

**Impacts of
Covid-19 on
Canadian
Beekeeping
in 2020:
Part 2**



Hive *Irights*

www.honeycouncil.ca

Fall 2021 | Vol 34 # 4

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

**Why Are
Honey Bees
Such Great
Pollinators?**

**Crossing
Borders: New
Research in
Canada, and
Our Newest
Science
Advisory
Committee
Member**

**Bee Aware
Of What
You're Buying
- Honey
Spreads Are
Not 100%
Honey**

**Breeding
bees for
Varroa
destroyer
resistance
using
molecular
tools**

\$4.95





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!

**Premium
Smokers**



M00926



M00928



A Complete Line of Containers



M00010

New 2015
Edition of
The Hive and
the Honey Bee

Full Line of Honey
House Equipment

**Little Wonder
Hand-Extractor Kits**

M00396KIT - Hand
M00403KIT - Power



Tools

A complete line of
quality woodenware
& foundations

Many styles from
which to choose

**Economy
Vent Suit**
V01260(size)
Suit



AP23®

POLLEN SUPPLEMENT

M0016040PH
AP23 PATTIES
40 LB BOX

M0016040
AP23
40 LB BAG



**Apiguard for
Varroa Mite
Control**

M01480

**Assembled
Starter Kit**
C52201P



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

Return undeliverable Canadian addresses to
Hivelights

PO Box 914, Station T Calgary,

Alberta T2H 2H4

geoff@honeycouncil.ca

www.honeycouncil.ca

(403) 512 2123



Fall 2021 Vol 34 #4

Funded by the
Government
of Canada

Canada

Cover photo: Bee performing waggle dance.

Photo credit: H. Broccard-Bell



Table of Contents

3	Canadian Honey Council Report	Rod Scarlett
5	Regional Reports	CHC Directors
11	New: Registration and distribution of ApiLifeVar in Canada	
13	Why Are Honey Bees Such Great Pollinators?	Heather Broccard-Bell
19	Crossing Borders: New Research in Canada, and Our Newest Science Advisory Committee Member	
23	Impacts of Covid-19 on Canadian Beekeeping in 2020: Part 2	Matthew Polinsky, Miriam Bixby, M. Martha Guarna
26	Bee Aware Of What You're Buying - Honey Spreads Are Not 100% Honey	Rod Scarlett
28	Breeding bees for Varroa destructor resistance using molecular tools	Nuria Morfin, Brock Harpur, Alvaro de la Mora, Berna Emsen, Ernesto Guzman-Novoa
29	Help Wanted	

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



2021 Directors • Canadian Honey Council / Conseil Canadien de Miel

Chair

Jake Berg

Saskatchewan Beekeepers Development Commission

Box 4031,

Melfort, SK. S0E 1E0

C: 306- 921-8360

E: sjbeez@hotmail.com

1st Vice

Albert Devries

Ontario Beekeepers Association
44648 Ferguson Line

St. Thomas, Ontario N5P 3T3

T: 519 868-9429

E: devriesfour@gmail.com

2nd Vice

Curtis Miedema

Alberta Beekeepers Commission

Box 39, Site 11, RR#1

Barrhead, AB T7N 1N2

T: 780.206.4483

E: miedemahoney@gmail.com

3rd Vice

Maggie Lamothe Boudreau

Fédération des apiculteurs du Québec

266, 9erang

Saint-Adrien d'Irlande, Quebec

G6G 5R6

T: 418-331-0527

maggielamotheboudreau@gmail.com

Director

Osee Podolsky

Manitoba Beekeeper's Association

Ehelbert Manitoba

T: (204) 742-3555

E: osee@podolskihoneys.com

Director

Chris Lockhart

Maritime Beekeepers Association

Box 965

Antigonish, Nova Scotia

B2G 2S3

E: apiaries@nbnet.nb.ca

Director

Stan Reist

B.C. Honey Producers

6124 Metral Drive,

Nanaimo B.C. V9T 2L6

Phone: 250-390- 2313

E-mail: flydutch@telus.net

Director

Ron Greidanus

Alberta Beekeepers Commission

Box 1581

Stettler, Alberta T0C 2L0

E: rongreidanus@gmail.com

W: 403 323 0234

Director

Micheal Yaremco

Bee Maid Honey

CHC OFFICE

Rod Scarlett

Executive Director

#218, 51519 RR 220

Sherwood Park, AB T8E 1H1

T: 877-356-8935

C: 780-498-0231

E: chc-ccm@honeycouncil.ca

Hivelights Magazine Editor & Advertising Sales

Geoff Todd Box 914, Stn. T., Calgary, Alberta T2H 2H4

T: 403-512-2123 E: geoff@honeycouncil.ca

Design and Production Cristian Campean
Advertising enquiries Geoff Todd
Publisher Bunker to Bunker Books Inc.

Printed in Canada



Paradise Honey

HONEY EXTRACTING LINES

Special deals are valid until
end of 2021



NEW ELECTRIC REVOLVER EMPTY FRAME RACK

120 FRAME EXTRACTING LINE

CAPACITY UP TO 42 BOXES / HOUR
WAX PROCESSING CAPACITY UP TO 1250 KG/H

***NOW ONLY 101 450,00 CAD**

54 FRAME EXTRACTING LINE

CAPACITY UP TO 18 BOXES / HOUR
WAX PROCESSING CAPACITY UP TO 350 KG/H

***NOW ONLY 37 100,00 CAD**

18 FRAME EXTRACTING LINE

CAPACITY UP TO 6 BOXES / HOUR
WAX PROCESSING CAPACITY UP TO 100 KG/H

***NOW ONLY 27 300,00 CAD**

HONEY & WAX PRESS SYSTEMS



P1000 HONEY & WAX PRESS
CAPACITY UP TO 1000 KG / HOUR

***NOW ONLY 11 990,00 CAD**



P350 HONEY & WAX PRESS
CAPACITY UP TO 350 KG / HOUR

***NOW ONLY 7250,00 CAD**

P100 HONEY & WAX PRESS
CAPACITY UP TO 100 KG / HOUR

***NOW ONLY 4550,00 CAD**

*Prices are valid until end of 2021

VERTICAL HONEY ROCKET SYSTEMS



R1250 VERTICAL HONEY ROCKET
CAPACITY UP TO 1250 KG / HOUR

***NOW ONLY 12 550,00 CAD**

R550 VERTICAL HONEY ROCKET
CAPACITY UP TO 550 KG / HOUR

***NOW ONLY 8350,00 CAD**

New continuously operating
Honey Rocket System with Turbo
is designed for commercial honey
and wax separation.

*Prices are valid until end of 2021

Prices (VAT 0%) shipping costs are 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
Katajaharjuntatu 24, 45720 Kuusankoski, Finland
Tel: +358 40 037 7441
info@paradisehoney.fi / www.paradisehoney.net



MADE IN FINLAND

Canadian Honey Council Report



Rod Scarlett, Executive Director, CHC

With the onset of Covid-19 in March of 2020, we all hoped that 2021 would return to the so-called normal but boy, did that prove to be wrong. The spring of 2021 resulted in drastically reduced imports of packaged bees, difficulties in securing labour and the introduction of more health and safety precautions. Despite these difficulties, it appeared that the bees were very healthy and hive numbers would recover. Across most of western Canada it was a dry spring while eastern Canada experienced somewhat normal weather and beekeepers' expectations were high, especially given strong honey prices. For many however, those expectations were shattered by extreme weather conditions, heat in the west and rain in parts of the central Canada. Still there were exceptions as there are reports of great honey crops on Vancouver Island as well as the odd average to above average honey crop on the prairies. Still production levels in mainland BC, Alberta, Saskatchewan, and Manitoba will probably be below average, in some provinces up to 20% below average. Much of Ontario and Quebec honey production also seems to be somewhat below average while Atlantic Canada enjoyed average to above average crops. The saving grace for many is that prices have remained strong and will certainly help offset poor production levels.

A noticeable difference this year is that much of the canola honey is darker than usual. There are couple of explanations for why this occurred, but one is that during the very hot spell when canola was in bloom, the bees looked for alternative sources for nectar and sought out those sources from trees and flowers on the edges of the fields. This may have impacted the color, but it also had a secondary impact. As Canadian beekeepers have been adding information to the database for nuclear magnetic resonance testing (NMR) the samples they have been providing have not included the "unusual". Canola honey was predominantly canola nectar and the occurrence

of things like honeydew, wildflowers and weeds were rare and thus never submitted to be included in the database. Since NMR creates norms that would be attributed to various honeys, the appearance of variations needs to be carefully analyzed in order not to incorrectly identify a honey as adulterated. The Canadian Honey Council has notified the Canadian Food Inspection Agency of this issue and has provided the appropriate scientific background for support. It's just one more area of concern for Canadian beekeepers.

For several years, beekeepers were fortunate to have AAFC coordinate the Bee Health Roundtable, which in turn brought to the attention of various interested parties the issues facing the industry. Solutions, compromises, and background information resulted and by all accounts, it was one of the most successful roundtables. Unfortunately, all the effort and initiative to get things done seems have disappeared as AAFC decided to restructure the roundtables and for the past two plus years the industry has not heard anything even though some restructuring has already occurred. Covid has certainly channelled AAFC's attention, but the industry continues to deal with issues non-covid related like MRI's, CFIA inspections, access to labour, stock replacement, inter-provincial transport, environmental sustainability amongst others, and the roundtable would have been a very good tool to address those issues. Even though honeybees contribute billions of dollars to the agricultural sector, it seems that currently, only the voices of the so-called large commodity organizations command the ear of AAFC which is indeed unfortunate.

The CHC goes into the fall and winter again preparing for the worst but hoping for the best. Face-to-face meetings are currently being scheduled and I certainly hope they go forward. National and international trade shows are scheduled beginning in 2022 as well as our AGM. Let's hope that by this time next year all the trials and tribulations of the past two years will be a distant memory. ■



Tom Nolan is the Founder and Past President of the *Urban Toronto Beekeepers Association* and lead Sales Representative for NOD Apiary Products. His personal mission: to ensure the sustainability of honey bee health. Tom shares his enthusiasm for honey bees by educating beekeepers on best management practices, Varroa control, swarm catching and by volunteering at an organic farm—all while running his successful beekeeping operation: *Hivetown Honey*.

Your honey bees work hard to prepare for winter. As beekeepers, we want to do everything we can to ensure they thrive over the season. Once temperatures begin to drop, properly protecting your hives can make all the difference in how your colonies overwinter.

Experienced beekeeper, Tom Nolan, shares why *Bee Cozy™ Winter Hive Wraps* are a smart choice for large commercial operations and backyard beekeepers, alike—so you can head into spring with stronger and healthier colonies.

Protect Your Colonies

Bee Cozy Winter Hive Wraps provide an insulating layer to minimize heat loss from the hive and help maintain ambient temperatures over the winter. The wraps are made with UV treated polypropylene and contain environmentally friendly R8 fiberglass. This protection blocks your hives from freezing conditions and acts as a windbreak for breezy locations. Pair with the inner cover pads for the perfect insulating layer and ventilation your bees need to winter successfully.

Save Time and Money

Wrapping your hives with other methods can be a time-consuming task. The *Bee Cozy's* ready-to-use design makes preparing your hives for winter easy

and efficient. Simply slip it on your bee hives in late fall, once temperatures are consistently below cluster point of 10°C (50°F). Slip off when temperatures are consistently above cluster point again, and possible snap freezes have passed. Plus, the *Bee Cozy* is reusable! Roll and store for next year, reducing your annual wintering costs.

“Wrapped colonies start off stronger in the spring, producing up to two times the amount of honey.”

Prepare for Next Year's Success

Winterizing your colonies will maximize your honey crop. Healthy, wrapped colonies start off stronger in the spring and produce up to two times the amount of honey compared to other colonies. With assistance from the *Bee Cozy*, your bees will brood up faster, so you can split earlier in the spring and be ready for the honey flow.

For successful overwintering, colonies should be treated for Varroa mites with *Formic Pro™* or *Mite Away Quick Strips™* and provided with ample feed stores ahead of wrapping for winter. ♡



Want to hear more?

Contact us to book Tom as a guest speaker for your Bee Association:
info@nodglobal.com

Watch how-to videos at youtube.com/NODApiaryProducts

Learn more about *Bee Cozy Winter Hive Wraps*, *Mite Away Quick Strips* & *Formic Pro* at www.nodglobal.com

Regional Reports



Atlantic



Chris Lockhart

At time of writing we are nearing the end of our harvest. Honey crop looks good considering how the last few seasons have gone in our region. There was a good mix of moisture and heat this summer which was good for growing bees. Feeding is also under way and soon it will be time to wrap bees. This year has felt extra draining it seems and I am looking forward to the winter break.

The lowbush blueberry industry in Eastern Canada is wrapping up harvest and also enjoyed for the most part a nice growing season. Mostly good crops are being reported and growers are also getting a good price for their berries. This season has been a relief to many growers in the region who have suffered severe draughts and frosts for several years running.

The CHC board is supposed to meet face to face in Saskatoon in November and Edmonton in February. There are also a handful of food expos and conferences that the CHC is to attend. A month ago we were pretty confident that these plans were likely not going to change....but here we are again in heavy uncertainty. I was looking forward to once again attending AGMs and seeing some familiar faces. It appears that our provincial association will likely play it safe and do another online AGM but it hasn't been set in stone yet.

Bear have been a big problem in New Brunswick again this year with seemingly unlimited amounts of sightings and strikes. One beekeeper reported losing close to 100 hives at one of his winter holding yards. So this fall don't forget to keep those fences charged and those mite levels low!

Québec



Maggie Lamothe Boudreau

Notre été se termine sur une bonne note!
En effet, les apiculteurs québécois ont eu une très bonne production de miel cet été. D'ailleurs, vu les pertes élevées de ruches rencontré durant l'hiver 2021, les prix du miel sont beaucoup plus élevés cet automne. Les rumeurs mentionnent que le miel c'est vendu entre 2,75\$ à 3,25 \$ la livre en baril cette été. Deuxièmement, le message a été martelé tout l'été, faites attention à votre varroa! Certains apiculteurs québécois se voient terminer l'été avec des ruches trop infestées. Espérons qu'il sera possible de remédier à cette situation.

Ensuite, l'association travaille en collaboration avec le Centre de recherche Animale de Deschambault (CRSAD) pour le projet de nourrissage au miel. Ce projet permettra aux apiculteurs biologiques de clarifier les pour et les contres du nourrissage au miel de la ruche pour la période d'hivernage. Nous aurons aussi une clarification concernant la modification de la norme biologique canadienne en apiculture qui obligera le nourrissage au miel pan canadien d'ici quelques années.

L'équipe a travaillé fort avec la financière agricole du Québec afin

d'obtenir une assurance catastrophe (perte supérieure à 70% collectivement qui se produit en général au 10 à 15 ans) pour nos membres. En effet, depuis 2004, nos membres ont malheureusement subi des pertes considérables à quelques reprise. La financière nous mentionnait que si cette assurance aurait été en vigueur nous aurions sauvé plus d'un million de dollar dans notre fond. Cette assurance, maintenant en vigueur, sera défrayé en totalité par le gouvernement et se reflètera par une diminution de 10 à 15% des coût relié à l'adhésion pour l'assurance Hivernage ou Miel.

