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

On the Road to Apimondia Montréal 2019!

Statement on Honey Bee Wintering Losses in Canada

Primary Agricultural Changes for the 2018-2019 Season

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see page 5 for details

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Hiveights

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Canada

Cover picture - Harry Meier
Cover story - See page 5



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

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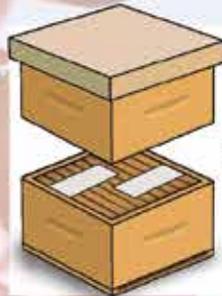
FOR OVERWINTERING: Treat at end of the honey flow, while the last super is still on, add additional boxes if bees do not have room to move up and expand. 2-3 brood cycles before Queen goes off-lay.

TEMPERATURE: Between 10°C (50°F) and 29.5°C (85°F) on day of application. Maximum temperatures should not reach above 32°C (90°F). **Bees need to be flying regularly** during daytime highs, therefore it should not be raining during the first three days of treatment. Nighttime temperatures below 10°C (50°F) are acceptable.

VENTILATION: Full width of hive, minimum 1/2 inch high. If using bottom boards with limited entrances, set-back second box by 1/2 inch to give fresh air access. Screen bottom boards should be closed off or anticipate a decrease in efficacy due to Formic Acid being heavier than air. Upper entrances and screen bottom boards are not additional or sufficient ventilation sources.



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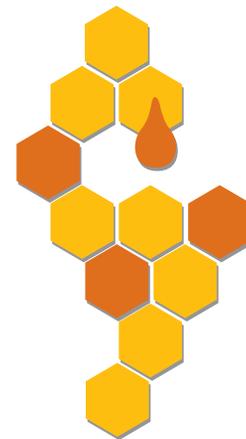


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Canadian Honey Council Report



Rod Scarlett, Executive Director, CHC

In April 2015, the Public Health Agency of Canada announced that Health Canada's Veterinary Drugs Directorate will introduce new federal regulations that will require veterinary oversight of the use of antimicrobials administered to food animals including those administered in feed or water. The date to have this completed is December 1, 2018. This policy impacts bees and so the any prescribed treatment for AMF or EFB will have to be done by a veterinarian. Provincial governments responsible for veterinarian registrations have been busy offering courses to those vets willing to get at least preliminary knowledge on how and what to do. Moreover, there have been calls in some provinces that a veterinary-client relationship needs to be established in order for prescriptions to occur.

From the very start, the Canadian Honey Council pushed to have some degree of continuity of policy between provinces, but that fell on deaf ears not only from Health Canada but from the various veterinary associations. Certainly, some provinces are more prepared than others and some beekeepers are more prepared than others. Right now, all we can do is hope for the best and try to evaluate the situation as issues arise. There is one interesting point, however, that certainly will have to be watched carefully. In the Government of Canada's drafting of the Regulations Amending the Food and Drug Regulations (Veterinary Drugs — Antimicrobial Resistance) the issues backgrounder stated that, "Evidence from Sweden, Denmark and the Netherlands,

where a ban on the dispensing of prophylactic antimicrobials was instituted, indicated an initial small reduction in animal weight and an increase in death following the coming into force of their regulations. As a result, farmers in these countries experienced a small fall in revenues, which returned to pre-regulation levels within two years due to changes in animal husbandry, such as providing more space for animals, using antimicrobial alternatives, ensuring appropriate therapeutic use of antimicrobials, and engaging in more robust cleaning protocols. The regulations do not represent as dramatic a change as the ban instituted in those European countries; the relative costs are therefore expected to be less."

We shall see if the costs of the drugs and the cost of the veterinary services that must be utilized do not substantially drive up the cost of treatment for the beekeeper. My inclination certainly differs from the backgrounder.

Just a couple other quick points of interest. The CHC has been working diligently on getting fumagilin back onto the Canadian market. I believe significant progress has been made in this regard and hopefully by the next issue of Hivelights I can provide readers with some details.

Finally, Apimondia 2019 in Montreal is less than a year away. The website is continually be updated with information so please check it regularly at <http://www.apimondia2019.com>. We will be providing up-to-date information at the various provincial AGM's this fall. Hope to see you there! ■

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Labour survey

Rod Scarlett, Executive Director, CHC

Canada's agriculture sector is poised for growth, as the global market for Canadian agricultural products expands to meet the demands of an ever-increasing world population. However, this sector faces significant workforce challenges that could jeopardize its growth potential and contribution to the national economy. EVERY province and commodity in Canada is affected by chronic and significant labour shortages.

To ensure a healthy future for agriculture in Canada, it is urgent that the agriculture industry find and implement solutions to address the looming workforce crisis.

That's why CAHRC research is so important and needed to help to better clarify labour shortage issues with current data. We are re-running the numbers to see if the labour shortage and agricultural job vacancies are growing.

And we need your help.

The Canadian Agricultural Human Resource Council (CAHRC) is conducting a Labour Market Information (LMI) survey from October 12 - November 30, 2018. All farm owner-operators, agricultural workers and supporting stakeholder groups will have an opportunity to provide valuable input to guide future action on workforce issues.

By understanding workforce needs, the agricultural industry can then present the new research to policy makers. LMI for the agriculture industry helps us understand the current state of farm labour and accurately forecasts requirements for the next 10 years by province, commodity and occupation.

We're requesting only 10-15 minutes of your time to assist us in working towards a sustainable workforce. Please complete the online survey at <https://mailchi.mp/cahrc-ccrha.ca/survey> by November 30, 2018.

The Canadian Agricultural Human Resource Council (CAHRC) is a national, non-profit organization focused on addressing human resource issues facing agricultural businesses across Canada. Over the past ten years, the Council has worked with industry stakeholders to quantify labour requirements and trends. ■

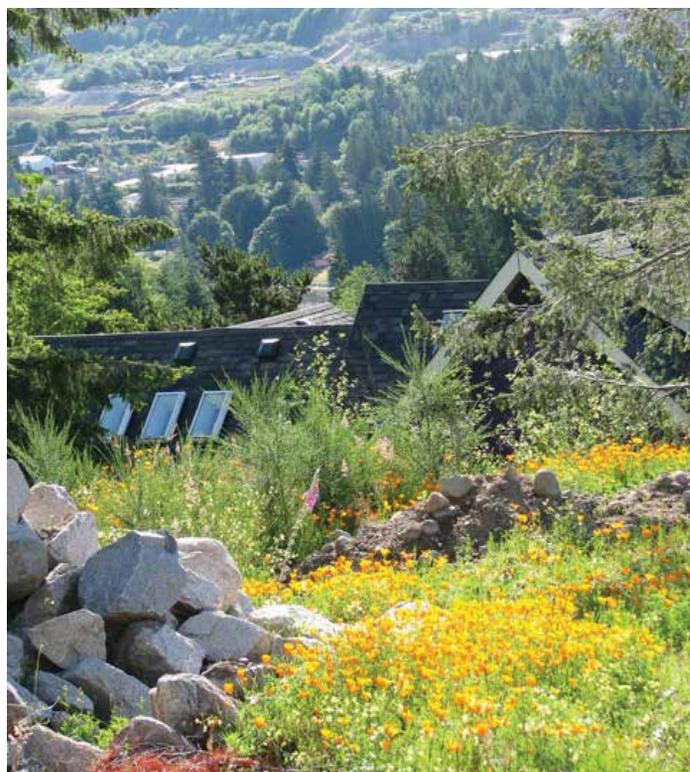
Picturesque Hives in a Picturesque Setting

Harry Meier

My wife & I are members of the Sunshine Coast Beekeepers Association and have been learning about bees through our club and other beekeepers, and guest speakers etc. We started a demonstration apiary 7 years ago at the local Botanical Garden in Sechelt and this ongoing project has been well received. We also have an apiary at Lehigh where we manage our hives in this reclamation area which will be an ongoing project. I was talking with the Sylvis.com project manager who has been doing work for the mine in their reclamation ideas and he is very interested in the bees that we have there. In the last issue of Hivelights there is a great article about forage ideas and I would like to get a copy of this magazine for him as resource information and work with him and Lehigh to make more improvements in the coming year. I intend to give a copy to Sechelt Parks Manager that we have been talking



with for a few years and he is very receptive to helping the pollinators. I've also spoken with manager of B.C.Hydro power line vegetation about considering other methods of vegetation control rather than the usual chemical/herbicides they do feel necessary at times. ■





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PRIMARY AGRICULTURE CHANGES FOR THE 2018-2019 SEASON

Submitted by 2018 Directors • Canadian Honey Council / Conseil Canadien de Miel

CHANGES TO HOUSING POLICY

Following the cross-Canada Primary Agriculture Consultations, several employers identified unintended consequences related to the 2018 Housing Policy changes, such as the inability to obtain housing inspection reports for temporary foreign workers (TFWs) staying in hotels; delayed Labour Market Impact Assessments (LMIA) because housing inspection reports could not be obtained for new builds or leases; and no clear policy position for transfer workers that do not change housing. To address these concerns, starting in the 2018-2019 season, the Temporary Foreign Worker (TFW) Program has increased flexibility in these areas, while maintaining worker protection measures.

All accommodations must meet the established housing policy requirements for the Primary Agriculture Stream. Unless otherwise indicated, the following measures would affect all Primary Agriculture Streams.

