Spring 2025 | Vol 38 #2

HiveLights

www.honeycouncil.ca

The Official Magazine of the Canadian Honey Council, The Canadian Beekeeper and The Canadian Honey Packer

$4.95

Dadant

Check out our website! (www.dadant.com) Canadian customers can now order online with all duties, fees, taxes and UPS shipping totaled at order time. No surprises at the border with additional unexpected charges to get your items. We make it easy to place your order and receive your products.

Quality that can't be beat anywhere in the industry

AP23®
Artificial Pollen 23
WINTER PATTIES
WITH HONEY-B-HEALTHY
M0016040PHW
1 CTN - 40 PATTIES

Ask about Quantity Pricing!

AP23®
POLLEN SUPPLEMENT
M0016040PH
AP23 PATTIES
40 LB BOX
M0016040
AP23
40 LB BAG

Premium Smokers

M00926 M00928

Apiguard for Varroa Mite Control
M01480

A Complete Line of Containers

Tools

Assembled Starter Kit
C52201P

M00010

New 2015 Edition of The Hive and the Honey Bee

A complete line of quality woodenware & foundations

Full Line of Honey House Equipment

Little Wonder Hand-Extractor Kits
M00396KIT - Hand
M00403KIT - Power

Many styles from which to choose

Economy Vent Suit
V01260(size)
Suit

WWW.DADANT.COM

51 S. SECOND STREET, HAMILTON IL 62341 • PHONE (217) 847-3324 • FAX (217) 847-3660 • TOLL FREE 1-888-922-1293
• CHICO, CA (877) 332-3268 • FRESNO, CA (877) 432-3268 • PARIS, TX (877) 632-3268 • SIOUX CITY, IA (877) 732-3268 •
• WATERTOWN, WI (877) 232-3268 • ALBION, MI (877) 932-3268 • WAVERLY, NY (877) 532-3268 •
• CHATHAM, VA (800) 220-8325 • FRANKFORT, KY (888) 932-3268 • HIGH SPRINGS, FL (877) 832-3268 •

Hivelights: The official magazine of the Canadian Honey Council, The Canadian Beekeeper and The Canadian Honey Packer.

The Canadian Honey Council (CHC) is the national organization of the Canadian beekeeping industry and Hivelights is the industry's magazine.

In order to receive Hivelights you must be a current member of your provincial association. Non members such as Hobby Beekeepers, Honey Packers, Urban Beekeepers or Canadians with interests in Beekeeping can subscribe to the magazine for a $25.00 subscription fee per year.

International and U. S. subscribers can receive our high quality magazine for a fee of $50 Canadian per year.

Schools, libraries, non beekeepers, university or government personnel can receive Hivelights magazine through special membership as "Friends of Canadian Apiculture" at no charge. Please contact the Hivelights office for more information: geoff@honeycouncil.ca

Hivelights is published quarterly (Spring, Summer, Fall, Winter).

Deadline for submissions and adverts are 6 weeks prior to publication (i.e. Dec 15th for the Winter issue). The opinions expressed in the articles printed in Hivelights are those of the authors and do not imply endorsement of the Canadian Honey Council for the promotion of any product, goods or services mentioned unless specifically stated.

Advertising rates as are follows:

	Black & White	Full Colour
1/8 page	$100.00	$150.00
1/6 page	$125.00	$185.00
1/4 page	$195.00	$300.00
1/2 page	$360.00	$500.00
Full Page	$700.00	$900.00
Business Card	$50.00	$75.00
Classified Ads	$25.00	

Now Available – One Full Page in color, consisting of a 1/2 page advert with a 1/2 page of editorial describing the products in the advert.

A 25% discount applies if 4 adverts are placed for one full year (4 issues).

To obtain advert specifications and book advert space contact:
Geoff Todd (403) 512-2123 geoff@honeycouncil.ca

Publication Mail Agreement number
43070512
ISSN 1489-730X
Hivelights
PO Box 914, Station T Calgary,
Alberta T2H 2H4
geoff@honeycouncil.ca
www.honeycouncil.ca
(403) 512 2123

HiveLights

Spring 2025 Vol 38 #2
Funded by the Government of Canada | Canada

Cover picture: C.N.B.C. Keynote Speaker, Priya Chakrabarti Basu.

Photo courtesy of the Courtney MacInnis

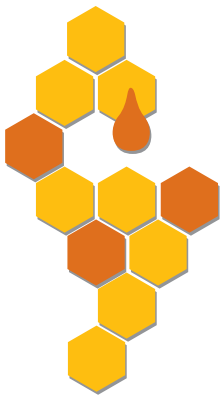
Table of Contents

Hivelights - The Magazine of the Canadian Honey Council is printed with all natural vegetable based inks. Please recycle this magazine.

Board of Directors 2024-2025 • Canadian Honey Council / Conseil Canadien de Miel

Design and Production .....**Burke Group**
Advertising enquiries .....**Geoff Todd**
Publisher .....**Bunker to Bunker Books Inc.**
Printed in Canada

Canadian Honey Council Report



Rod Scarlett, Executive Director, CHC

I am writing this on April Fools Day, the day before Canada has been threatened with significant tariffs by the Trump administration. It is a cloud that permeates all aspects of the bee business. In any other year, beekeepers only had to deal with two or three potential disasters and optimism was always an underlying sentiment. Not this year. While I have heard that some operations feel quite good about their overwintering losses it is far more prevalent to hear high loss concerns. It is more and more common to listen to beekeepers who have one yard that is not too bad, and the next yard nearly wiped out. Bees were treated the same with totally different outcomes and the reasons cannot be easily identified. Nationally, I don't think losses will be less than 35% and could be significantly higher. Let's hope I am wrong.

Compounding the concern for losses is the ongoing threat of tariffs. As I said, I am writing this prior to an expected April 2nd announcement. But that date really has little or no importance, given the unsurprising chaos the Trump administration likes to engage in. It may very well be that we could have four years of on again off again threats, or the House and Senate in the US could change in two years, or a new trade agreement could be ratified. Not knowing creates the chaos. What is known is that a tariff, no matter what rate is imposed will be a tax on beekeepers, whether it be from the import side or on the retaliatory tariff export side. Feed, already almost doubling in cost in the last few years, could cost 25% more. Honey exports to the USA will most certainly be affected as well as equipment and supplies. I believe one of the most delicate situations involves queens as a tariff on queens could have long lasting implications depending on how the market is impacted. I did have the opportunity to meet Ag Minister MacAulay to relay beekeeper concerns, but CHC also submitted a report highlighting those concerns in which we indicated:

Anticipated major impacts on Canadian beekeepers of the tariffs and retaliatory tariffs

Honey Sales. Over 60% of our honey sales currently flows through to the United States. In 2024, approximately $37 million dollars in sales went to the USA accounting for 63% of our total export sales. Difficulties in marketing to Japan has created a situation where the American market has once again become the major export market for Canadian honey.

Queen Bees Imports. Perhaps the biggest concern surrounding the introduction of retaliatory tariffs is that of live queen bees. Canada currently imports between 250,000 to 275,000 queen bees annually from mainland USA and Hawaii to fulfill the need for our 800,000 colonies. The cost of tariffs on queen bee imports could mean that beekeepers may be forced to downsize their operations, impacting not only honey production, but even more importantly, effectively reduce pollination services to the other reliant agriculture sectors across Canada. There is also a strong possibility that it could it devastate the Canadian industry and alter the infrastructure in the USA. There are little to no alternatives to importing queen bees other than from the USA and if there ever was an argument to be made about a **tariff exemption**, this is it.

Pollination Services. The declines in honeybee and other pollinator populations have already generated considerable scientific and public interest both in Canada and internationally. Strong colonies of honeybees are vital for the pollination of fruit, vegetables and hybrid canola seed. Well pollinated crops produce more fruit and honeybees increase production by 2 to 8 times. The value of honeybees to pollination of crops is estimated at over $4 to 6 billion annually.

- Canada ranks first in the world for canola production. Pollination of canola is a major activity for the Canadian honeybee industry. Each year around 500,000 colonies of honeybees (over half the colonies in Canada) contribute to the annual crop of open pollinated canola oil seed. As well, another 80,000 colonies (approximately 12% of the colonies in Canada) are dedicated to pollinating the highly specialized hybrid seed canola industry. This hybrid seed industry is dependent on honeybees for precise pollen transfer of specific genetic lines.
- Canada ranks second in the world for blueberry production. (North American produces 75% of the world's blueberries). Beekeepers provide around 75,000 colonies of honeybees for blueberry pollination.
- Canada is 16th in the world for apple production and beekeepers supply around 15,000 colonies for the pollination of tree fruit.

Feed and Sugar. The second biggest input cost for most beekeepers is feed and sugar that often must be imported from the United States when domestic supplies cannot meet demands. Adding 25% to a feed bill that can often exceed $100,000 is significant. In 2023 the CHC wrote Minister Ng requesting that a domestic sugar policy be created prioritizing sugar beets. Currently, only 8% of Canada's sugar is produced domestically. Due to limited availability, corn syrup or cane sugar imported from the USA are the primary alternatives.

All this, and we are in the midst of a federal election which could change the relationship between Canada and the USA. It has only been the first week, but I have been extremely disappointed with the lack of focus by all parties on agriculture. I suppose I shouldn't be surprised but food sovereignty was a big byproduct of Covid, and it seems to have fallen off the map thus far in the campaign. Again, hopefully, candidates, leaders and provincial Premiers and others will recognize the absolute and total need to ensure successful agricultural business operations and start talking about issues of real importance – not focussing on issues like the need to change paper straws back to plastic. It's not just the auto industry or the oil and gas industry, it is and always has been agriculture that drives stability and sovereignty.

The CHC has also had to deal with a Nicaraguan labour issue where the VAC office in Managua was shut down and the ability to get passports and appropriate paperwork completed was halted at one of the most inappropriate times. The impact on certain employers and employees has been great and hopefully a diplomatic solution can be reached in a timely fashion.

PMRA has been conducting a wide array of reviews on oxalic acid and I want remind beekeepers that when buying or using oxalic acid, please ensure it is labelled and packaged properly. The proper labelling can be found here: Pesticide Label Search - Health Canada and is also available as reference on the CHC website. I will be submitting more information on this topic in the next edition.

The National Bee Diagnostic Centre is conducting a research study that could have major implications on exporting honey to Japan. They are studying the rate of degradation of quinclorac in honey. If there is in fact a breakdown that can be quantified, it may open up opportunities for export that previously did not exist.

Finally, I want to thank Ryan Hicks and Jeremy Olthof who stepped off the Board at our AGM. I know Jeremy will be helping on a promotion and research project and I will be calling on Ryan for advice and knowledge. Their expertise and friendship will be missed.

For Healthier Bees and Thriving Hives

At Andermatt Canada, we know healthy hives are the heart of a successful apiary. That's why our Bee Health portfolio offers trusted, innovative solutions to support your bees year-round.

Apimil: A natural alternative to a traditional smoker; calm agressive Honey bees, improves success rate of introducing queens and combining colonies.

Varrox Eddy & Varrox Vaporizer: Proven tools for effective broodless varroa mite management, offering precision and efficiency in every treatment.

Thymovar: Organically certified, essential oil based Varroa Mite control to keep your hives strong and chemical-free.

Biopolin: A proven pollination enhancer that boosts crop quality, naturally.

Let's work together to create a sustainable future for bees and beekeepers across Canada.
For product training sessions at your association, reach out to Andermatt Canada today!

