

New
Pesticide
Labels
Mobile App

CBRF
Preliminary
Progress
Report 2015

New
Report on
Horticulture



ABF
Convention
SawGrass
Marriot
Jacksonville
Florida



Honey Bee
Research
Centre
Report, 2015

\$4.95



Hive Rights

www.honeycouncil.ca

May 2016 | Vol 29 # 2

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

Beekeeping in Art II:

Aganetha
Dyck



QUALITY BEEKEEPING SUPPLIES SINCE 1863.



HIVES • SUITS • SMOKERS • EXTRACTORS • TOOLS & MUCH MORE!



SHOP ONLINE AT
www.dadant.com  

Hiveights

May 2016 Vol 29 #2

Canada  We acknowledge the financial support of the Government of Canada through the Canada Periodical Fund of the Department of Canadian Heritage.



Cover story - Beekeeping in Art II
See article on pages 13-15.

Table of Contents

- 1 2016 CHC Directors
- 3 Canadian Honey Council ReportRod Scarlett
- 5 New Pesticide Labels Mobile App / Nouvelle application mobile pour les étiquettes des pesticides
- 7 Regional ReportsCHC Directors
- 10 Fraser Bee Auctions
- 11 New Report on Horticulture / Nouveau Rapport sur L'horticulture
- 12 CBRF Preliminary Progress Report 2015.....
...R.W. Currie Impact and Control of Viruses Associated with Honey Bee Colonies
- 13 Beekeeping in Art II: Aganetha Dyck..... Peter Kevan
- 16 ABF Convention SawGrass Marriot Jacksonville Florida..... Calvin Parsons
- 17 A New Tool to Help.....Rod Scarlett
- 19 Western Apicultural Society (WAS) Annual Conference
- 20 CAHRC working with CHC to Grow the Agriworkforce
- 24 Honey Bee Research Centre Report, 2015 Ernesto Guzman, Paul G. Kelly
- 27 Classifieds
- 27 Book Review: The Bee Book

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



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 (Feb, May, Aug, Nov). Deadline for submissions and adverts are 6 weeks prior to publication (i.e. Dec 15th for Feb 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

2016 Directors • Canadian Honey Council / Conseil Canadien de Miel

Chair

Kevin Nixon

20, 35566 Range Road 263

Red Deer County, Alberta

T4G 0C9

T: 403-227-0092

C: 403-588-6685

E: kevin@nixonhoney.ca

Vice Chair

Scott Plante

2369 chemin Lambert

St-Nicolas, PQ

G7A-2N4

T: 418- 531-0786

C: 418-455-3866

E: scott.plante@bell.net

2nd Vice Chair

Stan Reist

6124 Metral Drive,

Nanaimo B.C. V9T 2L6

Phone: 250-390- 2313

E-mail: flydutch@telus.net

3rd Vice Chair

Allan Campbell

C: 204-590-9441

B: 204-638-6515

RR#5 COMP.31

Dauphin, MB

R7N 2T8

E: allan@durstonhoneyfarms.com

Director

Bernie Rousseau

Bee Maid Honey

13407-136 Ave NW

Edmonton AB T5L 4B4

C: 780-907-6777

E: bernie@beemaid.com

Director

Bill Termeer

RR2, Site 13, Box 9

Sexsmith, AB T0H 3C0

T: 780-505-0410

H: 780-568-3420

E: termeerbill@yahoo.ca

Director

Dani Glennie

C: 306- 496-7272

E: dani_glennieh@msn.com

Director

Jim Coneybeare

215 Forfar Street

Fergus, ON

N1M 1B4

T: 519 843-7328

C: 519 546-2829

E: ConeybeareHoneyJ@aol.com

Director

Mario Swinkels

Maritime Beekeepers Association

Box 965

Antigonish, Nova Scotia B2G 2S3

T: 902-863-5791

C: 902-870-5106

E: mario@swinkels.ca

CHC OFFICE

Executive Director

Rod Scarlett

#218 51519 R.R. 220

Sherwood Park, AB T8E 1H1

ph. 877-356-8935

cell 780-498-0231

chc-ccm@honeycouncil.ca

Hivelights Magazine Editorial and Advertising

Geoff Todd ph. 403-512-2123 geoff@honeycouncil.ca

Field EditorDoug McRory

Design and ProductionCristian Campean

Advertising enquiries Geoff Todd

PublisherBunker to Bunker Books Inc.

Printed in Canada

Proud sponsor of the Canadian Honey Council

MEDIVET

A reliable partner

Beekeepers have had to broaden their management skills even further with increasing challenges by diseases and pests.

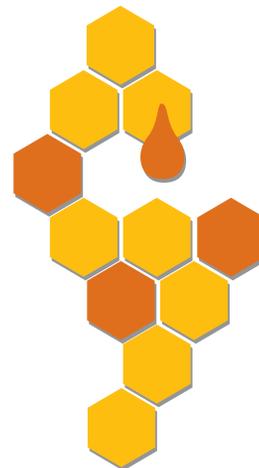
We can help by supplying you with the information you need to make informed decisions about disease prevention and the role of pharmaceuticals in your management practices.

Suppliers of
Oxytet-25 Soluble
Fumagilin-B
Formic Acid
Bee Repel
Apistan
FoulBrood Mix



403 652-4441 www.medivet.ca

Canadian Honey Council Report



Rod Scarlett, Executive Director, CHC



welcomed by beekeepers across Canada who will benefit from that research.

The Pest Management Regulatory Agency (PMRA) released a couple of consultation documents early in the new year that could impact beekeepers and the CHC made brief comments. For the Re-evaluation of Imidacloprid - Preliminary Pollinator Assessment, the CHC indicated that “The interim report is important in that it supports the use of risk-based assessments in understanding the factors that impact bee health. This science-based approach, conducted by our highly regarded regulatory agency, will provide beekeepers with the proper information from which to base business decisions.”

For the Notice of Intent Regarding Conditional Registrations under the Pest Control Products Regulations the CHC had to weigh the fact that this process is used by companies that register bee products and in fact Apivar is currently a conditionally registered product. Still, in summation we indicated that, “There are flaws in the current system, particularly since most of the conditional registrations on the books pertain to one class of chemicals, neonicotinoids. Despite public pressure to eliminate conditional registrations, particularly

because of the fact that the majority of those registrations are neonicotinoids, the CHC believes there is a place for conditional registration if sufficient regulatory guidelines and safeguards are put in place that allow for the timely submission of data.”

While engaged in our Apimondia bid in Daejeon in 2015, the CHC agreed to be a supporter of World Bee Day on May 20th. This is a United Nations supported initiative that is designed for “Raising public awareness of the importance of bees and apicultural products has an important role in the effort to protect bees and beekeeping sector.” The Slovenian Beekeepers’ Association, with the support of the Republic of Slovenia need to be commended for leading this initiative.

The Bee Health Roundtable continues to do great work on behalf of beekeepers across the country. Not only does participation result in improvements to bee health throughout Canada, it provides the opportunity to interact with other value chain roundtables and allows for comment and input into matters such as farm labour, business data and social license. As co-chair, it is hard to overstate the importance of the roundtable and the value it brings to beekeepers on a national level. ■

With any kind of luck, when you read this, winter will be a distant memory. For many regions of the country it was mild and reports in March indicated that, for the most part, overwintering survival was quite good. That can change, but it’s a good start. Costco Canada has recognized the importance of bees and are setting aside a portion of their honey sales and dedicating it to Canadian bee research projects. This additional funding is not only welcomed by the research community, it is also





INNISFIL CREEK
HONEY

Beauty is
IN ^{the} *EYE* _{of the}
BEE-Holder!



BEEKEEPING SUPPLIES
 **705-456-5093**

6090 10 Sideroad, Innisfil, ON L0L 1L0
innisfilcreekhoney.com
 www.facebook.com/InnisfilCreekHoney



COWEN
MANUFACTURING CO. INC.



www.cowenmfg.com

Technology and Nature
working together sure is sweet!

“BUY COWEN”
800-257-2894

New Pesticide Labels Mobile App

Today, PMRA launched a new mobile app that allows individuals to access pesticide labels that have been registered for use in Canada. This app will help homeowners, farmers, industry, as well as provincial and federal organizations look up specific details of the pest control product they are using from the convenience of their smartphone or tablet. The most up-to-date health and safety information will be right at their fingertips with this new user friendly tool.

Users will be able to save their searches as well as download product labels to their “Favourites” for access, even when they are offline. ‘Favourites’ will also auto-update whenever users access them when online. Pesticide labels can be searched based on various factors including product name and active ingredient. The directions found on pesticide labels are important as they contain detailed explanations on proper product use and what precautions should be taken to avoid injury.

Users can download the app on their mobile device using the link below. If you have any comments on the app, or suggestions for improving the app, please include them in the app’s comments section on your device’s app store.

If you have any questions, please contact the

<<http://www.hc-sc.gc.ca/contact/cps-spc/pmra-arla/infoserv-eng.php>> PMRA’s Information Service.

<<http://www.hc-sc.gc.ca/cps-spc/pest/registrant-titulaire/tools-outils/label-etiq-eng.php>> Pesticide Labels

Nouvelle application mobile pour les étiquettes des pesticides

Aujourd’hui, L’ARLA a lancé une nouvelle application mobile qui permet d’accéder aux étiquettes des pesticides qui ont été homologués pour utilisation au Canada. Cette application aidera les particuliers, les agriculteurs, l’industrie, de même que les organisations provinciales et fédérales, à chercher des renseignements précis sur les produits antiparasitaires qu’ils utilisent, à partir de leur téléphone intelligent ou de leur tablette. Ce nouvel outil convivial leur offrira à portée de main des renseignements à jour sur la santé et la sécurité.

Les utilisateurs de cet outil pourront sauvegarder leurs recherches et pourront télécharger les étiquettes de produits et les ajouter à leurs favoris aux fins de consultation ultérieure, même lorsqu’ils ne sont pas en ligne. Tout favori sera également mis à jour automatiquement chaque fois que l’utilisateur le consultera en direct. On peut chercher des étiquettes de pesticides à partir de divers critères, dont le nom du produit ou de la matière active. Le mode d’emploi de l’étiquette d’un pesticide est important, car il contient une explication détaillée de l’emploi adéquat du produit et des mesures de précaution à prendre afin d’éviter de se blesser.

Les utilisateurs peuvent télécharger l’application dans leur mobile au moyen du lien ci-dessous.

Si vous avez des commentaires sur cette application ou des suggestions d’amélioration, veuillez les indiquer dans la section « Commentaires » de cette application dans votre magasin d’applications.

Si vous avez des questions, veuillez joindre le

<<http://www.hc-sc.gc.ca/contact/cps-spc/pmra-arla/infoserv-fra.php>> Service de renseignements sur la lutte antiparasitaire de l’Agence.

<<http://www.hc-sc.gc.ca/cps-spc/pest/registrant-titulaire/tools-outils/label-etiq-fra.php>> Étiquettes des pesticides

Zabra Galebdar, M.Sc. Stakeholder Relations Policy, Communications and Regulatory Affairs Directorate Health Canada Pest Management Regulatory Agency Zabra.galebdar@canada.ca <<mailto:Zabra.galebdar@canada.ca>> (613) 736-3507

65% LIQUID FORMIC ACID

LOWEST PRICES IN CANADA!
SEE YOUR NEAREST BEE SUPPLY OUTLET.
DIRECT PRICING ALSO AVAILABLE.



- 208L -
- 20L -
- 4L -
- 1L -

MITE AWAY QUICK STRIPS

WATCH TEMPERATURES GOING INTO TREATMENT AND CHECK FOR MITE BOMBS. KEEP VARROA LEVELS AT A MANAGEABLE LEVEL ALL YEAR. TREAT FOR FALL LAST WEEK OF AUGUST OR FIRST WEEK OF SEPTEMBER.



MAQS IS A FORMIC ACID POLYSACCHARIDE GEL STRIP WRAPPED IN ECO-PAPER WHICH ACTS AS A WICK TO CONTROL THE RELEASE OF FORMIC ACID VAPOURS.

NOD
NATURE'S OWN DESIGN

— APIARY PRODUCTS —



THANKS FOR COMING BACK!

CASH BACK \$\$

GET ON THE HEALTHY BEE PROGRAM! GET 10% BACK ON YOUR 2ND PURCHASE OF NOD PRODUCTS!