Commercial Accommodations

- Employers farming some commodities, such as apiary, are required to use commercial accommodations (e.g. hotels, motels, bed and breakfasts) for their workers because it is an industry practice to move from farm to farm. As most employers cannot request a housing inspection report for commercial accommodations, it was difficult to meet the obligation to produce a housing report.
- Accordingly, ESDC will introduce the following measures to address this barrier:
 - o When submitting an LMIA, the employer will be required to identify **all** commercial accommodations (where possible) where the TFW will be housed while in Canada and provide proof of the ratings and reservation with their LMIA Application.
 - o Employers should ensure that commercial accommodations provide one bed for every worker, and workers should not be required to share a bed with individuals, other than their spouse.
 - o Whenever possible, employers should provide workers with commercial accommodations equipped with cooking facilities, however, in the event that these facilities are not available, employers should provide their workers with meals, and may refer to the appropriate employment agreements for information on deduction options.
 - o If the commercial accommodations are rated three stars (3) and above, the housing inspection may be waived if the employer provides proof of the star rating and the reservation with their LMIA application.
 - o If the commercial accommodations are rated under three (3) stars, the Service Canada officer will apply a reasonableness test, including:
 - Research using online resources (e.g., the website, trip review sites, recent news regarding the location and the surrounding area).
 - o If the Service Canada officer is not satisfied after reviewing the available online information, the employer may be asked to provide additional documentation:
 - If the commercial accommodations are part of a chain, there can be reasonable expectation that the accommodations would meet Primary Agriculture housing requirements; and
 - If the commercial accommodations operate as an independent business, employers may be asked to provide additional information to support their application such as documentation that the accommodations has been inspected by the relevant provincial/territorial/municipal health or other authorities for the accommodations and passed. This could be obtained from a public website if posted publicly, or from the proprietor of the hotel.
 - o Service Canada officers should be notified, in writing, of major changes to the TFW accommodations including if:
 - Circumstances require the reservation to be modified for a period of time longer than seven (7) days;
 - the location of the accommodations changes;
 - additional locations are required (i.e. business operations require additional commercial accommodations or locations)
 - o If any employer makes a **major change** to commercial accommodations for TFWs that were previously disclosed as part of their LMIA application:
 - Employers should provide a copy of this record with a rationale for the change to their Service Canada officer within 72 hours.

- This information would be uploaded to the appropriate LMIA file for the employer
- A copy, as well as any applicable supporting documentation (e.g. reservation records), should be retained by the employer in the event of an inspection.
- If the employer must make **minor amendments** to a previously disclosed plan for commercial accommodations, due to reasonable circumstances (e.g. weather conditions, production demands):
 - Employers should maintain a record of these amendments over the course of the season.
 - A copy of this record does not need to be submitted to Service Canada.
 - A copy of the changes, as well as any applicable supporting documentation (e.g. reservation records), should be retained by the employer in the event of an inspection.

Housing Unavailable for Inspection

- Some employers have accommodations that are used for the TFWs however they are not available in time for the housing inspection to be conducted within the eight months necessary for the employer to apply for their LMIA because:
 - They are not constructed yet (new builds/ pre-fabricated homes); or
 - The accommodations will be leased.
- Accordingly, the following information will be accepted as part of the LMIA application:

New builds and Pre-Fabricated Homes

- For pre-fabricated housing, the employer may submit evidence, such as the contract with the pre-fabricated supplier with an expected delivery date, and identify an alternative option if the building is not ready in time for the workers arrival (e.g. a commitment to book hotel accommodations if housing is no longer available);
- Employers will be expected to have these structures completed and inspected no less than one (1) month before the first worker arrives;
- Once available, employers should provide the housing inspection report to Service Canada officers, no less than one (1) month before the first worker arrives;
- If the housing does not meet TFW Program requirements, the positive LMIA may be revoked; and
- Given TFWs must pay for work permits prior to arrival, if the housing does not meet the established requirements, the employer should reimburse the worker the cost of the work permit.

Lease Agreements

- Employers are required to provide proof of the lease agreement and identify an alternative option if the lease is not ready in time for the workers arrival (e.g. a commitment to book hotel accommodations or arrange another lease if housing is no longer available). If a lease agreement is not possible, the employer may submit a letter from the landlord, stating their intention to lease the property and the dates for the lease.
- Employers will attest that they will submit a housing inspection report no less than one (1) month before the first worker arrives;

- Once available, employers will be responsible to provide the housing inspection report to Service Canada;
- If the housing does not meet TFW Program requirements, the positive LMIA may be revoked; and
- Given TFWs must pay for work permits prior to arrival, if the housing does not meet the established requirements, the employer should reimburse the worker the cost of the work permit.
- Service Canada officers should be notified, in writing, of major changes to the leased accommodations for TFW, including if:
 - Circumstances require the accommodations to be modified for a period of time longer than seven (7) days;
 - the location of the accommodations changes;
 - additional locations are required (i.e. business operations require additional commercial accommodations or locations)
- If any employer makes a change to the leased accommodations for TFWs that were previously disclosed as part of their LMIA application:
 - Employers should provide a copy of this record with a rationale for the change to their Service Canada officer within 72 hours.
 - This information would be uploaded to the appropriate LMIA file for the employer
 - A copy, as well as any applicable supporting documentation (e.g. reservation records), should be retained by the employer in the event of an inspection.

Transfer Workers Remaining in Original Accommodations

- Under the SAWP Program, transfer of workers is permitted; however, there is currently no policy for transfer workers who stay in their current dwelling, even though they are working for a different employer.
- As of August 1, 2018, if a SAWP employer transfers workers to another SAWP employer, and the workers will remain in the same approved accommodations on the former employer's property, the housing inspection report used by the transferring employer to assess the accommodations may be used by the receiving employer within that calendar year.
- To do this, the receiving employer must include with their LMIA application, an attestation signed by both employers that includes the following information:
 - The name and location of the business of the receiving employer;
 - The names of all transferring workers;
 - The start and end dates of the transferred employment;
 - The LMIA number for the transferring employer;
 - The address of the accommodations where the workers will live; and
 - The housing inspection used for the transferring employer's positive LMIA.
- The attestation must also identify if all the workers in the accommodations will be transferred to the receiving employer; or if both the transferring and receiving employers will have workers living in the accommodations.
- If all workers in the accommodations will be transferred to the receiving employer, the attestation must include a statement that the receiving employer agrees and acknowledges that:
 - The receiving employer will assume all responsibility for the cost of any housing repairs and for any housing-related integrity ac-

- activities that occur during any period of time that they employ workers living in the accommodations; and
- o Any pending inspections, or potential non-compliance related to housing identified during an inspection, may result in the deferral or suspension of LMIA for the receiving employer.
- If both the transferring and receiving employers will have workers living in the accommodations, the attestation must include a statement that both employers agree and acknowledge that:
 - o Both employers will be equally responsible for the cost of any housing repairs and for any housing-related integrity activities that occur during any period of time that they employ workers living in the accommodations; and
 - o Any pending inspections, or potential non-compliance related to housing identified during an inspection, may result in the deferral or suspension of LMIA for both employers.

Housing for Additional Transfer Workers

- Effective as of the 2019 season, if the initial LMIA is granted, the corresponding housing inspection may be used for subsequent LMIA for transfer and/or replacement workers living in the same accommodations within that calendar season, provided the total number of workers in the accommodations do not exceed maximum occupancy.

BC Conditions for Housing Inspections

- In response to housing concerns in BC, certain interim measures were implemented for the 2018 season and will be extended for BC employers for.
 - o All BC employers must use the BCAC form to complete the housing inspection for the LMIA application; and
 - o All BC employers must use the BCAC list of housing inspectors.

LABOUR MARKET IMPACT ASSESSMENT (LMIA) APPLICATIONS

Biometrics Measures

- As of December 31, 2018, all foreign workers will be required to provide biometrics information to obtain entry into Canada.
- To streamline processing of LMIA applications for employers who require workers early in the season, we are implementing the following:
 - o For the upcoming season, LMIA applications will be accepted earlier than usual for primary agriculture employers who are requesting workers to arrive in January and February 2019. This would provide employers who typically need workers early in the season sufficient time to receive an LMIA decision and provide workers additional time to secure a work permit given the anticipated surge in applicants.
 - o For agriculture positions commencing in 2019, the usual LMIA validity period of six months will be extended so that LMIA are valid until December 15, 2019 (the date on which all SAWP workers must leave Canada each year) or for six months, which-

- ever is longer. This will ensure that employers would not have to re-apply for an LMIA should their approved LMIA expire while waiting for workers' work permits to be processed.
- o To standardize processing across Canada, the TFW Program will allow processing of SAWP LMIA applications that include multiple TFW arrival dates with the same wage and NOC within one LMIA application to lessen the administrative burden on employers.

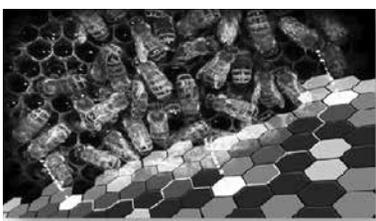
Submission of Employment Contracts with LMIA Application

- Currently, SAWP employers must include a copy of the SAWP contract with their LMIA application; however, the SAWP contract is a standard contract that cannot be altered, and is usually unsigned at the time the LMIA application is submitted.
- Currently, employers using the Agricultural Stream must submit a contract with their LMIA application, using either the sample contract on the Service Canada website or an alternative contract with all the same elements as the sample contract.
- To reduce paperwork for employers:
 - o a copy of the SAWP employment contract will no longer need to be included with the LMIA application.
 - o Employers using the Agricultural Stream will not be required to submit a copy of the employment contract, provided they use the sample contract available on the Service Canada website.
- Employers will still be required to have a copy of the employment contract on file, signed by both the employer and workers (after they arrive), in the event of an inspection. ■



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COLORS

OF HONEY

Submitted by Julio Beeman

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To measure the color of honey is used internationally the Pfund grader, whose scale is 0-140 mm from the clearest to the darkest. Other graders as the Lovibond comparator or colored USDA (United States Department of Agriculture), but also expressed in mm Pfund color. The color is measured in liquid honey, ie if it is crystallized, to measure color in mm must liquefy before.

