

FALL 2023 Edition Ron Miksha, ABLB editor

Honey is in the jar, and as Winnie the Pooh said: "I wasn't going to eat it. I was just going to taste it."

Welcome to *ABee Landing Board 8: Fall 2023*. With harvest finished, let's taste our honey and eat it, too.

In this issue, we report on the <u>results of a survey</u> of 102 Calgary and District beekeepers. They voluntarily and anonymously told us how well their bees did in 2023. Mostly, they did well. <u>Read here</u> to see the details.

The WAS/CDBA Conference is just days away. If you didn't pay to attend the presentations, CDBA members are still able to attend the huge <u>Trade Show</u> for free and they can enter the <u>Honey Show</u>. Don't miss out!

This issue has another story with Rose-Anne Bouffard. Rose is training her bird dogs to identify American Foulbrood. <u>Here, she tells us how it's done</u>.

Beginning in this edition of *ABee Landing Board*, you can enjoy two new features, written by two Calgarians.

Nichol Piniak, an accomplished writer, carpenter, and naturalist, tells us about her experiments in one littleknown aspect of natural *varroa* control – the use of a small scorpion-like creature that can live in a hive and eat mites. <u>Read her story</u> to see if that remedy works.

We also welcome Kendra Scott, the CDBA Communications Director, with <u>a column</u> that will relate with many new beekeepers – getting over fear and becoming comfortable among the bees.

Enjoy this issue. It has the usual <u>CDBA club news</u>, with activities and updates about beekeeping in our area.

The ABee Landing Board comes to you from Calgary, is edited by Ron Miksha, and produced by the Calgary and District Beekeepers Association. <u>Reach us here.</u>

Fall: Proof of the Pudding

Is your honey any good? Does it taste like the best thing since beekeepers invented sliced bread?



For beekeepers, the proof of our pudding is our honey's flavour. It's almost always delicious when it's from our own hives. By the way, "proof of the pudding" is an old English expression, perhaps originating in Lincolnshire's Haxey

Pudding, a town where an annual fight over a leather tube stuffed with meat pudding was once a big deal. Ultimately, the proof of the pudding is in its taste. My guess is that Haxey's pudding isn't worth fighting over.

Surprisingly, some local beekeepers say their honey has been quite different over the past three years. It's still good, but different. Maybe it's the smoke. Maybe it's some odd drought-resistant flower's nectar. We'll never know. But as Shakespeare might have said, honey with any other flavour still tastes as sweet to the beekeeper. Hope you got buckets of the sweet stuff this year.

A beekeeper's fall chores:

- Honey supers need to be removed;
- Last extracting should be finished;
- Store equipment where it can't be robbed;
- Check for mites and nosema;
- Medicate if needed;
- Feeding can start right after honey is removed;
- Feed 2:1 sugar:water to top-off winter stores;
- Add <u>fumagillin</u> to syrup, if necessary;
- Continue feeding until bees stop taking it;
- Feeding usually ends in October;
- Eliminate colonies that would die over winter;
- Remove <u>Apivar strips</u> if you used them;
- Add entrance reducers;
- Let hives slope slightly forward to drain water;
- Wrap the hives with insulation; and,
- Eat hot muffins made with your own honey.



You will notice a big change in the *ABee Landing Board*, beginning with this issue. We are introducing advertisers.

The companies you will see in this journal have local sales networks or local vendors carrying their wares. They serve Alberta beekeepers with pride and we are proud to have them on board with us.

In this issue, all of the advertisers are **sponsors of the WAS/CDBA 2023 Northern Lights Conference.** They are helping make this event possible. Without them, the conference wouldn't be possible. We want to thank these companies – from familyowned enterprises to big corporations – for stepping forward to support us as we provide up-to-date, relevant, local information to our readers and to the participants at the **Northern Lights Conference**. Being supported by our friends and colleagues is an honour for us. We hope that readers will find these business advertisements useful when exploring options for beerelated purchases. Please support these sponsors as they are supporting us.

Many thanks to all!









CALGARY & DISTRICT BEEKEEPERS ASSOCIATION: WHAT'S HAPPENING?

Your bee club is meeting monthly at the <u>Parkdale</u> <u>United Church.</u> The new season began September 13 with featured presenter **Ken Crebbin**. Ken, a masterful beekeeper, spoke about fall management, including feeding and *varroa* control. He also focused on the importance of locally-produced queens.

Club president, **Pierre Marleau**, told us that the CDBA Board has been meeting once a month through the summer and will continue with that schedule. The Board reviewed the 100 responses from a membership survey that was sent a few months earlier. More surveys will be sent out soon. This is seen as a way to assess interests and needs of CDBA members.

Among the survey gleanings are data that more than 50% of respondents are in their first two years of beekeeping, consequently, there will be a focus on teaching and mentoring the newbies.

A majority of people who answered the survey keep bees in the city, so <u>good residential beekeeping</u> <u>practices</u> will also be emphasized.

Among other Board decisions, the Board decided that the Google Chat (<u>cdbabeekeepers@googlegroups.com</u>) will allow everyone, even commercial entities (with permission), to post items for sale.

CDBA meetings are held on the **second Wednesday** of each month from September through May. Future dates are October 11, November 8, December 13, January 10, February 7, March 13, and April 10. The season wraps up on May 8 with the Annual General Meeting.

CDBA **memberships** are sold on the <u>club membership</u> <u>website page</u>. The executive encourages you to support your club by taking out a membership. A low fee helps pay for our regular meetings, guest speakers, free workshops, website, newsletter, and other club activities throughout the year. Benefits include monthly meetings with enlightening beekeeping presentations, Volunteer with the CDBA! The CDBA has lots of ways for you to get involved helping the community. Past opportunities have included the Winter Banquet; BBQ; Aggie Days; CDBA Stampede exhibit; Millarville Fair; mentoring; swarm recovery; and more.