Nous travaillons aussi provincielement sur une protection catastrophe pesticides. Quelques-uns de nos membres ont subi, au cours des dernières années, des pertes considérables relié à des applications de pesticides en proximité des ruchers ou encore durant des moments impropres pour les pollinisateurs. En effet, nous croyons que ce n'est pas aux apiculteurs de payer les frais de mortalité de ruches pour une utilisation de pesticide qu'elle soit adéquatement réalisée ou non. Pour ce faire, les AADQ sont en négociation avec le gouvernement, de plus ont fait parvenir une lettre au ministre qui sera appuyé sous peu d'une lettre d'appui du Conseil Canadien du Miel.

Finalement, nous avons malheureusement perdu une perle rare, Anne-Marie Beaudoin, notre répondante à la table filière apicole. Merci pour tout ton travail et ta dévotion Anne-Marie, nous te souhaitons le meilleur pour ce qui est à venir.

Si vous avez des questions, n'hésitez pas à contacter notre équipe.

Our summer ends on a high note!

Indeed, Quebec beekeepers had a very good honey production this summer. Moreover, given the high losses of hives encountered during the winter of 2021, honey prices are much higher this fall. Rumors mention that honey is being sold between \$ 2.75 per pound to \$ 3.25 per pound in barrel this year. Secondly, the message has been hammered all summer, pay attention to your varroa! Some Quebec beekeepers are ending the summer with hives that are too infested. Hope they can manage to bring this down rapidly.

The association is working in collaboration with the Deschambault Animal Research Center (CRSAD) for the honey feeding project which we would like to thank. This project will allow organic beekeepers to clarify the pros and cons of honey feeding for the wintering period. We will also have a clarification regarding the amendment to the Canadian organic standard for beekeeping that will require feeding honey pan-Canadian in order to keep the organic certification in a few years.

Then, the team worked hard with "La Financière Agricole du Québec" to obtain a catastrophe insurance (loss greater than 70% collectively that usually occurs every 10 to 15 years) for our members. Indeed, since 2004, our members have unfortunately suffered considerable losses on a few occasions. We were informed that if this insurance would have been in force since 2004, we would have saved more than a million dollars in our insurance fund. For your info, this insurance is now in force and will be paid in full by the government. This will result in a 10 to 15% decrease of costs related to membership for Wintering and or Honey production insurances.

Finally, we are also working provincially on a pesticide disaster protection. In recent years, some of our members have suffered considerable losses related to pesticide applications near apiaries or during improper moments for



**Contact
Us
Today!**

- **Locally Manufactured Bee Equipment**
- **Large Inventory in Stock**
- **Customized Products**

**Ontario's First
Woodman Engineering
Bee Box Machine**

**Pre-Drilled Nail Holes
Angled Top Hand Holds
Strong Box Corner Design
Optional Metal Frame Rests**

Phone: 888.923.9813 | Email: info@naturestastecanada.com

pollinators. Indeed, we believe that it is not up to beekeepers to pay the costs of hive mortality from pesticide use whether it is properly carried out or not. To do this, the AADQ are in negotiations with the government, have sent a letter to the Minister and are now supported by the CHC which has provided a support letter.

In the end, we unfortunately lost a rare pearl, Anne-Marie Beaudoin, our respondent at the beekeeping industry table. Thank you for all your work and your devotion Anne-Marie, we wish you the best for what is to come.

If you have any questions, do not hesitate to contact our Quebec team.

Ontario



Albert Devries

The beekeepers of Ontario have experienced droughts, forest fires, floods, hot days with high humidity, and wet muddy bee yards. What was experienced related to where you were located. The mild winter led to early brood rearing, which led to strong hives that wanted to swarm. In my area of Southwestern Ontario, once swarming settled down, we had a strong honey flow. What looked like good conditions to produce a large honey crop then changed as rain fell every couple of days for most of the summer. Meanwhile, beekeepers in northern Ontario

had to feed their bees because of drought conditions. I have not heard from anyone who had an above average crop. Most beekeepers are saying the honey crop is below average. It is good that the wholesale price of honey has increased. I have heard a beekeeper say that even the smaller pile of barrels is going to be able to pay the bills.

The early spring caused hives to start producing brood early. This has led to reports of high mite levels. The number of mites in a 300 bee sample can vary greatly from hive to hive within a beeyard. It would be nice to have more research directed to how and why mites can grow so explosively in some hives and not in others.

As I write this, we are having a lovely fall that has been interspersed with some very heavy rain. For the most part, it's been warm and conditions for feeding bees have been ideal. Hopefully, beekeepers are able to take advantage of this great weather and get their bees ready for winter. Meetings continue to be held online. I look forward to the time when we can meet in person again. I wish for a good winter for everyone.

Manitoba



Osee Podolsky

The fall season is rapidly approaching its closing, and soon enough the snow will be flying. Most beekeepers are a little bit disappointed that the year did not end up turning out as well as it looked like it might in the spring, but that's beekeeping "if it was easy everyone would do it". All things considered the Manitoba crop varied with some areas doing well and others doing poorly. The current estimated crop total is about 80% of normal which isn't bad for being in a near record drought. Most likely do to the extremely dry con-

ditions a much larger than usual amount of the honey produced was darker in color than other years. Honey prices are continually on the rise as the year progresses with prices cresting over \$3.00 CAD/lb by the end of September.

Varroa mites are presenting themselves to be an issue which are catching many beekeepers off guard. Higher than normal mite loads are presenting themselves across the province. Beekeepers are applying additional treatment measures to try and get Varroa mite levels down fast enough so that the health and longevity of the winter bees in the hives are not compromised going into winter. Hopefully the additional treatments will be effective, and beekeepers will have strong healthy colonies entering winter.

It's been another rollercoaster of a beekeeping year, I'm sure everyone could finally use a break to recharge the batteries, we're on the home stretch already.

Saskatchewan



Jake Berg

The honey crop in Saskatchewan, this summer, has ended up to be about 80% of normal on average. For a year that has had extremely low summer precipitation, I think this is a very good outcome. A lot of other agricultural commodities, have seen yields far below their traditional averages which makes me quite happy with our outcome.

Although the summer of 2021 was not the best for making honey, it was a great year for growing bees. Bee populations soared but, of course, with it the large bee populations came large varroa mites problems. The varroa population seems to be quite high with most producers. A fall varroa treatment of some kind was needed. Oxalic acid vaporization is the most popular treatment, followed by apivar and Formic acid here in Saskatchewan. It does sound like most producers were able to get their mite counts down. But even after the fall treatment, they are still at an elevated level. This problem will continue to haunt us next spring. Hopefully the colonies will make it through the winter okay.

Most temporary foreign workers are making their way home. So far, commercial flights have been working for our Nicaraguan temporary foreign workers. The mandatory testing and reporting to the airline before flight time has been an added challenge this fall but for the most part it as been manageable. Hopefully by next spring, international travel will be somewhat settled down, so getting our TFW back into Canada will not pose significant problems.

Alberta



Ron Greidanus

The Season of 2021 has ended. For some it is another year of bitter disappointment and for others, a quiet satisfaction that this Thanksgiving, there will be celebration of blessings that truly are deserving of gratitude from the very center of our being. I have owned beekeeping equipment for many years and have had the good fortune of having bees occupy said equipment for most of that time. One thing I have learned – I can go through all the motions but I am powerless to put one drop of honey into a hive. There can be 10 000 pounds of honey lying in the field but

only bees can put it in the frame.

I have been contemplating on what to report for this issue of Hivelights. All that I can come up with is that I am grateful that this season is coming to an end. Beekeeping in a pandemic has been stressful and challenging. I have spoken to many beekeepers in my small corner of the province and many of these producers have made significant efforts to provide employment to those in their community displaced from their careers due to shut downs or interruptions brought on by this Evil that has been visited upon us. In my own operation, I have always known that I can handle one newbie, maybe two; but when daddy has to hold the hands of 5 new children everyday, that can make daddy grumpy at the end of the day – sometimes I need to go behind the shop and have a little cry.

I have made a conscious decision to support my community by cutting the seasonal workers I typically hire in half and replace them with individuals from my community. Sucker for punishment... get woke go broke... Polly-Ann ish...or like my buddy Jerry says, "Ron, just make a decision and live with it." What an adventure. If I ever right a book, I will call it, "Tales from the bee yard."

Regardless, we have successfully completed this season. All of the locals that I hired have moved on. One gentlemen had come to me from the oil and gas sector. A victim of the downturn in 2020, bad knees, bad shoulder and trying to make ends meet for his family as a single dad. He was a very good worker – always 10 minutes early and had to send him home every

evening. The reality of beekeeping is that it is tremendously hard work. It is taxing on the body. Honestly, we do it for the goodness of our health; and if you not healthy, don't start. By the end of the season, he came to me and said, "I can't keep doing this – its going to put me in a wheelchair." I told him I understood and that I wished him well in his new endeavour managing a warehouse and driving forklift. I am sad to see him go.

Two students I had working for me went back to school. I sent them on their way with as much appreciation as I could that still fell into the realm of propriety. The last individual came to me and told me he had found other work. I was grateful because it saved me from having to look in his eyes and tell him it just wasn't working out. I wished him well, bought him a Milwaukee cordless ratchet and socket set as a parting gift, relieved.

One piece of advice that I would give to anyone wanting to have employees is this: Your employees are your employees. They are not your friends. Do not hire your friends. As a boss, you need to be kind to your employees. You need to be considerate of your employees. Employees are not a commodity – they are people with lives and they build their dreams on the income they derive from your business. And as an economic entity sometimes an employer needs to make tough decisions that comes at the expense of an individual or individuals in their employ. I have never been able to sleep very well after having to make those decisions – I put them off till they can be put off no longer. There is nothing worse than looking in the eyes of your employee as you deliver a decision that erases their hopes and dreams. A little part of you dies along with them. It becomes exponentially harder if the employee is your friend; and in life, good friends are hard to come by – no one can afford to lose any.

Harvest 2021 is done and it will be commemorated as an anomalous year – hot, dry, over before it even started; and surprisingly, better than was anticipated. We get these anomalies about once every 20 years or so. (1986, 2002, 2021) (typically every 8-12 years we get a bumper crop) Most producers are reporting better than expected yields but still the third year in a row of below average yields. There are a few out there that are reporting a slightly better than average yield – blessed by timely rains which fell in the right place at the right time.

Most producers in this central part of the province had finished all harvesting by September 1. BUTTTTT nuthin is ever easy. Varroa populations are through the roof every where. I have seen more sticky boards covered in varroa mites than I care to ever see again. I have seen alcohol washes that have so many mites in the bottom, its surprising that there are even bees on the other side of the jar.

Controlling Varroa has got to start in August. It seems that after August 15th ish bee populations start to diminish – getting ready for winter. But Varroa mite populations seem to explode at this time. What can you do? It is one of the best times to use a soft chemical as a knock down ie Oxalic acid or Formic Acid. There is relatively little impact on the honey that still may be potentially harvested. If queens are killed the hive can still be requeened. One or two treatments a week apart at the mid August juncture will deprive you of a mite farm in September. Save you from seeing a bazillion wingless bees and having to bring home deadouts with the last honey supers.

There are three things that will go a long way coming through winter with less than 20% winter loss 1) fat hives full of sugar 2) no Varroa and viruses 3) a healthy population of winter bees with a relatively young queen. When you test your bees in the fall with alcohol washes, you don't need zero's on all your hives, you just need less than 5 and no wingless bees.

I would like to wish all of you a Thanksgiving full of gratitude. I sincerely hope that each of you find yourselves surrounded with your loved ones, a harvest with which you are satisfied; a Hope and a Joy that cannot be quenched; and a Love and Gratitude for the blessings we all too often take for granted.

people looking to eat better food and because of the limitations on movement a lot more home cooking and baking, which translates into increased sales. Some small businesses that we do business with have experienced the same occurrence's, early on the outlook was totally dismal with limits on customers social distancing, sanitizing and it was not going well and then timings started to change with some relaxing of rules and then the leveling out of concerns, One of our customers said it went from slow death to actually possibility of coming out of this at a brake even for the year, and they could live with that. The farm market Halloween business was another one that in most cases went far beyond expectations and they were not severely impacted. So while there are some that were severely impacted there were some silver linings.

As it stands now it is shaping up to be a bigger loss year, from the Island and also in the southern interior and that's not good, package sales are above normal for this time of the year, and we generally don't see orders until the middle of January, good news is that so far everything is on track for the packages, Air Canada has committed two aircraft to three flights a week from Vancouver to Australia, New Zealand and back to Canada. This configuration allows the movement of bee stock from New Zealand without landing in Australia, which does not allow for transfer of bees from New Zealand through Australia to Canada.

In the last Year give or take I have been hearing quips about the Importation of queens from California. I am responsible for this we are responsible for that, Alberta spearheaded the importation etc. etc. so it is past time to put pen to paper and explain how the queens from the Continental U.S. were approved for importation into Canada

In 2004 there was a lot of friction about packages and Queens in western Canada especially from Alberta. At that time Heather Clay was the CEO of the CHC and I was a Member of the executive. In our discussions, Heather wanted to know if we paid the Apimondia dues or not, because the bank account was not that healthy. I told her that it there wasn't enough to pay her and Apimondia then pay herself and we would worry about Apimondia later. And then the discussion on the stock issue. Between Heather and I were certain that we stood a better and average chance of getting an agreement on the importation of Queens, then on both queens and Packages from the US. B.C. had a motion in the books to allow for the importation of Queens from the Continental U.S. Alberta had a motion to allow for both Queens and packages.

The plan was put into motion each province would have their PA and the president of their association and CHC rep at the meeting and that was it. I received a phone call one evening from a very angry Dale Hansen demanding to know why Derrick Johnson from the Coop was NOT ALLOWED TO ATTEND THE MEETING I explained that the Coop was a member therefore whoever they decided to send was their choice and was there a problem and he said he was told that was not happening, It was corrected. I called all the Presidents for the associations and Heather contacted the PA's and all were told they would have to pay their way as the CHC did not have the money to cover expenses, To our surprise there was great support for this initiative however there were a few hold outs. Then there was a request to have the meeting mediated, if there was no mediator then they were not willing to participate.