DISCLAIMER: Campaign is valid from January 01, 2016 until December 31, 2016. One discount per customer. Must be through a Bee Supply retailer. Date of receipts must be within the 2015/2016 calendar year. Minimum purchase of either (1) 2 Dose Pail or (1) Bee Casy Winter Wrap or (1) 1L TMT Liquid Formic Acid or (1) Box of 100 Honey Saver Comb Honey Trays per receipt. Maximum purchase of 900 MAQS doses (any pail size) or (50) Bee Casy Winter Wraps or (238) Litres of TMT Liquid Formic Acid or (1) 500 Box of Honey Saver Comb Honey Trays per receipt. Receipts must be a minimum of 30 days apart. GENERAL TERMS FOR OFFERS AND PROMOTIONS: 1. Discounts are applied on the product price excluding all convenience charges such as any applicable taxes, CO2, shipping and handling. 2. NOD Apiary Products USA Inc. and NOD Apiary Products Ltd. reserves the right to change/modify/add/delete any of the terms and conditions prevailing on the different promotional schemes it introduces in market from time to time. NOD Apiary Products Ltd. at its discretion, can withdraw a particular scheme from its website or market. 3. In case of any query pertaining to a rebate or discount campaign or regarding NOD products, please email info@nodglobal.com or call toll free 1-866-493-2929. 4. While participating in any NOD Apiary Products Ltd. rebate program or campaign you hereby agree to receive promotional mail from NOD Apiary Products and its subsidiaries. NOD will not share your information with any third party. 5. The Cash Back rebate of 10% off on two purchases of any NOD product, from any registered Bee Supplier, can be availed only once, for a maximum discount value of \$720.

HEALTHY BEES. HEALTHY PLANET.

To learn more call 866 483 2929 or visit www.NODGLOBAL.com.

Regional Reports



Maritimes



Mario Swinkels

First I would like to thank everyone for the opportunity to represent the Maritimes on the CHC board, Representing over 700 Maritime beekeepers, some large some small but all represented. Representation in numbers means a strong organization that is able to educate and influence other organizations and government for a better beekeeping. I would like to thank Paul Vautour for his work in the past as maritime representative

Winter in the maritimes has been up and down . Last year we were covered with two feet of snow and cold temperatures at this point, today we see bare ground. Temperatures are up and it looks like an early spring, we have endured lots of wind and ice this winter, but the warm spells have given bees a chance to step out and stretch . With blueberry pollination around the corner maritime beekeepers are looking forward to opening their hives and producing strong hives for the pollination season. This being said we hope the warm temperatures persist, as April can be a cool wet month.

SHB is a large topic in the maritimes as bees from across Canada make their way to our region. Nova Scotia is allowing interprovincial bees in Cumberland county only with each hive to be inspected before loading and shipping . New Brunswick will be holding it AGM March 19 with SHB as one of the topics of concern. PEIs AGM is in mid April with Les Eccles doing a SHB workshop. Small hive beetle has yet to be detected in our area but concerns are high with interprovincial movement. The fact that three provinces must import pollinators shows the maritimes has room for expansion within the beekeeping industry. Programs Such as the Modern Beekeepers course (dal ag campus) which is full this year and has a waiting list for next year, contributing to an increase of over 100 new beekeepers in 2015. As well Nova Scotia will be hosting the "Maritime Bee Tour" in Early August.

Québec



Scott Plante

Early winter loss results is around 5 percent, which is quite acceptable. Once spring clean-up is accomplished we should be at around 10-15 percent. My fear however rests in the fact that if the temperature doesn't start heating up, the hives that are already outside starts to dwindle.

The wholesale and retail honey for market remains stable and honey packers are struggling to find local honey.

The prices negotiated this year for blueberry pollination is \$125 for an 8-9 frame hive, \$140 for a box of bees and \$150 for anything stronger. I've even heard of prices on the \$180 to \$185 price range for two boxes of bees.

Quebec remains a SHB free zone and regulations have been put into place to insure this situation remains. All hives entering Quebec this year must be accompanied by the proper documentation and signed by the right authorities

On the 21st of March of this year a CHAIR IN EDUCATIONAL LEADERSHIP in beekeeping science at University Laval. More information on this in my next report.

Wishing you a good beekeeping season

Les pertes hivernales indiquent un taux préliminaire de 5%. Une fois la régie de printemps terminée, nous devrions atteindre un taux définitif de 10-15%, Je crains

toutefois que les ruches déjà à l'extérieur s'atrophient si la température ne commence pas à s'améliorer et à se réchauffer.

Certains empaqueteurs de miel semblent avoir de la difficulté à trouver du miel local et le prix du miel au détail et à la vente en gros demeure stable.

Le prix négocié cette année dans les bleuetières est de 125\$ pour une ruche de 8-9 cadres d'abeilles, 140\$ pour une hausse d'abeilles et 150\$ pour tout ce qui s'avère plus fort. J'ai même entendu parler de prix allant jusqu'à 185\$ pour des ruches à deux hausses d'abeilles.

Le Québec demeure une zone sans petits coléoptères de la ruche et des réglementations ont été mises en place afin d'assurer la continuité de cette situation. Toutes les ruches qui entrèrent au Québec cette année, devront être accompagnées de la documentation adéquate ainsi que de la signature des autorités désignées.

Le 21 mars sera inaugurée une CHAIRE DE LEADERSHIP

EN ENSEIGNEMENT en sciences apicoles à l'Université Laval. Plus d'informations sur ce sujet dans le prochain rapport.

Nous vous souhaitons une bonne saison apicole.

Ontario



Jim Coneybear

Small Hive Beetle (SHB) is a hot topic of discussion in Canada and appears to have many beekeepers worried. SHB has been in the Leamington area for five years now, and Tom Congdon has not been slimed out of business. He says that if he had a choice he would rather have SHB than wax moth in terms of the damage they cause to his hives. In Ontario, Tech Transfer has discovered that there are two times through the summer season that SHB increase reproduction; there is one spike in mid to late May, then again in early fall. The adult beetles are not a threat but the larvae are problematic. Queenless hives or those with drone laying queens are the greatest risk for becoming a source for SHB reproduction. Damp conditions are preferred over dry environments. Unquestionably they will survive our winters, but they are a tropical beetle and need warmer temperatures to pupate. When we consider the shorter season and the more northerly locations in the West, SHB may only have one round of reproduction in much of Canada. My initial observation from Ontario's experience is that we need to address SHB with some management modifications but have little to fear.

Winter this year in Ontario has been interesting. I have been calling it the "yo yo" season. We have seen days of near-normal temperatures with a little snow, then three or four day stretches with temperatures well above average. Rain instead of snow is often the precipitation we have had in early March, and also warm sunny days. As a result, many beekeepers have been out checking their hives. Thus far, everything looks excellent with most reporting less than 5% winter loss. It's still March, and too early to predict final wintering outcomes. We are hopeful that this trend continues, and that nice weather means an early start to a productive season.

I would like to take an opportunity to make a personal comment. (My attempt to address some controversy.) I have done commercial canola pollination since 1998 and made some observations over the years. When neonic treatments were first applied to canola I did not see a great effect on my bees. I noted that there were perhaps a few more queen issues and a slight increase in winter losses but these observations could conceivably have been attributable to something else. It wasn't until corn and soybean received widespread treatment that I experienced heavy winter losses and continual failure of queens throughout the season. I understand that there is a lot of debate over this subject. I believe western beekeepers, when they say they are not seeing big prob-

lems with neonics. I suppose there may be several reasons why their experience is different. I think part of the reason for the difference could be the types of crops planted and the way certain plants absorb and express the insecticide. Also, differences in environment, fungicide and herbicide use, rainfall and drainage, as well as possibly even soil type, may affect how bees are exposed to neonics. Often, when I experience bee kills, a herbicide or fungicide is also present in the residue analysis. (Their interaction can significantly increase the potency of insecticides.) At our OBA AGM, Tech Transfer presented research (Guzman and Eccles) to suggest significant neonic impacts on queens. These effects were seen after queens were given a single dose of clothianidin or thiamethoxam at a fraction of the LD50. Thankfully, Ontario is forming a Pollinator Health Strategy, working to reduce neonic use where it is not needed. Hopefully, with reductions, Ontario beekeepers will experience healthier bees and a brighter future. Thank you OMAFRA and MOE for all of your work to address the situation.

Manitoba



Allan Campbell

Spring has sprung! Or has it? Temperatures have been quite variable in the province and most of the snow had been melted in the fields before another cold snap came and another storm that dumped 4-5 inches of snow in parts of the province. During that reprieve some keepers were able to look at hives and do some assessment and I know anyone with indoor bees were spurred on to do checks as well. From what I hear most are optimistic that winter loss will be low again this year and bees seem to be in good shape still with lots of feed stores. Time will tell and fair spring weather will make all the difference.

Honey still does not seem to be moving. There are reports of a few loads being sold here or there, but I've heard estimates that say we may still be sitting on as much as 50% of our 2015 crop still unsold. To say that this is impacting producers would be an understatement and there is quite a lot of concern from many on the hardships this is incurring financially. We need to see our way out of this situation soon as it is becoming dire. Despite the flow of cheaper honey coming into Canada to be blended we have not seen prices drop on the store shelves to match so clearly the cost of savings are not being passed on to the consumer nor to the beekeeper. Thankfully however there are still some brands out there that are still 100% Canadian honey and I thank you all for your ethics and Canadian pride in this matter.

The last days of February we hosted more than one hundred attendees for our annual convention and symposium. We were very happy with the turn out as new faces and familiar faces came out to hear talks by Ernesto Guzman, Pierre Giovenazzo, Rob Currie, John Miller of Miller Honey Farm, among others and Maria Trainer of Crop Life Canada to introduce the new BeeConnected app, something we at the MBA are very impressed with. We began testing the app along with our provincial apiarist and some others from MAFRD as well as some spray applicators, we have identified a few changes we would like to see and passed them along to crop life, but are looking forward to using the very functional communication tool this summer.

We distributed an informal survey throughout the 2 days of our convention to gauge the interest of attendees in combining our AGM with the convention, and also support creation of a tech transfer team and hire a project manager to help the MBA with daily business affairs. We gained a lot of support for these ideas and will have more to report on soon. We were also very pleased to present Jim Campbell with an honorary lifetime membership and the Willy Baumgartner memorial award in a special presentation at our banquet. He was joined by his wife and son who were both beaming with pride as Jim's many contributions to the industry were recounted by his special friends Ron, Lorne and Rheel.

I wish you all a busy and successful spring and hopes for a bumper crop, fair weather for pollinators and fair prices in summer 2016!

Saskatchewan



Dani Glennie

The warm winter has been a nice treat this year, and hopefully will have made the winter easier on the bees. There hasn't been much news on the winter loss so far around the province, but we have checked a few of our own colonies and so far things look promising. The worry about SHB is something that many people in this province are concerned about as we move towards spring. The movement of bees' home from BC to Manitoba through our province is something we are addressing.

The TFW program has had smoother sailing this year, and many of the people have already received their paper

work from both countries and are booking their tickets for the season, which is very pleasant to hear. We have had some communication with our provincial Ag Minister where we were able to voice our concerns about the 4 in/4 out rule and though it is not handled provincially they were understanding and hoped that in the future we would be able to address our labour shortage problems.

There will be labour summit meetings in Winnipeg in the middle of March which will be hosted by CAHRC and I hope that our concerns about labour in the Ag sector will once again be heard and addressed. I will be happy to report about the goings on in the next report.

There has been very little movement of honey in Saskatchewan and the price is worrisome for many. With spring arriving we hope that the price will return as well as the waning market will springing back to life.

Alberta



Kevin Nixon

The season is getting underway here in Alberta. Early reports were most beekeepers were pretty happy and encouraged with what they were seeing. Winter was very mild and hives were seen with some brood in February and early March. From most reports it sounds like most hives have fairly large populations which means they will be burning through feed like crazy. Overall hive losses and condition seem to be similar to last year. However in the last couple days I've been hearing some reports of some higher loss numbers, still within an expected average range. The suspected causes I've heard sound to be queen failure, possibly higher mite levels last fall which didn't get knocked down soon enough, and in some cases, nosema symptoms have been visible. Pollen has been seen on the bees in central and southern Alberta since the last week of March and hopefully the bees will start building again.

The honey market remains to be quiet in Alberta and the little bit I've heard of what had shipped recently, prices are very depressed, basically down 50% from where we were a year ago. This is very frustrating as we have started making management decisions which costs money but we realized as beekeepers there was a positive affect on the bees by investing more dollars per hive. However with current honey prices, we must sit back and ask how we can justify the input on the lower return. It's simply not sustainable and the start to a potentially bad cycle. Honey prices drop, producers spend less on their bees and equipment, health of bees start failing due to lack of investment and we start facing higher losses. Hive numbers drop, production drops, honey prices rise and it take five years or more for us to recover economically and physically.