Volunteering is a great way to meet other beekeepers and learn from them!

the chance to purchase honeybee packages at a group rate, mentoring programs, social events (BBQ, winter potluck, honey competition, Bees and Beers), assistance identifying bee diseases, and this *ABee Landing Board*.

The best value you will receive from a local beekeeping club comes from the *local* knowledge brought by fellow bee wranglers. Good beekeeping is rooted in the experiences of seasoned neighbourly beekeepers.

Since a lot of people like to beekeep by watching YouTube videos, we recommend a series of videos that is *local*. It's produced by the <u>Alberta Farm Animal Care</u> <u>Association</u>. Their YouTube page features <u>27 short</u> <u>videos</u> created **by Albertans for Alberta beekeepers**. Especially relevant at this time of year are the short docs about moving bees (featuring Shelley Hoover), biosecurity (Renata Borba), and combining colonies as part of fall management (Ron Miksha). See the entire list on the <u>AFACA YouTube</u> page.

Don't forget to register your hives with the City of

<u>Calgary</u> if you keep bees in the city. You will need proof of proper experience or education when you apply. The CDBA offers a two-day beekeepers' course that exceeds the city's requirements for registering an apiary. To get this important training, <u>sign up here</u>.



September CDBA Meeting

This season of CDBA meetings began with an excellent talk from beekeeper Ken Crebbin, who has about 100 colonies south of Calgary. During the past 20 years, Ken has not bought any packages, nucs, or hives. His successful overwintering results in strong spring colonies. From those, he replaces any winter losses.

Ken told Wednesday's 45 attendees that successful wintering starts in August. There will always be a small number of colonies that won't survive winter. Identify them in August and apply remedies – taking your losses by doubling up the poor colonies with better ones.

Ken suggested that poor colonies usually result from poor queens. Poor queens, said Ken, are usually the result of poor genetics. He attributed most of his beekeeping success to always using queens bred for the North, purchased from Northern breeders or reared himself from his own best stock: "You have to have queens good for this climate. That's the bottom line."

Another key to successful wintering is appropriate winter packing. Ken experimented with a variety of ideas before settling on *lightly* wrapped hives with good winter sunshine exposure. Too much wrapping, he says, results in moisture inside the hive – a serious problem that will kill a good colony if it's too tightly sealed. (In our June 2023 <u>ABee Landing Board</u>, urban beekeeper Mark Soehner gave us the same message.)



Ken ended by explaining that "Beekeeping is developing a craftsmanship, learning from your mistakes, and going out and doing." Ken's successful years proves he's right.

CDBA's Bees and Beers



After-work bee chat amongst favourite beefriends. July 2023. Image: Miksha

A fun feature of CDBA membership is gathering with our community of beekeepers at a neighbourhood pub. During *Bees and Beers*, lifting a pint is totally optional, but chatting about bees is not.

This monthly traditional Wednesday event started out a few years ago. It was most recently organized by Kendra Scott, who is also one of the *ABee Landing Board's* <u>newest correspondents</u>. July's Bees and Beers was really well-attended with 40 beekeepers occupying at least two long tables. We were coming, going, roaming, reciting poetry, and downing nachos and burgers.

Proud to say, none of our beekeeping philosophical discussions led to any bloody fist fights. Everyone was cool and charming.

We hope that you are enjoying this newsletter! Feel free to share it with friends and ask them to contact us at <u>ABeeLandingBoard</u> to get on the distribution list. Of course, if you've had enough of us, we'll remove you – just send a judiciously-worded note to the editor.



Beekeeping with the CDBA

Need a refresher? We all do from time to time. That's why <u>Calgary and District Beekeepers Association</u> offers lots of beekeeping mentoring, learning, and training opportunities.

With A *Day at the Hive*, an experienced beekeeper opens colonies, exposing the inner workings of honey bee nests to new beekeepers. To participate, watch for announcements in the *CDBA Google Group Chat* platform. If you aren't on this online forum, send a message to <u>calgarybeekeepers@gmail.com</u> and the CDBA team will welcome you to the group. In addition to seeing announcements about the *Day at the Hive* and other club events, you can post beekeeping questions, which members of the CDBA will try to answer for you.



The **CDBA Introductory Beekeeping Course** exceeds requirements for registering as a Calgary Beekeeper. There is a lot that will interest beekeepers at any level – modules include Starting Right with Beekeeping, Beeing Safely, Pests and Diseases, the Alberta Calendar, Marketing Honey, and a dozen other sections – all in a two-day super-course. <u>Look here</u> to check for your opening in the fall program – and sign up!









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How was your honey crop? by Ron Miksha

How much honey did you make? Did everyone's bees do as well (or as poorly) as yours? To find out, your *ABee Landing Board* ran a poll this month in CDBA's Google Chat Group. Amazingly, over 100 beekeepers participated, each answering three simple questions:

- How much honey did you make per hive?
- How many colonies did you have on June 1?
- Where do you live?

Before interpreting the results, remember that this is a self-reported sample of just 102 out of about 500 Calgary-area beekeepers. There are errors generalizing these results to all the area's beekeepers. But it does tell us what happened to the 102 respondents.



people in the foothills and south of Calgary were most likely to answer the survey.

Nine people (almost 10%) produced no honey and eleven more said they made about 20 pounds per hive. These are small crops and frustrating for any beekeeper to admit to, even anonymously. Thank you for being honest. If you are in this group, I want you to know that I once produced a 17-pound average from 600 hives. Sometimes, stuff happens. For me it was a drought in southwest Saskatchewan. For you, it might have been poor queens, bear damage, a hail storm, persistent skunks, mites, disease, or so many other problems. Stuff happens, and you will have better years.

For those of you who broke the 200-pound barrier, stuff happens. New beekeepers sometimes take credit for their skill as a beekeeper. Experienced beekeepers just thank the stars for lining up. Back in southwest Saskatchewan, I once had a series of years with over 300 pounds per hive, each year. I wasn't especially skillful. I just didn't mess up what the gods sent me – perfect rains, sun, flowers, and the strength to get all that honey off my hives.

