

CAPA News

Canadian Association of Professional Apiculturists (CAPA)

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Upcoming Events

CAPA AGM 2025

6 Feb — Ottawa, ON

American Bee Research Conference 2025

7-11 Jan — Reno, NV

Canadian National Beekeeping Convention 2025

6-8 Feb — Ottawa, ON

IPM Workshop & Breeders Day 2025

5-7 Feb — Edmonton, AB

Apimondia 2025

23-27 Sep — Copenhagen, Denmark

Issue 1 — December 2024

Semi-Annual



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

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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.

Annual Colony Loss Report

Since 2007, CAPA has compiled and published statistics for Canadian honey bee colony losses. These statistics provide an ongoing picture of the health of apiculture in Canada.

Find the report at:

<https://capabees.com/capa-statement-on-honey-bees/>

CAPA Publication

◆ Honey Bee Diseases and Pests—3rd edition

To purchase English and Spanish version contact Janet Tam (jtam@uoguelph.ca), and for French version contact Martine Bernier (martine.bernier@crsad.qc.ca).

<https://capabees.com/category/publications/>

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

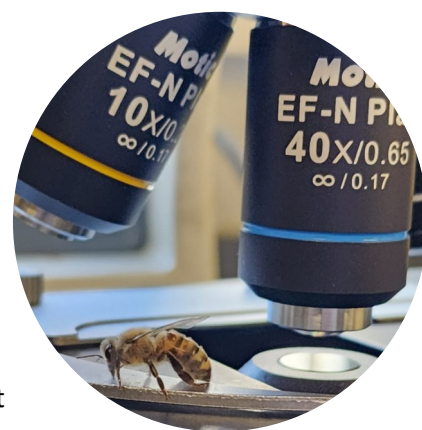
In 2023, the committee revised core questions of the Annual Honey Bee Winter Loss Survey and published a preliminary report on the survey findings in July followed by a more detailed report later in the year. The survey gathered data from Canadian beekeepers who managed 370,722 honey bee colonies, representing 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 Rheel Lafrenière (Winnipeg), the recipient of the Outstanding Service Award for 2023.



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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. VarroSan® 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.

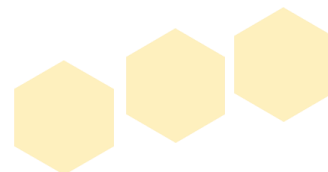


Publications Committee

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.



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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 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 Hive-lights 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].

CAPA Mission

CAPA members study, educate and administrate in the fields of apiculture and pollination.

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.

Canadian Bee Research Fund/ AS Atwal Graduate Scholarship in Bee Research

The Canadian Honey Council and CAPA request applications for grants supporting research on honey bees with particular emphasis on topics that are relevant for the Canadian beekeeping industry. Proposals requesting up to CAD10k will be considered. Additionally, the application cycle for the 2024 AS Atwal Graduate Scholarship in Bee Research (valued @ CAD5k) is now open. Submission deadline: 15th of December 2024. For further instructions, please visit the CHC website: <https://honeycouncil.ca/industry-overview/canadian-bee-research-fund/>



Editorial Board

Rassol Bahreini
Andrew J. Nagy
Cameron Menzies

The Editorial Board are pleased to invite you to submit your reports, research articles and news at: capa.news24@gmail.com

Robert Lu (Design & Artwork)