The color of honey depends mainly on nectar producing plants and growing conditions, but on the other hand, overheating and aging honey darken.

The palette of honey is wide, from the very light, called white water, to dark amber. In general, the sweetness of nectar (alfalfa, white clover, acacia) are clearer than those of honeydew (forest honey, pine honey, etc.).

Color	mm Pfund
Water White	0 to 7.9
Extra White	8 to 16.4
White	16.4 to 33.9
Extra Light Amber	34 to 49.9
Light Amber	50 to 84.9
Amber	85 to 113.9
Dark	114 to 140

Importers of bulk honey prefer clear honey, since processing of honey to the final consumer always involves a darkening, and they can use the clear honey to mix with other dark, lower price, and get an amber suitable to consumer tastes. ■



Regional Reports



Maritimes



Mario Swinkels

After a cold Spring, the Summer started with slow growing colonies, but for most as the summer heat came the bees responded well. So for those of us who received rain, a good summer/fall crop was achieved. Warm weather well into September helped with flower blooming much later than normal creating a good fall flow.

The Maritime honey tour was a great success, hosted by the New Brunswick Association. Paul Kelly gave an interesting and entertaining summary of his work as a beekeeper at the University of Guelph and his experience as a beekeeper in other provinces (he also worked in Nova

Scotia as well). Thanks to all involved and especially to Chris and Susan (master Chief) for opening their Apiary for us.

There are many AGM's scheduled for the winter months and I encourage all Maritimers to attend. As Dave Cameron said at one of our Nova Scotia meeting "you always learn something at these gatherings" sometimes it's highly relevant and sometimes it's just information but very interesting. Check your association websites to keep up to date on events.

Québec



Scott Plante

In most areas this year it has been hot. With only occasional precipitation in the form of storms. Essentially, your crop depended on whether your area fell victim to a thunder storm.

With heavy losses being felt in the spring, and all the splitting done to recuperate those losses there seems to be very little varroa mites in the hives this fall.

The Canadian Honey Council will be having its fall meeting in London, Ontario in conjunction with the Ontario Beekeepers Association's annual general meeting. Among the subjects which will be discussed includes the

development of a five-year plan for the Canadian Honey Council, the Interprovincial movement of bees and of course the development of a database for suppliers of Canadian bee stock and honey.

In the spring we were informed that Medivet was closing and all supply of Fumagillin would cease to be available. Immediately, an emergency meeting was convened to address this issue. Since the month of April the Honey Council has entered into talks with Medivet's owner to ensure that the continued supply of Fumagillin be re-established as soon as possible.

In the coming weeks you will be receiving a request to submit honey samples. These will be used by Peter Awram and Leonard Foster who are trying to develop an NMR encyclopedia for Canadian Honeys to give us the edge in combating honey adulteration. It is highly recommended that we participate in this project as it is beneficial to all of us.

Apimondia is fast approaching, and it would be great to see you all at the event. There's always something for everyone at an Apimondia Congress.

Dans la plupart des régions cette année, il a fait chaud. Avec des précipitations occasionnelles sous forme d'orages seulement. Donc, si vous étiez sur le chemin des orages, vous avez fait une récolte ou non.

Avec de lourdes pertes subies au printemps, et toutes les divisions effectuées pour récupérer ces pertes, il semble y avoir très peu de varroa dans les ruches cet automne.

Le Conseil Canadien du Miel tiendra sa réunion d'automne à London, en Ontario, lors de l'assemblée générale annuelle de l'Association des Apiculteurs de l'Ontario. Parmi les sujets qui seront abordés, mentionnons l'élaboration d'un plan quinquennal pour le Conseil Canadien du Miel, le mouvement interprovincial des abeilles et l'élaboration d'une base de données pour les fournisseurs de stock d'abeilles et de miel Canadien.

Au printemps, nous avons été informés que Medivet fermait ses portes et que toute offre de Fumagillin cesserait d'être disponible. Immédiatement, une réunion d'urgence a été convoquée pour résoudre ce problème. Depuis le mois d'avril, Le Conseil Canadien du Miel a entamé des négociations avec les propriétaires de Medivet pour veiller à ce que l'approvisionnement Fumagillin soit rétabli dès que possible.

Dans les prochaines semaines, vous recevrez une demande pour soumettre des échantillons de miel. Peter Awram et Leonard Foster tentent de développer une encyclopédie de résonance magnétique des miels canadiens afin de nous donner l'avantage dans la lutte contre l'adultération du miel. Je vous recommande fortement de soutenir leur projet.

Apimondia approche à grands pas et ce serait formidable de tous vous voir lors de l'événement. Lors d'un congrès d'Apimondia chacun y trouve son compte.

Ontario



Albert Devries

The summer of 2018 has been quite hot and humid. Rain has been inconsistent across the province with areas such as the Ottawa Valley and the Northern Bruce Peninsula experiencing drought conditions. Even within beekeeping operations, it has been inconsistent from yard to yard. What seemed to make the difference was a random thunderstorm going by at the right time. Honey crops are reported to be near average.

Fortunately, due in part to the late start to brood rearing and the many splits that beekeepers had to make in order to get their hive numbers back up, Varroa Mite levels seem to be low. Let's hope for some good overwintering numbers.

The OBA executive director, Lorna Irwin, has been hard at work planning for our fall conference at the Best Western Lamplighter Inn located in London, Ontario November 16,17. It will be a joint meeting of Canadian Honey Council, CAPA and the OBA. It promises to be an exceptional event. The agenda can be found on the OBA's website. Please mark your calendars and plan to attend.



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Manitoba



Allan Campbell

The seasons in Manitoba seem to be cycling through way to quickly this year, after a long winter that just hadn't wanted to release its icy grip. Spring seemed to be non-existent in my area, with the weather seemingly jumping straight from winter into summer. I think early summer had most of us believing it was setting up for a good honey season, if you were able to make up for heavier than normal losses that is.

With summer came hotter than normal temperatures and the rains started to become fewer, and far between. Canola bloom across most of the province seemed to start right on time, but the flowers soon dried up or offered little nectar during the flowering period. A hot dry summer also means that many cattle ranchers have far less hay put up for winter, not taking later cuts of alfalfa and leaving it to flower later. We chased that flow late into the season hoping to make up for what would normally be made in Canola. I made only half of my normal average this summer and in the darker ranges of white honey rather than the extra white honey (10mm) we've come to have as the norm.

This fall seems to be a real 180 degree turn from summer. We are experiencing frost most nights now and have had some flurries already, and it is only September! Feeding and mite treatments are ongoing, though I've heard many producers in South started feeding in mid- August as their honey season was shut down completely by that time!

The honey market still seems pretty soft, if not downright sluggish. Bulk price offerings have remained mostly steady at \$1.50. Far, far below what this producer feels they should be. Far below what is needed for a farm to thrive on in the on the prairies. With such a small population in the province of only a million people and honey produced in tens of millions, there is limited opportunity to retail honey on your own. I am a big supporter of honey council's commitment to expanding the Canadian honey production into expanding markets in Europe and Asia. We can no longer rely on our neighbours to the South to offer fair prices for a top- quality product when it seems that most packers are looking to make cheap blends with all sorts of off shore honey. Our commitment to quality seems to be coming at our own expense in the North American market which is a real shame. We must continue to work hard at opening new channels and keep that honey flowing!

Alberta



Neil Specht

We still have no Fumagilin,,, but there is light. CHC has some good news that is to fluid and dynamic for my report at this writing. Maybe there will be more in Hive-lights by others if they can make the print deadline. The ABC and CHC have been working independently on this and will meet together before this is in print. Keep eye on the bee media for more soon.

For me, I will resume my CHC work on the pollination guides for seed canola and the other commodities requiring pollination this fall. I will be looking for collaborators and experts in those commodities to give a

hand. More later.

My season in nut was...20% winter losses and average honey crop (about 100 pounds). The honey is averaging slightly darker this season. We made about 2000 queens. grew about 300 colonies. We made 600-6 frame nucs. We had about 10% of the colonies carrying Nozema loads of over 1 million this fall so we will spot treat cup-o-soup method. We have high mites averaging over 1% in August so we are doing Apivar. Colonies look in good shape for winter.

What I heard was... drought and smoke is giving average or less than for crops..the hear say Price is \$1.59 and not not much moving.

Good luck out there and hope to see you at the conventions.

British Columbia



For the most part, the honey crop has been average across the province. There are places where spring flows were above average and others just below average. We had a great spring flow never seen the likes of it before. Then we went into a dearth and then somewhat of a recovery. The Island can be very locally oriented due to the mountains and proximity of the ocean. The south and west and north

sides are in the position of getting a good recovery of moisture while the mid to south on the Georgia strait side does not benefit from this moisture and therefore less honey production.

The early fall monsoons have come just in time for the Cranberry growers in our part of BC. With fall here and the temperature falling to -1-2 at night there was barely enough for frost protection, now they even have enough water for harvesting. This is also causing a rejuvenation of plants and we are seeing a real good pollen flow coming into the hives just before they enter winter. We have also noticed a nectar flow and truthfully we haven't got a faint clue where it's coming from but its light in color which is good as we are not concerned about the bees wintering on dark honey.