So, here are the numbers. **Beekeepers sampled within city limits averaged about 84 pounds per hive, those outside averaged 90 pounds**. For a long time, we figured that honey bees are more productive outside the city limits. But the difference, 84 (+/-12) lbs vs 90 (+/-9) lbs, is not statistically significant. In other words, with our sample size, it's **possible** that the real average for all city beekeepers is not actually less than outside the city. Our 102 reporters are just part of the number of beekeepers who could have answered. If I ran the survey again, and different beekeepers answered, the average would be slightly different. But 19 times out of 20, I would find that city beekeepers made somewhere between 72 and 96 pounds per hive while rural beekeepers made between 81 and 99 pounds.

This summary about our honey crop will display the (+/- pounds) range and give the 19 times out of 20 caveat if I am extrapolating to the larger, unknown population. When describing the 102 answers, the numbers are exact. But sample summaries do not necessarily represent all the beekeepers in our area. The truth is out there, but not here.

Nevertheless, the data suggests slightly bigger crops outside Calgary's city limits. However, we can be fairly certain that a city beekeeper would be silly to give up a nice backyard location with the hope of getting a slightly bigger honey crop outside the city. The difference, if there is one, is not great, while the extra cost of an out apiary might not make it worth the miles.



Our survey had 102 responses. Seven managed more than 20 colonies in 2023. If we leave the seven semiprofessionals out for a moment, the 95 of us with fewer hives produced 22,260 pounds of honey. That means we are collectively making about a quarter of a million dollars of backyard honey each year. The average of these hobby beekeepers was 78 pounds per hive. Each of our little honey shops slung out 235 pounds from our (average of) three hives each.

Those seven larger-scale beekeepers (over 20 hives each) averaged 94 lbs/hive this year. They all kept their bees outside Calgary city limits, split about evenly between the north and south.

Location	average per hive	hives/bkpr
West of Calgary	55.0	2.0
SW Calgary	74.8	2.2
NE Calgary	80.0	4.2
South of Calgary	80.6	9.6
East of Calgary	84.7	3.5
SE Calgary	89.0	2.6
NW Calgary	91.8	2.3
North of Calgary	112.4	12.4

Why do Calgary's urban hobby beekeepers make about half as much honey, per hive, as the provincial average, which is over 160 pounds (excluding hives used in overstocked canola pollination)? It's because almost all the honey produced in Alberta comes from fewer than 200 seasoned, experienced commercial beekeepers. They skew the provincial average way up. We city folks include a lot of new beekeepers who are learning, making rookie mistakes, and perhaps drawing foundation (which reduces the honey yield). And, of course, many hobby beekeepers are not interested in maximizing crops and might not even own enough supers.

Each year, the Government of Alberta asks beekeepers to report the number of colonies operated. In order to respect our privacy, results are reported back to the public only at the city level. So, for example, we know that in 2018, Calgary had 1236 colonies divided among 276 hobby beekeepers. That's an average of 4.4 hives/beekeeper. That year, I did a deep census for research I was doing at the University of Calgary and I counted 284 hobby beekeepers with an average of 4.2 hives per beekeeper. In the poll that many of you participated in, the average city count was down to just 2.5 hives per beekeeper. It's possible that, five years along, people in the city have fewer hives. It's also possible that the people who answered the poll over the past several days simply keep fewer colonies.

Interestingly, our **52 'rural' correspondents** averaged 6.7 colonies per beekeeper and an 89-pound average crop. Let me quickly add that (for this survey) rural is loosely defined as outside the city of Calgary. So, Airdrie, Okotoks, and Strathmore are included, though they aren't exactly 'rural'.

West of Calgary, beekeepers reported 55 pounds per hive, the lowest crop average of any area reporting. A smaller crop west of the city makes sense - the foothills are far from abundant canola fields, have a short season due to elevation, cooler summer temperatures, more frost, and more predators such as bears.

South of Calgary, beekeepers reported owning ten hives each and produced a very respectable 81-pound average. North of Calgary reported 12 colonies/ beekeeper, and a larger crop – 112 pounds per hive. Meanwhile, only four beekeepers east of the city answered the survey. They reported owning four colonies each and making an 86-pound crop average. Such a small number of reporters means we can't extrapolate to the whole area in general.

Over the years, we have heard anecdotally that bees kept north and northeast of the city tend to produce the highest quantity of the areas we're looking at, but any of these three areas (north, east, south) could win top place one year or another, depending on rainfall and sunshine. *Excluding* the poorly-producing foothills, the rural areas near Calgary had an 94-pound average.



An optimal number of hives

How many colonies is the right number for a Calgary hobby beekeeper? Keep in mind that our survey results only show what happened to the 102 beekeepers who reported their findings. But, among those beekeepers, **four is a very successful number**.

Whether you had one, two or three hives, chances are you had about a 75-pound average. However, the six reporters with four hives had a 107-pound average. Since it's only six beekeepers, we have to be careful about drawing generalized conclusions. With such a small sample, the range is wide. Very wide. If I repeated this survey 20 times with the other beekeepers who keep four hives, their average would be somewhere between 56 to 158 pounds, 19 out of 20 times.

But let's play detective and imagine that four is a great number of hives to keep to get the most honey per hive. Does that make sense? By the time a person has four hives, they have probably been keeping bees for a while. They have learned a lot and gotten past the mistakes every new beekeeper makes. Four hives is too many to ignore, so swarming and supering are probably under control. With four hives, weak ones can be boosted in the spring. And a person with four hives has sunk a lot of money into their hobby, so they are going to be paying attention to the bees.

This all sounds good until we notice that *people with five hives had a smaller average crop.* Shouldn't they have done a little better than the ones with four hives? They should have. But this is why we can't draw too many conclusions from small samples of data. Instead, we should look at the "big picture". In general, **beekeepers with more hives make more honey per hive**. We are fairly sure because our sample has over a hundred beekeepers. But it's due more to their experience level than the number of boxes in their yard.