Heather went to work looking for mediators and we had a price of \$10,000 to do this, where to get the money. B.C. had received Approx \$60,000 from the Government in previous years and it was sitting in an account, THE chain attached to spending this money was IT had to benefit THE INDUSTRY. This fell in line with the strings attached to the money. I asked the BCHPA for the funds and explained what it was for. Jacquie Bunsie was the president at the time, the request was granted and we now had \$5,000 from B.C. to put towards the cause, then I approached the Alberta beekeepers and asked for the same amount, and again they kicked in the \$5,000 requested. The decision of who paid for the meeting was done between Heather and myself solely the two provinces who wanted the Queens and stood most to benefit from it were B.C. and Alberta and the



Stan Reist

British Columbia



Well looks like 2020 is behind us, to some it was the year from hell and to others it wasn't bad and to others it was good to above average. What we have seen is well above average in honey sales, people are just buying local honey. Yes we have seen hording but in most cases we have just seen

only provinces to have motions in favor of the openings. So now we had the money to hire the Mediator and we informed the participants that a mediator would chair the meeting. We still had some hold outs but gradually they agreed. Heather asked me which of the mediators to hire, your choice, Green Span out of Victoria or? The meeting place was decided to be in Kelowna starting the week before the BCHPA convention at the end of October. Money issues again arose because we couldn't pay for meeting rooms. As most people know if you're planning a convention the first questions from the facility are how many room nights and how many meals. And then that determined what else was thrown in. The BCHPA convention at the end of the week meant if we tagged on to that we upped the room numbers and the meal count and got the meeting rooms for nothing. That was good for us seeing that we didn't have the funds to do otherwise.

We had holdouts until the very last moment and then they agreed to participate, the meeting was held in Kelowna, The Mediators were from Victoria. Both Alberta and British Columbia five thousand dollars each, and the rest is history. At the start of the BCHPA meeting on Friday morning I announced that we had reached an agreement and it was now just working out the final details.

So who is responsible for the importation of Queens from the Continental US? Heather Clay did most of the ground work in arranging the meeting. I was the person inviting participants and requesting money to host it. Does that make us responsible?

So this is my take on it and you can agree or disagree as you wish. While Heather and I worked to pull the meeting together, B.C. and Alberta both contributed \$5,000 to hire the mediators without those contributions we could not have done it. IF ANY or ALL HAD SAID NO TO PARTICIPATING then it would not have happened. The reason it did happen was because the people in the positions at the time, Provincial Apiarists, presidents and CHC reps from all the provinces put aside their fears and concerns and agreed to cooperate with each other to improve the import conditions in Canadian beekeeping operations in allowing the Queens from the U.S. So who's responsible? If you were part of the above then you had a hand in the process, as individuals we are only responsible as part of the group. As to the statement that Alberta spearheading the importation of Queens from the continental U.S. that's not true. As you can read their contribution is listed. And they are a part of the process the same as the rest of the participants.

The CHC even when we were financially embarrassed was still able to pull Canadians together to make a better industry for all. So to say the CHC is controlled by hobbyists and does not represent commercial interests is completely false. The CHC made a modest profit in hosting Apimondia and we now have a cushion to work with. In this year of upheaval again the CHC has demonstrated it works for all beekeepers. The Chartering of flights for foreign workers, and the unexpected return of those foreign workers from Canadian beekeeping operations is just another example of what the CHC is about.

Heather Clay was one of the first steps in the improvement of the CHC. To start down the road of a paid executive officer. Heather was responsible for the collection of dues and if she didn't put the arm on you we didn't have the funds to operate and she didn't get paid. Heather carried us as far as she could, and then we moved on. I know no one who could have predicted where we would evolve to or what was coming. Since then we have gone through more changes. We now have Mr. Scarlett. From what we started out as and where we are now there is almost no comparison, Provinces are assessed dues and assessed hive levees and are billed and sent in. (some on time, not so others) The CHC put together a bid for Apimondia and we got it and then we had to deliver. Our main man behind that was Rod and we did it, although I have no idea how many years of life he contributed. This past year he has graduated from plane chartering courses. To manage our farm supply of foreign workers. If anyone were to review rods duties and expectations I know you're not going to find that either in small or large print. The CHC will continue to grow and evolve and we will stumble along the way but we are not going away.



Derrick Johnston Marks 40 Years with Alberta Honey Producers Co-operative!

These days, not many celebrate 40 years with the same company. Derrick Johnston, Manager of Bee Supplies and Member Relations at the Alberta Honey Producers Co-operative (AHPC) is one of those rare people.

Derrick began his career with AHPC in 1981. That Winter, he almost took off three fingers in a forklift accident. In Derrick's words, "they were squished pretty good. The doctor sewed them up, but I couldn't work in the warehouse." Derrick shared that it probably took about two months for his fingers to heal, and during that time he got started working in Bee Supplies.

Derrick exclaimed, "I can tell you – I hated those forklifts for a few years." He also worked in the plant quite a bit in the 1980s, but during beekeeping seasons, he would always be back in Bee Supplies and come fall, back in the warehouse or production. He looks back on that time fondly and appreciated the exposure to many facets of the business. Over the years, Bee Supplies and Member Relations eventually became his primary focus and today, he is a fixture in the beekeeping community. Everyone at Bee Maid Honey, Alberta Honey Producers Co-operative and the Manitoba Cooperative Honey Producers thanks Derrick for his tireless service and wishes him a very Happy 40th Anniversary!





Port Hope
5029 County Road 2,
Port Hope, ON L1A 3V5
T: 905 753 2523

Winnipeg
31000 Rosewood Road
Dutiesville, MB R5K 0P2
T: 204 866 2402

Hogg Comb Honey System

Ready to go! Place on a strong colony to produce delicious comb honey.

The Hogg honeycomb kit incorporates 40 cassettes in 10 frame honey super. Each cassette typically yields a 10-12 ounce sections.

- Coated with pure beeswax
- Efficiently produce comb honey
- Comes fully assembled
- Readily accepted by bees

Shop Online: www.dancingbeequipment.com
E: sales@dancingbeequipment.com

 100% Canadian Made
Woodenware & Stainless Steel

Dedicated to helping grow your apiaries in a cost effective and profitable way.

 www.facebook.com/dancingbeequipment

ApiLifeVar



**FROM THE VINEYARDS OF CALIFORNIA
TO THE CANADIAN MAPLE GROVES,
NO MATTER THE LOCATION,
APILIFEVAR WILL KEEP
YOUR BEES HEALTHY.**



In two studies conducted in Germany and Italy, **ApiLifeVar** showed the best efficacy results among the registered thymol treatments, even in continental climate.

Read the study



**AVAILABLE FROM
YOUR BEEKEEPING SUPPLIERS
IN THE USA AND CANADA**

MANN LAKE
WE KNOW BEES
An Employee Owned Company

BeeMaid
BEE SUPPLIES

**SYNERGY
OF 4 INGREDIENTS**



THYMOL



EUCALYPTUS OIL



L-MENTHOL



CAMPHOR



ALV09-135-A01-08/21

WWW.VETO-PHARMA.COM | INFO@VETOPHARMA.COM | FACEBOOK.COM/VETOPHARMA | INSTAGRAM.COM/VETOPHARMA

Check out our other solutions to support honey bee health on www.veto-pharma.com

Apivar
by Vétô-pharma

**varroa
easyCheck**
By Vétô-pharma

Api-Bioxal
Available only in the USA

Vétô-pharma
Committed to apiculture

New: Registration and distribution of ApiLifeVar in Canada

Health Canada's Pest Management Regulatory Agency (PMRA), under the authority of the Pest Control Products Act, has granted registration for the sale and use of ApiLifeVar for suppression of varroa mite in honey bee hives. Véto-pharma is the official importer of this mite treatment for the USA and Canada.

ApiLifeVar has been used in about 35 countries for several years, and is the current thymol-based product market leader in Europe. This success is due to its unique formulation, which is a solution composed by 4 natural ingredients: thymol, camphor, levomenthol and eucalyptus oil. This exclusive formulation allows a better release of thymol by contact in addition to the evaporation, improving efficacy. In addition, it allows a reduction in the dosage of thymol per hive, increasing tolerability to honey bees.

ApiLifeVar is currently distributed in the USA by MannLake and will shortly be available in Canada from BeeMaid Bee Supplies.

To learn more about ApiLifeVar:

Video "How to use": <https://youtu.be/Ule6w19ZST8>

Webinar: <https://youtu.be/qSKwcuiyXq0>

Véto-pharma is proud to offer a range of products to assist beekeepers in combating varroa: two effective miticides, Apivar (amitraz strips) and ApiLifeVar (thymol tablets), as well as Varroa EasyCheck, an innovative device for varroa monitoring.



PROUDLY OWNED BY CANADIAN BEEKEEPERS

BeeMaid



Canada's
beekeeping
source

We can handle your sugar
requirements. Dry or liquid
– small lots or trailer loads.

Bee Maid buys light
and dark beeswax
at competitive prices.

TOP QUALITY PRODUCTS FOR BEEKEEPERS

- | | | |
|------------------------------|--------------------|----------------------------|
| • Foundation | • Hive Equipment | • Extracting Equipment |
| • Queen Rearing Supplies | • Novelties | • Medications & Treatments |
| • Beekeepers Apparel & Tools | • Honey Containers | • Packaged Bees & Queens |

Contact your nearest outlet:

BeeOutfitters

Manitoba Cooperative
Honey Producers
625 Roseberry Street
Winnipeg, MB R3H 0T4
204.783.2240 ext. 228

Bee Maid
Honey
Highway #3
Tisdale, SK S0E 1T0
306.873.2521

Alberta Honey
Producers Co-operative
70 Alberta Avenue, Box 3909
Spruce Grove, AB T7X 3B1
780.962.5573

Shop online at:

www.beemaidbeestore.com

www.beemaid.com



COWEN

MANUFACTURING CO. INC.



www.cowenmfg.com

Technology and Nature
working together sure is sweet!

“BUY COWEN”
800-257-2894

Why Are Honey Bees Such Great Pollinators?



Author: Heather Broccard-Bell, Ph.D.

Dr. Heather Broccard-Bell is the Honey Bee Health Researcher at NOD Apiary Products Ltd. Heather shares her passion for honey bees through interactive lectures and workshops. Heather has been conducting and teaching research for over 15 years, with recent focus on honey bee health and communication.

The Western Honey Bee is a Pollinator Pro

As I am sure you are well aware, there are a whole lot of different kinds of pollinators out there: from the familiar bees to other insects, like flies and beetles, to birds, and even bats! Each is important, and each has a role to play. Within this diverse group of animals, however, the Western Honey Bee, *Apis mellifera*, stands out—especially when it comes to the pollination of food crops, like fruit and nut trees¹. Interestingly, the Western Honey Bee (hereafter referred to as the honey bee, even though there are actually several other species of honey bee²) is somewhat of a “perfect storm” of factors that, combined, make it a powerhouse pollinator.

Honey Bees are Hearty Little Creatures

First, honey bees are widespread. Like really widespread. Although there is some disagreement, they are thought to be native to Asia, with expansion into Africa and Europe about 1 million years ago^{2,3}. We humans have been keeping honey bees for their delicious honey for thousands of years—which means that we’ve also been taking them with us as we moved around the planet, and this has expanded their already large range considerably. Thanks to their particular way of life, honey bees don’t just tolerate a huge diversity of climates, they positively thrive in them. For example, where I am in Ontario, Canada, feral honey bee colonies are perfectly capable of overwintering all on their own, without the help of anyone, thank-you very much. Like it or not⁴, honey bees are now well established on every continent, except Antarctica.

They Aren’t Picky Eaters

Second among the reasons for the honey bee’s outsized influence on pollination is a combination of two factors: Not only is it a “super-generalist” forager (meaning that it isn’t picky about what it eats), it’s also a very efficient pollinator (honey bees are quite excellent at transferring pollen between plants)³. In the natural world, there are many examples of plants and pollinators that are so precisely adapted to one-another that each species literally cannot survive without the otherⁱⁱⁱ. The honey bee is decidedly not one of these species. Although honey bees certainly do have preferences, they will ultimately gather nectar and pollen (“forage”) on a wide range of flowering plants, especially if there is nothing else available.

Super Seeking Breeds Success

A third reason honey bees are so important as pollinators, and the focus of this post (as well as a lot of my past research) is that, compared to other animals, honey bees are really, really good at foraging. Now, it’s absolutely true that humans have selectively bred domestic bees specifically for this trait so as to maximize honey production. However, what’s going on with honey bees is much more than just selective breeding. Probably the biggest reason for the global success of honey bees is that they are naturally exceptional communicators.

Communication is Key

You are probably familiar with honey bee communication in one form or another. A lot of us know that the queen releases “queen pheromone”, a cocktail of chemicals that has varied effects depending on the context, like suppressing the development of worker ovaries, and promoting calmness during swarming⁴. Almost everyone is familiar with the “alarm pheromone”—that banana-smelling odour (or household cleaner scent, depending on who you ask) that greets the nostrils when a beekeeper has been a touch too indelicate handling her colony. Alarm pheromone, released especially when a bee is crushed or stings, signals to nearby workers that the colony is under attack, and a defensive response is then mounted⁵.

Not all communication in the colony is odiferous. Sometimes, it involves taste. For instance, returning foragers may offer up a sample of the contents of their honey stomach to bees in the hive in an act called

► pag. 15



**Working in partnership with the
Canadian Honey Council.**

FUMAGILIN-B
 Soluble Powder 50 Powder soluble 50
 fumagilin
 difenitofolylammonium HB
 Equivalence fumagilin 2
 21 mg fumagilin base HB
 For Veterinary Use Only
 Usage vétérinaire seulement
 Canadian Home Oils
 1555-15th Avenue Road S.E.
 Burnaby, B.C. Canada V5C 3H6
 1-877-333-6955
 Manufactured by Dividing Inc.
 10000 Avenue Health Sciences, St.
 11, Sherbrooke, J1K 2R5, Québec, Canada
 1-877-333-6955



14 | Fall 2021 | HiveLights

“trophallaxis”. Trophallaxis lets the recipient do things like assess the quality of the nectar being brought into the hive⁶.



Figure 1: Honey bees engaging in trophallaxis (photo credit: H. Broccard-Bell).

The Dance Language

Yet another form of honey bee communication happens through vibrations. The most famous of which is the waggle dance. While most beekeepers are aware of this dance language, it can be tricky to catch. Unless you have an observation hive or have been lucky enough to watch a swarm hanging from a tree branch for some time (honey bees also use waggle dancing when they are house hunting), you may have never seen it yourself. Many people have noted this unique movement throughout the ages, but it wasn't until the twentieth century that German scientist, Karl von Frisch, finally figured out its meaning⁷.

A Map Made of Dance Moves

The waggle dance is performed by foragers who have recently returned to the colony from a successful foraging trip. Its purpose? To tell other members of the colony how to find the site they've just visited. Dancers are keenly observed by other bees in the colony called “dance followers”, and the more rounds these bees “watch”, the more precisely they are able to navigate⁸. Each round of the waggle dance consists of two parts: a “waggle run” and a “return”. During the waggle run, the dancer walks forward in a straight line, swinging her rear end back and forth rapidly or “wagging”. At the end of the waggle run, the dancer stops her butt-swinging, turns, and circles back to her approximate starting position. Each time she ends a waggle run, she circles back in the opposite direction to the time before, roughly tracing out a path in the shape of a figure eight.

When it comes to waggle dancing for foraging purposes, it is performed inside the colony, a normally dark place where vision is of little use. Unbeknownst to the casual human observer, the waggle portion of the dance actually makes a sound! The sound is reminiscent of a helicopter, however, you'd need a special omnidirectional microphone and some spare time to be able to hear it⁹. I mentioned earlier that the dance followers watch the dance, but this is incorrect. In fact, they listen to it—although not in anything like the way people listen to sounds¹⁰. Honey bees use special organs on their legs to feel the vibrations that we hear as sound. Along with taste and smell, vibrations are one of the main methods of communication used by honey bees.