Follow us! @andermattcanada

1--705-434-7608

sales@andermattcanada.ca

www.andermattcanada.com

Andermatt

Regional Reports

Atlantic

Rodney Reid

Spring has arrived in Atlantic Canada, bringing renewed energy and excitement as beekeepers begin tending their hives after a long and often challenging winter. The arrival of warmer days marks a vital period for beekeeping, especially with hopes that a mild winter has been kind to the bees, leading to low winter losses and strong, healthy hives ready to support pollination efforts.

Atlantic Canada's blueberry industry, particularly in the maritime provinces, relies heavily on honey bee activity for its success. These berries depend on effective pollination to maximize yields, and honey bees play a significant role in ensuring the quality and quantity of the harvest. Their importance to agriculture and the ecosystem highlights the significance of maintaining strong hives during this critical time of year.

Before the busy pollination season begins, there is lots of activity with meetings, elections, and workshops taking place across the region. These gatherings are essential for building connections among beekeepers, industries, and partners, fostering collaboration that sustains and strengthens the growing beekeeping industry in Atlantic Canada.

As the season unfolds, best wishes for success and growth in your beekeeping journey as you prepare for the exciting days ahead.

Québec

Maggie Lamothe Boudreau, agr., M. Sc.

Québec – Vision collective pour une apiculture durable

L'année 2025 marquera un tournant stratégique pour l'apiculture québécoise, alors que s'amorce la révision des priorités apicoles du Québec en vue de la rédaction du prochain plan stratégique provincial, en collaboration avec la Table Filière Apicole du Québec (TFA).

Le processus est déjà enclenché. En février, se sont tenues l'assemblée générale annuelle (AGA) et la Journée d'information apicole du Québec (JIA) des Apiculteurs et Apicultrices du Québec (AADQ). Nous avons eu le privilège d'y accueillir l'expert français Benjamin Poirot dans le cadre de la JIA. Cette journée – tout comme les présentations qui s'y sont déroulées – a suscité des discussions riches sur divers enjeux, notamment la mortalité des ruches et la gestion du varroa.

Lors de l'AGA, les membres des AADQ ont adopté à l'unanimité la création de la **Chambre de coordination et de développement en apiculture (CCD)**. Cette nouvelle structure vise à assurer un financement stable, récurrent et démocratiquement piloté pour soutenir la recherche, devenue plus que jamais essentielle à la survie de nos ruches. Elle incarne une vision à long terme dans laquelle les apiculteurs prennent collectivement en main leurs priorités. Car, comme le dit si bien le proverbe : *Seul, on va plus vite. Ensemble, on va plus loin*.

À titre de première vice-présidente des AADQ, j'ai eu l'honneur d'être réélue lors de cette AGA. Je poursuivrai donc mon engagement dans la planification stratégique apicole du Québec, et je remercie chaleureusement l'assemblée pour sa confiance renouvelée.

J'ai également été réélue à titre de deuxième vice-présidente du **Conseil canadien du miel (CCM)**, où je continue de représenter les apiculteurs québécois à l'échelle fédérale. Je poursuis mon implication active dans plusieurs comités nationaux, notamment le **comité Pollinisation**, qui amorce les démarches pour l'organisation d'un grand événement sur l'innovation en pollinisation, prévu pour novembre 2026.

Par ailleurs, je m'assure de transmettre aux membres des AADQ les données, tendances et informations clés du secteur, notamment par le biais de l'infolettre.

J'ai également eu l'occasion de contribuer à la formation et à la relève apicole grâce à la création de webinaires éducatifs en partenariat avec Véto-pharma, abordant entre autres la gestion du varroa. J'ai aussi relayé, via l'infolettre, l'appel à former une nouvelle équipe canadienne pour participer à l'**International Meeting of Young Beekeepers (IMYB)** — un événement international destiné à inspirer et former une relève apicole dynamique et engagée.

Enfin, les observations et prédictions actuelles sur le terrain laissent entrevoir une mortalité hivernale plus faible que l'an dernier. Les estimations provinciales tournent autour de **20 %**, ce qui est encourageant pour les apiculteurs, bien que la prudence demeure de mise : la situation pourrait encore évoluer rapidement.

———————

Quebec – A Collective Vision for Sustainable Beekeeping

The year 2025 will mark a strategic turning point for Quebec's beekeeping industry, as we begin reviewing the province's apicultural priorities in preparation for the next provincial strategic plan, in collaboration with the Quebec Beekeeping Sector Table (TFA).

The process is already underway. In February, the Assemblée *générale annuelle* (AGA) and the *Journée d'information apicole du Québec* (JIA) were held by the **Apiculteurs et Apicultrices du Québec (AADQ)**. We had the privilege of welcoming French expert **Benjamin Poirot** as part of the JIA. The event—and the presentations throughout the day—sparked rich discussions on a variety of issues, particularly hive mortality and varroa management.

During the AGA, members of the AADQ unanimously approved the creation of the **Chamber for Coordination and Development in Apiculture (CCD)**. This new structure is intended to provide stable, recurring, and democratically managed funding to support research, which is increasingly critical to the survival of our hives. It reflects a long-term vision in which beekeepers take ownership of their collective priorities. As the saying goes: *"Alone we go faster, but together we go further."*

▶ pag. 7

As First Vice-President of the AADQ, I had the honour of being re-elected during this AGA. I will therefore continue my involvement in Quebec's strategic planning for the beekeeping sector, and I sincerely thank the assembly for its renewed trust.

I was also re-elected as **Second Vice-President of the Canadian Honey Council (CHC)**, where I continue to represent Quebec beekeepers at the federal level. I remain actively involved in several national committees, including the **Pollination Committee**, which has begun preparing for a major event on innovation in pollination, scheduled for **November 2026**.

In addition, I make it a priority to keep AADQ members informed of key sector trends, data, and insights—primarily through our newsletter.

I also had the opportunity to contribute to education and the next generation of beekeepers by creating educational webinars in partnership with **Véto-pharma**, focusing in part on varroa management. Through the newsletter, I also helped circulate a call to form a new Canadian team for the **International Meeting of Young Beekeepers (IMYB)**—an international event designed to inspire and train a dynamic, engaged new generation of beekeepers.

Finally, current field observations and forecasts suggest a lower winter mortality rate than last year. Provincial estimates are currently around **20%**, which is encouraging for beekeepers, although caution remains warranted as conditions can still change rapidly.

Ontario

Albert Devries

This past winter has been like the winters I remember growing up.

Temperatures stayed well below freezing and a lot of snow accumulated.

In my part of Southwestern Ontario it wasn't enough to cover our hives but for much of the province there was enough snow to cover and insulate hives. There wasn't much for freeze thaw cycles so layers of suffocating ice didn't form. While it is too early to say definitively most beekeepers are optimistic about their overwintering success.

The OBA was able to hold their spring meeting in early March. The first day focused on Queen and Nuc production while the second day's subjects included best management practices, record keeping and honey house design. There was also a tour of Nith Valley Apiaries in New Hamburg and their newly built honey house.

While the Ontario transfer team has been unable to hire a new lead they do have considerable Sustainable Canadian Agricultural Partnership funding available them. It looks like the general manager Mel Kempers will have a busy summer helping run Varroa control trials as well as exploring ways to increase Queen and Nuc production in addition to the courses taught by the TTP team. There are also plans for a varroa treatment decision tree to be developed . This sounds very interesting and could prove to be very helpful.

As this is written spring is taking over from winter. The days or even parts of them seem to feel like one or the other season but eventually spring will win over. Our hives are building up and soon splits will be made. I wish everyone a good season.

Manitoba

Osee Podolsky

On February 21st the Manitoba Beekeepers Association held their 2025 Annual General Meeting.

News from the sustainability committee included their work on raising awareness of the challenges facing Manitoba Beekeepers and advocating for policies what support pollinator health. A key initiative planning and having an official proclamation from the Minister of Agriculture, Ron Kostyshyn, declaring May 29 Manitoba Honey Bee Day. Recognizing the vital role that honeybees play in Agriculture and the importance of supporting Manitoba's beekeeping industry.

The KRTP Matthew provided a summary of activities for 2024. This included: Greenlight RNAi trial and the possibility of a 2025 trial, Collaboration with University of Saskatchewan on Oxalic Acid strips with Glycerin during the winter, trial with Nature Recombined Sciences (with mixed results), Bee Health Monitoring Program continuation, UBeeO and Hygienic Behavior Testing, Syrup testing with U of M, and miticide resistance testing.

The Research committee reviewed the Research Priority List and determined that the following be the priorities for 2025:

1. Acaracide efficacy research both new and previously researched materials to include efficiency of potential combinations of acaracides
2. Wintering Methods (indoor, outdoor, ventilation, wrapping material)
3. Wax Moth Control Options
4. Brood Diseases (AFB, EFB, Chalkbrood)
5. Nosema ceranae research on materials and methods to reduce spore loading
6. Sustainability. (Hygienic bee breeding, queen longevity and fertility)
7. Nutrient benefits
8. Bee Health
9. Climate Resilience – management adaptations related to changing climate conditions

2025 Project Discussion. At this point possible projects include Greenlight RNAi trials, Oxalic Acid and Glycerin cooperative trial, continuation of the Bee Health Monitoring Program which may include Tracheal Mite testing, support of the Queen Breeders group, Education on Tropilaelaps mites, Queen Quality and Late summer nuc production.

Spring is just around the corner with most beekeepers chomping at the bit to get into their colonies and begin feeding and treating. With this winter being a rollercoaster of temperatures from deep freezes to melting snow everyone is hoping for a normal spring for once with a nice steady warming up to get us into the summer.

Best of luck to everyone this beekeeping season.

Saskatchewan

Jake Berg

At the time I'm writing this, I think my bees are still ok.

Unfortunately, the reports that I'm hearing from my neighbours suggest we could be in for a rough start to 2025 in regards to bee mortality. It is still early spring and we haven't even thought about moving the bees out of the wintering shed. It is defiantly too cold overnight and lots of snow on the prairies and in the beeyards. Some of my outdoor wintering neighbours are somewhat concerned with what they are finding as they start putting apivar in their colonies. It seems that varroa mites has taken their toll again this winter.

The demand for honey in the bulk market is still low and the price being offered at this time is reflecting that low demand. With the uncertainty of tariffs looming I worry that this low demand and low price could continue into the summer.

So now that I have unleashed my negativity, I really hope that spring will come and the bees will bounce back and the demand for our great Canadian honey comes back too.

Good luck and all the best to you and your bees this spring and summer.