I took a moment to plot out the production trend line. You can see that beekeepers with more hives have a higher average. One last statistic to note is that the R² value for the trend is about 0.36. This basically means that 36% of the trend is due to simply having more hives. 64% of the trend is due to other things – like the number of years of experience the beekeeper has, or the mite count in their area, requeening habits, amount of supplements fed, or a number of other factors.

A short summary of the sample

I think that our survey gives us some insight into beekeeping in Calgary. It's a small sample, but here is a summary of this sample:

> 102 beekeepers answered the survey 52 were beyond the city limits; 50 were in Calgary The average honey crop among everyone: 88.3 lbs The average honey crop for Calgary hives: 84.0 lbs The average honey crop for outside Calgary: 89.8 lbs Inside the city, hives/beekeeper: 2.5 hives Out of the city, hives/beekeeper: 6.75 hives

Thank you to everyone who took the time to answer the survey! Now we all know a little more about beekeeping and honey production in our area. Please look for future surveys – they will be listed on the Google Chat space.







Alberta Blooming

A prairie fall wildflower: Prairie blazing star

Alberta gives its beekeepers spectacular summer honey crops. But in autumn, it doesn't. The end can be really abrupt. Colonies that gained ten pounds on Friday may be eating two pounds each day starting Sunday.

Alberta doesn't have many good fall flowers for bees. One year in seven, we may get a super of late summer honey from clover and alfalfa, if there has been enough late rainfall, warm sunny days, and no frost – conditions we've seen in 2023. Other years, the bees are jumpy and rob quickly even though they may find a few drops of nectar and flakes of pollen among the flowers.

After September 23, when fall officially starts, short days and cool temperatures keep the bees housebound. They begin to form their winter cluster, hopefully occupying the bottom box with lots of honey just overhead. The queen lessens her egg production, easing off until she might completely stop on the coldest and darkest days of winter.

Meanwhile, in the weeks before snow covers the hives, a bit of natural food gives the bees something to keep despair from mounting in the community. Fall pollen gives the bees extra protein, which includes a variety of minerals and vitamins.

Among the fall flowers, the prairie *Liatris punctata* is one of the most drought-resistant. The flower, commonly known as the narrow-leafed blazing star, dotted blazing star, or dotted gayfeather, stands up against drought that causes lesser flowers to wither.

In Canada, it's found from Alberta to Manitoba. It also thrives in dry regions of Montana south to northern parts of Mexico. Over its range, it provides forage for livestock as well as elk, deer, and antelope. The hardy plant is among species used for land reclamation and rewilding prairies. It can survive 35 years and spring back up from below the ground after a prairie fire.



Liatris punctata, photographed near Bozeman, Montana (Image credit: Matt Lavin, CC BY-SA 2.0, via Wikimedia Commons)

Butterflies are particularly fond of *Liatris* spp. In fact, one rare butterfly species (*Hesperia leonardus montana*) occurs only where the blazing star is found.

In late summer, when the blazing star begins to bloom, honey bees generally find better resources in patches of late-blooming alfalfa and sweet clover, especially in years with late frosts and some timely late-season rains. In years like these, the wild bees and butterflies have *Liatris* to themselves. During drier years, honey bees may compete against sweat bees and leafcutter bees for nectar from this flower (Weaver et al. 2021).

Should you plant one of the blazing star (Liatris) species in your garden to feed the bees? Native bees will certainly visit the flower in late summer. Honey bees may visit when they are desperate.

It takes about a month to germinate from seed, sown directly into the garden or started indoors to transplant later. Once established, it needs very little water and will live for decades as a tall purple perennial that likes full sun.

Learn more about the blazing star, gayfeather, and its relatives <u>here</u>, <u>here</u>, and <u>here</u>



Overcoming Fears of Beekeeping

By Kendra Scott



Kendra Scott is a keen young beekeeper and recent university grad. She has been working with her parents, who are also new beekeepers. Kendra recently joined the CDBA Board as Director of Communications. In this series,

Kendra shares her first-hand experiences among her new acquaintances.

Over the last two summers, I have had the privilege of helping my parents foster their small hobby hives. Because we all work full time, finding time for the bees is sometimes difficult, but our interest is never lacking. I have previously been quite afraid of bees, and never imagined myself being so up close and personal with them. Last summer was the first summer our family had bees, and we kept it simple with just one hive.



Image Credit: Kendra Scott

My involvement had only just begun, and I felt safer taking pictures and watching. Taking photos allowed us to do a physical inspection in person and then go into the house and enjoy pouring over the photos. This summer, I was considerably more comfortable around the bees, and we have now added a second hive to the yard. Both have presented their challenges and encouraged us to continue learning. I have been able to spend some time with our second hive, which has required much more maintenance. We were lucky enough to watch a bee emerge from a cell during one of our hive checks and this year, our marked queen made finding her feel less like Where's Waldo. This summer, I finally had my first, solo, handson experience with our smaller hive. Usually, my parents are the ones who do our hive checks and maintenance throughout the season, but when they go away, I have to officially step into my beekeeper role.

During the early summer, we had to requeen the hive on the east side of the yard. This, coupled with some cool weather and smoky conditions, made us feel that we had to provide some extra encouragement to this hive. The only complication was that my parents had gone away, and I had never gone into our hives alone.

On a Saturday afternoon, I had gone outside to watch the bees fly in the morning sun and found myself feeling extra brave. I went into the house, suited up, and made some sugar water. After going back to the hive, some of the bravery from ten minutes earlier had worn off, but supporting the bees was a necessary chore of the day. I was able to take the top lid off before I realized I had not brought any other tools and had to run into the house again.

Eventually, the lid came off. I was face to face with a hive full of bees, all by myself. I took a big step back and evaluated how the bees seemed to be feeling. There were very few that seemed to be bothered by me, and the bees were calmer than I was. After adding the sugar water and putting the lids back on, careful to not squish any bees, I had officially completed the task.

For some, this is a basic task when it comes to beekeeping, but as a beekeeper who used to fear any and all flying and buzzing insects, this was one of the greatest ways to overcome my fear and it is an incredibly rewarding process to be involved in.