Giving Good Directions

Anyone who has ever tried to find a new location knows that a good set of directions must answer at least two key questions: How far away is it? And in what direction? Fortunately for honey bees, the waggle dance has these necessary bits. The length of the waggle run, in terms of how long it lasts, tells the followers how far away the foraging site is. One second of waggle run is roughly equivalent to 1 km of distance. Distance is relatively straightforward and easy to understand, but things

get a little trickier when we consider how the waggle dance indicates direction.

Regardless of whether they are feral or managed, honey bees operate on vertical surfaces inside their nests. Thus, waggle dancing is naturally performed on a vertical surface (think of a fly on a wall). Their directions are based on two similarities that honey bees share with other animals: the ability to sense gravity and the use of the sun to navigate. Yet, unlike any other animal that we know of, honey bees combine these skills to communicate. Using gravity as their reference inside the colony, bees give instructions that “point” their followers in the desired direction to fly when leaving the colony.

Remember the waggle run that I described earlier? The specific direction the waggle dancer walks in, relative to straight up, tells the dance followers which way to fly when they leave the colony. If she were to walk straight up, this would mean, “fly directly toward the sun”, and if she were to walk straight down, it would mean, “fly directly away from the sun.” Using this system, waggle dancers can indicate any direction—provided that the sun isn't directly overhead.

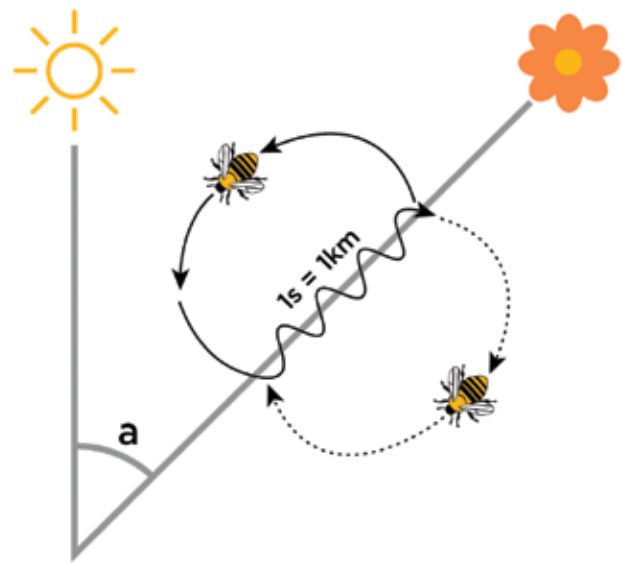


Figure 2: Diagram of the waggle dance used by honey bees to share directions with other foragers (image credit: NOD Apiary Products).

Bees Share Location Reviews for Five-Star Feeding

One last piece of information contained in waggle dances, albeit indirectly, is how good the foraging site is. Like many humans, each worker bee is a special little snowflake with her own unique personality (seriously, there is a whole scientific literature on this^{10,11}). Some bees will visit a flower, fly back to the hive, and do a waggle dance for several minutes, leading a number of foragers from the colony to visit that same spot. Another bee may visit the exact same flower, at exactly the same time and not dance for it at all, directing no additional foragers to the location.

Individual bees will also decide to dance more or less for a site. Performing many rounds of a waggle dance allows more dance followers to follow her instructions to visit that site. Whether or not a bee

performs a waggle dance, and for how long, depends on how highly she rates the quality of the spot she found. This rating is dependent on two factors: 1) genetics, which determine how sensitive she is to things like the sugar concentration of nectar¹¹, and 2) the state she is in at that moment (i.e., her “mood”), which depends on things like the availability of food in the environment, and her recent foraging experiences. In general, more bees will dance for high-quality foraging sites and each will dance for a longer time. This means that more foragers are directed toward good foraging sites than to bad ones, ultimately allowing the colony to gather the most resources from the best sites¹².

So, to sum it up (TLDR), the waggle dance tells followers the distance and direction they need to travel in to find a good food source, and indirectly indicates the quality of the resource. Unlike any other insect that we know of, honey bees seem to be able to “talk” about something (the location of a source of food) that isn’t right in front of them. This complex communication allows them to gather food in a much more efficient way than any of their relatives. For example, bumble bees also live in colonies, but their colonies are much smaller. Bumble bees are not able to stockpile food the way that honey bees do resulting in limited size of colonies—and this is because they do not communicate the location of resources to each other the way honey bees do. Every individual leaving a bumble bee colony to gather food is, at best, relying on her own memory, and at worst, having to start her search completely from scratch, with no information to go on at all—an arrangement that is much more time-consuming than the honey bee’s strategy^{13,14}.



Figure 3: A forager performs a waggle dance while several dance followers observe (photo credit: H. Broccard-Bell).

But Wait—There’s More!

Actually, there is a lot more when it comes to honey bee communication. People build whole careers around studying it because there is so much to know! For this article, however, I am going stick to telling you about two more vibrational signals used by honey bees.

The tremble dance looks a little bit like a waggle dance to the uninitiated, but rather than the periodic waggle – return – waggle – return, it’s kind of all waggle, all the time. Unlike the waggle dance, the tremble dancers don’t seem to be moving in any particular direction (although we understand the tremble dance and its functions to a much lesser degree, so it is possible scientists have missed this aspect so far). At least one purpose of the tremble dance, which is often performed by nectar foragers shortly after they return to the hive, seems to be to shift what everyone else is doing in the colony. Normally, nectar foragers get help unloading their nectar by younger in-hive bees. When a lot of nectar is

being gathered, however, there may be no in-hive bees available to help with the offloading. Tremble dancing appears to cause a shift in the jobs being performed by the in-hive bees, leading them to prioritize helping with the nectar offloading. In other words, tremble dancing allows the colony to adjust its behaviour to meet its own needs at that moment in time¹⁵.

And this brings us to our final type of vibrational signal: the stop signal. If you watch enough waggle dancers, you’ll see a move that looks like one of the dance followers is head-butting the waggle dancer. This causes the waggle dancer to briefly pause, giving this move its name. With the aid of that special omnidirectional microphone I mentioned before, you can hear that the head-butt is accompanied by a little “eek” sound. The vibration produced by this sound is actually what makes the waggle dancer stop. While the waggle dancer may start up again, a stop signal has the effect of making it more likely that she will not continue dancing and spreading her message¹⁶.

But why stop this waggle dancing fun? If a forager visits a site and encounters danger there (maybe a spider or some other bee predator), or find that the site has become over-crowded, she will return to the colony, locate waggle dancers advertising that site, and tell them to STOP. Interestingly, she doesn’t find the dancers by decoding the waggle dances, which would take too long. Instead, the returning forager takes a short-cut: she smells the waggle dancers to see who smells like the site she was just at, and targets them. Since the stop signal causes dancers to stop dancing, fewer bees are sent to the now dangerous or crowded site¹⁷.

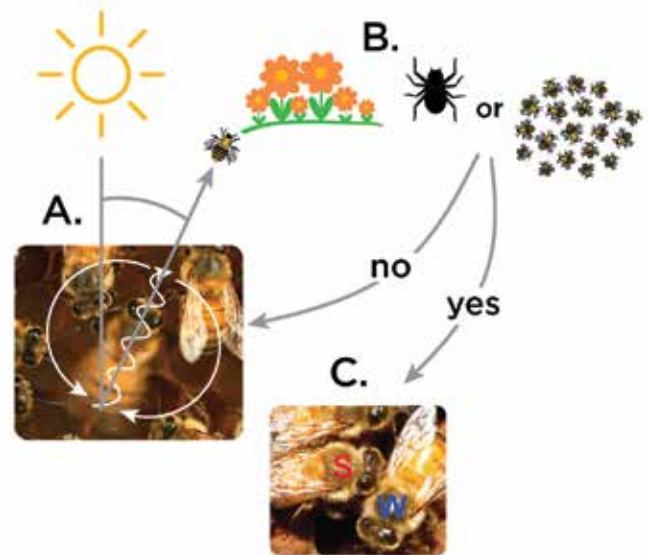


Figure 4: Diagram of waggle dance and stop signal: A. waggle dance is performed, which leads to B. dance followers following the directions to find the good patch of flowers. If foragers encounter danger or overcrowding at the patch, they will C. return to the colony, find waggle dancers advertising that location, and tell them to stop! Note that if the forager DOES NOT have a bad time at the flower patch, she will come back to the colony, not tell anyone to stop dancing, and may even perform a waggle dance of her own. (image credit: NOD Apiary Products; photos: H. Broccard-Bell).

Communication Creates a Super Pollinator

We have discussed three vibrational signals that honey bees use to help the colony gather food for itself in a highly efficient way. Waggle dancing allows foragers to tell other foragers how to get to the best sites,

tremble dancers cause in-hive bees to prioritize nectar storage when a lot of nectar is being brought in, and stop signals cause waggle dancers to stop advertising sites that have become dangerous or crowded.

I hope you are now able to get a sense of just how amazingly well-adapted honey bees are to foraging—which brings us back to pollination! Honey bees are successful because their communication system allows them to forage so efficiently that they can stockpile vast quantities of food, which, in turn, allows their colony sizes to be very large. Large numbers of bees foraging on an ever-shifting landscape of foraging sites translates into a lot of pollen movement, which further translates into a LOT of pollination. Honey bees are super pollinators because they are super-communicators! ■

Footnotes:

i. *Apis mellifera* is one of between 7 and 12 species (depending on which authority you want to go with) in the genus *Apis*, all of which are colony-living honey bees. Most species except *Apis mellifera* are found only in Africa and Asia, but many of them are kept, at least to a limited extent, in managed colonies for their honey¹⁸.

ii. It is important to note that some researchers now suspect that honey bees can outcompete native species for food sources¹⁹, and recent evidence suggests that some honey bee diseases may “spill-over” into native species^{20,21}. Although the impact of honey bees on other pollinators is not always positive, we can minimize these impacts through best management practices, such as treating for pathogens like *Varroa*. For the reasons discussed in this article, even if we wanted them to, honey bees are not going anywhere any time soon!

iii. Probably the most famous example of host-pollinator co-evolution is a species of orchid, now known as Darwin’s orchid, and its pollinator, Morgan’s Sphinx Moth. When Darwin first examined the newly-discovered orchid, he surmised that there must exist a moth species with a proboscis long enough to pollinate it. In fact, this turned out to be the case – although the moth itself was not discovered until well after Darwin’s death²².

iv. I will be covering how bees hear the world—as well as see, taste, and smell it—in upcoming blog posts!

References:

1. United States Food and Drug Administration (2018). Helping the helpful honey bees. <https://www.fda.gov/animal-veterinary/animal-health-literacy/helping-agricultures-helpful-honey-bees#American>
2. Han, F., Wallberg, A., & Webster, M. T. (2012). From where did the Western honeybee (*Apis mellifera*) originate? *Ecology and Evolution*, 2(8), 1949-1957.
3. Hung, K. L. J., Kingston, J. M., Albrecht, M., Holway, D. A., & Kohn, J. R. (2018). The worldwide importance of honey bees as pollinators in natural habitats. *Proceedings of the Royal Society B: Biological Sciences*, 285(1870), 20172140.
4. Princen, S. A., Oliveira, R. C., Ernst, U. R., Millar, J. G., van Zweden, J. S., & Wenseleers, T. (2019). Honeybees possess a structurally diverse and functionally redundant set of queen pheromones. *Proceedings of the Royal Society B*, 286(1905), 20190517.
5. Free, J. B., & Simpson, J. (1968). The alerting pheromones of the honeybee. *Zeitschrift für vergleichende Physiologie*, 61(3), 361-365.
6. Tezze, A. A., & Farina, W. M. (1999). Trophallaxis in the honeybee, *Apis mellifera*: the interaction between viscosity and sucrose concentration of the transferred solution. *Animal Behaviour*, 57(6), 1319-1326.
7. von Frisch, K. (1967). The dance language and orientation of bees. Harvard University Press.
8. Tanner, D., & Visscher, K. (2009). Does the body orientation of waggle dance followers affect the accuracy of recruitment?. *Apidologie*, 40(1), 55-62.
9. Wenner, A. M. (1962). Sound production during the waggle dance of the honey bee. *Animal Behaviour*, 10(1-2), 79-95.
10. Humphries, M. A., Fondrk, M. K., & Page, R. E. (2005). Locomotion and the pollen hoarding behavioral syndrome of the honeybee (*Apis mellifera* L.). *Journal of Comparative Physiology A*, 191(7), 669-674.
11. Rueppell, O., Chandra, S. B., Pankiw, T., Fondrk, M. K., Beye, M., Hunt, G., & Page, R. E. (2006). The genetic architecture of sucrose responsiveness in the honeybee (*Apis mellifera* L.). *Genetics*, 172(1), 243-251.
12. Hrncir, M., Maia-Silva, C., McCabe, S. I., & Farina, W. M. (2011). The recruiter's excitement—features of thoracic vibrations during the honey bee's waggle dance related to food source profitability. *Journal of Experimental Biology*, 214(23), 4055-4064.
13. Heinrich, B. (1976). The foraging specializations of individual bumblebees. *Ecological Monographs*, 46(2), 105-128.
14. Heinrich, B. (1979). "Majoring" and "minoring" by foraging bumblebees, *Bombus vagans*: an experimental analysis. *Ecology*, 60(2), 245-255.
15. Seeley, T. D., Kühnholz, S., & Weidenmüller, A. (1996). The honey bee's tremble dance stimulates additional bees to function as nectar receivers. *Behavioral Ecology and Sociobiology*, 39(6), 419-427.
16. Nieh, J. C. (1993). The stop signal of honey bees: reconsidering its message. *Behavioral Ecology and Sociobiology*, 33(1), 51-56.
17. Nieh, J. C. (2010). A negative feedback signal that is triggered by peril curbs honey bee recruitment. *Current Biology*, 20(4), 310-315.
18. Food and Agriculture Organization of the United Nations (n.d.). Chapter 1: Honey bees of the Genus *Apis*. <http://www.fao.org/3/x0083e/X0083E02.htm>
19. Hung, K. L. J., Kingston, J. M., Lee, A., Holway, D. A., & Kohn, J. R. (2019). Non-native honey bees disproportionately dominate the most abundant floral resources in a biodiversity hotspot. *Proceedings of the Royal Society B*, 286(1897), 20182901.
20. Dalmon, A., Diévar, V., Thomasson, M., Fouque, R., Vaissière, B. E., Guilbaud, L., ... & Henry, M. (2021). Possible spillover of pathogens between bee communities foraging on the same floral resource. *Insects*, 12(2), 122.
21. Alger, S. A., Burnham, P. A., Boncristiani, H. F., & Brody, A. K. (2019). RNA virus spillover from managed honeybees (*Apis mellifera*) to wild bumblebees (*Bombus* spp.). *PloS one*, 14(6), e0217822.
22. California Academy of Sciences (n.d.). Darwin's hawkmoth. <https://www.calacademy.org/explore-science/darwin%E2%80%99s-hawkmoth>



OVERWINTER PROTECTOR

HiveAlive Fondant Patty

Premium sugar patty ideal for overwinter/spring/emergency feeding

NEW!