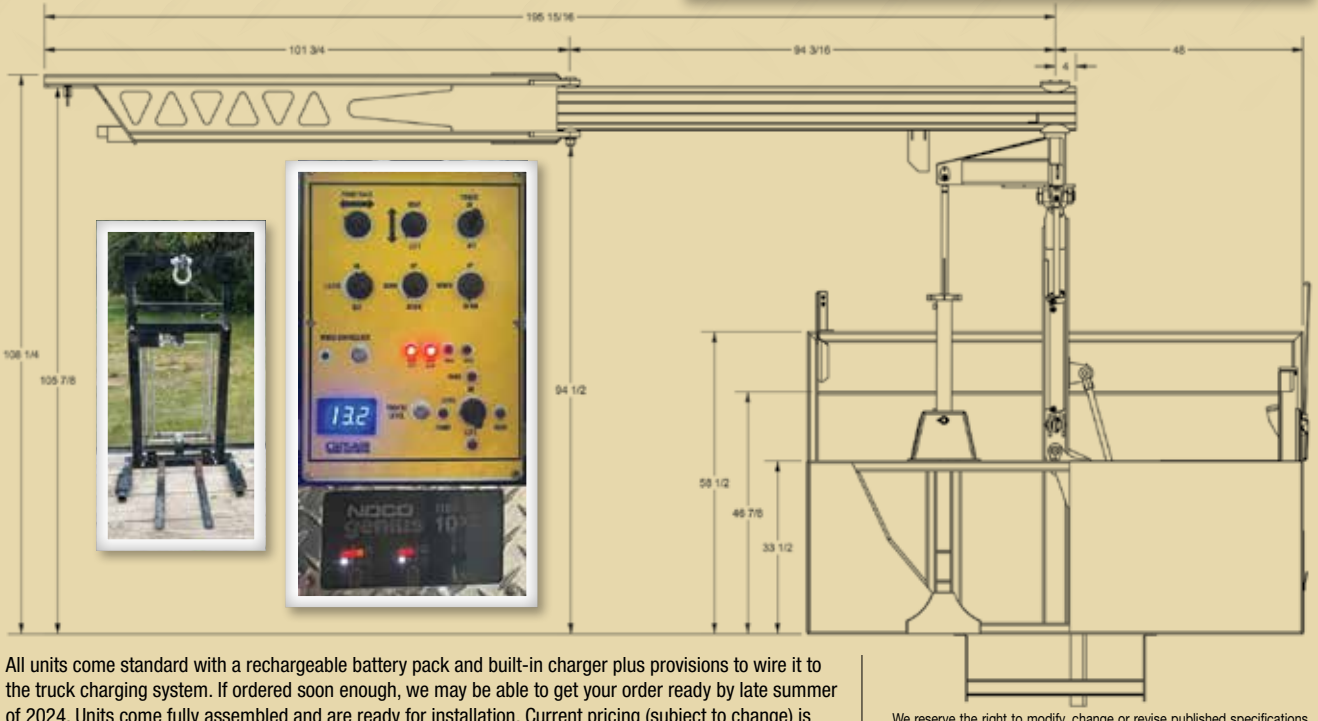
▶ pag. 9

CANCADE CBI LIMITED

WorkerBee

CancadeCBILTD CancadeCBI CancadeCBI

- Built in Brandon, Manitoba
- Installed or shipped out – truck decks or trailers optional
- Truck or trailer mounted
- Easily available replacement parts
- In most cases, troubleshooting calls if required will be returned within 24 hours
- Base price includes ready-to-install unit with:
  a. Two deep cycle rechargeable batteries
  b. Electronic controls in separate exchangeable weather proof containers
  c. LED indicator lights to help with operation (leveling) and troubleshooting
  d. 16' radius reach
  e. Load rated at 700 pounds
  f. High deck to boom clearance for optimal loading range
  g. Light to the touch/thumb remote control on cradle for raise/lower/level
  h. Standard forks and handhold grabbers for lifting cradle
  i. We also offer installation on a trailers or truck for an extra charge



All units come standard with a rechargeable battery pack and built-in charger plus provisions to wire it to the truck charging system. If ordered soon enough, we may be able to get your order ready by late summer of 2024. Units come fully assembled and are ready for installation. Current pricing (subject to change) is $47,500.00 (CDN) plus taxes, FOB Brandon, MB.

We reserve the right to modify, change or revise published specifications without prior notice in order to continually strive for product improvement.

www.cancade.com

Phone: 204-728-4450 Toll-Free 1-800-363-2639 Fax: 204-726-8795
cancade@cancade.com Brandon, Manitoba

Alberta

Real Dubeau

As this is my first report for the CHC Newsletter, I would first like to thank Jeremy Olthof and Ryan Hicks for their unwavering dedication to the Canadian beekeeping industry. I know that they both have done a tremendous job on the CHC board, and worked diligently to better the beekeeping industry. They should be proud of the work and dedication they have done to the CHC board.

I am contemplating what to write about, so like any other beekeeper, I'll talk about bees. Winter is coming to an end, and with that, I am getting excited for warm spring days full of renewal and hope. Winter survival rates are always top on mind this time of year. I'm hearing from my neighbors some good rates and some horror stories. Our operation is on the average side and bees are looking healthy and ready to be set free from the confines of the wintering building. Let us hope for a warm spring buildup season.

The CHC board is a new board experience for me and with that comes learning curves. I am excited to be on the board and hopefully in the next few meetings, I can get to know my fellow board members so that we may collectively work on solutions for the Canadian beekeeping industry. Since Canada is a massive country, the industry offers very different variety of beekeeper needs and concerns, but we all have one thing in common, the health and sustainability of our bees. Your board is working on these common goals. We may have different ideas on how to achieve health and sustainability, but by sharing these ideas we hope to have results that every beekeeper can benefit.

British Columbia

Jeff Lee

BC Director's Report for CHC Hivelights, Spring, 2025

Coming off a productive CHC Annual General Meeting and conference in Ottawa my work in B.C. is just starting to produce results. Here's some of the issues B.C. beekeepers and the provincial association are encountering.

BCHPA Semi-Annual Conference, Cranbrook

For the first time in perhaps 15 or more years the B.C. Honey Producers Association moved its spring education conference out of Kamloops. On March 21-22 it was held in Cranbrook, in the East Kootenays. The BCHPA executive decided to begin a program of rotating our spring event, which also includes a business day, to communities around the province.

It comes as the BCHPA re-evaluates its conference programming; we hold our Annual General Meeting in October, and usually move it around the province. Our spring event has been anchored in Kamloops for many years, on the theory that locating near where many of our clubs are in the Interior would give equal access to our members.

However, in the post-COVID world the reality is that hosting two hotel convention events a year is expensive and many of our members do not want the cost of two long road trips. As a result, the BCHPA is exploring how to make the spring event a more regionally-targeted education day that sheds some of the costs that can drive up conference fees.

The Cranbrook event, however, resulted in a strong showing of members from throughout the lower part of the province, including attendees from Vancouver, Kamloops and Kelowna.

Speakers included the ever-popular Andony Melathopoulos from Oregon State University, Shelley Hoover from the University of Lethbridge, and Christine McDonald, who runs Rushing River Apiaries from far-flung Smithers.

Impending Retirement of Provincial Apiculturist Paul van Westendorp

One of the highlights of the conference was a talk by Paul van Westendorp, B.C.'s long-serving chief apiculturist. In addition to talking about the current state of beekeeping and disease profiles he gave a stand-alone account of what he's seen in the 35 years he has been at the helm of the division.

At our AGM in Vernon last year he hinted that at long last he expected to retire in 2025. However, he's slowed his departure in order to see the 2025 bee season through with his 14 regional inspectors. He also admitted that he has such an accumulation of banked time that the province is trying to figure out how to deal with that! So, his final days have yet to be marked, but he's now on the record as saying it is time to hang up his inspector's veil.

BC Agriculture Minister Lana Popham, who was recently re-appointed to the position, has indicated she will begin the process, with help from Paul and industry, to find a new chief apiarist.

For the BCHPA, that person will likely have to deal with an emerging and developing landscape as diverse as the one van Westendorp inherited from Doug McCutcheon. When he became the chief, varroa hadn't yet made it to Canada. Now, he's leaving just as Canada invests efforts into how to deal with the Tropilaelaps mite when or if it arrives in North America.

A full swan-song goodbye for van Westendorp (read "roasting") will take place at the BCHPA AGM in Salmon Arm on Oct. 24.

Initial Overwintering Mortality

As of late March many beekeepers were just beginning to assess their hives. The initial outcome appears to be mixed. Quite a few beekeepers in the Metro Vancouver, Okanagan and Kootenays report higher-than-expected losses, in some cases ranging up to 100 per cent. One operator in the East Kootenays with 100+ colonies reported being wiped out, while others recorded survival rates of 30-40 per cent.

And yet in those regions, as well as parts of the Cariboo and Central Interior, some apiarists recorded losses as low as 10 per cent.

Those who lost larger amounts reported similarities in assessments; large patches of abandoned brood, absconded colonies and other hallmarks that may suggest mite issues or parasitic mite syndrome.

The full scope and impact of overwintering losses in BC won't be known until after the provincial government's spring survey is conducted and assessed.

Tech Transfer Program Update

With the move of tech lead Nuria Morfin to University of Manitoba, the BC team has recruited Fahim Raza to carry out research projects still in process. Raza began his beekeeping research in Pakistan on varroa mites before completing his PhD in China on fruit flies. He was working at the University of Saskatchewan in Elemir Simko's honey bee health lab when he was recruited by the BCHPA to take on tech-transfer projects.

The projects he'll be working on in B.C. this year include:

1. Implementing marker-assisted selection tools for hygienic behavior across BC, collecting samples with high and low hygiene, will sequence samples to find markers to assist in breeding program.
2. Evaluating viral loads and EFB in hives across
3. Evaluating amitraz-resistance in varroa mite population across BC with Erika Pletner - would like to include 30-40 apiaries across BC, opportunity for collaboration with beekeepers
4. Overwintering queen project with UBC and Leonard Foster's lab

Discovery of Amitraz Resistance in BC honey bees.

In January Rassol Bahreini from the University of Alberta issued a research report in indicating the discovery of amitraz-resistant varroa mites in a number of cooperators' colonies. It was the first such peer-reviewed study in Canada , verifying what some Canadian beekeepers had long suspected. The report became public towards the end of the

▶ pag. 11

public commenting period on the Canadian Food Inspection Agency's risk assessment on the importation of US package bees.

This week, as I write this report, I have been advised by Nuria Morfin that mites collected in our own apiaries in the Creston Valley have tested positive for amitraz resistance. For me, this is a bit of a surprise because we have not used Apivar as a mite control treatment since 2021.

Morfin did not share with me whether other co-operators in her mite project with Plettner have also tested positive for resistance in mites. But there is now no question that this chemical miticide is losing its efficacy in B.C.

Bee Maid

Marina Oirik

Bee Maid Honey Limited Scholarship and Research

In 2004, the **Fiftieth Anniversary Scholarship** was established to commemorate the formation of Bee Maid Honey Limited in 1954. This scholarship recognizes and encourages the children and grandchildren of Bee Maid members and staff as they pursue post-secondary education. It is designed to inspire academic excellence and reward outstanding achievement while fostering fresh ideas and perspectives within the Bee Maid family.

Bee Maid Honey Limited is pleased to announce the recipients of the **2025 Fiftieth Anniversary Scholarships:**

- April Steppler from Miami, Manitoba, who plans to attend the University of Manitoba to pursue an Agriculture Diploma.
- Danielle Vrignon from Wawanesa, Alberta, who is enrolled at the University of Brandon to study Biology and Chemistry.

Congratulations to both April and Danielle! We wish them every success in their studies.

In addition to our scholarships, the **Bee Maid Honey Research Fund** was established to support research in apiculture, hive health, and honey production. Following a call for proposals in late 2024, the Research Committee received many high-quality applications. After careful consideration, we are pleased to announce the project selected for funding:

- **"Detection of quinclorac and its transformation products in honey over time"** led by Patricia Wolf Veiga, Manager of the National Bee Diagnostic Centre.

We look forward to the insights this research will provide for the beekeeping community.