It's honey, Honey

"It's honey, Honey," by experienced Calgary beekeeper Mark Soehner, focuses on urban beekeeping. Mark is active in our bee club, hosts Saturday at the Hive each summer and volunteers in a wide



variety of roles, including auditing CDBA's financials. The retired firefighter is an award-winning honey producer and accomplished beekeeper.

Fall 2023 by Mark Soehner

Harvest is complete; Summer is wrapping up.

After a disastrous winter in the apiary, I purchased queens this summer. On September first, I inspected six hives and found one hive with a new queen had died.

The strongest hive coming out of winter today remains the strongest hive this summer. The two hives that came out of winter had two splits in June and two splits in July. The July splits were meant to be requeened by the hives, however that did not work and after waiting four weeks for results, queens were purchased.



Today, all five remaining hives have larva and brood, however, they are generally light on weight. I

Mark's Haysboro apiary and garden in autumn

have been feeding for two weeks now but they have not been thirsty.

Through the summer, I have been doing the oxalic acid vapourization treatment. This is the sixth treatment since mid-July.

HONEY RECI-BEES by Carmen Peccie

Honey Reci-bees is a quarterly series of recipes and cooking/baking ideas from beekeeper Carmen Peccie.

Hopefully you all have a surplus of honey to try out these recipes. It's a great time of year for any recipes containing zucchini because you may have plenty in your garden, or you can get it for a great price at the farmer's market. Enjoy!

BEEKEEPER'S ZUCCHINI BREAD

- 2 large eggs
- ³⁄₃ cup olive oil
- ²⁄₃ cup brown sugar
- ¹⁄₃ cup raw honey
- 2 tsp vanilla
- 2 cups shredded zucchini with skins
- 2 cups all-purpose flour
- 1 tsp salt
- 1 tsp baking soda
- 1 tsp baking powder
- 2 tsp cinnamon

Preheat the oven to 350 °C. Spray a loaf pan with cooking spray. Shred the zucchini. Mix the eggs, honey, vanilla, olive oil, brown sugar, and zucchini together. In a separate bowl combine the flour, salt, baking soda, baking powder, and cinnamon. Then add it to the wet mixture and combine it all. Pour it into the loaf pan and bake for 45-50 minutes, or when the center is cooked. Cool the loaf by letting it sit for 10-15 minutes before removing it from the pan.

FIG AND ARUGULA SALAD WITH HONEY

2 tbsp of honey
3 tbsp of olive oil
2 cups figs (cut into quarters)
1 cup crumbled sheep's milk cheese
1 cup arugula
¼ cup basil leaves
Course salt and black pepper (to taste)







Newsletter 8 – Fall 2023 Calgary and District Beekeepers Association



Notes from Dr. Olav Rueppell's Bee Lab at the University of Alberta

Editor's remark: <u>Dr. Olav Rueppell's</u> research lab is at the University of Alberta. In this report, sent to us by Dr. Rueppell, he describes the University of Alberta's collaboration with the USDA that discovered that some honey bees **resist** viruses while others **tolerate** them.

The Israeli acute paralysis virus

Viruses, these small enigmatic entities at the outer fringes of what we call life, have been on our minds for too long. But they are not going anywhere and every known organism is afflicted by them, including our honey bees. So far, no remedy is available although all over the world scientists are looking into possible avenues to mitigate the impact of the many different viruses that afflict honey bees.



Figure 1: IAPV symptoms in worker honey bees include paralysis causing bees to fall over with uncoordinated leg movements before death. The virus can also persist asymptomatically at low levels but acute infections commonly lead to death within three days.

One particularly devastating virus is Israeli acute paralysis virus (IAPV), which occurs in Alberta, albeit at a much lower prevalence than Deformed wing virus or Black queen cell virus. Initial reports that IAPV was associated with the then-famous Colony Collapse Disorder (Cox-Foster et al. 2007) could not be fully substantiated, yet it is beyond any doubt

that IAPV can cause severe disease in honey bees (Figure 1).

Dr. Olav Rueppell and two of his graduate students sought to identify the genetic factors that determine IAPV susceptibility in honey bees in collaboration with Dr. Michael Simone-Finstroem at the USDA Honey Bee Breeding, Genetics, and Physiology Research Lab in Baton Rouge (Louisiana). After setting up specific crosses, they inoculated hundreds of worker bees with IAPV and found a sharp dividing line between individuals that were very susceptible and died quickly and individuals that hang on and were less susceptible.

Upon determining the IAPV numbers in the bees that were less susceptible, the collaborative team found that about half of these bees contained very little IAPV – these bees survived because they were **resistant** and suppressed the virus replication. The other half survived with a lot of IAPV in their bodies – bees that were **tolerant** and just continued living with the virus amplifying in their body.

Both, resistance and tolerance, are important survival mechanisms but you can guess which one of them is better for the apiculturist: Tolerant bees carry a lot of virus around to infect other bees, so even if they can protect themselves they are a risk to others. Therefore, the only desirable breeding trait is resistance.

Furthermore, the study also identified some genome regions that influence resistance and genetic markers could be developed for breeding purposes. However, the bad news from that study was that these genome regions each have only a small influence, and that resistance to different viruses is largely determined by different genes. So, breeding for general virus resistance will not be easy.

This study has been presented at the Entomological Society of Canada meeting but has yet to be reviewed and published in a scientific article. – Dr. Rueppell

Good public domain resources about viruses that affect bees can be found at these links:

Honey Bee Viruses

<u>Virus Infections of Honeybees Apis Mellifera</u> <u>Viruses in Honey Bees</u> <u>Bee Viruses: Routes of Infection in Hymenoptera</u>





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Above all, **Propolis-etc...** boasts a dedicated team driven by a genuine passion for beekeeping. We are here to serve you and the larger beekeeping community. Our knowledgeable staff is always ready to assist, providing expert advice, troubleshooting support, and a listening ear. Together, we strive to strengthen the bonds of this remarkable community, fostering a culture of collaboration and shared success.