Stan Reist

I had the pleasure of judging two 4H clubs this year. Parksville Qualicum and Cowichan, in all there were about 12 at the Duncan Fall fair and about 8 at the Coombs fall fair. Their leaders produced a set of questions to ask the Students. The questions had a ranking of marks for the answers and it became apparent very quickly that the points allotted were insufficient and they were increased. Even though the points were increased, we still wound up with a tie. Reviewing the exams would not solve the tie so a new question was provided to the students. The new question was "How do you make money from beekeeping?" First response, you can't it's a hobby, or a side liner or to supplement your income. While this may sound disappointing it provides another opportunity to teach the student's different ways of managing bees and that you can make a living working bees.

This publication is national in scope so the previous statement would be very disappointing to our commercial beekeeping businesses. As devastating as it may sound it's actually a very good opportunity to work with young people and to teach them how to make money with bees. We are not the Prairies and we seldom get 250 - 300 lbs a hive for a crop. We have the ability to make Nucs, do pollination, collect pollen, and maximize wax collection and collect some propolis. Next year the challenge for the 4H members will be to present a plan on making money from bees. The best plan will then be the model for the year after to actually put it into operation. The hope is we will see a different attitude towards beekeeping and a monetary surprise. We will find out how many ties we have when it comes time for judging.

At one of our executive meetings the topic of treating bees for mites with Oxalic Acid and Glycerin came up. It's a hocus pocus remedy out of the U.S. We have beekeeping forums on the internet and we also have some individuals who regularly post what they do, and this is one of them. Now in Canada we have a number of registered treatments for the mites that infest our hives. They are legal and if you use them according to the instructions on the package they work as they are supposed to. Here's the rub. In Canada we have Provincial Apiarist's for all provinces, we have extension workers. We have bee inspectors that don't cost you anything to avail yourself of. There are volumes of information available from the local bee inspectors, all for the asking. Our treatments work and are effective and will do the job they say they will do. If you start to mess with hocus pocus formulas, in time we will have treatments that no longer work because they have been misused. We had 10+ years use out of Apistan. We have had 6-8 years out of apivar not to mention just plain 65% Formic Acid, Oxalic Acid and Thymovar. In Canada we have totally different climatic zones than the US. How many of us would put our bees into potato sheds the first of August? How many of us would put our hives into Apple storage sheds the First of August? That's when we are in honey production. We don't need to come up with hocus pocus remedies, to treat



Front Row: Kim Robinson, Ruby Sangha, Ryley Sangha, Indigo Robinson, Freya Gallagher-Berg, Ocean, Sierra Robinson, Sam David

Back row: Stan Reist, Dominic Fagan, Morgan Paul, Curtis Robinson, Haley Sudlow, Paula Sudlow

mites. What we have works. Let's keep it working.

Our AGM is fast approaching, it is being held in Victoria. As of now it looks like it will be a sold out event again this year. We have a great line up of speakers. Shelly Hover, Anicet Desrochers, Marta Guarna, Peter Awram, Jeff Pettis, Paul van westendorp, Zac lamas, and the list goes on. Great line up great speakers. You don't want to miss this.



Bernie Rousseau



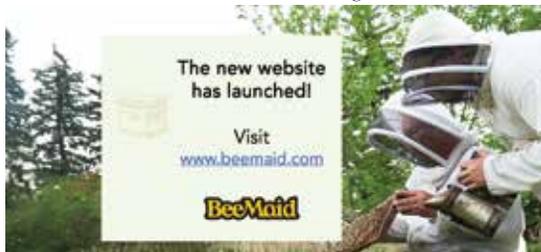
Bee Maid Honey Has Cooked Up A New Website!

In the digital world things move so quickly and it's important to keep up! While the Bee Maid website served us well for many years, 2018 was the year to undertake an update. We had several goals with our new website, a primary one to have the website represent the entire Bee Maid organization highlighting our food service, industrial, private label and international markets

along with providing information on our brand. Our members are front and center throughout the site and we plan to feature a different producer member every couple of months so our visitors can learn more about the people behind the products. Recipes, always a popular place on our site have been refreshed with new imagery and new ones (featuring BeeMaid Honey of course) will be added regularly.

The new website is easy to navigate and will work on any device like your tablet, smartphone, laptop or iPad!

Check out www.beemaid.com to see the changes we've made!



It's never been easier to CANADIANIZE your grocery shopping – Including Honey!

Submitted by Marnie Scott

CANADIANCOOLFOODS.COM creator Marnie Scott asks, "What's in Your Kitchen?" Here are examples of Product of Canada groceries at Save-On-Foods in Winnipeg. The site now features over 3,300 Products and 350 companies from across Canada. Honey products in this photo are from: Bee Maid, Western Sage, Desinty Road, Elias and Greetalia.

September 2018 – CANADA – It's never been easier to CANADIANIZE your grocery shopping AND support Canadians, our economy and our Country!

Marnie Scott is passionate about supporting Canadian industry and created this unique and independent website to provide a free service for anyone interested in finding or listing, Product of Canada or similar Canadian content foods, beverages and ingredients.

Scott says, "We have a great national representation of Honey producers and would like to add more! If you'd like to join us, please send me an email at contact@canadiancoolfoods.com or give me a call at 204-897-8144. The Honey Companies we have so far are:

Organic Matters	Ash Apiaries-Sunshine Valley	Martin's Sweet Farm	Elias Honey
Bee Maid	Western Family Foods	Co-op Gold d'Or	Clovermead
Durston Farms	Swinkels Bee Products	Chinook Honey Company	Kidd Bros. Honey
Phil's Honey	Cornect Family Honey	Border Hills Honey	Hockley Valley Honey
Burk's Honey Ltd.	Honey Bunny	Board's Northern Nectar	Grampa's Garden Honey
Howland's Honey	Fresh Roots Farm	Destiny Road Apiary	Okanagan Falls Specialty Foods
Wendell Estate	Golden Acres Honey	Gamma Bee's Honey	John Russell Honey
Western Sage	Dutchman's Gold		



Scott tells us, "More and more, Canadian consumers, chefs, retailers, wholesalers, distributors and manufacturers are looking for truly Canadian ingredients, foods and beverages. This is what Product of Canada (POC) is – 98+% Canadian grown ingredients, Canadian labour and Canadian processing.

Scott knows she's doing the right thing when she receives unsolicited comments from companies like: 'I really appreciate that you are promoting Canadian food companies and educating Canadians,' and 'This is a project long overdue and I am glad to see you tackling it.'

"The more we know about what we grow, forage and fish for across this great land – the better for everyone! Buying Canadian is an easy way to support the economy and health of Agricultural, Agribusiness, Agri-Food, Fishing and Foraging companies right in your own backyard."

The website is not an online grocery store but rather an information platform which links the products in the Shopping List to the companies' own websites where site users can make informed purchase decisions and learn about these great companies and Canadians.

Although not all products are currently available across Canada at this time, as knowledge and demand grows, so too will supply and availability. Scott is currently working with online and store-front retailers to list their Product of Canada products on the site.

Raman Khatar, Marketing Manager for Western Family, says that the company takes pride in supporting Canadian Food and Beverage companies. "With over 160 stores, we provide excellent product exposure, availability and consumer access for products such as those on CANADIANCOOLFOODS.COM."

"We know we can't carry everything. We like the CANADIANCOOLFOODS.COM Community approach – to treat everyone equally – to be a free service – to maintain independence – and to represent Canada from small to large on all sales platforms. It's a great service and looks to be very helpful!"

Scott encourages you to share the site with others, and welcomes your suggestions on new companies and products to add to the Shopping List. You can reach her directly at:

contact@CANADIANCOOLFOODS.COM.

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Canadian Association of Professional Apiculturists Statement on Honey Bee Wintering Losses in Canada (2018)



Prepared by CAPA National Survey Committee and Provincial Apiculturists: Julie Ferland (chair), Shelley Hoover (President), Melanie Kempers, Karen Kennedy, Paul Kozak, Rheel Lafreniere, Chris Maund, Cameron Menzies, Medhat Nasr, Steve Pernal, Jason Sproule, Paul van Westendorp and Geoff Wilson

Summary

The Canadian Association of Professional Apiculturists (CAPA) coordinated the annual honey bee wintering loss report for 2017-2018. As in previous years, harmonized questions based on the national beekeeping industry were used. Provincial Apiculturists collected the survey data. All provinces were included in the national survey this year. The respondents operated 502,764 honey bee colonies across Canada. This represents 63.9% of all colonies operated and wintered in the country in 2017-2018. The national winter loss, including non-viable bee colonies was 32.6% with provincial losses ranging from 18.4% to 45.7%. The overall national colony loss reported in 2018 is the highest reported loss since 2009. Through the hard work of beekeepers replacing losses and making increases, Statistics Canada reports show that the total colony count has increased by 34.1% during the period between 2007 and 2017.

Respondents reported some variation in identifying and ranking the top four possible causes of colony losses across the country. The most frequently cited causes in order from high to low were: weather, poor queens, weak colonies in the fall and starvation.

Beekeepers also responded to questions on the management of three serious parasites and pathogens to beekeeping: Varroa mites, nosema and American foulbrood. The majority of beekeepers in most provinces reported that they monitored for Varroa mites. The most commonly reported Varroa treatments were Apivar® in spring, Apivar® or formic acid (Mite Away Quick Strip® (MAQS), repeated 40 ml of 65% formic acid treatments, or flash treatments) in the summer or fall and oxalic acid in late fall. Many beekeepers reported using spring and fall applications of Apivar® or Apivar® plus formic acid to keep mites under control in 2017. Nosemosis and American foulbrood were treated by many Canadian beekeepers. Across the country commonly used treatments were registered antibiotics; but methods and timing of application varied from province to province. Provincial Apiculturists, Tech-transfer agents and researchers have been working with beekeepers across Canada to encourage them to monitor honey bee pests, especially Varroa mites and nosema, and adopt proven integrated pest management practices to keep these pests under control.