We have had a few calls and inquiries to CHC about how can we address these low prices. We continue watching imports and a flat consumption rate in Canada and we will continue to promote Canadian honey as a premium product. Why are US packers not that interested in Canadian honey? If Canadian consumption increases, will Canadian honey be used to fill the bottles, and how can we increase Canadian consumption? These are all great question I've been hearing and I think as a board we will need direction from the members at some point in time to help address these concerns. Best wishes for a safe and productive season.

I just wanted to share something with the beekeeping community and take a moment to recognize a group of people. As many of you may have heard, we had 12 hives stolen last year at Nixon Honey Farm in Alberta. This news story seemed to go national very quickly and far exceeded where we thought it would go.

Over the winter, Nixon Honey Farm was contacted by a few teachers from the Edgemont School in the city of Calgary on behalf of about 96 grade 2 students. These students were challenged with taking a look in the media and within their community around them and find an area where they could 'be a solution'. Well these grade 2 kids ended up seeing the story of the hive theft and decided they would like to do something to help Nixon Honey Farm. WOW! In early February I was invited into the school for the students to share with us what they have done. These grade 2 students over the winter did numerous jobs and chores around their homes and in their communities and ended up raising money to help recover some of the costs of the lost bees. I was so impressed. This was a group decision made by 7/8 year old kids to do something kind to help out others and to "be(e) a solution.

In all these students raised about \$600 and presented us with a cheque for this amount. We felt this was very generous of these kids and I explained to them that rather than just giving this money to Nixon Honey Farm, wouldn't it be cool if this money could help out many beekeepers, not just us. And they all agreed that would be awesome. So we let them know that Nixon Honey Farm would be sending the complete amount of money on to the Canadian Bee Research Fund in order to help researchers and scientists to continue their great work to help make bees healthier

all across Canada and even around the world! We also explained to them that there is sometimes opportunities for the money to be matched by different companies or agencies which would make their money go even further and to honor that, Nixon Honey Farm matched the donation to the Canadian Bee Research Fund. All in all, the



kids were all very excited about this and I just wanted to take this opportunity to thank Mr. Anthony Tang and the other teachers and grade 2 students from the Edgemont School once again and share with the beekeeping community how a group of young children can be so thoughtful to “bee a solution” within their community.

British Columbia



Stan Reist

Bee season has started in the lower portion of the Province, mild weather no cold season to talk about, however there has been lots of rain and more rain and rain. When the sun comes out the bees are flying, and bringing in lots of pollen.

The BCHPA had a booth at the Pac Age show in Abbotsford this year and the event went extremely well. Lots of interests from commercial growers and people looking at starting in bees. It was a three day event with lots of interest for everyone in all facets of Agriculture. I haven't got the final numbers but the pollination brochures we had printed

disappeared quite quickly.

The next event we have is the Semi Annual meeting which is going to be in Kamloops on March 10th and 11th at the Holiday Inns and Suites on Tranquil Rd. The rooms are all sold out and the attendance is looking really good.

Rudi Peters from Terrace is going to White Horse to teach a bee course and to make a presentation to the Gov leaders at the same time as there is no Apiculture legislation on the books. Looking forward to hear how that goes. Rudi is also starting a course in the Terrace area for the locals.

I am really glad to see the hard work of the members of the BCHPA, Lance Cutthill and Axel Crouse is paying off. Now because I named a few individuals here, doesn't mean they were the only ones involved. There are others I just can't name them all, so if you are one of the unnamed my apologies but stand up and be counted, you're a valuable asset.

Dr. Stangaciu from Romania, Apitherapy

Erick Stromgren Spring Management and two Queen hive.

Dr. Svenja Belaussoff, Project Manager for CHC increase profitability hand book for using CBISQT and Bees Biosecurity Standard.

Patricia Wolf Veiga National Bee Diagnostic Centre Tac Queen Health evolution of bee stock

Kerry Clark snakes and Africanized bees, teaching in Tanzania.

Dr. Marta Guarna, Queens losing Sperm in Transit?

National Bee Health Survey, up date for B.C.

Along with a World Café for Strategic Planning for the future

Checking around the province, most wintering hives with 10 – 20 % losses are on the decline right now and the 15th of April is coming fast. The 15th of April? What you have on this date is what you have, if the hive is alive, it should make it and be a viable colony. Otherwise it's dead and we all know about that. So even though it looks great now, there is still a ways to go. (Don't count your chickens comes to mind)

There is a disturbing trend that seems to be coming more evident, and that is small scale beekeepers not treating for mites. Why people get involved with bees is their concern. BUT deliberately not treating a colony for mites is not just their concern but everyone's concern! One instructor has told me that sitting in front of the hive assuming the Yoga position is not a valid way of treating for mites, and I would have to agree with him. This is where I would like to dose the individuals with lice and then tell them live with it. They can not treat themselves and see how long they

are willing to put up with the lice. All too often there are articles on the Garbage Net on how to keep bees with out treating, the problem with this is there are cultural controls that these people perform, which they do not classify as treating but leave this out, and lead people down the wrong path. Treatment is not an option, learn to keep bees first and then experiment, but learn before doing harm to your bees and others.

Last October at the Annual meeting, Less Echoless did a presentation on selecting Queens, and it was using a spread sheet to do this, some of our members are really interested in this and would like very much to try it. We understand the intellectual properties issue and the fact that it's not fully developed, and we hope Ontario will share it with interested beekeepers when it's available for release.

There was a presentation at the Semi Annual Meeting from the newly formed Commercial Beekeepers of B.C. Mr. John Gibeau, did a presentation about how the commercial Beekeepers and the BCHPA could work together. The usual rhetoric was brought up about who is passing what around. The Members of the BCHPA last Fall at our AGM made it clear they did not want any movement restrictions put in place, At the Semi Ann it was reaffirmed, the association had a second chance to look at its decision and confirmed they did not want any restrictions. The usual rhetoric about opening the border to hives coming up from Washington State. Who's going to do pollination, for what price etc.? The B.C.H.P.A. can and has and will continue to represent all sizes of beekeeping operations be it small operations or large. Some individuals with large numbers of hives, think they are entitled to more votes on some or all issues, I will take this opportunity to remind all, as a citizen of Canada regardless of size or income you still only have one vote in any election, Municipal, Provincial, Federal.

The BCHPA is not about to vote for opening the Canada US border any time soon, so that's not going to change. The commercial people appear to be very upset with Alberta Agriculture, with the restrictions put in place for the movement of bees into that province from B.C. That has nothing to do with us. At the meeting Us vs Them, Jen Dilfer stood up and made a statement. She was a small scale beekeeper and her family did not have to be concerned about the mortgage payment, if she was not able to move her hives. There was no opposition to that statement from anyone, No body in the BCHPA want's to see any beekeeper injured by the presents of the SHB. We still don't have any idea of what's going to happen. The motion that was passed was to have more inspections carried out and more funding to do this.

The unsaid words at this meeting would go something like this, The Commercial people can move their hives where they want, just keep in mind the rights of others not to be infested with a gift that keeps on giving. We can say a lot of things but the truth right now is we do not know what is about to happen or if it's going to happen. So let's all take a breather and roll a Players. Relax and deal with it in a calm manner.

Research Grant



honey industry continually evolves and Bee Maid Honey Limited understands the challenges and the importance of supporting bee and honey related research projects. We are pleased to announce that for 2016, after a call for research proposals, we have selected Dr. Sievenpiper and Dr. Khan from the University of Toronto to receive a research grant towards their project “The effect of honey on cardiometabolic risk in humans: A systematic review and meta-analyses”. We look forward to learning more about the results of their study in the next year.



Bernie Rousseau

Scholarships

The Bee Maid Fiftieth Anniversary Scholarship was created in 2004 to commemorate the formation of Bee Maid Honey Limited in 1954. The annual Scholarship is designed to stimulate the pursuit of excellence by rewarding outstanding achievement by the children and grandchildren of Bee Maid's co-op members and staff and to assist with their post-secondary studies.

Applicants were selected based on academic achievement in the previous year, evidence of community involvement and a 500-1000 word essay on a topic related to honey bees in agriculture and human food production.

The scholarship awards are testament to Bee Maid Honey's commitment to its members and staff. The Scholarship committee is pleased to announce that the 2016 recipients are Hailey Davidson from Edmonton, Alberta and Sydney Clark from Saskatoon, Saskatchewan.

Hailey is currently in her first year, attending Concordia University in Montreal majoring in French Studies, with a goal working as a translator after graduation. Sydney is graduating from high school this spring and hopes to enter the University of Saskatchewan in the fall, with plans of studying Kinesiology.



UNRESERVED APIARIST DOWNSIZING SALE for RIVERCREST HONEY FARM (WILL & MARTHA CLARK) of BRANDON, MB. - TUESDAY MAY 24th 1:00 PM

DIRECTIONS: From JCT #10 & #349 (South of Brandon, MB) 7 Kms West on #349 Sale Site on North Side of Road
From JCT #250 & #349 (North of Souris, MB/South of Alexander, MB) 14 Kms East on #349 Sale Site on North Side of Road Watch for signs sale day!



HIVES: • 400 +/- single brood nest colonies Will be equalized and queen checked. Treated with Oxalic acid Oct 2015. Have not used anything but Oxalic acid and Thymovar for Varroa treatment since 2012. No AFB detected in operation in 18 yrs. All hives on 4 way pressure treated clipped pallets with screened bottom boards. A number of single hive bottoms (150) will be available for those interested in purchasing odd numbers or non palletized colonies that can be transferred / traded. Forklift loading provided for both honey supers and hives. All hives have 3/4" fir plywood with wax dipped migratory lids. Most brood nests are dove tailed, wax dipped boxes. Will be government inspected for Varroa with less than 1% expected. Will be treated with Fumagillin for Nosema in early May 2016. Hives will have a mixture of Manitoba, Chilean, and Hawaiian queens, 2013, 14 and 15's.

SUPERS: • 2100 - 9 frame fully drawn honey supers 60% of the frames have a plastic foundation newer frame, (painted top bar), no metal ears, no nail ears, 99% + wood frames

EQUIPMENT: • 300 plastic queen excluders, 5 years old • 20' rolling gravity accordion type conveyor, used as an extracting room box return • Single stack, threaded rod box elevator, with new motor and barrel switch • Wax elevator / conveyor - from press or spinner to drum height

Not responsible for errors in description. Subject to additions and or deletions. Property owners and Fraser Auction Service not responsible for any accidents. GST & PST where applicable. TERMS: Cash or cheque. NOTE: cheques of \$50,000 or more must be accompanied by bank letter of credit.

For more information contact Will Clark 204-724-2373
willmarthoney@gmail.com



4th ANNUAL MANITOBA BEE PRODUCERS LIVE BEE AUCTION of BRANDON, MB. - WEDNESDAY MAY 25th 5:00 PM

Since bees are being consigned from Apiarists all over Manitoba the sale will be conducted at the Fraser Auction Service Barn in Brandon, MB by video presentation. Buyers wanting to see the bees in person will need to do so prior to sale day. Seller contact information will be posted on our website so you can contact them for directions to hive yards and info about their bees.

This sale is open to consignment of live bees. We are expecting +/- 1500 colonies of bees for this sale. Numbers will be dependent on winter losses of the consignors.

We are now taking consignments of all sizes of colonies for this sale. Singles / Doubles / Nuc

All bees must be government inspected prior to the sale and test results will be made available to prospective buyers. Inspections must be arranged with Provincial Apiarist by sellers.

CALL NOW TO DISCUSS THIS SALE OR TO CONSIGN YOUR BEES!!!

FRASER AUCTION SERVICE LTD.

Brandon, MB Auctioneer: Scott Campbell

Licensed and bonded. P.L. License #918093. Member of M.A.A., S.A.A., A.A.A., A.A.C.

P: 204.727.2001 F: 204.729.9912

W: www.fraserauction.com E: office@fraserauction.com

New Report on Horticulture

Nouveau Rapport sur L'horticulture

The Horticulture and Cross Sectoral Division of the Sector Development and Analysis Directorate, Agriculture and Agri-Food Canada is pleased to present the latest report: “Statistical Overview of the Canadian Honey and Bee Industry and the Economic Contribution of Honey Bee Pollination, 2013-2014”.

The report provides a comprehensive statistical overview of the honey and bee industry. It contains tables and charts about Canadian honey production, numbers of beekeepers and bee colonies, revenue, consumption and trade statistics. The report also includes an estimate of the economic contribution of honey bee pollination to Canadian agriculture.

Some highlights from the report include:

* Honey bee colonies in Canada are at their highest numbers in decades, increasing 4% from 2013 to nearly 700,000 in 2014.

* The value of honey produced in Canada totaled \$202 million in 2014, an increase of 11% from 2013.