Elevating Canadian Beekeeping: The Rayons de Miel Advantage

Nestled within the picturesque Appalachian landscape, Rayons de Miel is transforming Canadian beekeeping with innovative queen bee breeding practices. Led by Maggie Lamothe Boudreau, a seasoned beekeeper and passionate advocate for apiculture, the organization is making waves across apiaries nationwide by focusing on resilience, productivity, and adaptability.

Preserving a Proud Legacy Rayons de Miel has proudly safeguarded the exceptional Chapleau queen genetics—a lineage that has long represented the pinnacle of Quebec's apicultural heritage. Over 25 years of meticulous selection and breeding have ensured this genetic treasure remains strong, offering beekeepers across Canada queen bees of unmatched resilience and proven productivity.

Excellence through Rigorous Selection Rayons de Miel's queens are meticulously bred and carefully assessed to thrive in Canada's diverse and challenging climates. Each queen embodies three core traits:

- **Disease Resistance:** Queens are genetically selected for strong natural resistance to common bee diseases, reducing reliance on chemical treatments and enhancing colony vitality.
- **Winter Hardiness:** Specifically bred to endure Canada's demanding winters, these queens ensure robust spring colonies, essential for successful honey production.
- **Superior Productivity:** Proven records in high brood production and impressive honey yields make these queens particularly valuable to both commercial and hobbyist beekeepers aiming to optimize their apiaries.

Pioneering Genomic Research with ApiOmics Committed to the future of beekeeping, Rayons de Miel actively participates in the groundbreaking ApiOmics research initiative. Conducted by Laval University's renowned Giovenazzo Laboratory and supported by Génome Québec, this project aims to revolutionize queen breeding by identifying genetic markers linked to essential colony traits. Such advancements offer Canadian beekeepers powerful genomic tools, significantly accelerating genetic progress tailored to local conditions.

Learn more about ApiOmics and its revolutionary approach to queen breeding at: Rayons de Miel - ApiOmics

Why Canadian Beekeepers Trust Rayons de Miel The secret to Rayons de Miel's success lies in the dedicated expertise of Maggie Lamothe Boudreau and her team, who blend decades of experience with personalized client support and rigorous quality assurance. Their deep commitment to genetic continuity ensures every queen delivered meets exacting standards, providing clients with consistently superior results.

Plan Now for the 2025 Season Due to high demand for Rayons de Miel's premium queens, early reservations for the 2025 season are strongly recommended. Queens are available for pick-up at their facility or shipped conveniently through postal services or Air Canada Cargo, accommodating clients nationwide.

For more information or to reserve your queens, visit www.rayonsdemiel.com.

Join the community of Canadian beekeepers discovering firsthand how quality queens from Rayons de Miel lead to stronger, healthier, and more productive colonies.

Nature's Taste is a brand of high quality hand-crafted, Canadian-made beekeeping supplies brought to you directly from our country farms.

nature's taste

Beekeeping Equipment Manufacturer

888.923.9813 x201

We're located in
Grey County, Ontario

naturestastecanada.com

Canadian National Beekeeping Convention, Ottawa

By: Courtney MacInnis and Jemma Todoschuk

On February 7th and 8th, 2025, the Canadian Honey Council (CHC) and the Canadian Association of Professional Apiculturists (CAPA) hosted the Canadian National Beekeeping Convention in Canada's capital. This national beekeeping convention drew nearly 100 attendees, including researchers, producers, government officials, and industry representatives from across Canada and the United States. They swarmed the Lord Elgin Hotel in Ottawa, ON, for two action-packed days dedicated to all things bees. Over the course of the event, more than 35 individuals shared their expertise through panels and presentations covering a wide range of topics – from the pros and cons of domestic queen production to the impact of climate change on bee nutrition! The Canadian Honey Council panel provided the audience with time to ask questions and engage with CHC board members. All the presentations were excellent, sparking important discussions about the challenges and issues currently facing the industry.

The Friday night banquet was a well-attended affair, featuring a four-course meal, some tasty libations, the presentation of the CAPA Student Merit Awards (Victoria Ferland, MSc winner and Jemma Todoschuk, PhD winner), and an engaging presentation from Pierre Petelle, President, and CEO of CropLife Canada. Overall, the event provided an excellent opportunity for all attendees to learn, network, share ideas, and have insightful discussions. A big thank you to all who helped make the 2025 conference a huge success – the speakers and moderators, attendees, hotel staff, and of course, Rod Scarlett and Shelley Hoover for organizing the event. We are already looking forward to the 2026 convention!

Presentation Highlights

Keynote Speaker: Priya Chakrabarti Basu– *Assistant Professor in Pollinator Health, Department of Agricultural Science and Plant Protection, Washington State University*

Understanding the bee nutrition habitat and how to nutritionally manage colonies when needed

Dr. Chakrabarti Basu started her presentation by emphasizing a point that resonates with all of us: nutrition improves health. She then brought us deeper into the complexities of bee nutrition, revealing just how much we still don't know. Bee nutrition is far more intricate than simply considering macronutrients like pollen (lipids/protein) and honey/nectar (carbohydrates), which make up the bulk of the bees' diet. Dr. Chakrabarti Basu explained that micronutrients – such as amino acids, vitamins, and sterols – also play a critical role even though they are present in much smaller amounts. These nutrients, which bees obtain from pollen and nectar, are just as vital to their overall health.

Despite our increasing understanding of both macronutrients and micronutrients, bees continue to face significant nutritional challenges. Two major culprits are agricultural landscapes dominated by monoculture crops and the impacts of climate change. Together these factors limit the diversity, abundance, and quality of forage available to bees. So, how can we address this? The answer lies in creating habitats that offer diverse, staggered, and abundant resources for our bees!

Dr. Chakrabarti Basu has also started her "lifetime project" on the development of nutritional databases that include phenology wheels and detailed information on the nutrient content of both pollen and nectar. Ideally, these databases will provide growers and beekeepers with crucial data on the availability and quality of forage at any given time. This would be especially valuable to beekeepers considering that Dr. Chakrabarti Basu's research has shown that there can be considerable variation in proteins and lipids across plant varieties! Such information could help beekeepers determine when to supplement their colonies (e.g., by adding pollen patties to hives), especially when traveling to specific areas or pollinating specific crops.

▶ pag. 15

Presentation Highlights Continued

Stéphane Bayen – *Associate Professor, Department of Food Science and Agricultural Chemistry, McGill University*

Novel analytical approaches for characterizing the floral origin and quality of honey colonies when needed

Dr. Bayen delivered a fascinating presentation on the characterization of the quality and floral origin of honey. Using a highly specialized technique—Liquid Chromatography Quadrupole Time-of-Flight Mass Spectrometry (LC-QToF-MS, for those of us who can barely pronounce, let alone spell, the name of the technique)—Dr. Bayen and his team set out to determine whether they could detect differences in the 'chemical fingerprints' of three honeys from different monofloral sources: blueberry, buckwheat, and clover. The result? Each honey had a unique fingerprint!

To challenge themselves further, the group examined how different honey processing methods (filtration, creaming, pasteurization) impacted these chemical fingerprints. They found that processing had very little effect—for instance, there was a 99% overlap in the fingerprints of raw and processed blueberry honey. Further tests revealed that using LC-QToF-MS, Dr. Bayen and his team could differentiate between honeys stored in glass versus plastic jars, and that they could even use portions of these chemical fingerprints to authenticate honey. For example, niacin, a vitamer of B3, was present in both raw and processed blueberry honey.

After the presentation, the audience was eager to know whether this method could be used to detect pesticide residues in honey or identify adulteration. Dr. Bayen explained that this technique can screen for 50-100 pesticides in a sample, even at levels below their maximum residue limits. He also noted that, since most honeys are adulterated with syrups – which have their own unique chemical fingerprints – that LC-QToF-MS can be used to identify adulterated honey.

Team Canada Junior Beekeepers Update

In December 2024, three young beekeepers – Heidi, Rebecca, and Ben – travelled from Ontario to Dubai, UAE as Team Canada at the 13th annual International Meeting of Young Beekeepers. This event combines a diverse social and cultural program with a beekeeping-focused competition. Only 20 teams were selected to participate in 2024, and this was Canada's third time competing! Team Canada placed fourth overall in the competition – congratulations to Heidi, Rebecca, and Ben on this accomplishment! Looking forward, Team Canada is looking for more leaders to contribute to the Junior Beekeepers program, and hopes to one day host the International Meeting of Young Beekeepers in Canada!

Diagnostic value of detection of pathogens in bottom board debris collected from dead overwintered hives

Muhammad Fahim Raza, Juan Pablo Arias Marmolejo, Belarmino Eugênio Lopes Neto, Marcelo Polizel Camilli, Emilio Tellarini Prieto, Oleksii Obshta, Marina Carla Bezerra da Silva, Midhun Sebastian Jose, Thanuri Edirithilake, Igor Moshynskyy, Julia Tregobov, Rosephine Enadeghe, Aranza Mateos Gomez, Uros Glavinic, Marco Pietropaoli, Graham Parsons, Geoff Wilson, Harold Fast, Sarah C. Wood, and Elemir Simko.

Honey Bee Health Research Lab, Department of Veterinary Pathology, Western College of Veterinary Medicine, University of Saskatchewan.

Significant overwinter mortality of honey bee colonies remains the most important problem in the Canadian beekeeping industry. The diagnosis of various infectious and non-infectious causes of overwinter mortality requires a thorough and labor-intensive post-mortem examination of dead colonies. The overall objective of this research (which consisted of multiple pilot studies) was to determine whether examination of bottom board debris could facilitate the evidence-based diagnosis of infectious causes of overwinter mortality.

During 2022-2023, overwinter colony mortality in Saskatchewan was 28.8%. We collected bottom board debris from hives (n=188) affected by high winter mortality ($\bar{x}$ = 38.65, range 6.67 to 68.75%) in 5 yards around Saskatoon and performed a comparative analysis to determine: ***i)*** the number of spores of *Paenibacillus larvae* (hereafter AFB spores) in 10% of the total weight of bottom board debris from each live (n=99) and dead (n=89) hives, and ***ii)*** the number of *Varroa* mites in 50% of the weight of bottom board debris of the same hives. We demonstrated that the mean number (± SD) of AFB spores per gram of bottom board debris was significantly higher ($p<0.05$) in dead hives (48.69 ± 170.5) compared to live hives (5.39 ± 29.24). At the same time, a visual examination of all these hives during spring clean-up in May 2023 did not reveal any gross AFB symptoms. Accordingly, the AFB was not considered to be the major cause of overwinter mortality in these 5 yards. The total number of *Varroa* mites detected in the bottom board of dead hives (210.3 ± 222.6) was slightly higher compared to live hives (190.9 ± 248.8) but the difference was not statistically significant. Therefore, Varroosis was also not considered to be the major cause of mortality in these 5 yards during the winter 2022-23. Due to the lack of consistent clinical signs of Nosemosis in dead hives compared to live hives, we also ruled out *Nosema* as the major cause of mortality in these yards. Considering the above results together, we suspect that non-infectious causes played a major role in overwinter mortality in these 5 yards; namely, our top differential diagnosis is the suboptimal population of winter bees raised during Fall 2022 (most likely due to lack of pollen sources) observed and suspected during the removal of Apivar strips at the beginning of October 2022.