- Correct dosage of HiveAlive added
- Thin design for easy placement close to the cluster
- Additional vitamins & amino acids key for bee health
- Very fine particle sized sugar for enhanced digestion
- 1kg/2.2lb patties available individually or in cases of 15 patties

Feed HiveAlive for proven benefits:



MORE BEES



MORE HONEY



REDUCED OVERWINTER LOSSES



HEALTHY BEE GUT



Ask for HiveAlive Fondant at your local beekeeping store or visit www.usa.hivealivebees.com to find your nearest stockist!



The #1 Feed Supplement for Honeybees Worldwide

Fed to over 9 million colonies worldwide



Crossing Borders: New Research in Canada, and Our Newest Science Advisory Committee Member



Beekeeping is a big industry and interest in Canada. In 2019, Canada produced 80.4 million pounds of honey, and in 2017 pollination services in Canada were estimated to contribute between 4.0 and 5.5 billion dollars to the nation's economy.¹ Canada is a major producer of canola and blueberries, two crops that benefit greatly from pollination services. Unfortunately, beekeepers in Canada face similar challenges to those in the U.S. making research a necessity for improving honey bee health, creating and optimizing tools for beekeepers. In 2020, the Canadian Association of Professional Apiculturists (CAPA) reported 30.2% colony losses over winter, nationally, with some provinces losing as many as 40.7% of their colonies.



**Looking to expand,
or cover winter losses in 2021?
Time to consider mite-free
package bees from Tasmania
and Western Australia.**



Available in 1 kg,
1.5 kg and 2 kg
packages with
mated queen



Australian Bees
are strong foragers
and adapt well to
Canadian conditions



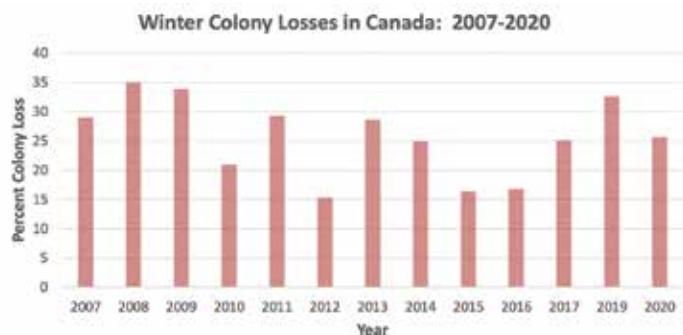
Packages can be
picked up at Major
Canadian International
Airports or delivered to
your yard



AQIS and
CFIA certified

For more information or to book a zoom appointment please get in touch:
Call Martin @ **604.880.4373** or Gloria @ **306.496.7522**

www.aussiebees.ca



A chart of colony losses in Canada from 2007-2020. Data sourced from the 2020 CAPA statement on colony losses.² In 2020, survey respondents represented approximately 50% of all registered colonies in Canada.

Sponsored by Costco Canada, in December 2020 Project Apis m. issued a call for proposals to support honeybee health and the food supply chain in Canada. The call was answered! Submitted proposals numbered in the double digits and were narrowed down through careful consideration by Project Apis m.'s Science Advisory Committee, which included two guest Canadian researchers, Heather Higo, and Dr. Marta Guarna, who volunteered their time to review the Canadian proposals.

The final selections were made at the beginning of June 2021. Three projects were chosen, with funding awards of 100,000 CAD, and 199,404 US sponsored by Costco Canada and Costco US respectively. The projects address the most immediate concerns for honey bee health with a focus on beekeeper tools and services:

Dr. Renata Borba, who leads the Alberta Beekeepers Tech Transfer team, was awarded 100,000 CAD over two years for her proposal, "Promoting Alberta's beekeeping industry sustainable growth through the expansion of the Tech Transfer Program." This project will take place primarily in Alberta, a major honey producing and pollination hub for Canada, and will increase the services available for beekeepers such as disease surveillance, training, and outreach.

Dr. Stephen Pernal, with Canada Agriculture and Agri-Food Canada, and Co-PI, Dr. Erika Plettner of Simon Fraser University, were awarded 166,170 USD over two years for their project, "Field Trials of a New Acaricidal Compound Against Varroa destructor in Honey Bee Colonies." Beekeepers need new options for mite control now more than ever. Varroa mite infestation, and the associated diseases, drive colony loss year after year, and resistance to existing miticides is a looming threat. This project will help advance a new treatment towards commercial availability.

Dr. Albert Robertson, of Meadow Ridge Enterprises Ltd, along with cooperators: Patricia Wolf-Viega, of the National Bee Diagnostics Center, and Dr. Declan Schroeder, of the University of Minnesota, were awarded 33,234 USD, for their project, "Increasing Honey Bee Colony Survival Through Combined Miticide Treatments and Use of Varroa Tolerant Strains." This project, while working with a Varroa tolerant strain of bees, seeks to identify mite treatments that result in lower levels of the bee viruses that are vectored by Varroa and are major contributors to colony loss.

In addition to new research, Project Apis m. is excited to announce that Dr. Marta Guarna will join the Project Apis m. team as a new Science Advisory Committee member. Dr. Guarna is a Research Scientist with Agriculture and Agri-Food Canada and an Adjunct Professor at the University of British Columbia. She brings a rich background to her work on bees, both in the lab and the field. Dr. Guarna is a member of American Association of Professional Apiculturists, the Entomology Society of America, the BeeHIVE Research Cluster, which

takes a multi-disciplinary approach to tackle complex honey bee issues, COLOSS, and the BeeBiome Consortium. Dr. Guarna also serves as chairperson of the Canadian Association of Professional Apiculturists' Research Committee, and the Canadian Bee Research Fund, and currently her research focus is on queen health, bee pathogens, and pollination.



New PAm. Science Advisor, Dr. Marta Guarna, in the field, 2019

Research Committee, and the Canadian Bee Research Fund, and currently her research focus is on queen health, bee pathogens, and pollination.

Dr. Guarna and Project Apis m. have worked together before, with projects funded on queen health and sperm viability, as well as bee health while pollinating highbush blueberries. Dr. Guarna will bring valuable knowledge about the Canadian beekeeping industry and its challenges to Project Apis m.



New PAm Science Advisor, Dr. Marta Guarna and team study honey bee health during high bush blueberry pollination in Canada in 2019.

Project Apis m.'s executive director, Danielle Downey, says, "Although the Canadian and US beekeeping industries are very different, the losses- and stakes- are high in both places. With funding from Costco Canada, and adding perspectives like Dr. Guarna brings, PAm's expanding support for Canadian research projects will address key challenges both industries face. As an alumni of a Canadian research lab, I am also excited to work more with Canadian colleagues."

Project Apis m. looks forward to increasing its impact in Canada and seeking solutions for beekeepers on both sides of the border. Support through research for beekeepers in North America will help secure the population of healthy honey bees needed to provide crucial pollination services and honey production. We thank Costco Canada for this funding and the Canadian Honey Council for their cooperation. To stay up to date on these projects and other PAm-funded research be sure to visit our research page! ■

Resources for this article:

- 1: <https://www.agr.gc.ca/eng/canadas-agriculture-sectors/horticulture/horticulture-sector-reports/statistical-overview-of-the-canadian-honey-and-bee-industry-2019/?id=1594646761058>
- 2: <https://capabees.com/shared/CAPA-Statement-on-Colony-Losses-FV.pdf>

crème de la crème

**DISCOVER
THE ULTIMATE
HONEY CREAMING
MACHINE**

**SUPER SMOOTH
90% FASTER**

creampal.com **creamPAL™**

**PREMIUM NEW ZEALAND
PACKAGED BEES**

- 1^{KG} PACKAGES
- 1.5^{KG} PACKAGES
- YOUNG BEES
- QUALITY MATED QUEENS

CONTACT:
Paradis Honey Ltd
Mike @ 780-323-4183
Paradishoney@outlook.com

Paradis Honey Ltd
Est. 1974

**SJA
HONEY**

PARADISHONEY.COM SJA.CO.NZ

COUNTRYFIELDS.CA

Shop Local.  Shop Online.


Come Visit Our New Location!
Largest In Stock Selection of Beekeeping and Honey
Equipment in Atlantic Canada!



Competitive Prices. Bulk Order Discounts. Open Year Round.
We Ship throughout Canada at Cost!

MANN LAKE WE KNOW BEES
GALLAGHER
BeeLine
Veto-pharma Committed to apiculture
beebest
BJ SKEELIFF
NOD NOD PRODUCTS
Dadant
GLOBAL Patties

www.countryfields.ca
11 Falls Run, Fall River, NS
Tel: 902-574-3079 or 1-877-505-6363

 **POELMAN
APIARIES Ltd.**

Jerry Poelman
Ph: 1-403-687-2440
pollenpal@gmail.com
www.palbee.ca

We render and
purchase all grades of
beeswax.
We sell wax, pollen,
and metal lids cut to
your specs.

Certified Honey Drums
Industry Standard - Double Rib

**New or Reconditioned
New Rings - Bolt or Lever Style**

For ordering, please contact:

Oaknook Honey Products Ltd.
Ph: (204) 548-4060
Em: info@oaknookhoney.com

OAKNOOK
HONEY PRODUCTS LTD
www.oaknookhoney.com

Impacts of Covid-19 on Canadian Beekeeping in 2020: Part 2

Prepared by Matthew Polinsky, Miriam Bixby, and M. Marta Guerra

Part 1 of this article appeared in the Summer edition of *HiveLights*, where we reported initial results from a study on the impacts of Covid-19 on Canadian beekeepers. In part 2, we continue this report and include results from a follow up economic modeling and profitability analysis which is published in the *Journal of Economic Entomology* and can be accessed at: <https://doi.org/10.1093/jee/toab180> (Bixby et al, 2021).

The Covid-19 pandemic began to affect Canada in early March 2020 at the same time that beekeepers across the country were just beginning their beekeeping seasons. Global transportation quickly came to a standstill, operating internationally at 2% of pre-pandemic levels by the end of April 2020 and only returning to 16% of pre-pandemic levels by the end of the year (UN News). Disruptions to domestic and global travel created obstacles to the safe and timely importation of queens and package bees, as well as hindered arrivals of the foreign labour workforce integral to the Canadian apicultural sector.

To learn more about the range of impacts from these travel disruptions and to gauge the economic implications for Canadian beekeepers, we began a study in the fall of 2020 by disseminating surveys in French and English via provincial apiculturists. By the spring of 2021, we had received 205 beekeeper responses from eight provinces. Beekeepers were asked about several beekeeping activities and how these were affected by the COVID-19 pandemic in 2020. The survey included questions about: the employment of local workers and temporary foreign workers (TFWs), importation of queens and packages, effects of disruptions on colony interventions, the adoption of new workplace health and safety regulations, and impacts on colony numbers and revenue sources as a result of COVID-19 disruptions. Respondents indicated that their beekeeping operations were significantly impacted by the disruption to both bee importation and temporary foreign worker arrivals.

Labour Challenges

Out of 205 surveyed beekeepers, 54% hire temporary foreign workers (TFWs) annually and 75% of those beekeepers reported that TFWs make up over 50% of their workforce, while 46% reported that more than 75% of their workforce is comprised of TFWs. Ninety-two percent of beekeepers who hire TFWs annually reported delays and cancellations of worker arrivals. Of those, 46% reported more than 80% of their workforce were delayed, and 19% reported more than 80% of their TFWs did not arrive at all.

TFW DELAYS & CANCELLATIONS

46% OF BEEKEEPERS REPORTED

>80%

DELAYED

19% OF BEEKEEPERS REPORTED

>80%

CANCELLED

Thirty-seven percent of respondents said that the challenges with TFW arrivals caused disruptions to their regular beekeeping management systems and 27% reported that their income was affected. The most impacted areas of colony management due to TFW delays and cancellations were: a reduction in colony interventions (35%) and delays in re-queening (25%). Spring colony management interventions such as health checks, treating and feeding, re-queening and dividing colonies in preparation for pollination contracts and honey production are especially time sensitive in the short northern beekeeping season. Thus, beekeepers in 2020 tried to make up for the labour shortages by hiring local residents or using family labour until TFWs could arrive. However, 58% of respondents reported a timing gap of 2 to 6 weeks between when TFWs were scheduled to begin work and when they arrived or when local workers were hired. Respondents reported difficulty finding local workers and in 92% of cases, those who managed to hire local workers reported a productivity gap between their local workforce and their typical TFWs. When asked about the reasons for the productivity gap, respondents reported that local workers were less skilled (51%), local workers quit for unknown reasons (28%), and locals quit due to receiving CERB (Canadian Emergency Relief Benefit) (28%). In no cases did respondents indicate that local workers were more skilled than their traditional temporary foreign workers. Most local workers hired to fill in gaps were under the age of twenty-five; 15-18 years (39%), 19-24 years (31%), 25- 29 years (12%), and >30 years (18%). Many respondents mentioned relying on friends and family members, especially those who had lost employment due to shutdowns in the early months of the pandemic, to fill gaps in employment due to TFW arrival disruptions and difficulty finding local workers.

Age range of new local hires

39% 15-19 YEARS OLD

31% 19-24 YEARS OLD

12% 25-29 YEARS OLD

18% >30 YEARS OLD

Despite difficulties receiving their TFW workforce, the majority of respondents said that going forward, they intend to maintain the same number of TFWs as they hired pre-pandemic (63%), or increase the number they hire annually (23%), highlighting the value of skilled and experienced foreign workers in Canadian apiculture. Other impacts on operations and staff management due to Covid-19 included: PPE costs (19%); increased vehicle costs due to social distancing (17%); paid labour during quarantine (16%); fewer workers and less output (16%); reduced efficiency due to social distancing (13%); and reduced efficiency due to mask wearing (8%). Due to these labour challenges in 2020, 30% of beekeepers reported operating fewer colonies than usual, and for the respondents who participated in pollination rentals, 25% reported a reduction in the number of rental colonies available. Besides the decline in colonies, shortage of skilled labour and rapid adaptation of new workplace health and safety procedures contributed to beekeepers' difficulties managing colonies for maximum health and productivity.

Access to Replacement Stock

Thirty-six percent of beekeepers who were expecting queens in 2020 reported delays and cancellations, while 40% of beekeepers expecting package bees experienced delays and cancellations. For those with package cancellations and/or delays, over a third reported delays and nearly two thirds reported cancellations of more than 75% of their packages.