* The trade balance remained positive in 2014 despite a decrease in exports. Total Canadian honey exports decreased from \$61 million in 2013 to \$51 million in 2014 while imports increased from \$26 million in 2013 to \$32 million in 2014.

* The annual economic contribution of honey bee pollination to Canadian agriculture in 2013 is estimated to range from \$3 billion to \$5 billion.

The key resources used in the preparation of this document are Statistics Canada and Global Trade Atlas. The methodology used to estimate the economic contribution of honey bee pollination is based on the work of Nicholas Calderone of Cornell University.

The report will be available online shortly but in the meantime, copies can be requested by emailing us at horticultureAAFC-AAC@agr.gc.ca.

Please feel free to forward this message to anyone who might be interested in reading this report. Please [infoservice@agr.gc.ca](mailto:%20infoservice@agr.gc.ca) email us to share your comments, questions and suggestions. ■

La Division de l'horticulture et des enjeux pan sectoriels de la Direction du développement et analyse du secteur est heureuse de présenter le dernier rapport : « Aperçu statistique de l'industrie apicole canadienne et contribution économique des services de pollinisation rendus par les abeilles domestiques, 2013-2014 ».

Le rapport fournit un résumé exhaustif des données statistiques de l'industrie apicole canadienne. Il contient des tableaux et des graphiques sur la production canadienne de miel, le nombre d'apiculteurs et de colonies d'abeilles, les revenus, consommation et échanges commerciaux. Il contient aussi une estimation de la contribution économique des services de pollinisation rendus par les abeilles domestiques à l'agriculture canadienne.

Quelques faits saillants du rapport sont :

* Les colonies d'abeilles domestiques sont à leur plus grand nombre depuis des décennies, soit une augmentation de 4 % par rapport à 2013 à près de 700 000 en 2014.

* La valeur du miel produit au Canada a atteint 202 M\$ en 2014, soit une augmentation de 11% par rapport à 2013.

* La balance commerciale est restée positive en 2014 malgré une baisse des exportations. Le total des exportations du miel canadien a diminué de 61 M\$ en 2013 à 51 M\$ en 2014 alors que les importations ont augmenté de 26 M\$ en 2013 à 32 M\$ en 2014.

* L'estimation de la contribution économique annuelle des services de pollinisation rendus par les abeilles domestiques à l'agriculture en 2013 se situe entre 3 à 5 milliards de dollars.

Les sources principales utilisées dans la préparation de ce document sont Statistique Canada et Atlas du commerce mondial. La méthodologie utilisée pour estimer la contribution économique des services de pollinisation rendus par les abeilles domestiques est basée sur le travail de Nicholas Calderone de l'Université Cornell.

Le rapport sera disponible en ligne sous peu, mais en attendant, des copies peuvent être demandées par courriel à horticultureAAFC-AAC@agr.gc.ca.

N'hésitez pas à transmettre ce message à tous ceux qui pourraient être intéressés par ce rapport. Veuillez nous écrire pour partager vos commentaires, questions et suggestions. ■

CBRF Preliminary Progress Report 2015

R.W. Currie Impact and Control of Viruses Associated with Honey Bee Colonies

The results of initial experiments are summarized below. Results were communicated broadly in oral presentations and CBRF funding for this project was acknowledged.

First detection of European honey bee (*Apis mellifera*) viruses on wax comb

Megan J. Colwell, Robert W. Currie, Stephen F. Pernal



UNIVERSITY OF MANITOBA



Agriculture and Agri-Food Canada

Agriculture et Agroalimentaire Canada

INTRODUCTION

European honey bees (*Apis mellifera*) are incredibly important pollinators. However, greater than normal overwintering losses has put a strain on apiculture and honey bee health. There is no clear answer for these losses, which are likely due to a number of interacting factors^{1-2,3}. Viruses have been implicated as one of these factors⁴.

Honey bee RNA viruses are highly prevalent in all honey bee populations, including Canada⁵. Three of the most common viruses are black queen cell virus (BQCV), deformed wing virus (DWV), and Israeli acute paralysis virus (IAPV)⁶. Whereas honey bee virus epidemiology has been studied extensively, no previous work has examined the possibility of the presence of these viruses on the wax comb that comprises the majority of colony substrates.

Potential implications of virus presence on comb:

- Virus reservoir
- Transmission of viruses within & between colonies
- Interactions with microbial factors on comb

This is the first investigation of viruses on honey bee wax comb.

OBJECTIVES

- I. To determine if honey bee viruses are detectable and quantifiable on wax comb.
- II. To determine if worker bees can transfer viruses to comb.



Bee on capped brood



Cage with wax foundation and 300 bees

METHODS

Molecular methods:

- TRizol reagent to wash wax samples^{7,8} (Life Technologies)
- Phenol-chloroform extraction of wash
- RNA extraction of supernatant (PureLink[®] RNA Mini Kit ThermoFisher Scientific)
- cDNA synthesis from RNA (iScript Life Science Research)
- RT qPCR to determine viral gene copies (iBBlocks[®] Integrated DNA Technologies)

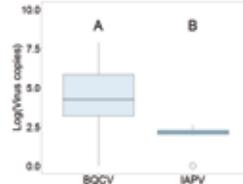
I. Wax comb samples were taken from 20 deadout colonies from the University of Manitoba overwintering building in April 2015, and were tested for viruses with the TRizol wash.

II. A cage study was performed with 3 treatments, 8 cages/treatment: high *Varroa* bees, low *Varroa* bees, and no bees. High and low *Varroa* bees were sourced from 8 colonies respectively, and 300 bees were randomly assigned to the 16 bee cages. Each cage had a piece of wax foundation (above, right) and were supplied with 50% sugar water and water *ad libitum*. Cages were kept in an incubator at 30°C and 75% RH for 7 days. Bees were sedated with CO₂ and frozen at -80°C. Foundation samples were removed from cages and kept at -80°C until processing.

Wax samples for both objectives were tested for BQCV and IAPV.

RESULTS

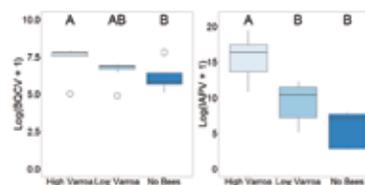
I. Both BQCV and IAPV were detected on deadout comb. BQCV was present on 95% and IAPV on 80% of samples (n=20). Co-infections of BQCV and IAPV were present on 80% of samples. Virus gene copies were log transformed for analyses.



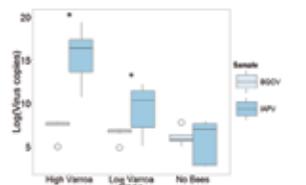
There was a significant difference in the amount of BQCV and IAPV on deadouts (ANOVA; df=18, p<0.0001).

II. Both BQCV and IAPV were detected on cage wax foundation.

TREATMENT (n=34)	PREVALENCE = BQCV	PREVALENCE = IAPV	PREVALENCE = CO-INFECTIONS
High <i>Varroa</i> bees	88%	88%	75%
Low <i>Varroa</i> bees	100%	75%	75%
No bees	88%	63%	63%



There was a significant difference in the amount of BQCV in high *Varroa* and no bee treatments (ANOVA; df=21, p<0.04). There was also a significant difference in the amount of IAPV in high *Varroa* versus other treatments (ANOVA; df=21, p<0.001).



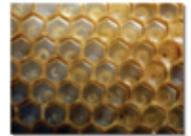
There was a significant difference in the amount of BQCV and IAPV in high and low *Varroa* cages (MANOVA; df=21, p<0.01).

DISCUSSION

I. Honey bee viruses are present on deadout comb. Both viruses were highly prevalent. BQCV was present in higher amounts than IAPV, which could mean BQCV was introduced in higher amounts, or, has higher survivability over time than IAPV.



Deadout colonies



Brood developing on drawn foundation

II. Honey bee viruses can be introduced to wax by worker bees. Again, viruses were highly prevalent in all samples in the different treatments. Virus amounts were greater in high *Varroa* cages than no bee cages, which was expected.

The most surprising result of this study so far is that viruses were present on wax foundation from cages with no bees. There could be several explanations: 1) human error introduced the viruses, 2) viruses were present on wax foundation before the experiment, and 3) viruses were spread through aerosol within the incubator. We cannot be sure of the cause without further experimentation, which is currently being planned.

In this experiment we see the opposite from the first in amount of the two viruses. It is possible that initially IAPV is present in higher amounts than BQCV, and that over time it degrades faster, eventually having lower amounts than BQCV. It's interesting that these two viruses are both in the same family of viruses (Dicistroviridae) yet perform so differently. It is also possible that viruses on deadout comb were introduced a different way than those introduced in this cage study.

FUTURE WORK

As this is the first investigation in this area, there are many basic points to address:

- Optimize qPCR primers for more viruses (e.g., DWV)
- Test honey bees from cage treatments
- Can we detect virus degradation?
- Are comb viruses infective to bees?
- Can comb viruses be controlled?

In PCR, a gene present in your sample is used as an internal control, making sure your results are reliable. Because wax has no genes, we have to develop an external standard to validate these results.



U of M's main apary

ACKNOWLEDGEMENTS

We would like to thank the University of Manitoba, Agriculture and Agri-Food Canada, and the Canadian Bee Research Fund for funding, as well as the following individuals for project support:

- Lisa Babey
- Jordan Bannerman
- Rasoul Bahreini
- Suresh Desai
- Dave Holder
- Derek Micholson
- Leanne Peltoot
- Zoe Rempel
- Aldo Rios
- Cole Robson-Hyska
- Kateryn Rochon
- Barb Sharanowski
- Steve Whyard

REFERENCES

1. Delaplane, E., and Mayer, D. F. 2000. Crop pollination by bees. CAB Publishing, New York.
2. De la Rúa, P., Iaffa, R., Daffre, R., Muñoz, L., and Serrano, J. 2009. Biodiversity, conservation and current threats to European honeybees. *Apidologie*, 40(3): 263-284.
3. Currie, R.W., Pernal, S.F., and Guzmán-Novos, E. 2010. Honey bee colony losses in Canada. *Journal of Apicultural Research*, 49(2): 104-106.
4. Hagfield, A.C., Nagar, A.E., Mackinder, L.C.M., Noll, L.M., Hall, M.J., Martin, S.J., and Schroeder, D.C. 2009. Deformed wing virus implicated in overwintering honeybee colony losses. *Applied and Environmental Microbiology*, 75(22): doi:10.1128/AEM.02227-09.
5. Chen, Y.F., Pettis, J.F., Collins, A., and Feldhafer, M.F. 2009b. Prevalence and transmission of honeybee viruses. *Applied and Environmental Microbiology*, 75(22): 606-611.
6. Desai, S.D., Kumar, S., Currie, R.W. 2015. Occurrence, detection, and quantification of economically important viruses in healthy and unhealthy honey bee (Hymenoptera: Apidae) colonies in Canada. *Canadian Entomologist*, 00: doi:10.4039/ice.2015.23.
7. Aparicio, F., Sánchez-Pina, M.A., Sánchez-Narros, J.A., and Pellás, V. 1999. Location of *Prunus necrotica* ring-pit (rasput) within pollen grains of infected nectarine trees: evidence from RT-PCR, dot-blot and in situ hybridization. *European Journal of Pathology*, 105: 623-627.
8. Singh, R., Levitt, A.L., Rajotte, E.G., Holmes, E.C., Orligay, N., vanEngelstroom, D., Lipkin, W.I., deFamphilis, C.W., Toth, A.L., and Cox-Foster, D.L. 2010. RNA viruses in Hymenopteran pollinators: evidence of inter-taxa virus transmission via pollen and potential impact on non-Apis Hymenopteran species. *PLoS ONE*, 5: e14397. doi:10.1371/journal.pone.0014397.

Beekeeping in Art II:

Aganetha Dyck

Submitted by Peter Kevan

Canadian beekeepers, and readers of HiveLights, it seems, like to know how their activities inspire artists (see HiveLights, August 2015 Volume 28, issue #3 article on JoEllen Brydon). So, I am encouraged to write this second article, this time about Aganetha Dyck and her art, in what may become a continuing series.



Bees, especially honeybees, bee's wax, industriousness, sociality and beekeeping have inspired art for thousands and thousands of years. The aesthetic value of bees to human beings is shown by ancient cave paintings of honey gathering in Spain 8,000 year ago. Egyptian wall paintings 3,500 years old explain beekeeping and honey production. Bees, honey and wax are parts of Hindu, Buddhist, Jewish, Christian, Islamic and other religious traditions. Of course, bees symbolize human aspirations for collaboration, organization, hard work and productivity. All in all, bees seem to have been part of art since art was invented.