To determine if bottom board debris could be used for detection of viral pathogens and diagnosis of viral diseases, we first compared the quality and quantity of RNA isolated from dead bees (n=60) collected from the bottom board debris with RNA isolated from live bees (n=60) from the same hives (n=11) that survived the winter 2023. On average, we isolated 236.7 (SD±178) ng/µL of RNA from live bees and 66.4 (SD±26.8) ng/µL of RNA from dead bees. We were pleasantly surprised by the amount of isolated RNA from dead bees which enabled us to proceed with viral detection. We suspect that RNA degradation in bottom board debris was reduced by low temperatures and absence of thaw-freeze effects during the winter in Saskatchewan. Using quantitative PCR, we detected Deformed Wing Virus (DWV) in 10 of the 11 samples from dead bees from bottom board debris and in 1 of the 11 samples from live bees from the same hive. Sacbrood Virus (SBV) was detected only in 2 of the

11 samples from dead bees from bottom board debris and in none of the 11 samples from live bees from the same hive. Kashmir Bee Virus (KBV) and Chronic Bee Paralysis Virus (CBPV) were not detected in any of the samples. There was a weak correlation trend between the number of *Varroa* mites and the amount of DWV detected in bottom board debris. We feel that more research is needed to determine the diagnostic value of analysis of bottom board debris for viral pathogens.

In 2023, our ongoing risk assessment for AFB outbreak at commercial beekeeping operations in Saskatchewan identified a beekeeping operation with very high spore numbers (i.e. more than 5,000 AFB spores per gram of pooled extracted honey–less than 2 spores per gram of pooled extracted honey have been determined previously as low risk for AFB outbreak). The following spring (2024), this operation had over 35% overwinter mortality, while average overwinter colony mortality in Saskatchewan was 18.1% for 2023-24. In early May 2024, we visually examined all dead hives in 5 yards affected by the highest overwinter mortality ($\bar{x}$ = 45%, range 39 to 57%) in this operation and collected bottom board debris from all hives with pathognomonic gross symptoms of AFB (n=23) and control dead hives (n=20) that did not have any evidence of gross AFB symptoms from the same yard, which were suspected to be affected by Varroosis based on symptoms characteristic of Parasitic Mite Syndrome. We performed a comparative analysis to determine: ***i)*** the number of AFB spores in 10% of the total weight of bottom board debris from each hive (n=43) in the affected operation, and ***ii)*** the number of *Varroa* mites in 50% of the weight of bottom board debris of the same hives. Subsequently, we compared these results to bottom board debris collected from 57 hives in two geographically distant yards (~100 km aerial distance) that did not have any evidence of gross AFB symptoms and had only 12% overwinter mortality. The bottom board debris from hives (n=23) diagnosed with AFB disease based on gross pathognomonic symptoms (i.e. AFB scales) had 2.6×10^{10} (SD ± 3.8×10^{10}, range 2.7×10^{08} to 1.4×10^{11}) AFB spores per hive (in the entire bottom board debris) while hives from the same yards without AFB symptoms had an average of $3.9\text{x}10^{8}$ (SD ± 4.8×10^{08}, range 3.3×10^{04} to 1.4×10^{09}) AFB spores per hive. Additionally, geographically distant AFB negative yards had $3\text{x}10^{3}$ (SD ± 5.7×10^{03}, range 0 to 2.7×10^{04}) AFB spores per hive. We suspect that colonies affected by AFB were robbed by the colonies not exhibiting AFB in the same yard based on comparative analysis of AFB spores in brood chamber honey. Namely, hives diagnosed with AFB disease (n=23) had $3.2\text{x}10^{07}$ (SD ± 9.8×10^{07}, range 5.4×10^{03} to 4.6×10^{08}) AFB spores per gram of brood chamber honey, while hives from the same yards without AFB symptoms had $9.2\text{x}10^{04}$ (SD ± 2.1×10^{05}, range 9.6×10^{01} to 9.4×10^{05}) spores/gram. At the same time, geographically distant AFB negative hives had 0.07 (SD ± 0.19, range 0 to 1.07) AFB spores/gram in brood chamber honey. Taken together, these data suggest that the high number of AFB spores in bottom board debris has the potential to differentiate colonies affected by clinical AFB disease from those not affected. In addition, it seems that moderate number of AFB spores in bottom board debris may be a useful risk assessment parameter for identifying colonies contaminated with AFB spores without visual symptoms of AFB (subclinical AFB). However, further research is needed to define threshold parameters.

The total number of *Varroa* mites detected in the bottom board debris of dead hives exhibiting pathognomonic AFB symptoms was much lower ($\bar{x}$ =51 mites/colony) compared to dead hives in the same yard without AFB symptoms but with symptoms of Parasitic Mites Syndrome ($\bar{x}$ =311 mites /hive). This finding suggests that anti-*Varroa* management practices applied during the Fall 2023 were suboptimal and that the substantial number of colonies that were not affected primarily by AFB succumbed to Varroosis.

We have also comparatively analyzed the total number of *Nosema* spores per dead bee in the bottom board debris compared to live bees from the same hive in some of the above experiments, and the results were variable among various experiments. Accordingly, we feel that more studies are needed to determine the diagnostic value of bottom board debris analysis for Nosemosis similar to viral pathogens.

In conclusion, our preliminary studies indicate that quantification of AFB spores and *Varroa* mites in bottom board debris may enhance evidence-based diagnosis of overwinter mortality, while analysis for the amount of viral pathogens and *Nosema* spores in bottom board debris needs additional investigation.

The Next Level of Honey Testing at NBDC

Since its inception as a Technology Access Centre (TAC) in 2013, the National Bee Diagnostic Centre (NBDC) has provided various services for detecting bee pathogens, pests, and parasites and is the only facility of its kind in Canada.

The NBDC has been a champion for the Canadian beekeeping industry during the past decade. They have collaborated on applied research projects and supplied fee-based diagnostic testing. Over 10,000 fee-for-service diagnostic tests are completed each year.

Their mission is to ensure sustainable, healthy, and profitable apiculture in Canada, and as such adjust to the industry's needs. Analysis of honey to ensure quality is a substantial challenge to producers and is an area where the NBDC and Northwestern Polytechnic's Agriculture & Biosciences Applied Research Centre (ABARC) seek to expand their research and provide solutions.

NBDC tests honey samples for chemical and antibiotic residue in collaboration with the Government of Alberta and detects pathogens such as foulbrood spores for export requirements. Leading research projects such as Harnessing the Power of Polled DNA Metabarcoding to Enhance Pollinator Health and Honey Value in Cropping Landscapes, funded by Results Driven Agriculture Research (RDAR) and Alberta Innovates, provide opportunities to analyze pollen DNA both in honey and on bees in order to understand bee health and the link to floral resources.

In response to the needs of Canadian producers, NBDC and ABARC are expanding their slate of honey and agriculture testing options. Honey producers are concerned about the impact of fraudulent honey on the Canadian honey industry, with adulterated honey affecting prices. The expansion of their research activities to include advanced honey testing will establish an assurance program, confirming the quality of the products at the source. As honey is one of the top three counterfeit foods in the world, Canadian producers strive to validate the authenticity of their products.

"Not only will we be testing for quality, but we will also be able to identify plant compounds in the honey that may have additional health benefits"

In 2023, the Alberta Beekeepers Commission and the NBDC partnered to upgrade their equipment by installing a High-Performance Thin Layer Chromatography (HPTLC) system. Further support was received from Natural Sciences and Engineering Research Council of Canada (NSERC) and Prairies Economic Development Canada to purchase a Mass Spectrometer and a High-Performance Liquid Chromatography while developing and validating protocols in the pursuit of lab accreditation. These innovative methods are quick, reliable, repeatable, and cost-effective and can be used to determine the sugar spectrum and chemical residues in honey samples and botanical compounds.

The NBDC and ABARC are working to develop a series of protocols to identify honey quality and characteristics. "Not only will we be testing for quality, but we will also be able to identify plant compounds in the honey that may have additional health benefits," says Patricia Wolf Veiga, Scientific Lead at the National Bee Diagnostic Centre. "Quality testing will allow us to create a distinctive and marketable Canadian brand and detect higher levels of antimicrobials and antioxidants."

Using this approach, honey products could be certified authentic before sale or export, increasing consumer confidence in Canadian honey products and aligning with other systems worldwide. Honey testing at the NBDC will begin in 2025 with added comprehensive services to be established in 2026. For more information on the services offered at the National Bee Diagnostic Centre, visit **NWP.me/NBDC**

NEW FORMULA From Vita Bee Health

Pr OXYTET-62.5

The *New* oxytet formulation for bees from Vita BeeHealth Canada is now available from your veterinarian.

Vita Diagnostic kits for the early detection of European Foulbrood & American Foulbrood

It is vitally important to detect EFB and AFB as early as possible in order to prevent its further spread to healthy colonies.

Vita's two quick and effective diagnostic kits, developed with Central Science Laboratory enable every beekeeper and veterinarian to test for the presence of EFB or AFB in bee colonies.

PRODUCT	WDDC CODES	CDMV CODES	VP CODES
VITA BEE OXYTET 62.5 10kg	140997	127978	5262020
VITA BEE OXYTET 62.5 400g	140996	127977	5262010
VITA BEE OXYTET 62.5 100g	140995	127976	5262000
VITA BEE FUMAGILIN - B POWDER 24g	141023	-	-
VITA BEE FUMAGILIN - B POWDER 96g	141024	-	-
VITA BEE FUMAGILIN - B POWDER 454g	141025	-	-
VITA BEE AFB DIAGNOSTIC KIT	141026	-	-
VITA BEE EFB DIAGNOSTIC KIT	141027	-	-

Available as 100g sachets for small holdings or 400g tubs and 10kg pails for commercial use.

FUMAGILIN-B

IS BACK

TO PREVENT NOSEMA IN HONEY BEES

Effective against *Nosema apis* and *N. ceranae*

VITA beehealth CANADA

www vitabeehealth.com | 780-676-0239 | vitabeehealth | healthybeeguide.com | @vitabeehealth

Evaluating efficacy of Oxytetracycline, Lincomycin, and Tylosin for treatment of clinical European foulbrood disease

Midhun S. Jose, Harmony Woodrow, Ryan Merkl, Maria Janser, Marina C. Bezerra da Silva, Oleksii Obshta, Marcelo P. Camilli, Emilio E. Tellarini Prieto, Thanuri Edirithilake, Lopes N. Belarmino E., Muhamad Fahim Raza, Rosephine Enadeghe, Julia Tregobov, Igor Moshynskyy, Elemir Simko, and Sarah C. Wood

Department of Veterinary Pathology, Western College of Veterinary Medicine, University of Saskatchewan, Canada. Midhun.jose@usask.ca, hrw993@mail.usask.ca, ryan.merkl@usask.ca, mab196@mail.usask.ca, oleksii.obshta@usask.ca, win827@mail.usask.ca, swd917@mail.usask.ca, thanuried@gmail.com, belarmino.neto@usask.ca, fahim.uca@gmail.com, piw745@mail.usask.ca, julia.tregobov@usask.ca, igm800@mail.usask.ca, els920@mail.usask.ca, and sarah.wood@usask.ca

Increased incidence of European foulbrood disease in Saskatchewan in 2024

European foulbrood (EFB) is a re-emerging disease of honey bees, caused by the bacterium Melissococcus plutonius, which severely compromised the health, pollination services, and honey production of Saskatchewan honey bee colonies in summer 2024. In 2024, the Ministry of Agriculture reported 15 EFB outbreaks in Saskatchewan and we utilized one of these colonies for our investigation. Considering that EFB is a stress-induced disease, factors such as early spring rains, restricted foraging, and poor nutrition for the brood could be major causes of EFB outbreaks in Saskatchewan. Larvae are thought to acquire the pathogen through brood food provided by nursing adult bees [1]. Clinical signs of EFB include discoloration and twisted appearance of larvae, a non-uniform brood pattern with a foul smell [2]. In Canada, oxytetracycline (OTC) is the only approved antibiotic for the treatment of EFB. Although, not approved for treatment of EFB, the antimicrobials tylosin (TYL) and lincomycin (LMC) are widely used in Canada for controlling American foulbrood (AFB) disease. Since 2018, North American veterinarians are required to prescribe antibiotics to beekeepers. However, it is crucial to re-evaluate the prescribing practices to ensure good antimicrobial stewardship especially, considering that EFB has been historically considered a self-limiting disease [3]. Accordingly, in this study of a naturally occurring outbreak of EFB in Saskatchewan in late spring and early summer, we investigated the clinical efficacy of treatment with OTC, TYL or LMC for EFB, compared to sham-treatment with powdered sugar. Previous studies have shown that TYL and LMC were effective to treat honeybee larvae infected with *M. plutonius in vitro* [4]; however, the impact of these antimicrobials on treatment of clinical disease within a colony is unknown. Therefore, we investigate the effectiveness of both approved and non-approved antimicrobials for treatment of nucleus colonies naturally affected by EFB during an outbreak in Saskatchewan in June 2024.