PACKAGE DELAYS & CANCELLATIONS

36% OF BEEKEEPERS REPORTED

>75%
DELAYED

63% OF BEEKEEPERS REPORTED

>75%
CANCELLED

According to the beekeepers, Covid-19 related disruptions in queen and package arrivals resulted in the following: general disturbances across operations/management (33%); loss of income (33%); altered regular hive management practices (31%); impacted wages (11%) and training (8%). Respondents indicated that specific aspects of colony management were significantly affected by these arrival disruptions, in particular: reduction in number of colonies (23%); delayed re-queening (20%); increased number of splits (14%); increased queen rearing (12%); reduction in colony interventions (9%); and purchasing more bees locally (10%). All beekeepers, whether they did or did not require access to foreign labour or bees, reported experiencing impacts in the following areas: employees (23%), daily operations (20%), finance (20%), selling honey locally (10%), colony health (8%), selling hive products (7%), selling honey (7%) and only 2% reported difficulty selling honey internationally. Forty-seven percent of respondents said the pandemic did not affect their access to markets, while 24% reported less access to markets and 18% said their access improved. Lastly, 48% of beekeepers reported a reduction of their revenues due to the pandemic.

48% OF RESPONDENTS REPORTED A DECREASE IN REVENUES IN 2020

The survey confirmed that Canadian beekeepers faced two major challenges due to the COVID-19 pandemic: 1) disrupted importation of honey bee queens and bulk bees used to maintain or re-establish stock and 2) disrupted arrival of temporary foreign workers. These challenges resulted in fewer colonies and suboptimal colony management, culminating in higher costs and lower productivity. We developed a profitability model to estimate the impact of these disruptions on colony profit. Our model indicates that if a beekeeper experiences only bee import or only TFW disruptions, the colony profit would decrease between 55% and 83%. In the case of both bee and TFW disruptions, however, profit falls by between 103% and 176%. Overall, the impact of Covid-19 on apicultural profits depends on the beekeeper's ability to compensate for the disruption with local bees and local workers.

"The economic and agricultural impacts from the COVID-19 pandemic have exposed a vulnerability within Canada's beekeeping industry stemming from its dependency on imported labour and bees. Travel disruptions and bor-

der closures pose an on-going threat to Canadian apiculture and highlight the need for Canada's beekeeping industry to strengthen domestic supply chains to minimize future risks." (Bixby et al, 2021)

Acknowledgements

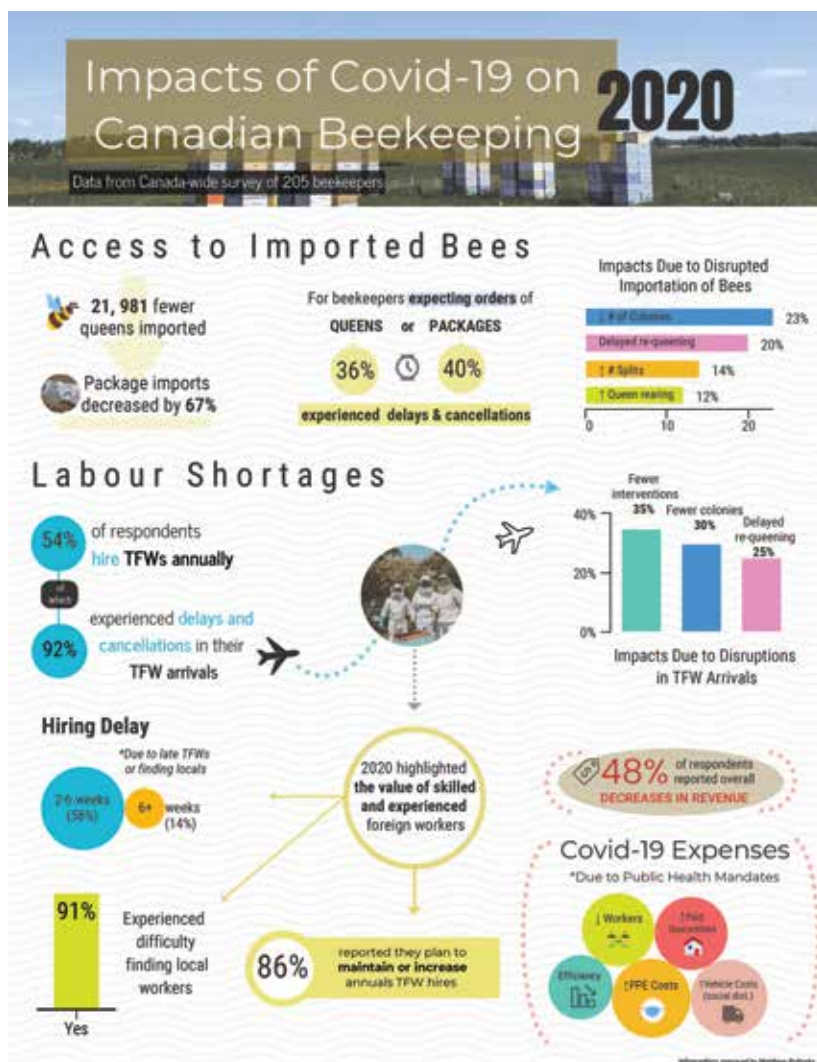
We thank Rod Scarlett and the Canadian Honey Council for supporting and disseminating our COVID-19 survey as well as many Canadian Provincial apiculture specialists and all participating beekeepers who shared their experiences. This work was supported by the Bee CSI team including Leonard Foster, Amro Zayed, Shelley Hoover, Heather Higo and Julia Common. ■

Cited:

Miriam E F Bixby, Matthew Polinsky, M Marta Guarna. *Impacts of COVID-19 on Canadian Beekeeping in 2020: Part1*, 2021 *HiveLights Summer 2021* Vol 34 #3, p25-28 <https://honeycouncil.ca/wp-content/uploads/2021/07/Hivelights-Summer-2021.pdf>

Miriam E F Bixby, Matthew Polinsky, Rod Scarlett, Heather Higo, Julia Common, Shelley E Hoover, Leonard J Foster, Amro Zayed, Morgan Cunningham, M Marta Guarna. *Impacts of COVID-19 on Canadian Beekeeping: Survey Results and a Profitability Analysis*, *Journal of Economic Entomology*, 2021; toab180, <https://doi.org/10.1093/jee/toab180>

United Nations News. "Air travel down 60 per cent, as airline industry losses top \$370 billion: ICAO". January 15th, 2021. <https://news.un.org/en/story/2021/01/10823021>.



Serving the Industry
since 1959
Family Owned and
Operated



*Doing our best to
meet your
Honey Extraction
Needs*



221 S. 7th St / PO Box 220
Loup City, NE 68853

1-308-745-0154

www.cooknbeals.com

Proverbs 16:24

Oxalic Acid Vaporizer



www.VMelinator.com

Saskatraz Breeding Stock Available in 2021

Queen cells from tested Saskatraz breeders (\$20). Closed population mated breeder queens (\$300), out crossed breeder queens (\$100) Saskatraz stock carrying VSH trait also available as queen cells, in Saskatraz hybrids and breeder queens in 2021.

Saskatraz Hybrid production queens available April 15th to August 15th (\$30 US). These hybrids will produce pure Canadian Saskatraz drones for stud use. All breeding stock tested and certified. Limited number of nucs available in 2021 with Saskatraz hybrid queens. See www.saskatraz.com for breeding information and updates.

Saskatraz stock bred in Saskatchewan for honey production, wintering ability and resistance to mites and brood diseases.



Email: a.j.robertson@sasktel.net
Phone: (306)-373-9140 Cell: (306)-270-6627
for prices and availability.



**WE WOULD LIKE TO SAY
THANK YOU TO OUR CUSTOMERS!
FROM OUR FAMILY TO YOURS,
KEEP SAFE & STAY HEALTHY**



Stay **UP-TO-DATE** with our new products by downloading
our **PACKAGING BROCHURE** at www.dominiongrimm.ca
New products are **ALWAYS** being added!!



D&G supports Canadian manufacturers!
heather@dominiongrimm.ca
1 877 676 1914



BEE AWARE OF WHAT YOU'RE BUYING - HONEY SPREADS are not 100% HONEY

Rod Scarlett, CHC

The Canadian Honey Council and its industry partners are looking for the Canadian Food Inspection Agency to clarify some labelling and packaging issues as it pertains to honey. Of immediate concern is the emergence of products on the grocery store shelf that confuse consumers and threatens the confidence that Canadians have when purchasing honey. The appearance of "vegan honey" and "honey spreads" in stores has meant that real honey is now in competition with products that contain little or no honey. In addition to working with CFIA to rectify this situation, the CHC has launched a national public relations initiative to inform consumers of the differences. Special thanks goes out to BeeMaid who supplied the graphics that accompany the campaign.

The concern, however, is much broader than this. Currently the CFIA does an outstanding job sampling honey for adulteration. Using the most advanced technology and traditional C-4 testing, Canada has very good reputation for preventing the importation of adulterated honey despite the fact that honey is recognized as one of the most fraudulently produced food products. Canada must remain vigilant, however, with the emergence of the new aforementioned products, it would appear that a gap now exists. The same honey that would be prevented from entering the country because of adulteration, could now enter the country and land on shelves next to certified pure honey and be labelled a honey spread. The ability to import adulterated product labelled as honey spread would put into jeopardy the whole honey import/export system.

If you have any comments or ideas that you think would help us out, please do not hesitate to contact any CHC Board member or myself. ■

BEE AWARE OF WHAT YOU'RE BUYING



Canadian Honey Council

Honey spreads contain sugar syrups and artificial ingredients and only a small amount of pure honey.

Honey Spreads are not 100% Honey



Breeding bees for Varroa destructor resistance using molecular tools

Nuria Morfin^{1*}, Brock Harpur², Alvaro de la Mora¹, Berna Emsen¹, Ernesto Guzman-Novoa¹
¹University of Guelph, ON, Canada | ²Purdue University, IN, USA | nmorfin@uoguelph.ca

Varroa destructor parasitism and associated viruses are one of the biggest challenges that beekeepers face in North America (Guzman-Novoa et al., 2010; McMenamin & Genersch, 2015). Breeding for bees resistant to V. destructor could assist beekeepers in their Integrated Pest Management (IPM) strategies to control mite levels. At the Honey Bee Research Centre, University of Guelph, a bidirectional breeding program has been conducted since 2017 to select for low and high Varroa population growth (LVG and HVG, respectively) (de la Mora et al., 2020). Having LVG and HVG lines allowed us to study genetic differences between the selected colonies. Honey bees use self-grooming behaviour to get rid of mites and reduce their levels (Guzman-Novoa & Morfin, 2019). To self-groom, bees use their legs and mandibles to remove parasites and particles from their bodies, and they can do it lightly (using one or two legs with soft movements) or intensely (using more than two legs and vigorously shaking) (Guzman et al., 2012). Self-grooming has been linked to low Varroa population growth in previous studies (Guzman-Novoa et al., 2012). To understand the mechanisms behind the selection of traits linked to low Varroa growth, we conducted a study in which bees from three LVG colonies and from three HVG colonies were subjected to self-grooming behaviour assays using flour as an irritant (Morfin et al., 2020a). Worker bees were classified into two categories: 'light groomers' and 'intense groomers'. The brains of bees from the different categories (LVG-intense, LVG-light, HVG-intense, and HVG-light) were used for gene expression analysis and viral identification. Additionally, the bees from ten LVG and ten HVG colonies were used for DNA sequencing. Differentially expressed genes (DEGs) associated with LVG and HVG selected lines were identified and included odorant binding proteins. Moreover, DNA sequencing confirmed the involvement of an odorant binding gene. Interestingly, there are reports of odorant binding proteins playing an important role during hygienic behaviour, in which bees identify dead or diseased brood and remove them from the colony (Spivak et al., 2003; Scannapieco et al., 2017). It appears that odorant binding proteins are essential to perceive parasites and irritants (like flour) and trigger behavioural immune responses. In this study, we also found that bees from the HVG line had higher viral levels of Deformed wing virus-A (DWV-A), Varroa destructor virus -1 (VDV-1), and Apis rhabdovirus -1 (to the best of our knowledge for the first time identified in Canada and in brain tissue!). In the future, we will pay special attention to odorant binding proteins and other potential molecular markers (e.g. neurexin) that have been linked to grooming behavior (Hamiduzzaman et al., 2017; Mor-



fin et al., 2020b). There is another breeding program that uses traits associated with self-grooming behaviour, including mite drop, proportion of bitten mites (mutilated mites), and the severity of the bites -currently lead by Dr. Brock Harpur at Purdue University. Future steps will include the comparison between their stock and ours to better understand the mechanisms behind mite resistance to strengthen IPM strategies for beekeepers in North America.

Acknowledgements. We are grateful for the support of the Canadian Bee Research Fund for the financial support. We thank Paul Kelly for assistance during field experiments; Brynn Hickey, Hailey Till, Pia Marquardt-Salathe, Wendy Shipsides, and Catherine VanderHeyden for helping us conduct self-grooming assays; Alexandra Cupoli for helping us create datasets; and Dr. Laramy Enders for providing valuable advice on the identification of honey bee viruses. ■



References

- De la Mora, A., Emsen, B., Morfin, N., Borges, D., Eccles, L., Kelly, P.G., Goodwin, P.H. & Guzman-Novoa, E. (2020). Selective breeding for Low and High Varroa destructor growth in honey bee (*Apis mellifera*) colonies: Initial Results of Two Generations. *Insects*, 11(12), 864.
- Guzman-Novoa, E., Eccles, L., Calvete, Y., McGowan, J., Kelly, P. G., & Correa-Benitez, A. (2010). Varroa destructor is the main culprit for the death and reduced populations of overwintered honey bee (*Apis mellifera*) colonies in Ontario, Canada. *Apidologie*, 41(4), 443-450.
- Guzman-Novoa, E., Emsen, B., Unger, P., Espinosa-Montano, L. G., & Petukhova, T. (2012). Genotypic variability and relationships between mite infestation levels, mite damage, grooming intensity, and removal of Varroa destructor mites in selected strains of worker honey bees (*Apis mellifera* L.). *Journal of Invertebrate Pathology*, 110(3), 314-320.
- Guzman-Novoa, E., & Morfin, N. (2019). Disease resistance in honey bees (*Apis mellifera* L.) at the colony and individual levels. In *Comprehensive Biotechnology*, 3rd ed.; Elsevier BV: Amsterdam, The Netherlands, 2019; Volume 4, pp. 811-817.
- Hamiduzzaman, M. M., Emsen, B., Hunt, G. J., Subramanyam, S., Williams, C. E., Tsuruda, J. M., & Guzman-Novoa, E. (2017). Differential gene expression associated with honey bee grooming behavior in response to varroa mites. *Behavior Genetics*, 47(3), 335-344.
- McMenamin, A. J., & Genersch, E. (2015). Honey bee colony losses and associated viruses. *Current Opinion in Insect Science*, 8, 121-129.
- Morfin, N., Espinosa-Montano, L. G., & Guzman-Novoa, E. (2020a). A direct assay to assess self-grooming behavior in honey bees (*Apis mellifera* L.). *Apidologie*, 51(5), 892-897.
- Morfin, N., Given, K., Evans, M., Guzman-Novoa, E., & Hunt, G.J. (2020b). Grooming behavior and gene expression of the Indiana "mite-biter" honey bee stock. *Apidologie*, 1;51(2):267-75.
- Scannapieco, A. C., Mannino, M. C., Soto, G., Palacio, M. A., Cladera, J. L., & Lanzavecchia, S. B. (2017). Expression analysis of genes putatively associated with hygienic behavior in selected stocks of *Apis mellifera* L. from Argentina. *Insectes Sociaux*, 64(4), 485-494.
- Spivak, M., Masterman, R., Ross, R., & Mesce, K. A. (2003). Hygienic behavior in the honey bee (*Apis mellifera* L.) and the modulatory role of octopamine. *Journal of neurobiology*, 55(3), 341-354.