So also bee products. Bee's wax is used, mixed with pigments and a huge variety of included objects, in encaustic creations. It is also used in traditional batik in which the wax provides dye-proof areas and lines to make patterns and pictures through serially dying and re-dying while the wax is removed in hot water and reapplied on previously dyed areas.

Aganetha Dyck uses the industriousness and constructiveness of honeybees directly in her bee-collaborative art. She and the bees incorporate comb building into sculpture!

I first saw her work at the Macdonald Stewart Art Centre in Guelph in summer 1997. There, the colony, housed in a transparent room in the gallery, had access to the outdoors through a plastic pipe. The bees were building comb on and in a bridal trousseau as a living, changing, dynamic sculpture. As Aganetha knows, honeybees may build their homes in almost any enclosed, and even in open, spaces. She has used her collaborators as “guest workers” inside at least 10 art galleries.

Many of Aganetha’s intriguing pieces comprise comb built onto found objects. The amazing array of found objects she has used ranges from broken sports equipment, discarded clothing, ceramic ornaments, figurines, it seems anything that takes her fancy for fascinating forms when embellished with hexagonal patterns of comb. She has also used bees to help draw by recording their work on computer scanner tablets. Now, she has been taking the bees’ patterns of activity recorded on feeder boards used in hives. All these exemplify joint work and present to us visual forms of inter-species communication.

Aganetha is Manitoban and works with beekeepers there. In particular she acknowledges the help and encouragement of Phil Veldhuis of Starbuck, Manitoba. She is not a beekeeper herself, but like me, when first introduced to a colony, was drawn powerfully by the natural precision, energy, activity, sounds and smells from the hive. So started her conjoined interests in inter-species communication, the power of the small, and the shared vulnerability of honeybees and human beings as creators of space and as environmental architects.

Her most recent exhibition (ending on 10 January, 2015: I will go!) “Denouement: Memories of the Hive”, at the Tom Thomson Art Gallery (google: Tom Thomson Art Gallery, Aganetha Feeder Boards) in Owen Sound, Ontario reflects Aganetha’s having become highly allergic to honeybee stings. She intends to continue collaborating with honeybees and beekeepers, but staying at a respectful distance from the former!

She has an impressive record of exhibitions around the world. In 2007, Aganetha received the Canadian Governor General’s Award in Visual and Media Arts and, the year before, the Manitoba Arts Council Award of Distinction. She is a major influence in contemporary art as her many contributions attest, not just through imaginative, evocative and novel pieces, but also through her many interviews and collaborations.

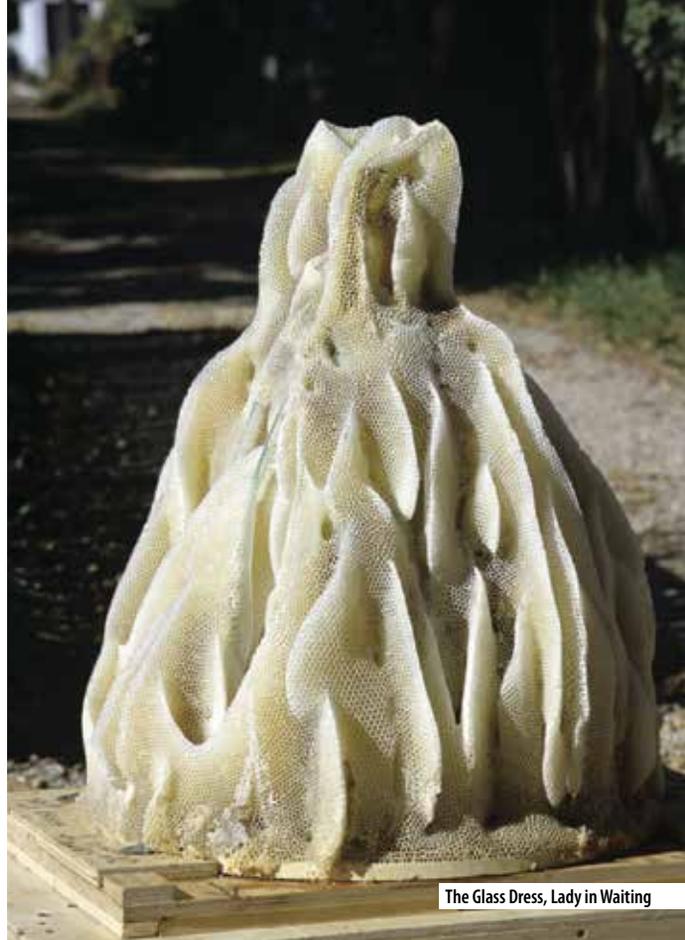


“These images were produced in the darkness of the beehives by artist Richard Dyck (my son) and I in 2002. A selection of these are in the National Gallery of Canada, The Canadian Embassy in Berlin and other museums. They have been exhibited all over the world including Canada, Serbia, Berlin, USA and others. They are inkjet prints by Richard Dyck and Aganetha Dyck and Phil Veldhuis’s honeybees.”





Cinderella's show?



The Glass Dress, Lady in Waiting



This illustrates how the pieces were created by Aganetha and the bees



Making the Table cloth piece

Aganetha asks me to include some special thanks. So, I quote her words “the beekeeper that I worked with for over 20 years was Phil Veldhuis, Starbuck, Manitoba - he deserves a lot of credit for my success as does Dr. Mark Winston from Simon Fraser University.”

To learn more about Aganetha’s work, why she has worked with honeybees, and her plans going forward, please visit the gallery that carries her work (<http://www.gibsongallery.com/artists/aganetha-dyck>) and her personal website (<http://www.aganethadyck.ca>). A highly informative interview with Aganetha from 2011 is reported in The Mason Journal of the Toronto-based interiors design firm, Mason (<http://www.mason-studio.com/journal/2011/10/interview-with-aganetha-dyck-canadian-visual-artist/>). ■

Hockey night in the beehive



ABF Convention SawGrass Marriot Jacksonville Florida



Submitted by Calvin Parsons

It was my pleasure to attend the ABF convention in Jacksonville Florida to help with the information booth that the CHC had set up in the trade show area. While it had been many years since I had been to the USA I thought that visiting with entire new bunch of smoke blowing, hive tool bending fanatics certainly there had to some fun involved.

The trade show area we were in was huge. There was every manner of bee keeping equipment manufacturer, bee books, remote sensing, extracting equipment and honey handling and packaging.

The CHC booth was located on the corner of the second row directly across from the Dadant booth. We had a tremendous amount of traffic and a lot of interest in beekeeping in Canada. The Americans loved the look of the honey samples we had on the table and it got many compliments. Discussion ranged from the varieties of honey we had in Canada and of course the varieties the Americans had. There were many questions about the use of oxalic acid as a mite control

agent since oxalic has just received registration there. How much feed we give our colonies and what kind of protection are the colonies afforded for winter. Our mite levels and of course the winter loss rates.

I have noticed as we have traveled around the world that beekeepers share many things even though they are an entire continent apart of half way round the world.

The main topic of discussion seemed to be the price of honey and the unbelievable collapse of the firm honey market only months before. There was some genuine interest in the Apimondia upcoming congress.

I took the opportunity to sit in on some presentations, and I was pleasantly surprised that beekeepers and the provincial beekeeping associations and CHC have moved forward on the subject of bee health on a lot of fronts further than the Americans. Canada has taken the opportunity to work together with beekeepers and CAPA as well as the federal ministries involved, have come together for the betterment of bee health all across Canada. It made me feel good for all the work that has gone into bee health here. ■



Comprehensive diagnostic services for the Canadian Beekeeping industry.

- Nosema Spore Count & Identification
- Tracheal Mite Detection
- EFB Detection
- AFB Detection & Antibiotic Resistance
- Varroa Count
- Virus Detection & Quantification
- Antibiotic Residues in Honey
- Pesticide Residues in Honey, Bees & Pollen

GPRC National Bee Diagnostic Centre
Beaverlodge, Alberta
780.357.7737
NBDC@gprc.ab.ca
www.theNBDC.ca

NEW FOR THE 2016 SEASON!!!!



NEW SIZE!
250g Miele
(63mm)



500g Miele
(70mm)



1Kg Miele
(82mm)

HERE'S TO A GREAT 2016 SEASON!

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

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

A new tool to help encourage communication between beekeepers and farmers is coming to Canada

CropLife Canada's BeeConnected app anonymously connects registered farmers, beekeepers and pesticide applicators – free of charge – to provide information on any pesticide application activity or beehive locations near them – all through the use of a web browser, iPhone or Android device.

“We’ve heard from a number of groups that communication between all parties could be improved,” said Pierre Petelle, vice-president of chemistry, CropLife Canada. “And the BeeConnected app addresses this issue with an end goal of helping prevent bees from being unintentionally exposed to pesticides.”

CropLife Canada has partnered with the Canadian Honey Council to bring the app to Canada.

“We understand the importance of the full agriculture industry working together. BeeConnected is another tool that can help improve information sharing between beekeepers, farmers and contractors to ensure bees are protected,” said Kevin Nixon, chair of the Canadian Honey Council board of directors.

Getting started is easy

Users simply visit the website or download the app from iTunes or Google Play and create an account right on their smartphone.

Farmers are then notified when a beekeeper logs a bee yard location within five kilometres of their property and beekeepers are notified when any crop activity is logged within five kilometres of their hives.

All registered information is kept confidential and users are always anonymous.

Registered users can choose to use BeeConnected's built-in messaging service to coordinate and privately share information with specific users or can broadcast their message to any relevant users registered within a five kilometre radius of their activity or hive.

Farmers, commercial applicators and beekeepers can also explore the in-app map to find any nearby activity that could affect them. But beekeepers can't see other beekeepers and farmers and pesticide applicators can't see other farmers and applicators, something Petelle says was flagged as a concern for users of existing geolocator apps.

Petelle says BeeConnected is an important tool to help farmers, commercial applicators and beekeepers protect pollinators by opening up a line of communication about agricultural activity or hive locations with their neighbours.

“Bees and pesticides are integral and complementary components of sustainable agriculture,” said Petelle. “The plant science industry is committed to ensuring both beekeeping and agriculture can co-exist and thrive and this is just one tool to help make the connection between farmers and beekeepers.”

Interested in signing up? Head to beeconnected.ca for more information and further instructions on how you can download the app. ■

MASTER BEEKEEPING CERTIFICATE
Online

Upcoming Courses:

JOURNEYMAN
June 6-August 5

APPRENTICE
August 15-September 23

MASTER
October 3-December 3

UNIVERSITY OF MONTANA

REGISTER NOW **UMT.EDU/BEE**



Hummerbee™ Forklifts

Designed To Improve Your Productivity



Hummerbee XL

**2 Models
Available**

XL: 1600 lb Rating
Turbo: 1800 lb Rating
Turbo Tipping Load
Straight: Over 3000 lbs



Hummerbee Turbo with Clamp

**Turbo Features: 43 HP 4 Cylinder Diesel, Extra Cooling,
Hydraulic Foot Pedal is "Very Smooth", Large Flootation Tires**

Exceeds All ANSI Certifications At Rated Weights

A&O Forklift

800-943-8677

email: hummer@hummerbee.com

website: www.hummerbee.com

Manufacturing More New & Handling More Used Forklifts Than Anyone!

**Trust the company with 25 years manufacturing and
35 years commercial beekeeping experience**

Attachments: Hive Clamps - Drum Handlers - Mowers - Buckets - Brooms - Augers - Snow Plows





As winter winds begin to seep around the edges of the beeyard in Canada, do you dream of soft island breezes and luaus on a Hawaiian beach?

Your dream just came true...and there's more!

Join the Western Apicultural Society (WAS) at their Annual Conference this October 13 - 15, at the Ala Moana Hotel, on the end of famous Waikiki Beach in Honolulu, Hawaii. Experience Island cuisine and the gentle, laid-back Island style, mix and mingle at the Bee Buzz Social the evening before the conference begins, hear excellent speakers talk about the latest science has to offer the beekeeping industry, with plenty of time to just visit with other beekeepers from all over North America.

The conference theme is "Beekeeping in Hawaii: New Insights into Old Questions". The distinct islands, each with their own set of pests and parasites, provide researchers with natural laboratories in which to study the effects of the mite on colony health. The work conducted in Hawaii has opened the doors to new perspectives with respect to virus evolution, varroa's impact, and colony management.

The conference program will include professionals and students who are working on these research programs, many unique to Hawaii; a look at the effect of honey bee problems among other pollinators; and a teaching component to help elementary and high school teachers provide their students with learning opportunities related to pollinators. Workshops and tours will combine visits to tropical farms, apiaries, and the gorgeous island scenery.