Study design and methodology

Forty-eight, six-frame nucleus colonies from a single commercial beekeeping operation in Saskatchewan were diagnosed with EFB based on visual inspection in June 2024. Diagnosis was confirmed by performing qPCR for *M. plutonius* in larvae and adult bees from 12.5 % (6 colonies) of colonies. Colonies were stratified into four treatment groups based on colony strength (frames of bees and brood) including: sham (control), OTC, TYL, and LMC. Each group contain twelve colonies. These groups were kept in three hospital yards, each 5.5km apart, with sixteen colonies per yard. Each yard contains four experimental groups with four colonies in each group. The treatment strategies for each group are described in Table 1.

▶ pag. 23

Table 1. Treatment scheme for control and antimicrobials.

TREATMENT GROUPS	TREATMENT/COLONY (CONCENTRATION OF ACTIVE SUBSTANCE)	TREATMENT INTERVAL AS PER THE LABEL	PRODUCT DETAILS
Sham (Control)	32 g of icing sugar	3 times application, 5 days apart	Icing sugar (Rogers Lantic, Canada, lot: 6311110512)
OTC*	200mg OTC in 32g icing sugar	3 times application, 5 days apart	OXYTET 62.5. (Vita Bee Health Canada Ltd., Canada. Exp. 04-2025)
TYL	200mg of TYL in 20g icing sugar	3 times application, 7 days apart	Tylan Soluble (Elanco Canada LTD. Canada. Exp:01-2025)
LMC	125mg LMC in 20 g icing sugar	3 times application, 7 days apart	Lincomix (Zoetis Canada Inc. Exp. 01-2025,)

*4 g of OXYTET 62.5 was mixed with 35 g of powdered sugar, and 32g of this mixture was given to each colony.

Treatments were applied over the top bars at the back of each brood chamber (Fig 1A). We assessed each colony for strength and the number of sick larvae (counted within a 5×5-inch plastic square placed on the most affected brood frame) pre-treatment and at 1-month post-treatment intervals (Fig 1B). Additionally, larvae (n=9/colony) and adult bees (n=20/colony) were collected and analyzed for *M. plutonius* bacterial load using quantitative PCR in two-time points; pre-treatment and 1-week post treatment. The data were statistically analyzed by mixed effect analysis with Sidak's multiple comparison using SPSS.2020.

Results and main findings

We observed clinical resolution of EFB in both control and antimicrobial-treated colonies. However, a significant increase in colony strength was reported only in the antimicrobial-treated groups, while the control groups showed an increasing trend. Over the study period (40 days), we lost nine colonies (3 in the sham group, four in the OTC group, and two in the LMC group), but none in the TYL group. Antimicrobial treatment was associated with a significant (27.1% to 29.5%) increase in colony strength, while sham treatment was associated with a nonsignificant (23.8%) increase in colony strength in one-month post-treatment, compared to pre-treatment assessments (Fig. 2A). One month post treatment there was a non-significant decrease (30% to 62%) in the proportion of colonies with sick larvae in the antibiotic-treated groups, and a non-significant increase (11%) in proportion of colonies in control/sham treatment with sick larvae. (Fig. 2B). Additionally, we found that larvae and adult bees were carrying *M. plutonius* regardless of antibiotic treatment. We observed a statistical non-significant increase in *M. plutonius* load in adult bees (1.8 ×105 to 9.5×105 CFU/bee) and in larvae (1.3 ×105 to 2.3×106 CFU/larva) in 1-month post treatment compared to pre-treatment.

Conclusion

We found that antibiotic therapy may not be essential for clinical recovery of colonies from EFB. Nevertheless, it helped them to gain strength more quickly as well as a trend toward decreased proportion of colonies with sick larvae was also found. Limitations of the study include short period for colony assessment and some colonies were not detected with *M. plutonius* in larvae or adult bees by qPCR at the beginning of experiment. Future directions for this research include investigating the persistence and disinfection procedures for *M. plutonius* on beekeeping equipment to address potential reservoirs for this disease.

Acknowledgement

We extend our heartfelt gratitude to Georgia Blatch and Sayler Martian for her invaluable assistance with fieldwork and data collection. We are also deeply thankful to the beekeeper for generously providing the colonies and offering continuous support throughout our research.

References

1. Mckee B, Djordjevic S, Goodman R, Hornitzky M, Alexander MCKEE B, Philip DJORDJEVIC S, et al. The detection of *Melissococcus pluton* in honey bees (Apis mellifera) and their products using a hemi-nested PCR. Apidologie. 2003;34: 19–27. doi:10.1051/apido:2002047i
2. Forsgren E. European foulbrood in honey bees. J Invertebr Pathol. 2009;103: S5–S9. doi:10.1016/j.jip.2009.06.016
3. Forsgren E, Lundhagen AC, Imdorf A, Fries I. Distribution of Melissococcus plutonius in honeybee colonies with and without symptoms of European foulbrood. Microb Ecol. 2005;50: 369–374. doi:10.1007/s00248-004-0188-2
4. Masood F, Thebeau JM, Cloet A, Kozii I V., Zabrodski MW, Biganski S, et al. Evaluating approved and alternative treatments against an oxytetracycline-resistant bacterium responsible for European foulbrood disease in honey bees. Sci Rep. 2022;12. doi:10.1038/s41598-022-09796-4

▶ pag. 25

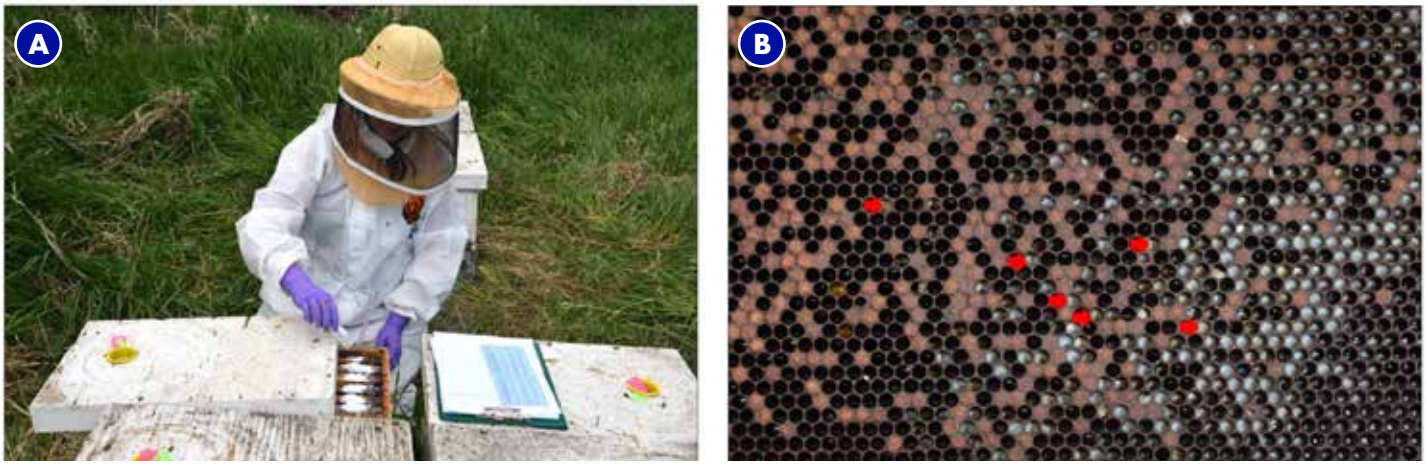


Fig 1 A. (A) Application of antimicrobials over the top bars at the back of each brood chamber. (B) Frames with larvae showing signs of EFB. The red arrow indicates sick larvae.

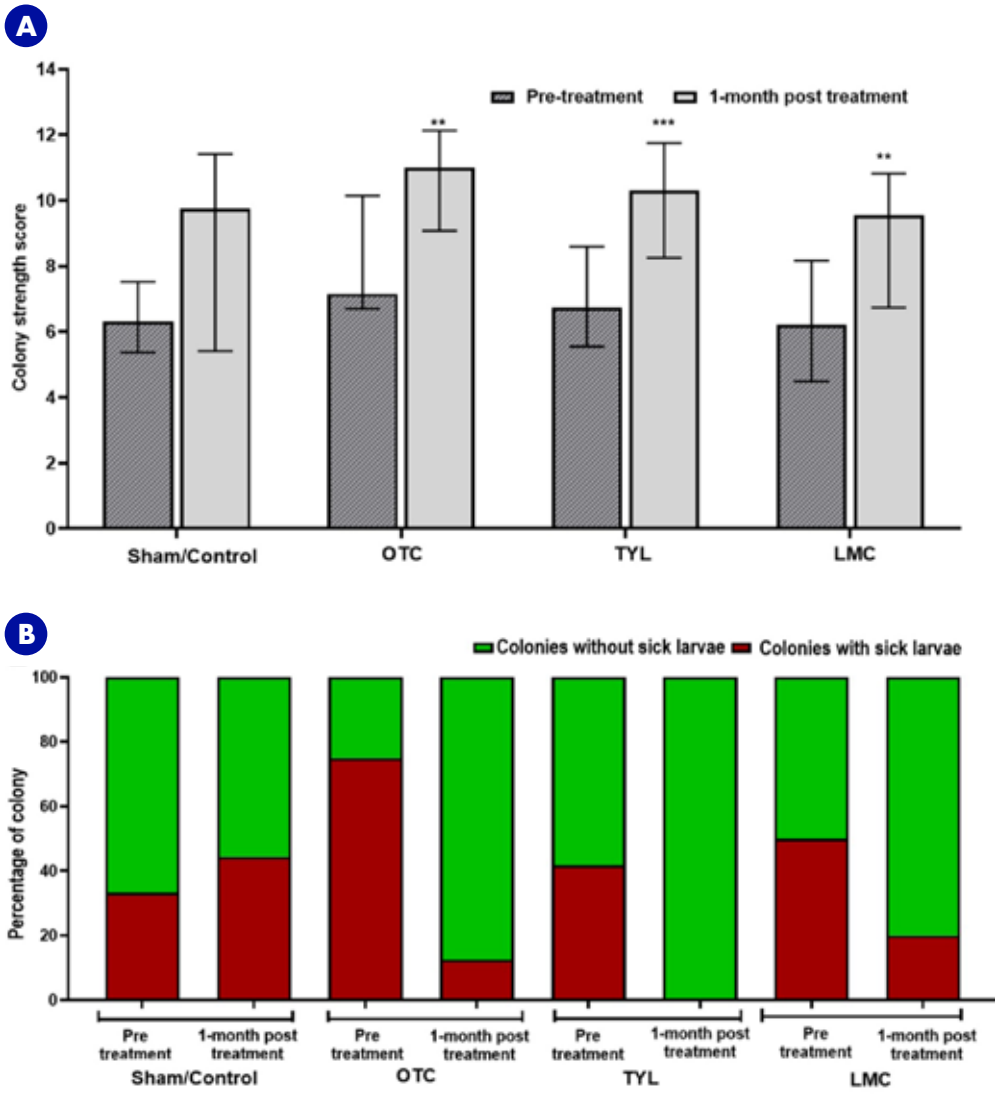


Fig 2. Colony strength and clinical symptoms of EFB in colonies pre-treatment and 1-month post treatment. A. Median ± IQR of colony strength score ([(Total % of brood per colony)/100] + number of inter frames covered by bees). The score was calculated by adding brood score and inter frame bee coverage. *, **, *** represents significant differences from pre-treatment, with $P<0.05$, $P<0.01$, $P<0.001$, respectively. B. Percentage of colonies having sick larvae. Sham/Control, OTC. Oxytetracycline, TYL. Tylosin, and LMC. Lincomycin.