For more information about **Propolis-etc...** and to explore our extensive product range, visit our website at <u>www.propolis-etc.ca</u> or reach out to our team directly. Let us be your trusted partner on your beekeeping journey.





Calgary, Canada | Friday, Saturday, and Sunday

September 29 - October 1, 2023

The WAS/CDBA Northern Lights Beekeeping Conference is just a few days away. The conference has sold out, so if you have not purchased your passes for the Workshops or the Presentations, we are sorry that you will miss these.

However, every member of the Calgary and District Beekeepers Association is invited to the **Trade Show** (Saturday, September 30 and Sunday, October 1) for free! Come out to the Northern Lights Beekeeping Conference at the <u>Grey Eagle Resort</u> and visit with the vendors. You will have the chance to buy some holiday season gifts (it's not too early!) or take home some gadgets and equipment for your bee operation.

Among the nice folks with wares on display are Alberta Beekeepers Commission, Andermatt Canada, Bayer Canada – Crop Science, bCatch Inc., Beaver Plastics, Bee Maid, BHF Sales Ltd., Eco Bee Box, Frank Linton (books), Global Patties, Hive IQ, Hiveworld, Joan's Beeswax Candles, Meadow Ridge Enterprises Ltd, NOD Apiary Products, Paradise Honey, Perry Mankatta, Project Bee/Nyati Apiaries, Propolis Etc., Strong Microbials, The Honey Merchant, Vita Bee Health, Western Bee Supplies, Wood River Inc., Worker and Hive!

There is free entry to the Trade Show for over 300 CDBA members. Do it and enjoy it!



Tech Transfer Program

From the Alberta Tech Team to You: Monitoring your hives for *Varroa*

A quick, friendly reminder to use your kit.



By now, all registered beekeepers should have received the mite monitoring kit, shown above. This is yours, provided without direct cost, to assure that everyone has the right tools and information to find varroa mites and to treat their bees accordingly.

> Once you have tested your hives, you are invited to <u>SUBMIT YOUR DATA HERE</u>



Colouring Outside the Lines with Bees

We welcome Nichol Piniak as a new feature contributor to the ABee Landing Board. I met Nichol at a CDBA Introductory Beekeeping Course seven years ago. She has an amazingly creative mind and a passion for bees and nature. She is a Calgary artist, inventor, experimenter, and skilled carpenter. – ABee Landing Board editor.

Imagine a tiny creature,

harmless to honey bees,

living in our hives and

eating varroa mites.

Maybe that's what pseudoscorpions do. Or

Several years ago, I

became fascinated by

little creatures called pseudoscorpions. They

look like the real thing,

without a stinging tail,

maybe not.

The helpful hitchhiker?

Nichol Piniak



Pseudoscorpions Image credit: Piniak

are very small, and prey on smaller insects. They can sometimes be spotted in older book collections where they feed on booklice, while the lice feed on starch and plant matter of bindings. The latter fact earned the false scorpions the pet name "book scorpion". Like many arachnids, the pseudoscorpions have classifications, but there is one species called "*Chelifer cancroides*", otherwise known as a 'house pseudoscorpion'. All book scorpions look similar, but are distinguished by preferences for moisture and environmental needs. For example, some thrive in rotting stumps while others favor a dry barn or basement. The creatures are part of the arachnid family and so small they are harmless to us.

Several years ago, I became inspired by <u>Ujubee, an</u> organization in South Africa. In November 2017, Ujubee captured a series of photos of a swarm of honeybees in transit. The swarm lingered for some days in one location. On the third day, several pseudoscorpions emerged from the middle of the swarm. This caused a lot of excitement among treatment-free beekeepers. When I heard about this, I was filled with inspiration, wondering if it were possible for the two to coexist in a symbiotic relationship. When the bees finally departed for their destination, some bees seemed to extend a leg, and the pseudoscorpions latched on – as if to say, 'grab a ride, we're heading home'.

I had a hive build in progress around the same time. This is my personal area of interest... I am an environmental artist who blends science into the beehive, I call the activity beehive architecture.

The addition of pseudoscorpions seemed wonderful, but I had little information to go on. Some natural beekeepers in Washington suggested that the debris on the bottom board of a beehive could emulate the moist environment of a forest floor.

I started emailing entomologists and joined a <u>Facebook</u> group devoted to photographing and classifying



pseudoscorpions. I explained that I was a beekeeper who liked to experiment and that I needed help understanding how to locate and collect these arachnids.

Click to view the video from Jerimiah Toole

I'm glad I spoke up. The group admin made clear that I needed the species

known as *Chelifer cancroides*. The information I received helped solidify my understanding of biology, and the challenge grew to determination. This species of chelifers are predacious in nature and well matched for an acrobatic mite like *Varroa destructor*. I visualized the chelifers within the parameters of a house, in this



case a bee's house. Did I want them on the floor where things die, or up in the frames where varroa mites breed and eat? I began searching through leaf litter and



decaying logs, but wasn't having luck. I continued building my beehive and designed specialized frames which I coined 'nesting frames' but I had no chelifers to add. I included a compost drawer

Nichol's 'nesting frame' a home for pseudoscorpions

under a screened floor for good measure.

Things were still foggy, so I covered all possibilities. My hive was completed, and I got a swarm settled inside, but the year was closing, and I felt defeated – still no chelifers. One night, in a last attempt, I resorted to the internet, trying to find a professional with a scientific approach. I had good luck and found some research taking place by <u>a German citizen-scientist named</u> <u>Roland Sachs.</u> The site included video. Someone's hands were gently picking up chelifers and transferring these to a jar. I was very excited, he seemed to be working with honeybees as well, so my hopes were up.

I sent an email and received a timely response. I asked why these animals were being collected in such a dry place - it looked like a hay loft. Roland's reply was very specific "you need chelifers that live in an exact environment to be successful. Ones suited to your project dwell in older structures, like a 100-year-old barn. In addition, treatment-free practices must take place, due to the sensitivity of chelifers. Last, you will have the best of luck in a barn with a poultry operation taking place inside. Find this, go to the hay loft, and inspect all the wood, especially the floorboards. Use a small, soft paint brush to pick up the fragile creatures".