Through various working groups within the association and with various stakeholders CAPA members continue to work on development and improving management options for beekeepers to keep healthy bees. CAPA members are also actively involved in the Federal Bee Health Roundtable to develop strategies that work toward addressing risks and opportunities for developing sustainable industry.

Introduction

Over the last decade, many countries, including Canada, have surveyed beekeepers and reported overwintering mortality of honey bee colonies and management practices used for Varroa mites, nosema and American foulbrood. The Canadian Association of Professional Apiculturists (CAPA) has reported on wintering losses of honey bee colonies and possible causes of bee mortality in Canada since 2007. The objective of this national report is to consolidate provincial honey bee losses across the country based on data collected through harmonized survey questions. The possible causes of winter loss and information on pest surveillance and control are also reported. The survey results aid in identifying gaps in current management systems, developing strategies to mitigate colony losses and improving bee health, biosecurity practices, and industry sustainability.

Methodology

In 2018, the Provincial Apiculturists and the CAPA National Survey Committee members reviewed the questions used in the 2017 survey and made necessary revisions. The result was a harmonized set of questions to be used in the 2018 survey (Appendix A). These questions took into account the large diversity of beekeeping industry profiles, management practices and seasonal activities within each province. Some provinces also included supplementary regional questions in their provincial questionnaire. Results of these regional questions are not included in this report but it can be accessed by contacting the Provincial Apiculturist of the province in question (Appendix B).

Commercial beekeepers and sideliners that owned and operated a specified minimum number of colonies (Table 1) were included in the survey. The survey reported data from full-sized producing honey bee colonies that were wintered in Canada, but not nucleus colonies. Thus, the information gathered provides a valid assessment of commercial wintering honey bee losses and management practices.

The common definitions of a honey bee colony and a commercially viable honey bee colony in spring were standardized as follows:

- Honey Bee Colony: A full-sized honey bee colony either in a single or double brood chamber, not including nucleus colonies (splits).
- Viable Honey Bee Colony in Spring: A honey bee colony that survived winter, in a standard 10-frame hive (Langstroth box), with a minimum of 4 frames with 75% of the comb area covered with bees on both sides on May 1st (British Columbia), May 15th (New Brunswick, Nova Scotia, Ontario, Prince-Edward-Island and Quebec) or May 21st (Alberta, Manitoba, and Saskatchewan).

The colony loss and management questionnaire was provided to producers using various methods of delivery including mail, email, or an online option or a telephone survey; the method of delivery var-

ied by jurisdiction (Table 1). In each province, data was collected and analyzed by the Provincial Apiculturist. All reported provincial results were then analyzed and summarized at the national level. The national percent of winter loss was calculated as follows:

$$\text{Percentage Winter Loss} = \left(\frac{\text{Sum of the estimated total colony losses per province in spring 2018}}{\text{Sum of total colonies in operation in each province for 2017}} \right) \times 100$$

Results

Throughout Canada, a total of 582 sideline and commercial beekeepers responded to the 2018 survey. These respondents represented 46.6% of the all surveyed targeted beekeepers. They operated nearly 63.9% of all registered colonies that were put into winter in 2017. This year the province of Newfoundland and Labrador participated in the survey as it did in 2016. It is worth noting that British Columbia and Prince Edward Island reported a higher number of colonies went into winter than the total number of bee colonies they had reported to Statistics Canada in 2017, beekeepers reported that they were anticipating losses so they produced additional colonies to their production colonies to put into winter.

The survey delivery methods, operation size of surveyed beekeepers,

and response rate of beekeepers in each province are presented in Table 1. Survey results showed that the national level of wintering loss including nonviable colonies was 32.6% with individual provincial percentage ranging from 18.4% to 45.7%. The overall winter loss percentage for 2017-2018 was greater than 2016-2017 which had a loss rate of 25.1%.

The level of winter loss varied from province to province, and among beekeeping operations within each province. In general, most provinces reported higher mortality in 2017-2018 than the previous year, the exception being Prince Edward Island reporting similar mortality to last year. In areas with higher winter mortality beekeepers cited weather as a more prominent concern than previous years. Ontario reported the highest winter losses of 45.7% in 2018 with weather cited as being the most frequent cause contributing to colony mortality. The lowest winter loss (18.4%) was reported by Nova Scotia.

Overall 73% of the colonies owned by respondents were wintered outdoors in fall 2017. The rest of the colonies (27%) were wintered indoors (Table 2). The highest percentage of bee colonies wintered indoors was in Nova Scotia (74%), closely followed by Quebec (73%).

For detailed information about the winter losses in each province, please contact each province directly for a copy of its provincial report where available.

Table 1: Survey parameters and honey bee colony mortality by province

Province	Total number of colonies operated in 2017	Estimated number of colony lost based on the estimated provincial winter loss	Type of data collection	Number of beekeepers targeted by survey	Number of respondents (% of participation)	Size of beekeeping operations targeted by survey	Number of respondents' colonies that were wintered in fall 2017	Number of respondents' colonies that were alive and viable in spring 2018	Percentage of surveyed colonies to the total number of colonies in the province	Provincial Winter Loss including Nonviable Colonies
Newfoundland and Labrador	354	91	email / telephone / fax	5	4 (80%)	20 col. and more	244	181	68.9	25.8
Prince Edward Island	6 300	2 633	email / telephone / post	50	20 (40%)	All PEI beekeepers	6 580	3 830	104.4*	41.8
Nova Scotia	26 360	4 850	email	41	19 (46%)	50 col. and more	16 279	13 284	61.8	18.4
New Brunswick	12 761	3 865	email / telephone / post	48	23 (48%)	30 col. and more	10 169	7 089	79.7	30.3
Quebec	57 743	17 737	post / email	129	106 (82%)	50 col. and more	53 840	37 302	93.2	30.7
Ontario	105 244	48 113	online / post / telephone	186	117 (63%)	50 col. and more	63 236	34 327	60.1	45.7
Manitoba	111 802	27 940	email / post	212	67 (32%)	50 col. and more	57 810	43 363	51.7	25.0
Saskatchewan	115 000	32 162	online	120	53 (44%)	100 col. and more	43 161	31 090	37.5	28.0
Alberta	311 000	105 491	post / email / telephone	109	63 (58%)	400 col. and more	203 337	134 365	65.4	33.9
British Columbia	40 275	13 828	online	350	110 (31%)	10 col. and more	48 108	31 591	119.4*	34.3
Canada	786 839	256 711		1250	582 (47%)		502 764	336 422	63.9	32.6

* Beekeepers in Prince Edward Island and British Columbia increased the number of colonies above the number of production colonies in an anticipation of winter losses

Table 2: Overwintering method by province

Province	Total number of colonies owned by responded beekeepers wintered outdoor in fall 2017 (% of colonies)	Total number of colonies owned by responded beekeepers wintered indoor in fall 2017 (% of colonies)
Newfoundland and Labrador	163 (73%)	61 (27%)
Prince Edward Island	6 578 (100%)	2 (0%)
Nova Scotia	4 246 (26%)	12 033 (74%)
New Brunswick	4 734 (47%)	5 435 (53%)
Quebec	14 290 (27%)	39 475 (73%)
Ontario	44 100 (82%)	9 636 (18%)
Manitoba	28 890 (50%)	28 920 (50%)
Saskatchewan	34 495 (80%)	8 666 (20%)
Alberta	179 949 (88%)	23 388 (12%)
British Columbia	39 501 (92%)	3 530 (8%)
Canada	356 946 (73%)	131 146 (27%)

Contributing factors as cited by beekeepers

Beekeepers were asked to rank possible contributing factors to colony losses. These responses are summarized in Table 3. Weather was considered a major factor for winter loss across the country, likely reflecting the extended cold weather well into April through most of the beekeeping areas. In nine provinces, weather was considered the number one (eight provinces) or number two (one province) factor contributing to reported winter losses. Beekeepers reported that most bee colonies died in April which was one of the coldest, snowiest and wettest Aprils in years.

Poor or failing queens were also another commonly cited as a cause of winter loss across Canada. Poor queens can result in weakened colonies entering the winter this causes an insufficient number of bees in the colony to survive. If a queen fails or dies over the winter the colony will die as well because there is no opportunity for the beekeeper to replace the queen and the bees cannot rear a new queen during the winter season. The poor and failing queens can be caused by many factors, including, inadequate rearing conditions, poor mating weather, age of the queen or exposure to pesticides in hive and in the environment. The recent increase of queens as a reported cause for winter mortality is a concern that should be investigated further.

Starvation was the second or third possible cause of winterkill reported by beekeepers in several regions across Canada. Starvation can be the result from the inability of bees in weak colonies to store enough stored food during the fall, the inability of bees to move to new resources within the hive during winter, the rapid consumption of stored food because of early brood production, or insufficient feed provided by the beekeeper in the fall or spring. During the winter of 2017-2018, starvation may be associated with the long cold winter and extended cold through the spring.

Another contributing factor identified across Canada was weak colonies in the fall. This can be caused by a variety reasons including: making late splits (nuclei), underlying pest and disease issues, exposure to pesticides, or poor foraging and nutrition.