For those not familiar with us, WAS is a registered non-profit, educational organization with specific interests in western North America (though we have members from all over). Created in 1977 to address the then-unmet needs of hobbyist and smaller beekeeping operations, the 2016 version of WAS continues to take care of those needs at the same time it acknowledges and remains inclusive of the commercials. New research, which is the basis of the conference and, by extension, the WAS Journal, is not exclusive to either end of the spectrum. Nor do you need to be a WAS member to join us.

Dr. Ethel Villalobos and her team look forward to sharing the cultural and biological diversity of these islands with all of you. Watch the website (www.westernapiculturalsociety.org) for more details as they become available.

ALOHA!

WAS RETURNS TO THE ISLANDS

HAWAII 2016

OCT. 13-15

WWW.WESTERNAPICULTURALSOCIETY.ORG



CAHRC WORKING WITH CANADIAN HONEY COUNCIL TO GROW THE AGRIWORKFORCE

CAHRC is currently engaged in four research Initiatives focussing on clarifying various aspects of the labour situation facing the agricultural industry. By building our labour market intelligence, evidence based policy can be developed and the industry can create meaningful plans to **Grow the AgriWorkforce**.

CANADIAN AGRICULTURE AND AGRI-FOOD WORKFORCE ACTION PLAN (WAP) is a comprehensive strategy which is a roadmap forward designed to address the sector's critical and pervasive labour shortages which have been identified as the biggest business risk management issue for the industry. It is a collaborative effort developed by the Labour Task Force (LTF), comprised of industry representatives from every aspect of the agriculture and agri-food value chain. The **Workforce Action Plan** provides government and industry with short, medium and long-term action items focusing on:

1. Increasing the supply of labour for skilled and unskilled workers; and
2. Improving the knowledge and skills of workers in the industry.

On February 9th, CAHRC partnered with the Canadian Federation of Agriculture to offer a Virtual Farm Tour for Federal Department officials. We had excellent engagement where producers were able to communicate the work that takes place on modern agricultural operations today through videos and pictures. We had 12 LTF members presenting and 30 Department officials participating from Agriculture and Agri-Food Canada, Employment and Social Development, Immigration, Refugees and Citizenship, and Statistics Canada.

Kevin Nixon, Canadian Honey Council Chair, spoke about beekeepers recruitment efforts, the nature of the work, and the skilled workers the industry cannot afford to lose. At a side meeting, Kevin and other seasonal industries connected with the immigration Department Officials that oversee the Cumulative Duration file.

Read the article: *Let's get to work on a Canadian agriculture and agri-food workforce action plan* (Hill Times, Nov. 9, 2015, pg 46).

<http://www.cahrc-ccrha.ca/sites/default/files/2015-11-LetsGetToWorkCdnAgWAP.pdf>

To learn more about the Workforce Action Plan: <http://www.cahrc-ccrha.ca/workforce-action-plan>

LABOUR MARKET INFORMATION (LMI) is defining today's agricultural workforce shortage and future labour trends to clarify Canada's agricultural labour market situation and future requirements. **The LMI national results will be released upcoming at the CAHRC Growing the AgriWorkforce Summit March 14 to 16.** Part of this important work is research how to reduce barriers to entry for under-represented groups such as Aboriginal people, Immigrants and Persons with Disabilities. CHARC has two pilot projects currently underway in which employment coordinators are working with employment agencies and agricultural businesses to place potential workers. **Learn more:** <http://www.cahrc-ccrha.ca/labour-employment/lmi-supply-demand-forecast-model>

NATIONAL AGRICULTURAL OCCUPATIONAL FRAMEWORK (NAOF) is identifying the knowledge and skills involved in today's modern farm operations to support employers with tools for training agricultural workers and to help agricultural colleges align their training programs to industry needs. It is an in-depth study about the core agricultural jobs and competencies involved in today's agricultural workforce. To date, twenty National Occupational Standards (NOSs) have been developed for the pork, sheep, aquaculture, beef and poultry producers. This fall, NOSs for beekeepers were developed in collaboration with Canadian Honey Council members. Focus Group Meetings took place in:

- Edmonton, AB - November 18, 2015
- Saskatoon, SK - December 1, 2015
- Winnipeg, MB - January 12, 2016

A Competency Profiling Session also took place in Edmonton February 11, 2016 identifying the many of the “softer” skills for the four levels entry, experienced, supervisor and manager. For example, does this employee need to be able to work in a team, do they need to be adaptable.

This is important foundational research that will help the industry develop hiring and management tools that support growers in finding, training, and retaining workers. Tools will include industry-validated job descriptions, worker assessments, training requirements and resources, customizable job ads, interview guides, online learning resources, and a nation-wide job board for agricultural jobs.

“Together, CAHRC and the CHC are strengthening the agricultural workforce and creating a more sustainable future for beekeeper. These initiatives are helping us to address some of our most important issues and get our voices heard at every level of government.” -Rod Scarlett, Canadian Honey Council

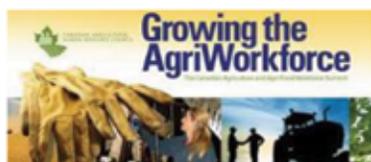
Learn more: <http://www.cahrc-ccrha.ca/skills-training/national-agricultural-occupational-framework-labour-market-support>

SUPPORTING THE ADVANCEMENT OF WOMEN IN AGRICULTURE (SAWA) is examining and addressing critical barriers to advancement facing women in the agriculture industry, leading to implementation of a strategic program to support improved access to leadership opportunities for women working in agriculture. A survey examining possible barriers to women advancing to leadership roles in agriculture is currently underway.

Participate in the survey here: <http://www.cahrc-ccrha.ca/Supportingwomeninagriculture>

Read *Women in agriculture polled on barriers* (London Free Press, November 3, 2015):

<http://www.lfpress.com/2015/11/03/women-in-agriculture-polled-on-barriers>



GROWING THE AGRIWORKFORCE: CANADIAN AGRICULTURE AND AGRIFOOD WORKFORCE SUMMIT, MARCH 14 – 16, 2016, Fairmont Winnipeg Hotel, in Winnipeg Manitoba: The latest LMI agricultural national research will be released and tools will be showcased with stakeholders from the entire agriculture value-chain will be participating. Industry agricultural leaders will contribute to the discussion

about **how we grow the AgriWorkforce**. Many CNLA members are participating in the Summit which will set the course for the next steps of the Canadian Agriculture and Agri-Food Workforce Action Plan. **The hotel room block runs out February 29 so register today:** <http://www.cahrc-ccrha.ca/growingtheagriworkforce/>

WAGES OF FARM WORKERS KEEP PACE WITH THE WAGES IN OTHER SECTORS, FARM CREDIT CANADA, OCTOBER 2, 2015

<https://www.fcc-fac.ca/en/ag-knowledge/ag-economist/wages-of-farm-workers-keep-pace-with-the-wages-in-other-sectors.html>

The Canadian Agricultural Human Resource Council (CAHRC) is a national, non-profit organization focused on addressing human resource issues facing agricultural businesses across Canada. For more information visit www.cahrc-ccrha.ca

The Canadian Ag HR Council is your one-stop shop for agricultural HR needs:
the access point for agricultural labour research and customizable solutions for HR management and training



@CdnAgHRCouncil | info@cahrc-ccrha.ca | www.cahrc-ccrha.ca | 613-745-7457



BUSY BEEKEEPING SUPPLIES

A complete line of beekeeping and candlemaking supplies
We buy and sell BEESWAX

20 County Rd 1 TOLEDO, ON K0E 1Y0
613 275 1112 busybeesupplies@hawk.igs.net
www.busybeekeeping.com



Early Queen Arrivals
Providing queens to beekeepers since 2001

Queens from Australia and California

- plan now for 2016
- order early to ensure your requests
- quality service and reasonable pricing for early season: splits, re-queening or pollination needs
- shipping from Toronto
 - by air (Air Canada) to major Canadian centres
 - by courier (Priority Post) to Ontario destinations

Arrival dates through April and May. Confirm final orders by end of February.

Contact Peter Mewett | Phone: 613.395.3225 | Fax: 613.395.1835
Email: pmewett@hotmail.com | www.earlyqueenarrivals.com



Paradis Valley HONEY Ltd.
WATINO, ALBERTA

Danny & Ginette Paradis
PH: 1-866-624-8175
FAX: 1-866-240-7664
Email: forpollen@gmail.com
www.paradisvalleyhoney.com

Canadian honey and pollen sales
Purchasers of fresh Canadian bee pollen

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

Proud sponsor of the Canadian Honey Council



Honey Wanted

**FOR CURRENT MARKET CONDITIONS
CALL – GAIL WYANT
1-800-265-4988 Ext. 3322
e-mail: gail_wyant@mccormick.com**

**Trusted By Beekeepers
for Over 50 Years!**

**McCormick Canada,
600 Clarke Road, London, On.
N5V 3K5**

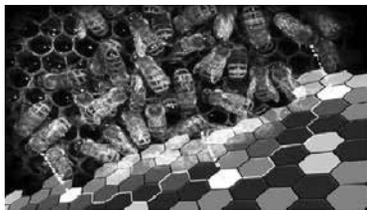
Fax: 519-673-0089 www.billybee.com



Industries Canada Inc.

Hive Contamination Management

Iotron provides a solution for today's bee colony problems. Iotron's treatment program provides Apiculturist's a cost effective and environmentally friendly solution for managing common beehive contaminants. Iotron's Electron Beam irradiation treatment is proven effective for eliminating AFB and Nosema from comb, pollen, and wax. Iotron's treatment method penetrates through materials like an X-Ray, yielding superior results and does not leave any residues. The Iotron treatment allows beekeepers to reduce the need of antibiotics and other interventions. Iotron's Electron Beam irradiation treatment program is an advanced IPM tool for working on today's complex issues.



Please contact Iotron for more information
Iotron Technologies Corp.
1425 Kebet Way, Port Coquitlam, BC V3C 6L3,
Tel: 604 945-8838 Fax: 604 945-8827
Email lotron@iotron.com Website www.lotron.com

Certified System
ISO 9001
QMI-SAI Global



**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

VESPER TRANSPORT LTD.

Fully reconditioned and #1 Quality Export Drums - Offering custom trucking across western Canada and western states.
Office/Cory 250-499-5773 - Lee 250-499-5753 -
Fax 250-499-5752

BC Bee Supply

Beekeeping supplies & equipment.

We buy and sell - beeswax - bee pollen - propolis

Burnaby, B.C. www.bcbeesupply.ca



PLANET BEE HONEY FARM TOURS & GIFTS

5011 Bella Vista Road
Vernon, B.C. V1H 1A1
Phone 250 542-8088
email: info@planetbee.com
website: www.planetbee.com

Retail / Wholesale & Distribu-
tor Pricing,
Re-sellers Wanted
Specialty Honey, Pollen,
Propolis, Royal Jelly,
Filtered Beeswax



WIPE OUT YOUR MITE PROBLEMS

Safe and least expensive method for applying formic acid to control bee mites in honeybee colonies. Available at your local beekeeping supplier or call:

Telephone (519) 847-5333 Fax (519) 847-5340

E-mail: dbryans@xcelco.on.ca



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
Muro 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
Permament
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

APINOVAR

**Key Tool
for an easy
control
of
varroa**



**Now with
stainless
steel
wire mesh
and reinforced tray**

Monitor easily

MADE IN CANADA

Treat efficiently by the "flash" method

distributors:

Propolis etc.
Alberta Honey Producers
Stanabbey

More information including
IPM guide and schedule on our web site

www.apinovar.info



Honey Bee Research Centre Report, 2015

By Ernesto Guzman and Paul G. Kelly

Introduction

The current research in our lab is a response to the high mortality rates of honey bee colonies. More than one third of the honey bee colonies in Ontario and Canada died during each of the past seven winters. This mortality level has no precedent and beekeepers do not understand what is happening to their colonies and how to minimize their losses. These colony die offs are worrisome because the annual incremental value of bees as pollinators of crops in Ontario exceeds 100 million dollars and that of all Canada exceeds one billion dollars.

Results of a study conducted by our team (Guzman-Novoa et al. 2010) suggest that bees are dying as a consequence of combined effects of several causes, being the parasites *Varroa destructor* and *Nosema* spp. two of the most damaging factors. The varroa mite was found to be associated with more than 85% of the winter mortality cases, whereas *Nosema* shortened the lifespan of bees, which resulted in a significant depopulation and slow growth of honey bee colonies during spring. Current methods used to control these parasites rely upon the application of synthetic medi-

caments (miticides and antibiotics). However, the continuous use of these products has led to the development of mite resistance to their active ingredients and the same could happen with the antibiotic used to control nosema disease. Additionally, the use of synthetic chemicals implies a risk of contamination of honey and other hive products with toxic residues.