Canadian Association of Professional Apiculturists

CAPA News

CAPA was originally founded as the Canadian Association of Apiculturists (CAA) in 1959. At the 1974 Annual Meeting held in Banff, the CAA decided to federally register and professionalize the organization. Hence from 1975 onward, the organization has been known as the Canadian Association of Professional Apiculturists (CAPA).

CAPA members study, educate and administrate in the fields of apiculture and pollination. CAPA members engage in diverse pursuits, including:

- Aspects associated with the management of honey bees.
- Research on bee and pollination biology.
- Inspection of commercial and non-commercial bee colonies for diseases and pests.
- Collection of statistics on provincial and federal honey bee products and bee colony losses.
- Providing education and extension services to beekeepers.
- Conservation initiatives to protect and use wild species of bees.
- Development of cost-effective methods for the sustainable management of commercial honey bees.

CAPA meets annually in conjunction with the Canadian Honey Council (CHC) to develop educational material and organize professional initiatives.

CAPA President's message

We are pleased to share our first issue of CAPA News with our members, Canadian beekeepers, and other stakeholders interested in the well-being of bees. The purpose of this newsletter is to better inform about our activities in the fields of bee management, education, research, compilation of statistics, extension, and sustainability of apiculture. We hope that this news vehicle will be useful to our members, the beekeeping industry and anyone interested in bees.

I want to congratulate the editorial board of CAPA News, Rassol Bahreini, Andrew J. Nagy and Cameron Menzies, for their initiative and time dedicated to this communication tool.

Sincerely,

Ernesto Guzman

Ernesto Guzman

▶ pag. 28

Canadian Honey Council letter

Congratulations to CAPA and its membership for initiating a newsletter updating everyone on activities in the apicultural field. The Canadian Honey Council (CHC) and CAPA have had a long- and well-established relationship that has enhanced the knowledge and expertise of beekeepers and bee keeping enthusiasts from across the country. For decades there have been joint meetings and exchanges of information, not to mention involvement in numerous provincial meetings and of course, outstanding support for hosting Apimondia congresses in both Vancouver in 1999 and Montreal in 2019.

In days past, the distribution of scientific data was mainly done through published papers and in person presentations. This, however, has changed dramatically in the most recent of times as the internet has opened up the world to an endless stream of information, some of it science based, some of it, not so much so. This has made the work that CAPA does come under much more scrutiny. At the same time, the relationship with the apicultural industry has strengthened as the issue of bee health has grown in importance. In the past decade the CHC has put forward suggestions to CAPA to work on such things as blueberry pollination health concerns, developing better and improved IPM strategies, pushing for *Varroa* control procedures and the development of *Varroa* control products, all of which CAPA and its members have worked studiously towards finding solutions.

While bee health is still, and will always remain, the primary concern of beekeepers, the CHC is dealing with a myriad of other concerns in the industry including labour and issues with the temporary foreign worker program, honey sales both domestic and international, rising input costs, trade irritants, government support or lack thereof, pests, pesticides and impending threats, climate change and stock replacement among other issues. Often, the expertise of CAPA members is called upon to provide valuable insight and research into these topics. Differentiating between CAPA and individuals with expertise in the apiculture industry is sometime misunderstood but the relationship that has been built up between CAPA and the CHC is, and will continue to be, strong.

The upcoming announcement concerning the CFIA risk assessment for U.S. packaged bees will no doubt prove to be an interesting time for the beekeeping community. The expertise of CAPA members will certainly be leaned upon by beekeepers to ensure the proper and safe conclusions are reached.

Again, congratulations to CAPA on its inaugural newsletter and I will endeavour to provide the readers with far greater detail on some of the important work that the CHC does for its members.

Rod Scarlett
Executive Director Canadian Honey Council (CHC)

2023 Committee reports

Winter Loss Survey Committee

In 2023, the committee revised core questions of the Annual Honey Bee Winter Loss Survey and published a preliminary report on the survey findings in July followed by a more detailed report later in the year. The survey gathered data from Canadian beekeepers who managed 370,722 honey bee colonies, representing 48% of Canada's total colonies. The national winter loss rate was 32.2%, a significant increase compared to the average of 27.0% from 2007-2022. Factors contributing to these losses included varroa mites, weak colonies, starvation, and adverse weather conditions. Despite a decline in the number of colonies (down 6.4% from the previous year), Statistics Canada reported a 30% increase in the overall colony count from 2007 to 2022, attributed to beekeepers replacing lost colonies. Beekeepers were surveyed on their management of key pests and diseases, with most monitoring for varroa mites, although some neglected to do so at certain times. Common treatments included amitraz and organic acids for varroa control, while antibiotic usage for the management of foulbrood diseases varied greatly depending on the province. CAPA and provincial experts continue to collaborate to promote monitoring and IPM practices among beekeepers, aiming to enhance colony health and sustainability.

Bee Movement and Importation Committee

The committee focuses on addressing key issues in bee health and importation and may provide expertise upon request to regulatory agencies and other stakeholders. However, this

committee and CAPA does not have regulatory functions. In 2023, the committee collaborated with various stakeholders, including the Canadian Food Inspection Agency (CFIA) and the Canadian Honey Council (CHC), including providing expertise on matters related to shipping options for Californian queens as a result of the detection of Africanized Honey Bee genetics, and restrictions on bee importations from Ukraine due to the spread of the parasitic mite *Tropilaelaps* in regions of Southern Russia.

Awards Committee

CAPA awarded two Student Merit Awards for 2023, valued at $600 each, to Courtney MacInnis (Ph.D. level, University of Alberta) and Rhonda Thygesen (M.Sc. level, University of British Columbia). Both were invited to present their research at the 2024 CAPA AGM. Additionally, the Outstanding Service Award for 2024 was awarded to Rob Currie, to recognize his invaluable scientific contributions to apiculture. Rob received a bronze Queen Bee Statue, made by the artist George Foster. CAPA has also shipped a bronze Queen Bee statue, accompanied by an engraved plaque, to Rheal Lafrenière (Winnipeg), the recipient of the Outstanding Service Award for 2023.

Integrated Pest Management Committee

In 2023-2024, research groups, government, and Canadian Bee Tech Transfer Programs (CAN-BTTPs) across the country assessed mite resistance to acaricides, particularly amitraz, with differing levels of testing and findings. Resistance testing shows lower effectiveness of amitraz in Western Canada, while it purportedly remains effective in the East. Variations in testing methods hinder conclusive assessments, but the evidence thus far for diminishing amitraz efficacy in regions of Canada underscores the need to develop and register new treatments for Varroa destructor. The committee noted several efforts, including: Simon Fraser University and Agriculture and Agri-Food Canada (AAFC) testing a promising new compound; the University of Alberta exploring synthetic and plant-based miticides; Manitoba and Ontario TTPs conducting trials on an RNAi-based product; and Saskatchewan developing two potential miticides with different modes of actions for application in bee hives. VarroxSan® extended oxalic acid strips are also being tested for Varroa control by SK team and an application for registering the product has been submitted to PMRA. The Ontario Beekeepers' Association (OBA) and the Canadian Honey Council (CHC) are working together to expand the registration of oxalic acid (i.e. a glycerin delivered treatment targeting suppression of Varroa during the mid-season), with key contributors finalizing the data package for submission. The product Certan® (active ingredient *Bacillus thuringiensis*)—a treatment for wax moths—was notably registered for emergency use in Manitoba, New Brunswick, Prince Edward Island, and Nova Scotia in 2024. The IPM committee has been highly active, with discussions on IPM strategies, acaricide resistance issues, and novel treatments for *Varroa* mite control, proving essential for members to collaboratively develop joint strategies, share research outcomes, and plan future projects.

Publications Committee

In 2023, CAPA sold 1,036 copies of the CAPA "Honey Bee Diseases and Pests" (3rd edn.) in English, 56 in French, and 0 in Spanish. Ample supplies of the English and Spanish copies remain while a reprint of the French edition may soon be needed. At the 2022/23 AGM, CAPA agreed to raise the selling price of the English, French and Spanish versions from $10 to $12, not including shipping and handling. To purchase English and Spanish version contact Janet Tam (**jtam@uoguelph.ca**), and for French version contact Martine Bernier (**martine.bernier@crsad.qc.ca**).

Canadian Bee Research Fund Committee

Three research proposals were submitted and awarded in 2023: investigations into a new miticide (Pernal & Plettner, AAFC & Simon Fraser University); an amoeba study (Guarna & Wolf-Veiga, National Bee Diagnostic Centre); and a queen desiccation study (Rueppell & Smith, University of Alberta). Four research proposals and three Atwal scholarship applications were received for 2024.

Non-Apis Committee

The committee focused on various developments regarding non-Apis species in 2023, particularly the common Eastern bumble bee (*Bombus impatiens*). Evidence from British Columbia showed an increasing population of the species raising worries about their impact on native bumble bee species due

▶ pag. 30

to competition and disease transmission. The lack of federal and provincial regulations on their movement exacerbates the situation, prompting calls for better biosecurity measures. Information on the disease status of commercially reared bumble bees is limited, suggesting a need for more stringent disease testing and inspections to prevent pathogen spillover between species. The committee also notes several other non-Apis activities including: a project underway at the National Bee Diagnostic Centre (NBDC) to find effective bioactive compounds for controlling parasitic wasps that threaten leafcutter bee populations (as previous chemical controls have been discontinued); expansion in the use of leafcutter bees and honey bees for hybrid canola pollination in the Canadian Prairies; and an app called Scout IPPM for scouting pests and pollinators in pumpkin and squash crops developed in partnership between researchers at the University of Guelph and the Pollinator Partnership aiming to assist growers in implementing integrated pest management (IPM) practices. Efforts to create a National Pollinator Protection Plan, similar to the plans that exist in the US, are being revisited, potentially fostering better collaboration among stakeholders.