I immediately went to Facebook and searched for a poultry group within Alberta. I asked to join and was honest about why I was there. The very next morning I was permitted into the group and contacted by a few people and one who wasn't far away. The woman and her family breed fancy poultry and various large mammals. They checked every box on my list. I drove to the farm, about an hour away, and was shown into the hay loft of the barn.



This is where Nichol found pseudoscorpions.

The worst part was the odor, but I adjusted. The first piece of wood I turned over had a deceased chelifer, which I collected as a keepsake. I found several living specimens the same day. I was very happy (to say the least) and brought them home to release on the prepared frames in my beehive.

After I arrived home, it was too cold to enter the beehive, but bees were at the entrance cleaning. Finding a varroa mite was easy, my eyes were very



good. The cold helped me grab a bee with a passenger on her back, and I managed to sweep the mite onto a Qtip, and flick it into the jar of chelifers. Before I could even pick up my phone to photograph the action, a chelifer grabbed and paralyzed the mite. It moved around, looking for a quiet place to eat; I confirmed that chelifers eat varroa mites.

The next day the sun was out, I released two chelifers onto the nesting frames I had prepared. I wanted to observe an interaction between a bee and a chelifer, but it was not what I expected. I placed a chelifer on top of a frame where it sat looking a little confused. A bee darted up from the frames and grabbed the chelifer, and harshly pulled it into the hive. I don't believe the chelifer was welcome, I feel the honeybee identified the chelifer as a mite, but it's hard to say.

People are quick to jump to conclusions, and beekeepers get their hopes up fast. We all want the varroa mites to go away and enjoy bees without the use of chemical treatments. My few observations here in Calgary left me with a distinct feeling. I'm aware that there are those who feel pseudoscorpions can be a potential bio agent inside a beehive, but think for a moment. One chelifer will not hunt the number of mites you may imagine.

Based on my observation, pseudoscorpions may not be as welcome in a hive as we hoped. I feel that trying to add them in high numbers could lead to additional stress on a bee colony.

I also believe that pseudoscorpions have lived inside beehives, and that some bee colonies may have an established relationship, but that it's rare. I don't feel the need to investigate further, but I'll let my bees bring home a guest pseudoscorpion, if they want one.

- Nichol Piniak



Upcoming Alberta Conferences

1) Western Apicultural Society (WAS) Conference and AGM, co-hosted with Calgary and District Beekeepers Association (CDBA) present *Beekeeping under the Northern Lights* at Grey Eagle Resort, September 29, 30 and October 1.

2) Alberta Bee Commission (ABC) AGM and conference at West Edmonton Mall, November 30 – December 2.

3) **BeeTech:** Canadian National Beekeeping Convention and Tradeshow, February 8 – 10, 2024, Calgary, Alberta

WAS/CDBA: Diamond, Platinum, Gold Sponsors

The WAS/CDBA Conference, September 29 – Cotober 2, will be at the Grey Eagle Resort, next to the City of Calgary. Please register. It's solo



next to the City of Calgary. Please register. It's sold out, but CDBA members can attend the Trade Show for free.

This event simply could not happen without the generous support of its many sponsors including:

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Platinum: <u>Bayer</u>; <u>Orange Frog Production</u>; <u>Propolis</u>, <u>Etc.</u>; <u>The Honey Merchants</u>; <u>UBA</u>; <u>Worker and Hive</u>

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Honey Competition

The WAS/CDBA Honey Competition is open to participants of the conference and CDBA members. <u>Rules are here, Entry is here</u>, and Calgary's <u>Worker and</u> <u>Hive</u> is offering two free 500-gram jars to anyone entering the contest. Just drop by and pick them up.



Trade Show Vendors

These are some of the companies displaying at the WAS/CDBA Conference



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Rose-Anne Bouffard's Busy Dogs



In this issue of *ABee Landing Board*, we interview <u>Rose-</u> <u>Anne Bouffard</u>. Rose trains dogs to help rescue wild bee nests and she has begun to prepare her helpers to sniff out American Foulbrood. Rose is also a CDBA member and a recent <u>CDBA</u> <u>Introductory Beekeeping</u> <u>Course</u> graduate. She has a blog where she reviews her dogs' work and play. You can find her blog here.

ABee Landing Board: What does AFB smell like?

Rose: To me, in my experience, AFB smells like rotting carcasses and spoiled fruit. I have heard some people describe it as moldy gym clothes. It is a very distinct smell that is hard to miss, but you have to open a hive to detect it. Those people with less sensitive noses wouldn't catch it until the infection has destroyed the hive.

For a dog, it should smell foul from quite a distance. Seven, a bird dog, takes a lot of scent from the air (this is how they know where a bird is hiding). The breeze picks up the particles and wafts them to Seven. Seven's nose is moist, and as a result these particles stick. Now Seven has a scent and can key onto location, she then makes a bee-line (pun intended) to the infected hive and marks it with a behaviour I've selected. In our case it is lying down or sitting.

There are several questions about what AFB would smell like to a dog: For instance, is the dog keying on stress pheromones? Rotting bee bodies? Foul honey? Or the disease itself? More work is needed to see if Seven will distinguish actual disease versus the other listed concerns. We would need access to isolated clusters of bacteria in order to be sure Seven is detecting disease and not just the consequences of infection.

ABee Landing Board: How long does training take?

Rose: A scent detection dog should be training, in my opinion, for at least a year. Many take much longer. There are a lot of things to consider, behaviours to mold, comfort in different situations, and the drive to build. For instance, right now, we are training on comfort with bees and discouraging trying to eat them (spicy sky raisins aren't on the menu). Seven needs to learn to associate the sound and scent of bees with work and focus. The other day I took my collection of live honey bees and opened the container outside, right before it rained so they would return.