Ineffective Varroa control was reported as the fourth possible contributing factor to winter colony loss specifically in three Eastern provinces, this is a very different pattern than in previous years. While the

Varroa mites and their impacts on the honey bee health are still a serious issue for Canadian beekeepers, it may indicate that most beekeepers are treating in a timely manner to keep mite population under control and are doing a better job in monitoring for the mites. Many beekeepers across the country are relying on multiple Varroa treatments in a year that better enables beekeepers to protect their bees in the winter. Unfortunately, some individual producers that treated Varroa too late reported winter mortality greater than 30% and frequently reported mites as a primary concern.

Several beekeepers in different provinces reported that they did not know why their colonies perished. Inability to identify a possible cause for colony mortality may be associated with lack of monitoring for pests, diseases and other general colony health parameters during the season, or a multitude of underlying problems that cannot be identified without specialists.

Operations that reported higher than 25% winter loss were asked to rank the top four possible causes of bee colony mortality in the 2017-2018. These data are summarized in Table 4. It is notable that weather was the number one cause of winter losses in these operations as reported across the following provinces New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan and Alberta. Ineffective Varroa control was number one cause of high losses in Prince Edward Island, number two in Quebec and Saskatchewan, and number three in Ontario. Overall, there were not striking differences between reported causes of winter losses across the provinces and operations that reported 25% or more winter losses. These results reflect that these higher reported losses are influenced by management practices in the operation in addition to local environmental factors.

Table 3: Top four ranked possible causes of honey bee colony mortality by province, as cited by beekeepers who responded to the 2017-2018 winter loss survey.

Province	1st.	2nd.	3rd.	4th.
NL	Weather	Starvation	Weak colonies in the fall	Poor queens
PE	Weather	Poor queens	Don't know	Ineffective Varroa control
NS	Weak colonies in the fall	Poor queens	Weather	Starvation
NB	Weather	Weak colonies in the fall	Starvation	Poor queens
QC	Weather	Poor queens	Weak colonies in the fall	Ineffective Varroa control
ON	Weather	Poor queens	Weak colonies in the fall	Ineffective Varroa control
MB	Weather	Poor queens	Starvation	Weak colonies in the fall
SK	Weather	Poor queens	Starvation	Weak colonies in the fall
AB	Weather	Starvation	Poor queens	Nosema
BC	Weak colonies in the fall	Weather	Starvation	Don't know

Table 4: Top four ranked possible causes of bee colony mortality by province, as cited by beekeepers who reported higher than 25% losses in the 2017-2018 winter loss survey.

Province	1st.	2nd.	3rd.	4th.
NL	Starvation	Weather	Nosema	Poor queens
PE	Ineffective Varroa control	Weather	Don't know = Poor queens	Don't know = Poor queens
NS	Don't know	Poor queens	Starvation = Other (over-feeding)	Starvation = Other (over-feeding)
NB	Weather	Weak colonies in the fall	Starvation	Don't know
QC	Weather	Ineffective Varroa control	Nosema	Don't know
ON	Weather	Poor queens	Ineffective Varroa control	Weak colonies in the fall
MB	Weather	Poor queens	Weak colonies in the fall	Starvation
SK	Weather	Ineffective Varroa control	Poor queens	Starvation
AB	Weather	Starvation	Poor queens	Nosema
BC	Weak colonies in the fall	Weather	Starvation	Don't know

Bee Pest Management Practices

In recent years, integrated pest management has become the most important practice to maintain healthy honey bees. To successfully manage bee health, beekeepers must identify and monitor pests and diseases to take timely action in accordance with approved methods. This survey focused on asking beekeepers questions about their management of three serious threats that may impact bee health, survivorship and productivity (Appendix A).

A. Varroa monitoring and control¹

The Varroa mite continues to be considered by beekeepers and apiculture specialists as one of the main causes of honey bee colony mortality.

During the 2017 production season, a large majority of surveyed beekeepers monitored for Varroa mite infestations (for more details, check Table 5). The alcohol wash of a sample of 300 bees per colony was the most preferred technique in all provinces, except Quebec and British Columbia where beekeepers favoured the use of sticky boards. The frequency of use for the alcohol wash technique in various provinces ranged from 21% to 92%. The frequency of use of the sticky board method ranged from 10% to 41%. Some beekeepers used both sticky boards and alcohol wash methods to evaluate the levels of mites.

These results demonstrate that most Canadian beekeepers recognize the value of surveillance and monitoring of Varroa mites. The education and extension programs delivered to beekeepers in Canada have helped in adoption of proper management practices for Varroa mites. Monitoring Varroa mite populations, determining the right timing and selecting the best treatment options for Varroa mite control have become frequently used practices in day to day beekeeping man-

agement. Survey results show that most beekeepers in Canada manage Varroa mites using a combination of chemical and non-chemical control measures. Non-chemical methods include: trapping Varroa using drone combs, trapping Varroa using screened bottom boards fitted with sticky boards, using Varroa tolerant bee stocks, or division of colonies (e.g. splits) at the right time of the season.

There are a variety of registered miticides available to beekeepers for mite control. Beekeepers are encouraged to use the most effective miticide that fits their region, season and operation. They are also encouraged to rotate miticides to prevent the development of resistance to these products. In the current survey of bee winter losses, beekeepers were asked “what chemical treatment was used for Varroa control during the 2017 season”. The beekeepers’ response is summarized in Table 5. In the spring of 2017, the percentage of beekeepers that treated with chemical methods ranged from 43% in New Brunswick to 95% in Saskatchewan. Throughout Canada, the main miticide used for spring Varroa control was Apivar® (a synthetic miticide with the active ingredient amitraz). The second most common treatment is formic acid in late spring, followed by oxalic acid. In fall of 2017, most Canadian beekeepers ranging from 67% in Alberta to 100% in New Brunswick treated their colonies for Varroa. The main miticides used at this time of the year were oxalic acid, Apivar® and formic acid. It was noted that there some beekeepers used Apivar® twice in the same year in 2017, once in spring and again in fall. Most beekeepers did not use Apistan® (a synthetic miticide with the active ingredient fluvalinate) and Checkmite™++ (a synthetic miticide with the active ingredient coumaphos). Beekeepers may be leery of these products because of previously reported resistance to these active ingredients in Canada.

Once again, these surveys show that Apivar® (amitraz) is one of the most commonly used miticides for treating Varroa in Canada. Through the repeated use of Apivar®, it is only a matter of time before we see the development of resistance to this miticide. Initial finding of few cases of low efficacy and resistance were observed in Alberta in 2016 and Saskatchewan in 2017. It is becoming increasingly important that beekeepers become aware of the principles behind resistance development and the importance of monitoring the efficacy of all treatments, in particular Apivar. This will help to mitigate unforeseen failures of treatments. Beekeepers are encouraged to incorporate resistance management practices such as using appropriate thresholds for treatment, and alternating miticides with different modes of action in their Varroa treatment programs. Good biosecurity and food safety practices will also go a long way to ensure healthy bees and a safe quality product while reducing the disease pressure.

B. Nosemosis management practices:

Nosema is a fungal pathogen that infects honey bees. *Nosema ceranae* has become the most frequently found nosema species in Canada for some years after it had gradually replace *Nosema apis*. The real role of *N. ceranae* in honey bee colony survival during winter and spring build-up is still unclear but it could, in certain regions or in some circumstances have an impact and play a role in mortality. It was rarely cited by all surveyed beekeepers as a possible cause of colony mortality during the 2017-2018 winter loss survey, except in Alberta, Newfoundland and Labrador, and Quebec. In the survey, beekeepers reported their use of Fumagillin for the treatment of nosemosis in spring and/or in fall of 2017 (Table 6). The percent of beekeepers reporting using this drug varied widely from province to province.

¹ Newfoundland and Labrador is not included in this part of the report because no Varroa mites are found in the province.

Table 5: Varroa monitoring and chemical control methods as cited by the respondents of the 2017-2018 winter loss survey. Chemical treatment is in order from most to least commonly used.

Province	Beekeepers monitoring varroa mites (%)		Beekeepers who treated varroa and method of treatment			
	Sticky boards	Alcohol wash	Varroa treatment in Spring 2017		Varroa treatment in Summer/Fall 2017	
			% of beekeepers	Methods of treatment	% of beekeepers	Methods of treatment
NL	0	0	NA	NA	NA	NA
PE	10	50	65	Apivar® (Amitraz), Formic Acid-40 ml multiple application = Formic Acid-250ml single application	95	Oxalic Acid, MAQS®, Apivar® (Amitraz)
NS	26	42	53	Apivar® (Amitraz), Oxalic acid, MAQS®	90	Apivar® (Amitraz), MAQS®, Oxalic Acid
NB	22	65	43	Apivar® (Amitraz), Formic Acid-250ml single application, Oxalic Acid	100	Oxalic Acid, Apivar® (Amitraz), Formic acid-250ml single application
QC	41	21	48	Formic acid-40ml multiple application, Apivar® (Amitraz), Oxalic acid	98	Formic acid-40ml multiple application, Apivar® (Amitraz), Oxalic acid
ON	17	59	74	Apivar® (Amitraz), Formic acid-40ml multiple application, MAQS®	94	Apivar® (Amitraz), Oxalic Acid, Formic acid-40ml multiple application
MB	17	42	93	Apivar® (Amitraz), Oxalic Acid, MAQS®	91	Oxalic Acid, Apivar® (Amitraz), MAQS®
SK	11	78	95	Apivar® (Amitraz), Apistan® (Fluvalinate), Oxalic Acid	91	Apivar® (Amitraz), Oxalic Acid, MAQS®
AB	24	92	92	Apivar® (Amitraz), Oxalic Acid, Formic Acid	67	Oxalic Acid, Formic Acid, Apivar® (Amitraz)
BC	37	25	64	Formic Acid, Apivar® (Amitraz), Oxalic Acid	88	Formic Acid, Oxalic Acid, Apivar® (Amitraz)

C. American foulbrood management practices

American foulbrood (AFB) is a bacterial disease of brood caused by Paenibacillus larvae. AFB is considered endemic in Canada, and it has been of great concern to beekeepers. Oxytetracycline and more recently Tylosin are antibiotics registered for treating AFB in Canada. The pattern of use for these antibiotics, as reported by beekeepers is presented in Table 6. Oxytetracycline was more frequently used by beekeepers in spring and fall than Tylosin.