Africanized Honey Bees Committee

Africanized honey bees (AHBs) have been confirmed in multiple U.S. states, with ongoing expansion in California. Recent studies indicate AHBs may have mixed genetic backgrounds, complicating detection and management. Annual hive movement and potential swarm dispersal from the U.S. pose significant threats. Effective monitoring and testing are therefore essential. Current methods for detecting AHBs—morphometrics and mitochondrial DNA (mtDNA) testing—are flawed, with high rates of false negatives. A new method using single nucleotide polymorphisms (SNPs) offers a more accurate assessment of AHB genetics but is costly (https://onlinelibrary.wiley.com/doi/10.1002/ece3.70554).

Research Committee

The last report on research priorities was published in Hivelights in Fall 2022 (https://honeycouncil.ca/wp-content/uploads/2022/10/Hivelights-Fall-2022.pdf), there will be no changes in research priorities for 2024.

Tech Transfer Committee

There are seven Canadian Bee Tech Transfer Programs (CAN-BTTPs) across Canada, all dedicated to promoting honey bee health and productivity and to advancing the sustainability and profitability of the beekeeping and crop pollination industries through applied research, education, communication, and knowledge transfer. Their work focuses on fostering a healthy, productive, and sustainable beekeeping industry. The teams are actively working with stakeholders and partners to address issues of concern, including the impact of stressors, like pathogens and climate change on bee health, and the demands of crop pollination. In 2023, the CAN-BTTPs committee established a formal connection with the Canadian Honey Council (CHC). Currently, two appointed CHC directors serve as liaisons in the CAN-BTTPs. This committee is devoted to addressing national challenges facing the beekeeping industry. Throughout 2023 and 2024, the committee held seven meetings and participated in regional and national events, including the Newfoundland Bee, the WAS/CBDA International, and CHC Bee Tech conferences. In May 2023, the committee submitted a letter of intent for a national project to Agriculture and Agri-Food Canada through the CHC, requesting for federal funding and resources to enhance applied research and outreach projects and collaboration carried by the CAN-BTTPs. This initiative is aimed to harmonize research efforts among the seven programs to boost the sustainability of the Canadian beekeeping sector. The main focuses of the proposed CAN-BTTPs activities include honey bee health, *Varroa destructor* control, and the dissemination of best beekeeping practices through knowledge transfer. The proposed national project could be a crucial support for the beekeeping industry by aligning efforts on essential issues. The challenges beekeepers face today are substantial, but coordinated action offers a powerful path to address these concerns effectively. This national initiative not only aims to safeguard beekeeping but also to strengthen the agricultural sectors that rely on honey bee pollination.

American Association of Professional Apiculturists (AAPA)

The AAPA has 82 active members including representation from the CAPA. The organization encompasses 42 universities, five USDA-ARS groups, 111 beekeeping organizations, seven research-based industries, and various government institutions. Major activities of the organization in 2023 included: holding their annual conference, which in 2023 was held alongside the American Beekeeping Federation (ABF) industry convention; a joint meeting with Apiary Inspectors of America (AIA); and awarding three students for their presentations. The committee is focused on continuing to enhance networking between CAPA and AAPA, potentially replicating the COLOSS task force model, and a submitting joint meeting proposal at the Entomology Society of America (ESA) conference.

Archives Committee

CAPA maintains archives of the winter loss report on the CAPA web site. Access to the CAPA AGM proceedings are restricted to members, and are available to members via the CAPA website. Simon Fraser University Archives houses some archival material that is primarily under Dr. Winston's section and contains the archival material associated with the Apimondia meeting that was held in Vancouver in 1999. There is also a set of the older CAPA proceedings there. Physical copies of Hivelights magazine from 1998-present are housed at the University of Lethbridge.

The Yellow-legged Hornet: A New Pest of Honey bees in North America

The Yellow-legged Hornet (YLH) was discovered in Savannah, Georgia, USA, last year. Eradication efforts have not succeeded: 50 colonies have been eliminated in Georgia and South Carolina this year! In late summer and fall, these hornets hover at honey bee hive entrances and pick off incoming foragers. The bees respond by shutting down their foraging, leading to increased winter bee mortality. The YLH is predicted to thrive in coastal British Columbia, Canada, and may also survive in southern regions of eastern Canada.

Gard W. Otis,
University of Guelph, Canada, and
Institute of Bee Health, Switzerland

Articles

- Bahreini, Rassol, et al. "Comparing the efficacy of synthetic Varroacides and *Varroa destructor* phenotypic resistance using Apiarium and Mason jar bioassay techniques." *Pest Management Science* 80.3 (2024): 1577-1592.
- Biganski, Sarah, et al. "Fall treatment with fumagillin contributes to an overwinter shift in *Vairimorpha* species prevalence in honey bee colonies in Western Canada." *Life* 14.3 (2024): 373.
- Claing, Gabrielle, et al. "Prevalence of pathogens in honey bee colonies and association with clinical signs in southwestern Quebec, Canada." *Canadian Journal of Veterinary Research* 88.2 (2024): 45-54.
- Colwell, Megan J., Stephen F. Pernal, and Robert W. Currie. "Treatment of waxborne honey bee (Hymenoptera: Apidae) viruses using time, temperature, and electron-beam irradiation." *Journal of Economic Entomology* 117.1 (2024): 34-42.
- Micholson, Derek, and Robert W. Currie. "Heightened sensitivity in high-grooming honey bees (Hymenoptera: Apidae)." *Journal of Insect Science* 24.3 (2024): 21.
- Morfin, Nuria, et al. "Varroa destructor economic injury levels and pathogens associated with colony losses in Western Canada." *Frontiers in Bee Science* 2 (2024): 1355401.
- Peirson, Michael, et al. "The effects of protein supplementation, fumagillin treatment, and colony management on the productivity and long-term survival of honey bee (*Apis mellifera*) colonies." *Plos one* 19.3 (2024): e0288953.

Short News

Congratulations on retirement of **Dr. Rob Currie.** Rob is named as a professor emeritus at the Bee Culture magazine: https://www.beeculture.com/rob-currie-named-professor-emeritus/

Congratulations to **Dr. Nuria Morfin** for her new position as assistant professor at the University of Manitoba.

Congratulations to the recipient of the CAPA merit award:
Jemma Todoschuk, PhD level, University of Lethbridge
Victoria Ferland, M.SC level, University of Laval.

Editorial Board

Paradise Honey

Combining Nature & Technology

EXTRACTION LINES

PROFESSIONAL HONEY EXTRACTION LINES STARTING FROM 18 FRAME ALL THE WAY UP TO 200 FRAME!

18 F: 17060,00 EUR (VAT 0%)
27 F: ~~19720,00~~ 19390,00 EUR (VAT 0%)
54 F: 25610,00 EUR (VAT 0%)
76 F: 43490,00 EUR (VAT 0%)
92 F: 47590,00 EUR (VAT 0%)
120 F: ~~56190,00~~ 54990,00 EUR (VAT 0%)

WAX PRESSES

CAPACITY STARTING FROM 50 KG/H(P50) UP TO 1000 KG/H(P1000)

~100kg/h
3190,00 EUR (VAT 0%)

~200kg/h
4590,00 EUR (VAT 0%)

~350kg/h
~~5190,00~~ 4950,00 EUR (VAT 0%)

~500kg/h
6590,00 EUR (VAT 0%)

~1000kg/h
8490,00 EUR (VAT 0%)

CENTRIFUGE C1250

Rotor lifter included!

Capacity up to 1250 kg/h !

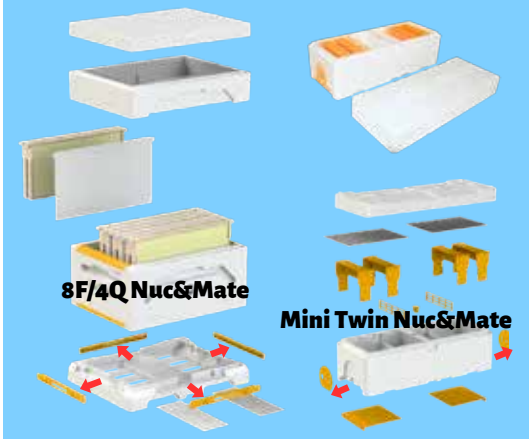
Honey tank and honey pump are sold separately!

~~19000,00~~ 18490,00 EUR (VAT 0%)

HONEY ROCKET R550

~550kg/h
~~6090,00~~ 5690,00 EUR (VAT 0%)

Now searching for new Beebox distributors in British Columbia, Saskatchewan, Manitoba!



LOCAL CANADIAN DISTRIBUTORS:

WWW.ATLANTICBEES.COM
WWW.INNISFILCREEKHONEY.COM
WWW.GOLDEN-GREEN.CA
WWW.PROPOLIS-ETC.CA

Offers are valid until 15th June 2025.
Prices EXW, shipping not included
All Machinery is made of Finnish Stainless Steel
All Paradise Honey Products are Patented
Equipment will be sold in EUR currency

Paradise Honey LTD
Hunajatie 19. 06530 Kerkkoo, Finland
Tel: +358 40 037 7441
info@paradisehoney.fi / www.paradisehoney.fi

MADE IN FINLAND

Improved Consumption | Quality Nutrition | Higher Honey Yields | Ready to Use | Protein Rich

ULTRA BEE ROCKET FUEL

Scientifically Formulated Complementary Bee Feed

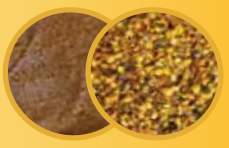
MANN LAKE

MADE IN USA

With Apis Biologix Bio-Activator

ULTRA BEE Rocket Fuel

HIGH PROTEIN NATURAL POLLEN SUBSTITUTE



A PRODUCT BY MANN LAKE

5% NATURAL POLLEN

15% CRUDE PROTEIN

HONEY BEE FEED IN CONVENIENT PATTY FORM

Natural Pollen Substitute with APIS BIOLOGIX BIO-ACTIVATOR. Bio-Activator is intended to bring the nutritional profile of pollen supplements into alignment with that of floral pollen.

THE ROCKET FUEL PATTIES HAVE ALL THE BENEFITS OF ULTRA BEE WITH THE INCLUSION OF 5% NATURAL POLLEN AND APIS BIOLOGIX MAKING IT THE ULTIMATE POLLEN SUBSTITUTE.

FOR STRONGER, HEALTHIER BEES

Apis Biologix Bio-Activator fills the gap between pollen substitutes and natural forage for bees. It contains vital nutrients from natural pollen: vitamins, carotenoids, amino acids, enzymes, and trace minerals aiming to offer a balanced alternative for bee health.

AMONG OTHER APPLICATIONS, PROPER NUTRITION IS CRITICAL FOR SPRING POPULATION BUILD-UP, QUEEN REARING, AND WINTER BUILD-UP.

CALL TO PLACE AN ORDER : 800-880-7694 | ORDER ONLINE : WWW.MANNLAKELTD.COM

Proud sponsor of the Canadian Honey Council

PM 43070512

The Canadian Honey Council is the national association of beekeepers representing apiculturists across Canada. The CHC provides a forum where producers, packers, professionals, provincial associations and officials from different levels of government can talk and recommend action in the best interests of the Canadian honey bee industry. Currently, the CHC membership consists of representatives of provincial associations with the total number of beekeepers at approximately 13,000 managing over 810,000 colonies.