HelpWanted

Interlake Honey Producers Ltd. PO Box 328, Fisher Branch, MB R0C 0Z0 has the following positions:

Apiary Technician 5 Positions Available

Required for the 2022 honey season. Seasonal, full time, days, evenings and some Saturdays. Work is mostly outdoors, so must be able to work under hot conditions. The job starts April 1st – July 1st. End date: September 10th – October 31st. Wages: \$13.00 - \$16.00/hour. Minimum 2 years experience preferred. Performance and/or production bonus may be available.

Duties: include but not limited to, feed and care for honeybees, replacement of hives and production of nucs, moving hives, supering hives, detect and report hive health and apply correct disease cures and/or controls, keep field and/or production records, harvest honey, work on extracting line, cleaning extracting equipment and honey house, raise queens, assemble and maintenance of bee equipment, drive and maintain vehicles, other duties as assigned. Work is very physically demanding, with long days and heavy lifting. The job is located 2 hours north of Winnipeg in the RM of Fisher NE 33-23-1W in Fisher Branch, MB. Send resume by mail to Box 328 Fisher Branch, MB R0C 0Z0 or email anita@ifsltd.ca

Help Wanted: East Selkirk (MB)

Waldbee Honey Farms Inc. - East Selkirk (MB)

Apiary Technician/Workers 2 positions (NOC 8431)
\$12.43-15.00 per hour.

Employment from November 1/2021 to November 1/2023. Minimum 2 years experience required.

Apiary Technician/Workers 2 positions (NOC 8431)
\$12.43-\$13.50 per hour.

Employment from March 1/2022 to October 31 2022. Minimum 1 year experience required.

Seasonal full time, days, evenings, Saturdays. Language is English.

Duties would be to handle, feed and care for bees; help in replacement of hives and production of nucs; move hives; collect honey; process honey; maintain and drive vehicles; maintain bee yard; manufacture, assemble and maintain beehive equipment; maintain and operate other apiary related equipment; Must be able to handle heavy loads, and work is physically demanding. Must work well with others, as well as the ability to maintain basic production records. Report to Supervisor. Would require steel toed safety boots.

Contact Philip Waldbee

Send resume by email to philip@waldbee.com

Address: Waldbee Honey Farms Inc., Box 9 Group 19 RRI, East Selkirk, MB. ROE OMO

Help Wanted: Souris (MB)

HARLTON APIARIES has 4 Seasonal positions available for the 2022 Season

4 Apiary Workers (NOC 8431) for March or April to end of October 2022

Wages \$13 - \$15.50 per hour depending on experience. 1-2 years experience preferred. Operating a forklift is an asset. A valid driver's license and the ability to speak English is an asset.

Duties include assisting with feeding, bee hive maintenance and treatments, moving hives, harvesting and extracting honey, and winter preparation and some building of new hive equipment.

Contact Irwin Harlton, Harlton Apiaries

Box 644 Souris (MB) R0K 2C0 204-483-2382

iharlton@mymts.net

Help Wanted: Granum (AB)

SUPERNUC APIARIES located near Granum, AB (251032 TWP RD 104) has the following positions for the 2022 season.

APIARY TECHNICIAN (NOC 8431) 1 position:
wage starting at \$16.50 - \$20.00/hr, and

APIARY WORKERS (NOC 8431) 2 position: starting at \$15.50 - \$18.00/hr,

Needed full time (45+ hrs/wk) from Mar 1, 2022 through October 31, 2022.

Apiary technicians must have a minimum of 3 seasons of full-time experience in a Canadian commercial apiary and have the ability to supervise/train staff, have knowledge in commercial hive management for pollination, honey production and queen-rearing and the ability to assess hive health and care for them in the appropriate manner.

Apiary workers must have a minimum of 1 season full time experience in a Canadian commercial apiary. Duties include assisting technicians with beehive maintenance and treatments, building and repairing bee equipment, moving hives, harvesting and extracting honey, and winter preparation.

Some evening, night and weekend work will be required.

Accommodations are available.

A valid driver's license and the ability to speak English is an asset.

Must be physically fit and accustomed to working with honeybees. No educational requirements.

All wages are negotiable based on experience and productivity. Bonuses may be available.

Contact Amy Ovinge

Phone: Fax - 403-687-2154 Email resumes to aovinge@gmail.com or fax to 403-687-2154

Help Wanted: Fort Macleod (AB)

POELMAN APIARIES LTD. located near Fort Macleod, AB (102007A Range Rd 254) has the following positions available for the 2022 season: 6 SUPERVISORS (SKILLED WORKER, NOC 8252) with a minimum of 5 years(seasons) experience working at a Canadian apiary. Employment needed from March through October 2021; wage starting at \$15.50 - \$17.50 (depending on exp. with possible bonus) (40 + hrs/week). Duties will include: caring for honeybee colonies in the appropriate manner; coordinating the production of replacement bees and equipment; recognizing, reporting, monitoring hive health issues and applying appropriate treatment/controls; harvest and fill honey barrels and containers; supervise small teams of workers; driving of vehicles; operate and maintain other apiary equipment; conduct bee yard maintenance.

18 TECHNICIAN/WORKERS (LOW SKILL WORKER, NOC 8431) with a minimum of 1-2 years

experience. Employment needed from April through November 2022; wage starting at \$15.50- \$16.50 (depending on exp. with a possible bonus) (40 + hrs/week). Duties will include: caring for honeybee colonies in the appropriate manner; assisting Technicians with bees and equipment; assisting with harvesting honey; assisting with the bee yard and equipment maintenance.

3 GENERAL FARM LABOURERS (LOW SKILL WORKER, NOC 8431) experience is an asset but will be trained. Employment needed for April through November 2022; wage starting at \$15.50 per/hour (with possible bonus) (40 + hrs/week). Duties will include: Supering and harvesting honey, cleaning honey extraction and storage equipment, barrel moving prep, filling and storage, manufacture and assemble and maintain hive equipment, and bee yard maintenance.

All wages are negotiable based on experience and productivity. Housing is available. Applicants must be able to work in the presence of honey bees. All positions may require some evening, night & weekend work. All applicants must be in good physical condition and able to work in a team environment. Ability to speak English is an asset.

Contact Breanne Poelman

Email resumes to pollenpal@gmail.com attention Poelman Apiaries or fax to 403-687-2410 or mail to Box 1887 Fort Macleod, AB T0L 0Z0.

Help Wanted: Pitt Meadows (BC)

Wanted 2021/2022 - Beekeeper

We are looking for a Beekeeper (NOC 8431 – Apiary Technician) to join our Dr. Bee Beekeeping team at our Pitt Meadows, British Columbia farm. This full-time seasonal position works from March 15th to October 15th. We are looking for applicants to start immediately for the 2021 season and/or the 2022 season on March 15th.

Responsibilities

-Transporting bee hives

-Bee colony observation and maintenance

-Harvesting and extracting honey

-Assist in queen rearing

-Assist in royal jelly production

-Clean, maintain, and assemble beekeeping equipment

-Miscellaneous general farming work

Requirements

-Minimum 3 years of commercial beekeeping experience

-Familiar with brood nest management, livestock production, honey production, and disease and pest control

-Any experience with queen rearing and/or royal jelly production is highly preferred

-Be able to operate small engine equipment

-In good physical condition

-Be able to work well with others and be able to understand instructions in English

-Valid Class 5 Driver's Licence or equivalent Compensation/Benefits

-Starting wage \$18-20 based on experience

-Eligible for comprehensive benefit program following 3 months of work

-Accommodations available, you are responsible for your own food and luxuries

Contact: Richard, Phone: 604-460-8889

If you are interested in this opportunity, you can apply by emailing your resume to careers@drbee.ca with the subject line "Beekeeper".

Have a honey of a day!

Miel Labonté Honey Inc.

HONEY WANTED

530, rang Nault, Victoriaville, Quebec, Canada, G6P 7R5
 PH: (819) 758 3877 FAX: (819) 758 9386
jm.labonte@labonteinc.com



Paradis
 -VALLEY HONEY-

RAW HONEY & BEE POLLEN
 PRODUCTION • SALES • POLLINATION SERVICES

WWW.PARADISVALLEYHONEY.COM | INFO@PARADISVALLEYHONEY.COM
 1-866-624-8175 | WATINO, ALBERTA



ODEM INTERNATIONAL INC.
**YOUR PARTNER
 IN SALES**

WE BUY HONEY & WAX
 ASK FOR NORMAND, SÉBASTIEN OR STÉPHANE
 1 800 567-3789 | info@odem.ca | odem.ca




FRASER
AUCTION
Ltd.

**Fraser
 Auction
 Service Ltd.**
 Brandon, Manitoba

**SERVING BEEKEEPERS
 IN ALBERTA, SASKATCHEWAN,
 AND MANITOBA
 FOR OVER 20 YEARS**

If you are thinking
 of buying or selling,
 please call
 1-800-483-5856 or 204-727-2001
 Fax: 204-729-9912

or check our website:
www.fraserauction.com



TLS **Tony Lalonde Sales Prt.**

Buy
 Honey
 Wax
 Propolis

sell
 Beekeeping Supplies
 Extracting Equipment
 Used Equipment

Distributors for some or all
 of the supplies

Alberta
 Alberta Honey Producers Coop. 780-960-8010

Manitoba
 Manitoba Honey Coop. 204-783-2240

Maritimes
 Claude Hachey 506-546-6687

Ontario
 Munro Honey 519-847-5333

Quebec
 Rejean Lambert 819-828-2549

Saskatchewan
 Tony Lalonde Sales 306-931-0155
tonylalondesales@sasktel.net

Bentley extractors
 Cowan extractors
 Swinger Forklift
 High Fructose Corn
 Syrup
 Sucrose Syrup
 Inland Plastic Winter
 Wraps
 TLS Bee Apparel
 Mahurangi Hiveware
 Bee Pro Pollen Supple-
 ment
 Mountain Bee Products
 - bee suits, veils
 Oxytet
 Permadent
 Frames
 Supers painted and un-
 painted

Supers assembled and
 unassembled
 Lumber for supers
 Helmets
 Hive tools
 Hive lifters
 Smokers
 Honey containers
 Feeder pails
 Barrels
 Liners
 Barrel Grabber
 Barrel Carts
 Pallet puller

Tony Lalonde Sales Prt.
 Box 42, Clavet SK,
 Canada S0K 0Y0
 Ph: 306-931-0155
 fax: 931-1646



Help Wanted: Mission, (BC)**Apiary Workers**

Golden Ears Apiaries Inc., in Mission, BC, is seeking 11 Apiary Supervisors at \$15.21/hr, starting Feb 1, 2022 until Oct. 31/2022, working 40+ hrs/week. Apiary Supervisors must have a minimum of 3 seasons working full time (40+hr/wk) in a Canadian style commercial beekeeping operation, and must have a good understanding of honeybee management and have the ability to independently assess hive health and make decisions regarding individual hive management.

All positions do require some evening, night and weekend work. All applicants should be able to work in a team environment. English is an asset as well as a valid driving license. Work will be in southern BC (Fraser Valley).

Contact Carolyn Shipley at jmcshipley@shaw.ca.

Help Wanted: Nipawin, (SK)

Yves Garex Honey Inc, P.O Box 2016, Nipawin, SK, S0E 1E0 seeks employees for the March 2022 to October 2022 season at facilities located 10 km North-East of Nipawin, Saskatchewan.

Good work ethics, health and stamina essential, for hard work, heavy lifting, long days including some weekends. Those allergic to bee stings and work need not apply.

-8 Apiary Technicians (NOC 8252) with experience in handling bee hives including unpacking and packing, checking, feeding, medicating, cleaning, moving, splitting, supering, raising queens, as well as harvesting and extracting honey. Wages \$ 15.00 to \$ 20.00 per hour, depending on experience.

-8 Apiary Workers (NOC 8431) We will train successful applicants in bee yard maintenance and hive manipulations. Wages \$ 13.00 to \$ 15.00 per hour.

-4 Apiary Laborers (NOC 8431) No experience required. Wage start at \$ 12.00 per hour.

email: y.garez@sasktel.net

Help Wanted: Roblin (MB) - positions available for 2022

3012352 Manitoba Ltd. o/a Wendell Honey Box 1439 Roblin MB. R0L 1P0. Reporting to work at Wendell Honey, one mile east of MacNutt, Saskatchewan. Transportation provided from there to various bee yards.

15 full-time positions available at Wendell Honey in 2022

- Apiarist Technician (NOC 8252)

- o help with Spring check, hive assessment and manipulation

- o help with pest and disease control

- o help with grafting, making nucs and raising queens

- o assemble equipment

- o help super hives

- o help harvest honey

- o help keep field production records

- o help maintain beeyards

- o help with Fall feeding, assessment and treatments

- o help to wrap bees

- o team lead/supervise as required

- o other duties as assigned

- Positions available from April 6, 2022 to mid-October 2022

- Min. 2 years of experience working with bees necessary

- Work is physically demanding

- Wages \$15.00 - \$25.00 per hour depending on experience with Wendell Honey

- Possible production bonus

Email Isabel Wendell at isy@wendell.ca for fax 204-564-2568 or phone 204-564-2599

15 full-time seasonal positions available at Wendell Honey in 2022

- Apiary Worker (NOC 8431) to

- o assemble equipment

- o help super hives

- o help harvest honey

- o help maintain beeyards

- o help with Fall feeding

- o help to wrap bees

- Positions available from May 10, 2022 to mid-October 2022

- No experience necessary

- Work is physically demanding

- Wages \$12.50 - \$17.00 per hour depending on experience with Wendell Honey

- Possible production bonus

Email Isabel Wendell at isy@wendell.ca for fax 204-564-2568 or phone 204-564-2599

Help Wanted: Tees (AB)

TEES BEES INC. requires: Three APIARY TECHNICIANS (NOC 8431) with a minimum of 2-3 years (seasons) experience working on a Canadian style commercial apiary in the min. capacity of Apiary Worker or General Farm Worker with employment March thru October 2022 (\$15.42-\$19/hr depending on exp. with possible bonus) (40+ hrs/wk); Duties include: caring for honeybee colonies in the appropriate manner; coordinating the production of replacement bees and equipment; recognizing, reporting, monitoring hive health issues and applying appropriate treatment/controls; harvest and fill honey barrels and containers; supervise small teams of workers; driving and daily maintenance of vehicles; operate and maintain other apiary equipment; conduct bee yard maintenance; keep some field production records. A motor vehicle operator's licence with no serious infractions, recognized by the Province of Alberta and major insurance companies is required. Five APIARY WORKERS (NOC 8431) with a minimum of 1 year (season) experience and with employment March thru October 2022 (\$15.42-\$17/hr depending on exp. with possible bonus) (40+ hrs/wk); Duties include caring for honeybee colonies in the appropriate manner; assisting Technicians with bees and equipment; assisting with harvesting honey; assisting with the bee yard and equipment maintenance.