Other important factors associated to bee mortality are pesticides used by both beekeepers and crop growers. Several research strategies have been followed at the Honey Bee Research Centre to better understand the effects of pesticides and parasites on bees, as well as to develop novel control methods for *Varroa destructor* and *Nosema* spp. in honey bee colonies. Research is being conducted to assess the toxicity and detrimental effects of synthetic miticides and antibiotics (used to control varroa mites and *Nosema* fungi) on the bee's immune system. The same evaluations will be conducted for neonicotinoid pesticides and other insecticides used in agricultural crops that are pollinated by honey bees. These studies will increase our knowledge of why and how these products could be associated to bee mortality, but also how damaging they are to bee health. They will probably strengthen the argument about the need to minimize the use of synthetic pesticides and chemicals in hives and on crops.

Research Projects

The following are summaries of the research projects our lab was involved in during the last three years:

a). Pathogenic effects of *Nosema ceranae* and *N. apis* and alternative treatments

The microsporidium fungus *Nosema ceranae* is an obligate, intracellular parasite that has been recently discovered infecting the western honey bee, *Apis mellifera*. It was detected for the first time in Canada in 2007 and has been associated to cases of bee mortality in other countries. A study recently conducted by our team showed that *N. ceranae* is the dominant *Nosema* species in Alberta and Ontario and that the infection levels of colonies parasitized by *N. ceranae* were up to five times higher than those of colonies parasitized by *N. apis* (Emsen et al. 2016). Thus, more research on the biology of *N. ceranae* as well as on the impact it might have on *A. mellifera* is greatly needed. However, conducting studies on *N. ceranae* is not only dependent on availability of *Nosema* spores at different times of the year, but also on reliable methods for determining spore viability. One of the objectives of this project is to use cryogenics to provide a year-round source of viable *N. ceranae* spores in vitro and a differential staining procedure with fluorescent dyes to assess the viability of *Nosema* spores. Results from Janine McGowan's MSc. thesis have shown that cryopreserving *N. ceranae* spores will facilitate studies on nosema disease of honey bees.

Other objectives of this project are to further investigate the pathogenic effects of *N. apis* and *N. ceranae* as well as to study the immune responses of bees infected with different *Nosema* species. One important practical aspect of these studies will be to investigate ways of increasing the expression of immune responses in bees to potentially control honey bee diseases, including nosema disease. We are looking at infection levels, damage at the cellular level and effects on the immune response and length of life of bees infected with *Nosema ceranae*. The immune induction experiments involve the testing of various resistance inducing agents followed by an infection challenge. Genes that are expressed in the bees as a consequence of the immune response to the parasites will be identified through gene expression techniques. These genes will be sequenced and primers will be designed to develop markers that could eventually be used in marker-assisted selection of bees that show high immunological responses to pathogens. We will also test potential immune enhancers that could eventually be used instead of synthetic chemicals to improve the natural immune response of bees against diseases and parasites.

We have established a bee molecular and pathology laboratory, which will be key for the studies proposed. We have also developed new techniques to extract the DNA from these parasites as well as methods to reliably identify *Nosema* species even from single infected bees, which is something that was difficult with previous techniques. Dr. Hamiduzzaman, a Research Associate in our molecular lab, as well as Pegah Valizadeh (Ph.D. student), and Daniel Borges (MSc. student) are fully involved in these studies. Additionally, we have had the collaboration of Dr. Paul Goodwin, an expert on gene expression studies. Preliminary results have shown that *N. ceranae* shortens the life span of honey bees by about 14-24% and shows high infectivity. Infections of millions of spores can develop in the bees' digestive tract when fed with as low as 32 spores. Additional results have shown that two microorganism proteins as well as some nutraceuticals could be promising immune activators that may contribute to inhibiting infection development of *N. ceranae* in honey bees.

b). Immune related basis of honey bee resistance to the ecto-parasitic mite *Varroa destructor*

The objectives of this project include measuring humoral and cellular immune responses of susceptible and resistant bees to the ecto-parasitic mite *Varroa destructor*. Bees of European (susceptible genotype) and African (resistant genotype) origin have been used to test the hypothesis that mites inoculate viruses or proteins that differentially inhibit the immune response in resistant and susceptible bees. Parallel experiments were conducted in Canada with European bees and in Mexico with Africanized bees. Bees were artificially parasitized with varroa mites, exposed to mite fluids, or simply pierced, emulating a mite bite. Samples of haemolymph (bee blood) and bees subjected to the different treatments at different times of exposure were collected to determine the number of haemocytes (blood cells) and the expression level of immune-related genes. Results have shown that the cellular and humoral responses of bees exposed to the mites or to their fluids are inhibited in both types of bees. Gün Koleoglu, a MSc. student, worked on this project.

c). Effects of miticides and agricultural pesticides on the mite *Varroa destructor*, and on the health and behaviour of honey bees

Our recent study on colony mortality showed that *Varroa destructor* was the winter mortality factor number one. The application of synthetic acaricides has traditionally been the most common way of controlling this parasite. However, acaricide resistance in mite

populations has become more common over time, limiting the possibilities of adequate pest management. Additionally, contamination of hive products with synthetic acaricides (especially honey and wax) poses a risk to human health. These problems associated with the use of synthetic acaricides have resulted in the need to find new and safer methods of varroa mite control. Several natural products, especially organic acids (formic and oxalic acids) and essential oils (thymol and oregano oil), have shown promising miticidal effects. We have tested more than 20 natural products for mite control in the laboratory and in field settings. Based on these findings, new formulations of thymol were developed and tested in Ontario and Alberta between 2009 and 2014 with good results. Hanan Gashout (Ph.D. student) and Nancy Bradbury (beekeeping technician) have been in charge of this part of the project.

Another part of the project is aimed at studying the effects of synthetic and natural acaricides used by beekeepers to control varroa mites as well as agricultural pesticides, particularly neonicotinoids, on honey bees. We are measuring the toxicity of these pesticides, as well as their effects on honey bee longevity, immune responses and behaviours such as hygienic, grooming, foraging and defensive behaviour. We are testing the hypothesis that these compounds are harmful to the bees and affect their health and behaviour, contributing to the phenomenon known as Colony Collapse Disorder. These experiments are being conducted by Hanan Gashout (Ph.D. student), Nuria Morfin (Ph.D. student) and David MacKay (MSc. student). So far we have some results on the toxicity of several compounds. LD50 data showed that synthetic acaricides are more toxic to bees than natural acaricides but not necessarily more effective at killing mites. Therefore, natural acaricides could be a better choice for the control of mites, but with a higher safety margin to bees than synthetic acaricides. We have also found that acaricides may affect the foraging behaviour and hygienic behaviour of bees. Among the neonicotinoid pesticides tested, imidacloprid and clothianidin have resulted extremely toxic to bees, which could in part explain some of the colony losses observed in recent years, particularly after corn or soybean is planted. Experiments on the effect of these pesticides on behaviour and on the expression of immune-related genes are currently underway.

In addition to conducting research, the Honey Bee Research Centre of the University of Guelph participates in service and extension activities, engaging different audiences, but mainly Ontario beekeepers. ■

Saskatraz Breeding Stock Available in 2016

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 2016.

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 2016 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.

BOX 316, AUSTIN, MANITOBA
Toll-free 1-866-800-2077
Phone: (204) 637-2277 Fax: (204) 637-2033
Murray or Adam Lewis

**QUALITY WOODENWARE BOXES,
 FRAMES, ETC., AND PINE LUMBER**
**Unassembled, Assembled
 and/or Wax-dipped
 Food-Grade Finish**

Also available at all "BeeMaid"
 Bee Supply Outlets

Call for Pricing
 Please order well in advance.

**BEEKEEPERS
 BUILDING FOR BEEKEEPERS.**

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

Contact your nearest outlet:

BeeMaid Outfitters

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

Hive Lights

Classifieds

Help Wanted

Help Wanted: Surrey (BC) & DeBolt (AB)

POSITION 1

Job Opportunity: Beekeeping Manager

Position Type: Beekeeping Manager for Honeybee Centre, Location: Honeybee Centre
7, 480 176th Street, Surrey, B.C., V3S 7B1 and 1st Street, DeBolt, Alberta, T0H 1B0

Honeybee Centre is looking for a full time beekeeping manager to run a crew of 3-5 beekeepers, operating 1,500 colonies. The applicant must have extensive supervisory experience with beekeeping operations in Western Canada, fully aware of blueberry pollination, pollen collection, and clover honey production. The applicant must have a valid driver's license and be able to operate farm machinery. Strong interpersonal skills are essential, conversant in the Spanish language is an asset.

Job duties include:

- Brood nest management - Honey extraction
- Repairing, building, and maintaining equipment
- Overseeing a team of 3 - 5 staff - General farm duties

Skills Required:

- Extensive proven supervisory experience within beekeeping operations in Western Canada
- Valid driver's license
- Ability to operate farm machinery
- Strong interpersonal skills
- Organized
- Demonstrates good judgement and decision making skills
- Oral and written skills in Spanish an asset

Conditions of Work

- Beekeeping in inclement weather and in the heat, mostly outdoors
- Lifting supers and brood chambers up to 60 lbs (many times per day)
- Standing for long periods of time
- Bending, crouching, kneeling
- Working in the lower mainland of B.C. as well as 3.5 months in DeBolt, Alberta (rural community in North of Grand Prairie)

Position runs asap until September 30, 2016

Location: Various locations around the Lower Mainland as well as 3 1/2 months in DeBolt, Alberta (June 15 - Sept 30) Please apply by March 31, 2016 Rate: \$20/Hour

POSITION 2

Position Type: Beekeeping

Location: 1st Street, DeBolt, Alberta, T0H 1B0

Honeybee Centre is hiring 2 beekeepers to work full time, seasonally from June 15 - September 30, 2016

We are looking for someone with several years of experience in brood nest management, honey extraction and general farm duties. This individual should be familiar with beekeeping conditions in Northern Alberta.

Skills Required:

- Repetitive lifting of honey supers up to 60 lbs
- Able to work fast and under time pressure
- Hand-eye coordination
- Able to bend, crouch, kneel, stand for long periods of time
- Experience working in a commercial operation, specifically in the Northern Alberta area is preferred

This person should demonstrate the following abilities:

- be organized and on time
- work effectively with a team of 5- 7 beekeepers
- Have effective interpersonal skills

This individual will be given the option of staff housing during the season. The area is about 30 minutes north of Grande Prairie and is quite remote. Please apply by March 31, 2016, Rate: \$14.02/Hour

Help Wanted: Kinistino (SK)

BACON APIARIES LTD. of 102 Ruttle Ave. in Kinistino, Saskatchewan is looking for 5 Honey Harvester Labourers for the upcoming 2016 honey season. Job duties include: using an automatic lift to place full honey supers on a conveyor, running honey frames through an automatic uncapper, moving frames into an extractor, putting empty honey frames into honey supers, stacking them onto pallets to be stacked away, make new honey equipment, and make repairs to existing honey equipment. The employees hours will be 40-60 hours/week (5-6 days) with the wages starting at \$10.61 per hour, plus bonuses, which will be paid based on the employees job performance. No formal education required, no work experience necessary as on job training is available. The employment is from the 15th of July to Sept 24th, 2016. Send resumes to rbacon@sasktel.net before May 8th, 2016.

Help Wanted: East Selkirk (MB)

Apiary Worker 2 positions (NOC 8431)

Beekeeping farm. Seasonal full time, days, evenings, Saturdays.

\$11.35-13.00 per hour for 50 hrs. per week. Employment from March 31/ 2016 October 31/2016. At Waldbee Honey Farms Inc. Box 9 Group 19 RR1, East Selkirk, MB . R0E 0M0. Language is English. Minimum 1 year experience required. Duties would be to handle, feed and care for bees; help in replacement of hives and production of nucs; move hives; collect 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. Send resume by mail to above address or by email to philip@waldbee.com

Help Wanted: Kinistino (SK)

Baconian Bee Farm, located in Kinistino, Saskatchewan, is looking for two Apiary Workers for the 2016 crop season.

The job in seasonal full-time starting no earlier than March 15, 2016 and ending no later than November 15, 2016.

Primary duties include, but may not be limited to:

1. Moving colonies out of and into winter facility
2. Feeding and medicating of colonies
3. Evaluation and development of colony strength
4. Building and repairing equipment
5. Harvesting of honey supers
6. Extracting and storing of honey

Experience is not required but would certainly be an asset. Availability to work long hours, including weekends, evenings and holidays is required. Salary starts at \$11.53/hour based on experience. Ability to read and speak English would be an asset. Housing and transportation may be an option.