Honey Bee Winter Loss and Population in Canada Since 2007

There has been a lot of variation in winter losses in Canada since 2007 as reported in the national surveys. This year, the reported Canadian winter mortality averaged 32.6%. This is higher than the long term acceptable threshold of 15%. The national overwinter losses were highest in 2007, 2008, 2009 and 2018 and ranged from 29.0% to 35.0%, in those years but from 2010 to 2017, the national overwinter losses ranged from 15.3% to 29.3%, averaging 22.2%. Statistics Canada reports show that the total colony count has increased by 34.1% during the period between 2007 and 2017. This proves the resilience of

beekeepers to maintain and increase their numbers despite difficulties keeping healthy viable bee colonies through winter.

Since the inception of this harmonized survey in 2007, beekeepers have been facing challenges keeping healthy bees. Causes for bee health concerns include pest management, climatic condition, bee nutrition, bee exposure to pesticides in hives and the environment. Another added challenge facing beekeepers is the economics of beekeeping this includes variable honey prices versus the cost of production. Even though responses from

Table 6: Antibiotic treatments for noseosis (fumagillin) and American foulbrood (oxytetracycline and tylosin) as cited by the respondents of the 2017-2018 winter loss survey.

Province	Use of Fumagillin (% of respondents)		Use of American foulbrood treatments (% of respondents)			
	Spring	Fall	Spring treatment with Oxytetracycline	Spring treatment with Tylosin	Summer/Fall treatment with Oxytetracycline	Summer/Fall treatment with Tylosin
NL	0	10	0	0	0	0
PE	15	30	15	0	5	0
NS	26	68	58	0	32	0
NB	22	39	70	0	43	0
QC	2	16	10	0	5	0
ON	17	18	68	0	64	0
MB	26	37	78	0	59	5
SK	20	44	65	9	71	9
AB	87	100	75	5	64	8
BC	17	23	13	< 1	11	< 1

this annual survey have provided evidence that beekeepers from various regions are using recommended practices for monitoring and managing honey bee pests and diseases; there are always the opportunities to make further improvements.

It appears that stresses caused by parasites and a combination of other stressors warrants further studies to provide alternative management practices to maintain honey bee health. At this time, beekeepers have few products to control Varroa. New options are important to mitigate the risk of developing resistances. Additionally, the only product registered to treatment of nosema (Fumigillin) is currently unavailable. If there is resistance developed to the primary treatment for Varroa (Apivar®) and no available treatment for Nosema spp., beekeepers

could suffer even greater difficulties keeping their bees alive. Ultimately, beekeepers will need more effective and additional options (miticides, antibiotics and non-chemicals) in their “tool box” if they are to continue effective integrated pest management to maintain healthy bees.

Further Work

CAPA members continue to work closely with industry stakeholders, the Bee Health Roundtable and provincial working groups to address bee losses and bee health. Members of CAPA and Provincial Apiculturists have also been actively involved in conducting surveillance programs at the provincial levels and across the country to monitor the status of bee health including the emerging pest, the small hive beetle. CAPA and the Provincial Apiarists are also involved in developing policies for antimicrobial use in beekeeping and conducting outreach and extension programs to promote IPM and biosecurity practices to beekeepers. Researchers within CAPA are active in evaluating alternative control options for Varroa mites and nosema and developing genetic stocks more tolerant to pests which will hopefully enhance the integrated pest management (IPM) practices and address honey bee health sustainability. ■

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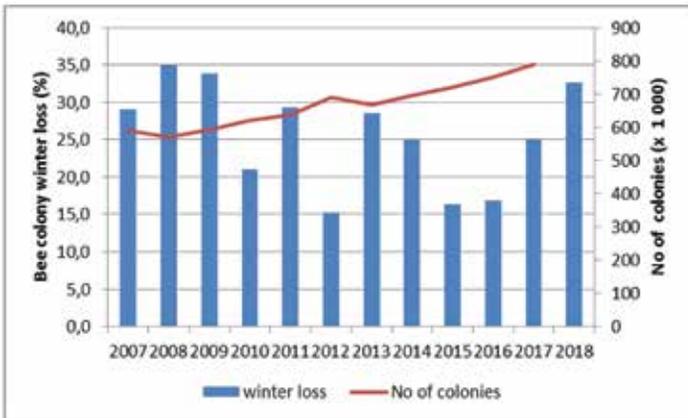


Figure 1. Summary of bee colony numbers and bee losses in Canada from 2007-2018.

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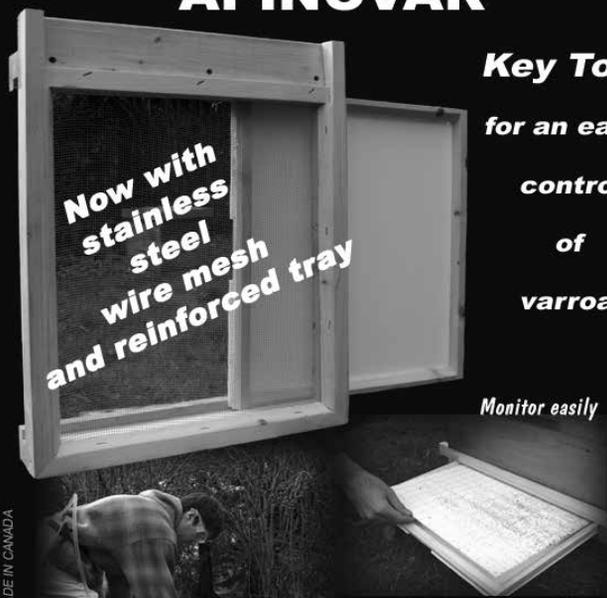


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International Honey Market

By Ron Phipps

1. Trade Wars and Fraud

The summer of 2018 has seen the eruption of international trade wars. These wars involve a wide range of nations and changing tariffs, nontariff trade barriers, opposition to violations of both international law and intellectual property rights law. Blatant incidences of food fraud in a growing number of categories have been in the news, such as seafood.

Since 2001, the U.S. has had high antidumping duties in place on Chinese honey, and only a few containers of Chinese honey have been imported each year since the imposition of those duties. Additional Trump administration tariffs on Chinese products would not be expected to directly affect honey imports into the U.S.

Professor Michael Roberts, from the Resnick Program for Food Law and Policy at the UCLA School of Law, has pointed out that efforts to detect and curb food fraud cost \$8 billion. Food fraud globally costs an estimated \$30-40 billion per year (John Spink, Michigan State University, 2014). Within the context of food fraud, honey is ranked third after milk and olive oil (U.S. Pharmacopeia). Prof. Roberts has written “Economically Motivated Adulteration is designed by nature not to be detected.” He has recommended that the honey industry “engage with US Pharmacopeia (USP), a scientific nonprofit organization that sets standards for the identity, strength, quality, and purity of medicines, food ingredients, and dietary supplements manufactured, distributed and consumed worldwide” (USP.org). The USP has announced that a meeting of a honey expert panel will be held in 2018.

Intolerance of fraud is growing among authorities in charge of implementing laws. Equally important, consumers are increasingly sympathetic to beekeepers, whose livelihoods are dependent on food authenticity and ecological sustainability.

The international trade war involves increased rejections, and reciprocal tariff and non-tariff trade barriers. One large Australian retailer, Coles, removed honey that has Chinese components from their retail stores. The Chinese government rejected recent honey imports from Australia and Canada. Those rejections apparently did not cite any known regulation. In 2017 China imported honey valued at \$91,200,000 according to global trade statistics.

The collapse of honey prices from world exporters, and shifts in the patterns of honey exports, are directly linked to the prevalence of adulterated honey in the international honey market. This issue was addressed in the Apimondia Roundtable on Economically Motivated Adul-

teration held in October, 2018 and chaired by Prof. Norberto Garcia.

The challenge of establishing a definition of honey with the specificity required to help prevent both circumvention and adulteration has been an important topic in recent months. Adulteration and circumvention to mask true country of origin are inextricably linked in today’s global marketplace.

The trade wars cited are occurring within a context of tremendous international and national debt, including the national debt of the two biggest global economies (the U.S. and China), volatility of currencies, economic stress and a global sweep towards autocracy and rising tensions.

2. U.S. Honey Import Trends

Over the past 5 years, U.S. import volumes have increased on average 10,720 metric tons per year. The increase comes from Asian sources, at a rate of 11,365 metric tons per year, while imports from the Americas decreased by 3,495 metric tons per year. The total volume of imports increased from 141,000 tons in 2012 to 202,000 tons in 2017. Import prices from all sources reached an average high in 2014-2015 of \$1.59/lb. (\$3,500/MT), declined in 2015-2016, and then prices from Asian countries continued to decline through 2017 to an average of \$0.91/lb. (\$2,000/MT). Prices for conventional honey from the Americas rose by about 15% from 2016 to 2017. Prof. Garcia has prepared this information and Charts 1 and 2 below.

“The honey-export explosion from the Eastern countries has resulted in at least three visible consequences on the international market: (i) downward pressure on pure honey prices as a result of the product’s oversupply, (ii) the disincentive to produce and export pure honeys by several traditional countries, which have shown significant decreases in their export volumes over the past 10 years, and (iii) the appearance of new important exporters, which may re-export those cheap imports, straight or in blends, as locally produced (Garcia, *The Current Situation on the International Honey Market*, Bee World, 2018).”