All wages are negotiable based on experience and productivity. Applicants must be able to work in the presence of honey bees. All positions may require some evening, night & weekend work. All applicants must be in good physical condition and able to work in a team environment. Ability to speak English is an asset. Contact Jeremy Olthof at 23318-Hwy 50, Tees, AB; mail to RR1, Tees, AB T0C 2N0; or email at teesbeesinc@gmail.com.

Help Wanted: Austin (MB)

New Rutherford Apiaries (4647204 Manitoba Ltd) RR#1, Austin, MB R0H0C0

Apiary Technician/Worker 4 Positions

Located north-west of Austin, MB in the RM of North Norfolk (69033), New Rutherford Apiaries requires four full time, seasonal, Apiary Technician/Workers for the 2022 season. The positions start: March 05 - June 05, 2022. End date: September 15 - November 05, 2022.

Duties include helping with: honey harvesting and extracting, feeding and medicating hives, moving hives, making hive increases, queen rearing, building hive equipment, bee yard maintenance and clean-up. Must have at least one season of beekeeping experience. Work is physically demanding, often in a very hot environment with weekend and evening hours required. Wage rate of \$11.95 - \$15.00/hour depending on experience.

Apply to Mike Lewis at: mike-beehive@hotmail.com ph: (204)466-2551 or by mail to above address

Help Wanted: Ridgedale (SK)

Silver Fern Honey Farms Ltd is currently taking applications for the 2022 bee season. SFHF has openings for Beekeepers and Beekeeper Assistants. These positions are seasonal fulltime, \$12.50-\$15/hr, 30-50 hrs/week from March 1-Nov 5 2022. Must have a valid drivers license. Some of the duties are...helping with feeding bees, making nucs, supering beehives, harvesting honey, preparing bees for winter.

SFHF are also taking applications for the 2022 extracting season. These positions are a seasonal full-time position from July 1-Sept 10 2022, \$12-\$14/hr, 30-50hrs/week. The duties are extracting honey and gathering the honey from the beehives. Contact Joe Edwards, Phone: 306-873-1463

The jobs are located at 101 Railway Ave, Ridgedale, Saskatchewan.

Applicants can apply by email or send applications to Box 104, Ridgedale, SK, S0E 1L0

Help Wanted: Argyle (MB)

Grysiuk Apiary Inc. requires 7 full time seasonal apiarists in Argyle, MB. wages are \$14.00 - \$16.00 per hour depending on experience. Job is physically demanding, must help with wrapping, feeding, making nucs, supering, pulling honey, honey extraction, medicating hives and winter preparation. Start date is February 1, 2022 - November 15, 2022. Please apply by email: acgrysiuk@shaw.ca, Ph.204-831-7838, or mail: 83 Acheson Dr., Winnipeg, MB. R2Y 2E8.

Help Wanted: Ardmore (AB)

T'N'T Apiaries require:

5 APIARY TECHNICIANS (NOC 8431) for year round and seasonal (January thru November 2022). full time (40+ hrs/wk) employment (\$17.00-\$22/hr depending on experience. Bonuses possible). Must have a minimum of 2 years (seasons) working full time on a Canadian style commercial apiary in the min. capacity of Apiary Assistant or General Farm Worker.

Duties include:

- Caring for honeybee colonies in the appropriate manner.

- Co-ordinating the production of replacement bees and equipment.

- Recognizing, reporting, monitoring hive health issues and applying appropriate treatment/controls.

- Harvest and package honey, pollen and beeswax.

- Supervise small teams of workers.

- Drive (including std transmission and medium duty trucks) and daily maintain vehicles.

- Operate and maintain other apiary equipment (including forklifts, chainsaws and pumps).

- Conduct bee yard maintenance.

- Keep some field and/or production records.

6 APIARY WORKERS (NOC 8431) for full time

(40+ hrs/wk) employment (\$15.00-\$19.00/hr. depending on experience. Bonuses Possible) January thru November 2022. Applicants must be able to work in the presence of honey bees.

Duties include:

- Caring for honeybee colonies in the appropriate manner
- Assisting Technicians with bees and equipment.
- Assisting with harvesting honey, pollen and beeswax.
- Assisting with the bee yard and equipment maintenance.

Some evening, night and weekend work is required of all positions. All applicants must be in good physical condition and able to work in a team environment. Preference will be given to those Technicians and Worker applicants holding a motor vehicle Operator's license with no serious infractions, recognized by the Province of Alberta and major insurance companies. Contact Dave Tharle, 44116 - Hwy 659, Ardmore, AB or Box 80, Ardmore, AB. (Fax 780-826-6013). Email: tnatpi@mcsnet.ca

Help Wanted: Big River (SK)

West Cowan Apiaries is hiring for the 2022 Apiary Season.

Start Dates: April 4- October 28, 2022

1 Supervisor in Apiary-Minimum of 3-4 full seasons of apiary experience required.

Wage: \$15.50-\$22.00 per hour depending upon experience.

Job includes: to work in the presence of honey bees and will assist with colony management; honey extraction and processing; queen-rearing. Recognize and report beehive health issues and apply appropriate disease cures or controls. Supervise and give direction to other employees. Keep field and production records and any other apiary jobs that are required.

4 Apiary Technicians/Workers- Minimum of 1-2 full seasons of apiary experience required.

Wage: \$12.80-15.20 per hour depending upon experience

Job includes: Wrapping and unwrapping hives; spring and fall maintenance; feeding hives; creating nucs; queen-rearing; supering; pulling honey (80+lbs) and carry & stack on the truck deck; extracting honey; moving bees; maintain bee yards; and any other assorted apiary jobs that are required.

Requirements for both jobs: No formal education required but with at least a Grade 12 education would be an asset. Have a valid driver's license and have a vehicle to get back and forth to work. Experience driving a standard truck is an asset; be in good physical condition and to work in a team environment. Please do not apply if you are allergic to bees.

Employment Details: Seasonal and full time; minimum of 40+ hours per week.

Training is provided on an ongoing basis.

Most tasks are performed outdoors in all kinds of weather, work is repetitive and physically demanding. Location of work: SE 14-56-8 W3 -our bee yards are located in RM's of Big River, Shellbrook, and Canwood.

Mail or deliver in person your resume with references to: West Cowan Apiaries, PO Box 425, Big River, SK. S0J 0E0 Fax to: 306-469-5779 or email to: c.warriner@sasktel.net Apply by - December 31, 2021

Help Wanted: East of Saskatoon (SK)

Meadow Ridge Enterprises Ltd requires 5 Seasonal Apiary Harvest Labourers for the 2022 beekeeping

season. Meadow Ridge Enterprises Ltd is a commercial beekeeping and queen rearing operation. Full-time seasonal positions are needed commencing in April and ending in October. Minimum one-year beekeeping experience with wage starting at \$12.45 to \$15.00 per hour for laborers depending on experience. Potential to earn bonuses. Duties include spring feeding, hive maintenance, grafting, raising new queens, and building nucs. Supering hives, harvesting honey, extraction of honey, fall feeding, wrapping of colonies, equipment cleaning, repairing, and yard maintenance. Must be able to work long hours, weekends, and holidays in all weather environments. Job requires heavy lifting, a valid driver's license, a reliable vehicle to arrive at the worksite is an asset. Meadow Ridge Enterprises is located 10 minutes east of Saskatoon, NW 33 TP 36 RG3 W3rd. Please email resumes to a.j.robertson@sasktel.net

Help Wanted (MB)

Grysiuk Apiary Inc. requires 7 full time seasonal apiarists in Argyle, MB. wages are \$14.00 - \$16.00 per hour depending on experience. Job is physically demanding, must help with wrapping, feeding, making nucs, supering, pulling honey, honey extraction, medicating hives and winter preparation. Start date is February 1, 2022 - November 15, 2022. Please apply by email: acgrysiuk@shaw.ca Ph.204-831-7838, or mail: 83 Acheson Dr., Winnipeg, MB. R2Y 2E8.

Help Wanted: Shellbrook (SK)

More Information

Hannigan Honey Inc. located at #9 Shell River Road, Shellbrook, SK. is now accepting applications for 8 Apiary Harvest Labourers (NOC 8431).

These positions are available on a seasonal basis (45+ hrs/week), running from July to October 2021.

Duties include honey extraction, cleaning extraction and storage equipment, filling containers, cleaning and maintaining hive equipment.

Workers are required to be mentally and physically fit and must be able to work in the presence of bees. Wages start at \$11.52/per hour.

Please send resume to Dave Philp, Box 367 Shellbrook, SK. S0J 2E0 or email hanniganhoney@sasktel.net.

Help Wanted: Ridgedale (SK)

Silver Fern Honey Farms is currently taking applications for the 2022 bee season. SFHF has openings for Beekeepers and Beekeeper Assistants. These positions are seasonal fulltime, \$12.50-\$15/hr, 30-50 hrs/week from March 1-Nov 5 2022. Must have a valid drivers license. Some of the duties are....helping with feeding bees, making nucs, supering beehives, harvesting honey, preparing bees for winter.

SFHF are also taking applications for the 2022 extracting season. These positions are a seasonal full-time position from July 1-Sept 10 2022, \$12-\$14/hr, 30-50hrs/week. The duties are extracting honey and gathering the honey from the beehives.

The jobs are located at 101 Railway Ave, Ridgedale, Saskatchewan.

Applicants can apply by email or send applications to Box 104, Ridgedale, Sk, S0E1L0

Help Wanted: Kinistino (SK)

Contact Corey Bacon for B's Bee Ranch Inc.

Apiary Harvest Labourers and Apiary Harvest

Workers required for seasonal work in a commercial honey production and bee rearing operation for the 2022 season in rural SK.

Two Apiary Harvest Labourer positions available for 5-8.5 months (starting no earlier than February). Labourers perform (but are not limited to) tasks such as supering hives, harvesting honey, cleaning honey extraction and storage equipment; barrel filling and moving; repair, assemble and maintain hive equipment and bee equipment; bee yard maintenance. Knowledge of the industry, a valid drivers licence and English speaking skills an asset but not mandatory. Wage starts at \$11.85/hr plus subsidized housing option, transportation and potential for bonuses based on performance, attitude, character and production targets.

Three Apiary Harvest worker positions available for up to 8.5 months (Feb to November). Apiary Harvest Workers perform (but are not limited to) tasks such as supering hives, harvesting honey, cleaning honey extraction and storage equipment; barrel filling and moving; repair, assemble and maintain hive equipment and bee equipment; bee yard maintenance; assist with colony manipulation; assist with colony treatments; assist with moving colonies; assist with feeding colonies. Canadian beekeeping industry knowledge, minimum 18 months Canadian commercial experience required, valid drivers licence and English skills required. Wage starts at \$12.75/hr+ plus subsidized housing option, transportation and potential for bonuses based on performance, attitude, character and production targets.

For these positions, availability to work long hours, evenings/nights, holidays and weekends is required. Work can be paced and physically demanding with heavy lifting. Must be able to work in all weather conditions, accept and implement construction education and performance evaluations from Supervisors/management while maintaining an excellent attitude. Email resume and cover letter with references to B's Bee Ranch Inc at beeranch@sasktel.net

Help Wanted: Kinistino (SK)

Position 1 Bacon Apiaries Ltd, located in Kinistino, Saskatchewan, is looking for an Apiary worker for the 2022 honey crop season. The job will commence approximately on March 15, 2022 to Oct 31, 2022. Primary duties (but may not be limited to) includes moving hives, feeding and medicating colonies, evaluating colonies, supering hives and harvesting honey, extracting and storing of honey and repairing bee equipment. Availability to work long hours, including week-ends and evenings is required. Salary starting from \$12.65/hr to \$ 14.00/hr depending on experience.

Position 2 Bacon Apiaries Ltd, located in Kinistino, Saskatchewan, is looking for 6 Honey harvester labourers for the upcoming 2022 honey season. Job duties include using an automatic lift to place full honey supers on a conveyor, running honey frames through an uncapper, moving frames into an extractor, removing empty frames and putting them into supers, stacking them away, making new honey equipment and repairing existing honey equipment. Employees hours will be 40-60 hours/week (5-6 days) with wages starting at 12.65/hr to \$14.50/hr depending on experience. Employment from July to September 24th 2022.

Send resume to rbacon@sasktel.net



Be ready this spring. Save time, money, hassle and mess.

Call now and order

Ready-Made Pollen Patties

made to your specifications

Global is faster, better and cheaper than your other options.

Order one of our standard formulas using yeast, soy, pollen*, sugar and Latshaw's vitamin & mineral supplement or request your own recipe and patty size.

We'll supply all the ingredients, or use our supplies you provide.

Call Mike at 1-866-948-6084 today

or email *Mike@globalpatties.com*

Global Patties can be delivered in boxes or on pallets

Visit us at www.globalpatties.com

*Pollen in our formula is irradiated by Iotron for prevention of bee disease

Bees need both protein and carbohydrate for good build-up and large honey crops.

Feed protein patties in spring to ensure colony health, maximum build-up and maximum production



BJ SHERRIFF

EST. 1968



PROUDLY CRAFTED IN BRITAIN

Specialist makers of fine quality beekeeping apparel



BEE FARMER VEST & HOOD



HONEY RUSTLER JACKET



APIARIST ALL-IN-ONE



CLEARVIEW VEIL HOOD

Trusted for over 48 years to deliver a range of robust and reliable safety work wear designed to last and last. Handcrafted in Cornwall, a BJ Sherriff is the only beesuit you'll ever need.

**Canadian
Stockists**

**Alberta Honey Producers
Co-op Limited**
Alberta
ccaines@beemaids.com
001-780-962-5573

**Countryfields Beekeeping
Supplies**
Nova Scotia
timpurdy@countryfields.ca
001-902-576-3079

Flying Dutchman
British Columbia
flydutch@telus.net
001-250-390-2313

**Propolis
Quebec**
defrance@propolis-etc.ca
001-450-772-2637

HEALTHY BEES ARE OUR PRIORITY



Healthy bees start with quality ingredients, and we at Mann Lake ensure that your bees receive only the best. Put your bees on track to overall vitality and well-being by using our premium products such as Ultra Bee Pollen Substitute, Pro Health Feeding Supplement and ProDFM Direct Fed Microbials. Accept nothing less for your bees.



MANN LAKE
WE KNOW BEES

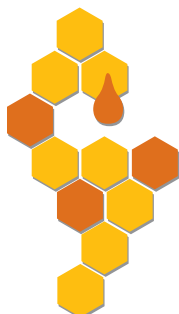
800-880-7694
www.mannlake ltd.com

Hackensack, MN • Wilkes-Barre, PA • Woodland, CA • Marshall, TX

*Free shipping applies to most orders over \$100 sent standard ground service within the lower 48 states. Prices are subject to change without notice.

Proud sponsor of the Canadian Honey Council

Publication Agreement # 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 10,000 managing over 750,000 colonies.