Send all inquiries and resumes to: dionebacon13@sasktel.net. Application deadline is March 15, 2016

For a complete list of Help Wanted go to the Canadian Honey Council website: www.honeycouncil.ca and look under Careers (Classifieds - Help Wanted).

Honey Bees and Supplies for Sale and Wanted

For Sale:

2007 Cook & Beals Spin Float Honey-Wax Separator with Electronic Drive with new sump & float switch. \$11,000.00
Also For Sale: Buckwheat Honey in Drums 150mm
Contact: Bruce 204 742 3515 or west10honey@gmail.com

FOR SALE

Dakota Guinness Model 200 Uncapper with 5 foot extension and drip trays. In excellent condition \$8500. Pick up in Edmonton, Alberta. Please contact: nobeessness@gmail.com

For Sale:

Full line of equipment to build bee boxes:
Multi rip saw. Finger jointer. Under cut saw. Handle cutter. Shaper and Assembling jig. \$11,800.00 for all of it.
We also have a frame assembling machine. This machine will automatically assemble and put in plastic permanent. 720 frames an hour placed in bee boxes. \$50,000.00
Contact Dave Stahl: de1265@gmail.com

For Sale:

4-frame over-wintered nucs for sale in May. Pick up only.
Highlands Honey, 6-Z2 Old Kingston Rd., Portland, ON, K0G 1V0
613-271-2091 email: highlandshoney@storm.ca

Book Review

Bees are a marvel of nature and vital to human existence. The Bee Book is a great introduction to bees and beekeeping and celebrates the wonder of bees in nature, in our gardens and in the hive. A honey bee visits up to 1,000 flowers a day yet produces only 1/12th of a teaspoon of honey in its lifetime. The Bee Book offers startling insights into the lives of bees and shows how we can best support and benefit from their presence in our gardens and hives. Marvel at the industry and intelligence of bees, the turbulent life of a queen and the remarkable properties of honey. This book includes recipes for simple home remedies and beauty treatments using honey, wax and propolis, such as a honey and clay facial mask, or a sunburn lotion.

Follow our step-by-step guides to create bee-friendly spaces such as bee 'hotels', read about beekeeping, harness the power of honey for your wellbeing and guard the future of the bee. Available "wherever books are sold" - Indigo / Chapters / Costco - many independent booksellers - and of course www.amazon.ca ■



Honey Business For Sale BC

Grand Forks, B.C.

3 Bedroom House, Large Certified Honey House, 2.6 Acres, 500 Hive Equipment, Trucks, School Bus Route.

The Honey House: Retail sales office, 220v and 110v electrical service, natural gas heat, 3 piece bathroom. Cowan Uncapper chain drive machine. Kelley jumbo capping wax melter. Kelley 72 frame auto shut off extractor. Eight foot stainless steel uncapping tank. Stainless steel baffled S/S sump tank (1,200lb capacity). Kelley five G. P. M. sump pump. Cook and Beals heat exchange unit. Two stainless steel storage tanks (2,000lb and 5,000lb). 1.5" piping with stainless steel "s" Ferrule connectors. 3/4" warm water heating system throughout tanks. Two trucks: 1980 GMC 7000-20' flat deck equipped with a 24' Kelley boom and a 1991 GMC 3500 Vandura, 1 ton cube van.
Contact: brian@thate.ca 250-442-7370

For Sale:

3000 beehives in doubles located in Prince Edward Island, about 9000 extracted boxes with stickies; boom trucks, flatbed and box trucks, extracting equipment.

Over 80 longtime yard locations available from good landowners.

Guaranteed pollination contracts for all the hives.

A guaranteed market for the honey in drums and the brand name with its associated retail sales.

I prefer to sell without land and buildings. Everything else is portable and can be inspected for NS or NB.

I prefer to see the operation as a unit.

contact sandler.stan@gmail.com

FOR SALE

Turn-key beekeeping operation on the east coast. (Prince Edward Island)

- *200 hives*

- *8 acres with renovated 4 bedroom house*

- *honeyhouse with all extracting/bottling equipment*

- *tractor, trucks, trailer etc*

- *workshop/candle making building*

- *bee equipment storage container*

- *self serve honey stand*

- *pollination contracts*

*for further information please contact: peihoneywine@gmail.com

peihoneywine@gmail.com.*

Serious inquiries only, please.

FOR SALE:

500 Brood chambers just off of the 2015 season, Brand new paraffin wax dipped box with 10 frames of comb. \$65.00/box.

Contact Chris: 1-204-872-2398 or email: pilotman1977@gmail.com

FOR SALE:

Maxant 30 frame vertical extractor. Honey pump, wax tank, and more Maxant extraction equipment.

Deep supers, covers, feeders, Queen excluders.

Clifton Royal, NB 506-651-5568

Lavigne.carla@gmail.com

BUSINESS FOR SALE, Vancouver Area (BC)

Vancouver area bee supplies/candle supplies business for sale.

Established and growing. Gross revenue \$25k per month. Selling due to retirement. Please email inquiries to beekeeping25@shaw.ca

HIVES for Sale

Very strong with Caspian Queens. Singles \$330, Doubles \$410, Minimum Order 50 hives. Available May 15-25. Serious Enquiries Only.

Contact Jean Marc Le Dorze 778-882-6254. Golden Ears Apiaries Inc. Location Mission, B.C.

Email: jeanmarcleedorze@gmail.com

*BUSY BEE BEEKEEPING SUPPLIES

- we sell beekeeping equipment, hive parts, tools, protective clothing, honey containers etc - also candle making supplies, silicone moulds. We buy and sell beeswax. Located in eastern Ontario, we ship coast to coast. www.busybeebeekeepingsupplies.ca

Proud sponsor of the Canadian Honey Council



**WE CONSIDER
YOU
OUR PARTNER**

WE BUY HONEY, BEESWAX, AND POLLEN

CALL *Elise or Normand*
TOLL FREE 1 800-567-3789

483 GRANDE-COTE ROAD, ROSEMERE, QC, J7A 1M1
TEL: (450) 965-1412 FAX: (450) 965-1425

WWW.ODEM.CA

ELISE@HONEY.CA NORMAND@HONEY.CA



**POELMAN
APIARIES** Ltd.

Jerry Poelman
Ph: 1-403-687-2244
pollenpal@gmail.com

We buy and render wax

WE SELL WAX, POLLEN,
28 GAUGE METAL LIDS CUT
TO YOUR SPECS



Paradis Honey Ltd.

Box 99
Grouxville, AB
T0H 1S0 Canada
Ph: 780-323-4183
Fax: 780-323-4138
www.paradishoney.com
E-mail: mikelse@serbnet.com

WE PURCHASE AND
RENDER BEESWAX.
CALL MIKE FOR
PRICES

Rendering beeswax for over 50
years...



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

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*, BeePro and sugar, or request your own recipe and patty size.

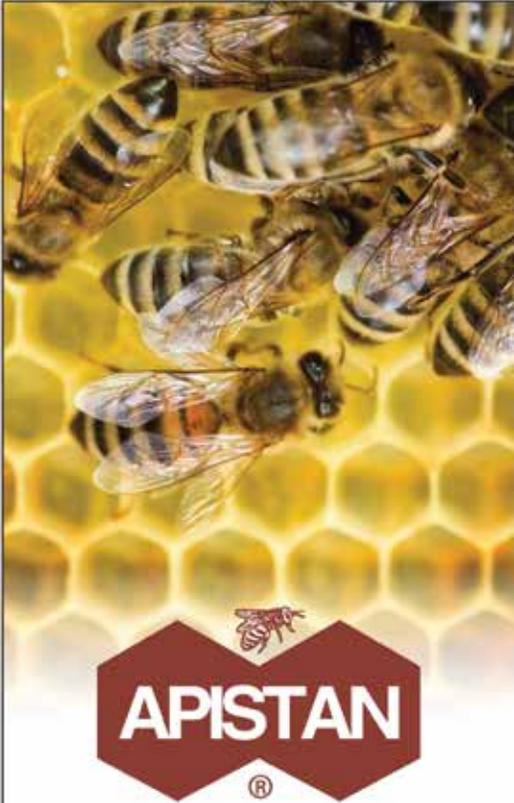
We'll supply all the ingredients, or use supplies you provide.

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



A BEE'S BEST DEFENSE AGAINST THE VARROA MITE

Apistan® anti-varroa mite strips are an essential part of any varroa mite control program.

- The convenience of no-mess strips.
- Easy-to-follow application.
- Fluralinate, the active ingredient in Apistan® is released at a constant, controlled rate, targeting varroa as they emerge from brood cells.
- Tough on mites. Gentle on bees.
- Won't leave a residue in honey.
- Economical, Health Canada approved varroa miticide.

For additional information, contact your favourite bee supplies company or call 1-800-688-7378.

Always read and follow label directions.

Apistan and Apistan with design are registered trademarks of Wellmark International. ©2002, 2009, 2012 Wellmark International.

10242012

BEEKEEPERS PROTECTIVE CLOTHING

SHERRIF



ref: S21
vest
& veil



ref: S28
smock



ref: S41
jacket
size:
S to 5X

*Apiarist suit
as worn by
Honey Queen
Ceri Collingborn*



Manufacturer of Fine Beesuits for Optimum Performance **The**

ALBERTA HONEY PRODUCERS CO-OP Ltd - www.beemaid.com

ALBERTA: ph (780) 962 - 5573 fax (780) 962 - 1653 cmarion@beemaid.com

FLYING DUTCHMAN - flydutch@telus.ca NANAIMO BC: ph (250) 390 - 2313 fax 390 - 5180

COUNTRYFIELDS - info@countryfields.ca NB: ph (506) 387 - 6804 fax (506) 386 - 2599

F W JONES SON Ltd - info@fwjones.com QUEBEC: ph (450) 248-3323 fax (450) 248 - 2592

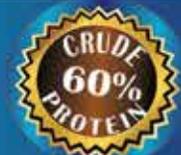
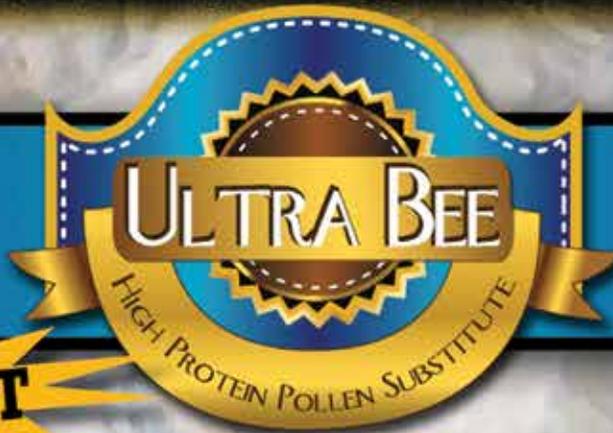
B J Sherriff - England Ph + 44 1872 863304 Fax + 44 1872 865267

PROVEN PROTECTION

bjsherriff.com beesuits.com beegift.com e-mail:sales@beegifts.com



PATTIES



DRY FEED

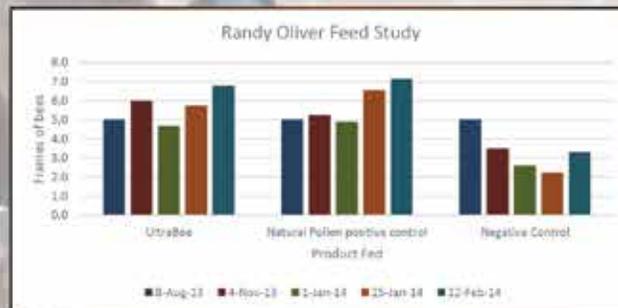
THE BEST

POLLEN SUBSTITUTE ON THE MARKET!

Now With Probiotics!

Field Testing Proves **ULTRA BEE** Is Comparable To Natural Pollen!

According to research published in the American Bee Journal, August and September 2014, Ultra Bee Patties produced results statistically equal to those of natural pollen!



Good Nutrition = Healthier, Stronger, Longer-Living Bees!

Healthy Bees = More Honey!

HIGHEST PROTEIN CONTENT AVAILABLE!

- Increased Brood Production
- Healthier, Stronger Bees • No Animal By-Products
- A Complete Amino Acid Profile • Beneficial Vitamins, Lipids And Minerals
- Made From The Finest Ingredients • Ready To Feed When You Need It

MANN LAKE
WE KNOW BEES

An Employee Owned Company

800-880-7694
www.mannlakeltd.com

Proud sponsor of the Canadian Honey Council

Proud sponsor of the Canadian Honey Council