more of these substances is present, the gel forms. The reaction may be fairly quick or it may take days, depending on a variety of factors.

Non-food items can be thixotropic, too. For example, paint, shampoo, and blood are all thixotropic. Synovial fluid, the lubricant that reduces friction between the bones in our joints, gels at night as we sleep. But as soon as we begin to move our joints the next morning, it quickly reverts to a thin liquid.

The opposite of thixotropy

Much less common is a second type of non-Newtonian fluid that does the opposite. Liquids that get stiffer with agitation are called anti-thixotropic or rheopectic. A common example is inkjet printer ink, which starts as a liquid but gets stiffer as it goes through the printer jets. This thickening allows the ink to dry quickly before it smudges the next sheet.

Another memorable example of rheopecty is Silly Putty.[3] Silly Putty does many cool things, including bouncing, stretching, and tearing. Strong bonds hold the polymer together, but weaker bonds form between the molecules. Breaking the weak bonds at different rates produces the unique characteristics kids love. But leave Silly Putty undisturbed long enough and it will puddle like a liquid. Since 1950, parents have warned their children to store the putty in its egg to keep it from melting into the carpet (although many of us failed).[4]

Thixotropic honey varieties

Some of the most famous honey varietals in the world are highly thixotropic, a characteristic usually attributed to the presence of a certain protein in the nectar collected by the bees. These types of honey can be vexing for beekeepers because the honey won't easily flow out of the cells, even in a radial extractor. Fortunately, most honey has only small amounts of protein and behaves like a normal Newtonian fluid.[5]

Because beekeepers are enterprising folks, those with lots of thixotropic honey have clever ways of dealing with it. Many of the extraction techniques, which tend toward messy and time-consuming, were developed in Europe, Australia, and New Zealand where varieties of thixotropic honey are much more common than in North America.

The most famous varieties of thixotropic honey include:

1. Manuka honey, known for its medicinal qualities, comes from the nectar of *Leptospermum scoparium*, a tree native to New Zealand and Australia. Of all the thixotropic honey varietals, it holds the record for the speed at which it resumes the gelled state after agitation.
2. Ling (or common) heather honey, made from the nectar of the heather plant, *Calluna vulgaris*, is famously thick, strongly flavored, and dark colored. Common in Europe, heather honey spurred much of the experimentation into alternative extraction methods.[6]
3. Eucalyptus (*Eucalyptus* spp) honey is the product of various species of eucalyptus trees that grow in Australia. Eucalyptus honey comes in a treasure trove of colors and has a wide range of thixotropic properties that vary from species to species. However, a few species of eucalyptus display no thixotropy at all.[7]
4. Buckwheat honey derives from the nectar of buckwheat, *Fagopyrum esculentum*. Buckwheat honey has a memorable dark brown color and a strong, molasses-like flavor. Its thixotropic properties vary, probably as a result of the nectars mixed with it.
5. Grapefruit honey comes from the nectar of grapefruit blossoms, *Citrus paradisi*. It ranges from light to dark amber and is moderately thixotropic.

The easiest way to sell thixotropic honey is in the comb. When eaten in the comb, the gel breaks down when the honey is spread onto toast or crackers, making it behave like any other comb honey. But if you must extract your crop, beekeepers have devised ways to do it.

Although not as popular as it once was, North American farmers still grow buckwheat. The grain is milled into flour and the entire plant is useful as a cover crop for suppressing mid-summer weeds.

Pressing honey with a wax screw press

Many beekeepers simply press the honey out of the combs. Unfortunately, pressing destroys the comb, but with thixotropic honey, even pressing won't separate the honey from the beeswax. Gravity doesn't help much, so an extra step must follow.

Some beekeepers like to use a wax screw press, a device with a large screw in the center of a cylinder, kind of like a meat grinder. But the cylinder has slits along its length that exude liquid honey as it separates from the wax. The honey collects in a sump below the cylinder and dry wax curls drop from the end.

Before going into a jar, the honey must be strained, a process that takes a long time. Because it is so stiff and thick, it requires constant stirring so the honey doesn't jam the strainer and form a gel around the wax pieces.

Extractors and thixotropic honey

Another way to extract requires a tangential extractor instead of a regular radial extractor. Radial extractors hold the frames perpendicular to the side of the extractor like the spokes of a wheel, while tangential extractors hold the face of the frame parallel to the side of the extractor. Each type has pros and cons.

For example, radial extractors spin faster, but tangential extractors can extract larger frames without damaging the combs. However, because the tangential type extracts only one side at a time, the beekeeper must flip the frames after the first side empties. To address that problem, the swing-cage tangential extractor was developed.

In a swing-cage extractor, the frames fit into wire cages that can swing either to the left or the right. After the first spin, the extractor reverses to spin in the opposite direction. As the motion begins, the cages flip to the other side, meaning the beekeeper doesn't need to reposition the frames manually.

Using a tangential extractor with gelled honey

To use a tangential extractor with gelled honey, the beekeeper must first uncap the frames in the normal way. Next, he puts the frames, one at a time, into a heather loosening machine. Using a long lever, he squeezes plates of metal pins into both sides of the comb simultaneously. The pins disturb the honey, breaking the gel so it will flow.