I brought Seven outside, and she was immediately a bit shy of the bees, she had been stung before, weeks ago, when she decided to attack some. But she came out because her drive is to be near me, and that trumps her fear (this is a great quality for a dog). While we sat amongst the flying, buzzing bees for 5 minutes, I fed her high value treats (a kind of beef jerky stuff).

ABee Landing Board: How else do you reward the dog?

Rose: Currently Seven is rewarded with dog treats, and very exciting praise. When Seven does something correct, I just jump up and down wildly. Seven loves to work, so it has been relatively easy to reward. This is one of the best things about bird dogs.

ABee Landing Board: How accurate is a dog at finding AFB? Do you expect to miss much or to have false positives?

Rose: Dogs, like humans, are fallible but I do not expect many mistakes at all, if any. I found this excerpt from a paper I was reading: "The final results of this teamwork can be affected if the dog is experiencing boredom, fatigue, lack of stimuli, no bond with the handler, or



handler insensitivity to the signals sent by the dog, in addition to other factors such as health status or age."

Handler insensitivity to signals is a big deal. It happens a lot because handlers do not take the time to learn dog language. Dog language is every bit as complex as spoken language. I have learned this over the years with my obsessive reading, and working with my dogs. Actions as small as an eyebrow twitch in the dog is saying something, and depending on context can mean several different things.

This considered, it was noted in this same paper that dogs still outperform any man-made detection system, by and large. "Overall, the mechanism of olfactory detection and the ensuing innate canine olfactory abilities **make them more sensitive detectors than the best man-made analytical instruments**." (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC83887 20/#B21-animals-11-02463)

Another article on drug detection states: "Altogether 1,219 experimental searching tests were conducted. On average, hidden drug samples were indicated by dogs after 64s searching time, with 87.7% indications being correct and 5.3% being false."

(https://pubmed.ncbi.nlm.nih.gov/24631776/)

So, as far as some research is concerned, dogs can not only detect, but also note the difference between detected items. And the success of a team is largely reliant on the human aspect and their tendency to doubt or overlook things that would sully the results. If we could agree to listen and trust our dogs (as well as pay attention to their needs), we'd have 100% success.

For Seven and me, there could certainly be misses, especially at first, but experience and training should make that close to nil. I would gladly take a false positive over a miss though, because a false positive may likely mean it's just not detectable by humans yet, and what to do with such a hive will be a decision to make in the field. Dogs will have a lot to teach us about trust in the bee world soon, and I hope Seven is the one to start it.



Propolis Substitutes

At this time of year, bees are busy gathering sticky resin and sap from trees. They use the material to seal drafty cracks in their den and to reduce the hive entrances.

Honey bees have been known to collect caulking from freshly weather-proofed windows, but here, CDBA member Kevin Eloschuk found dozens of honey bees collecting tar from a roofing project. You can see this bee pulling bits of tar to be added to her pollen baskets.



Image credit: Kevin Eloschuk



Selling Honey, Pricing Honey

You worked hard to produce some of the nicest food on the planet. Then, you decide to dump it on the open market. Maybe you like bees, don't like people, and don't want to become a salesperson. So you sell it cheap, figuring you can get a few dollars and not have to deal with the sticky mess of handling lots of money.

But your honey will often sell for more than you expect. Albertans produce some of the best honey found anywhere – it's mild, light, and in demand – and your local honey can be trusted. Setting a fair price on your product shows the customer that you think it's worth it.



Image credit: Miksha

This summer, a CDBA member saw this honey for sale at a Calgary market. People were buying. At \$14/500g, \$20/kg, and \$45/3kg, this is a fair price. The Nixons know how to price for retail. It will sell.

An old rule of thumb is "If no one complains about the price, it's too cheap; If one in ten complains, it might be OK; if one in five complains, your honey has probably hit the sweet spot."



Image credit: Miksha

Remember, if a customer complains about the price, they may be the sort that complains about everything. Even if they are right – maybe the honey is priced too high for their taste – that doesn't mean that they don't like you or your product. It's not a personal insult.

To help with pricing your honey, drop by at a local chain store (Co-op or Safeway; *not* Costco or Superstore) and check the price on nice-quality retail honey. Never sell your honey for less than the stuff on the store shelf. Your honey is probably better. And it's worth more.



THE BACK PAGE EDITORIAL by Ron Miksha

Rockin' and Rollin' with a Rented Extractor



Electricity finally came to the Miksha household. For the past five years, we extracted with a three-frame hand-crack. But as my health worsens and decrepitude firmly



seeps in, I can no longer crank the crank.

I should have bought a small motor-driven machine from the start. But when I went shopping with my 15-yearold son, he didn't think we should "waste" money on a motorized contraption when he would always be around to supply muscle power. Five years later, he's in his third year at McGill, down in Montreal. His summers at home are crowded with things other than beekeeping.

So we rented an extractor owned by Mark Soehner, who lives nearby. It was magic. The 10-hour job was completed in three. Our son, Daniel, invited a high school friend, Gemma, to help. Several times, their loads were unbalanced, the extractor was rocking and rolling, but they found it could be held in place with 280 pounds of ballast strategically placed on the lid.



This year, using electricity, we widened our environmental footprint. In addition to whatever our two colonies might be doing to spoil nature's ecological balance, we have

gone from zero energy consumption to a few watts to produce our 200 pounds of honey. Our wax has always been processed in a solar melter and, until this year, our honey production used renewable human-energy.

We produced 276,000 calories of energy using about 85 calories of electrical energy consumed by the extractor. That's not a bad trade. Even on a big farm with trucks, distant apiaries, power devices, and gas heat for rendering wax, producing honey generates more energy than it consumes. This makes beekeeping rare among all human activities – the sustainable creation of natural, net-positive energy that tastes really good.

As always, we'd like to hear from you – especially if you have contrary ideas and opinions to share! Meanwhile, many thanks to all our <u>ABeeLandingBoard</u> volunteers. All readers are invited to contribute stories and photos. We'd love to hear from you!





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