After releasing the pins, the operator needs to scooch the frame about ⅛ inch along the length and pin it again. Usually, one frame needs to be pinned multiple times to make sure all the cells get disturbed. Any cells not pierced will not release their honey even inside the extractor.

Once the frames of thixotropic honey are in the extractor, beekeepers recommend slow-spinning clockwise and then counterclockwise to get the honey moving. They follow this with a medium-speed spin in both directions and finally a high-speed spin in both directions (making the swing-cage style very attractive). Reversing the sides keeps the frames balanced, removing the honey in installments without breaking the combs or making a colossal mess. Although this system is time-consuming, it preserves the comb, a major advantage for the beekeeper.

After extraction, the honey flows from the spigot in painfully slow-moving globs that drop into a large strainer. The beekeeper must constantly scrape and stir the honey in the strainer, encouraging it to move through. Without constant attention, the honey will gel right in the strainer, adding to the expense of heather honey.

Is your honey thixotropic or crystallized?

Most beekeepers have a good idea of what's in their combs, but not always. If you live in an area without major thixotropic honey plants, you're unlikely to get thixotropic honey. However, we don't know all the plants that cause it, so we can't be sure. And because most honey comes from a mix of nectars, even if some are thixotropic, the characteristic gelling may not occur.

The bigger challenge is deciding if your honey is thixotropic or crystallized. It's easy to confuse the two because they both make honey appear more solid than liquid. But to remove crystals in honey, you need to apply heat, whereas thixotropic honey merely requires a stir at room temperature to revert to the liquid state.

I have a small jar of buckwheat honey that was given to me. When I first opened it, I thought it had crystallized. But as I began to stir with a knife, it loosened into a velvety liquid without a crystal in sight.

Unless the crystals are extremely small, crystallized honey often feels gritty, whereas gelled honey is smooth. Also, crystallized honey is often light or almost white and opaque because of the way light reflects from the crystals. In contrast, gelled honey retains its translucent quality, although it may look cloudy. Unfortunately, neither can be extracted with a radial extractor.

However, these simple tests for crystals vs. gel are not definitive because even thixotropic honey can granulate over time. Many beekeepers think crystallization in thixotropic honey results from mixed nectars. But others say it's simply the ratio of fructose to glucose that controls crystallization, regardless of thixotropic-inducing molecules. In addition, one paper claims, "All honeys in their crystallized state show a strong thixotropic effect, which can be measured."[8]

Be sure to try some thixotropic honey

Unless you have large amounts of gelled honey to extract, the properties of non-Newtonian honey will have little impact on your beekeeping operation. However, learning how and why gelled honey happens will allow you to answer consumer questions about it, making you the local expert.

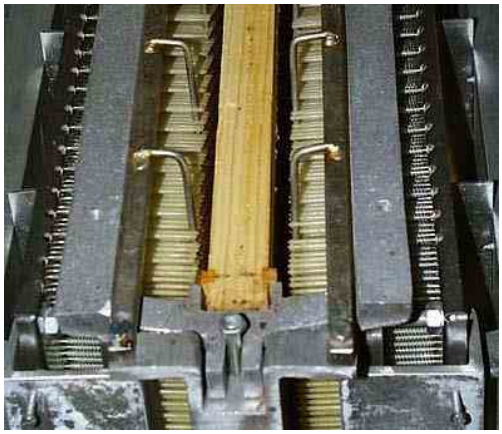
Years ago when I learned about thixotropy, I immediately purchased some imported ling heather honey just for the experience. I highly recommend it, both for its excellent flavor and because it's a fun thing to do. And while you're shopping, buy some Silly Putty, too. And don't forget the ketchup.

Rusty

Honey Bee Suite

How to get that thixotropic honey out of the frames

https://beeman.se/biodling/ljung/ling-2-nf.htm



The Sjoelis Honey loosener. The only efficient tool to get Heather and Manuka Honey out of the combs. It consists of two plates with small plastic needles that are pushed into the cells and stir the honey so it loosens up and can be forced out during the extracting process.

The frame hangs between the two plates with needles, and the machine is operated with a handle that push the plates together and needles are forced into the cells. Five times for each frame they are pushed in, each time the frame is moved slightly (one mm) so the needles work all honey in the cells.

Close up of the plastic needles. There are 1,700 of them, one for every cell in the comb. Each one is supported by a spring so it will not brake when there is pollen in the cell.

No evidence for effectiveness of probiotics for bee guts……or human guts

https://www.beeculture.com/the-hopeful-state-of-probiotic-science/

It's a rather long-winded meander through the experimental work on trying to introduce beneficial microbes "probiotics" into bees gizzards and improve their "biome", health, and disease resistance (and ability to resist AFB). Along the way, the author compares results of similar research in the attempt to improve the human gut or "biome", for example, eating live yogurt cultures after rounds of antibiotics – a common belief.

It's all to no avail apparently – according to the thousands of experiments undertaken so far. The author also takes a swipe at the "health and wellbeing industry" who flog this stuff to the tune of US$100 billion world wide.

As the author states "The variety of products now labeled "probiotic" has become overwhelming, a prophecy advanced in *Idiocracy*, a 2006 film depicting a dystopian future wherein electrolytes (like those in Gatorade) are a universal tonic.

The results of one set of experiments is displayed, see opposite.