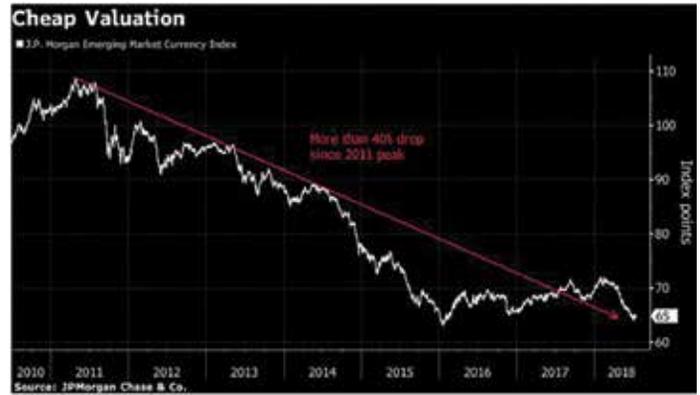
As Chart 2 illustrates, the downward trend in prices abruptly changed in 2016 and the price gap significantly widened from 2016 to 2017. Import markets have shifted in 2018 compared to 2017 (see Chart 3).

The organic market has continued to be strong, reaching a total volume of 62,751,490 pounds (28,460 metric tons) for 2017. Average prices for organic honey rose to a high of \$2.00/lb. (\$4,500/MT) in March of 2017, and have come down dramatically over the past 15 months (see Chart 4).

“By 2020, if not before, the American Honey Market will be very different and much healthier.”
– Kelvin Adeo, President of the American Honey Producers Association.

3. Macro Economic and Currency Patterns are Shifting

As the Federal Reserve maintains its current policy of gradual increases in interest rates and global central banks shift away from monetary easing towards tighter monetary policies, there is increased potential for higher and more frequent episodes of financial market volatility. Amidst a backdrop of unprecedented levels of global debt, rising interest rates, and significant non performing bank loans in China, increased financial market volatility will undoubtedly affect commodity prices, honey included. It has been noted in recent months that commodity prices relative to overall financial assets are at/ near recent lows. Supply/demand dynamics, however, may provide a floor to agricultural prices for the remainder of 2018 and into 2019. The fluctuations in international currency rates are illustrated below.



Currency Index for Emerging Markets

4. Honey around the World

Argentina is estimated to have had a honey crop of about 60,000 metric tons, with a predominance of Extra Light Amber and darker colors. Drought caused crop failures in some areas such as the north, Entre Rios and parts of Buenos Aires. There is a carryover of about 10,000 tons and exports as of mid-summer have been about 30,000 metric tons with additional 5-10,000 tons already sold. Demand from Europe has been good. Higher inflation is predicted for the coming period, with prices in the field going up. The political, economic and

currency instability shrouds Argentina in uncertainty.

Brazil as a whole has suffered political instability and currency fluctuations. The most salient feature of Brazilian honey exports has been the decline in prices and the narrowing of the gap between organic and conventional honey. Organic prices have fallen approximately 50%.

Prices of organic and conventional honey have abruptly declined, and the gap between organic and conventional honey has changed from 50% to 21% according to a snapshot of selected prices (Chart 4).

Canadian beekeepers report that the last 3-4 years have been very difficult for commercial honey producers, who are struggling to compete with low priced honey from Asian sources and Ukraine. The white colors they produce, in the range of 10-30mm, have typically sold at a premium.

Peter Bross, President of the Hungarian Beekeeping Association, has described how the presence of adulterated and mislabeled honey has negatively impacted the Hungarian beekeepers. He cited how Hungary's prized, pure and authentic high quality acacia is much more expensive to produce than the fake acacia honey that has crept into Hungary's domestic market through imports. Other countries suffer similar market depressions due to food fraud in the form of exported "pure Eastern European acacia honey." A similar story can be told of New Zealand's manuka honey.

In June beekeepers in Hungary and Eastern Europe reported zero demand, even though the price was low, and expressed concern that in Europe there is no traceability. This has opened the door to mislabeling of country of origin within Europe.

Reports from beekeepers in Ukraine indicated that agricultural use of chemicals is causing dramatic bee losses up to 75%. Domestic honey availability is expected to be very low. At the same time, reports indicate that Europe is suffering terrible heat waves and Ukraine suffered drought conditions in May and June. Ukraine exports of honey to the world in the first half of 2018 were 17,000 metric tons, down 43% compared to the previous period.

Vietnam ranked 2nd in Asia in honey exports in 2017, but volumes fell rapidly although prices were at the lowest level on the world market. Costs of transportation are high and inflation is a problem for beekeepers, who report lack of profits from honey production. Dependence upon the U.S. market is a concern of Vietnamese beekeepers, who would like to dramatically improve the quality of their honey and develop the European market. The Vietnamese Beekeeping Association recognizes that they must change their methods of production if they are to open the European market. Some Vietnamese exporters have said that their honey is extracted at high moisture and is immature. "We could wait for the honey to fully ripen before extracting it, but then the cost of production would be much higher and result in prices higher than the American market is willing to pay." In late July quantities available were limited.

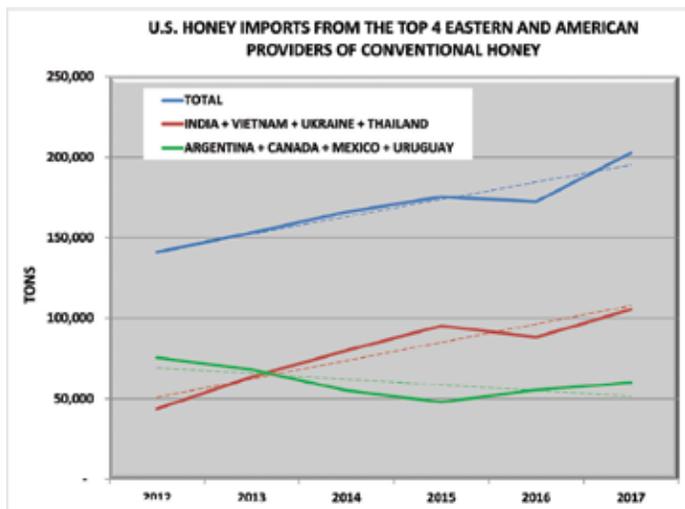


Chart 1. U.S. Honey Imports 2012-2017 (prepared by N. Garcia)

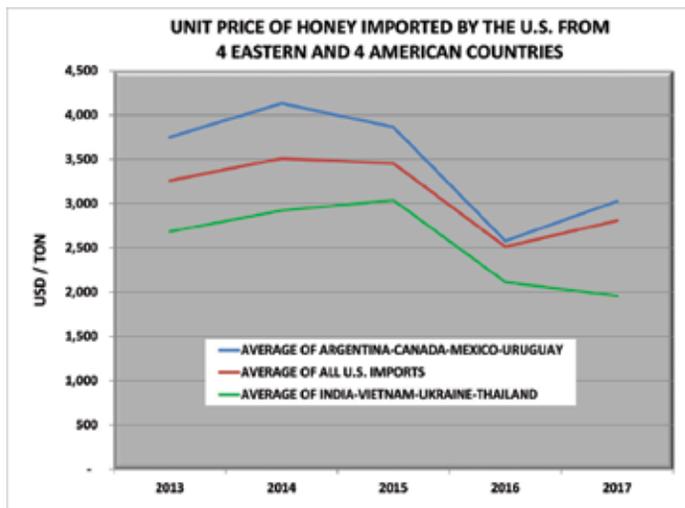


Chart 2. Unit Price of U.S. Honey Imports 2013-2017

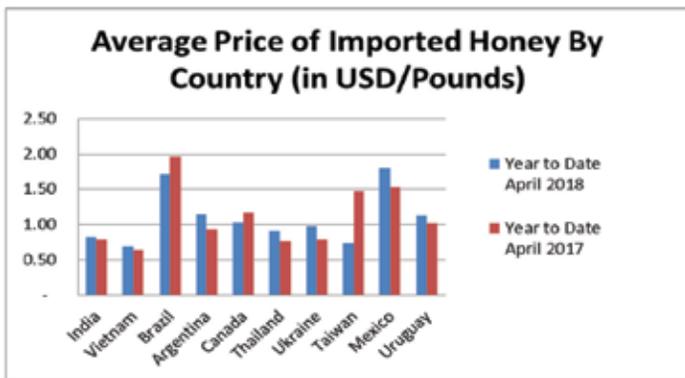
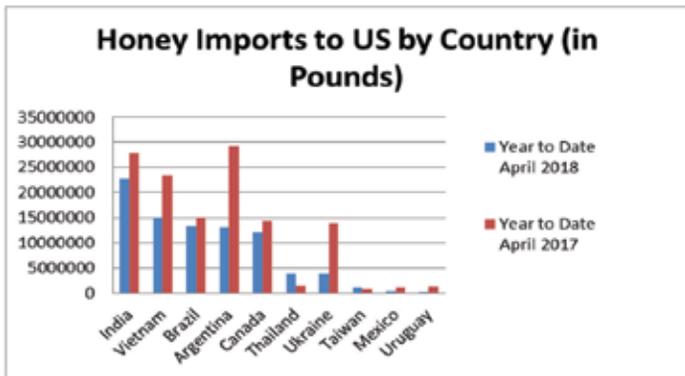


Chart 3. U.S. Honey Imports Jan. to April 2018 v. 2017

News reports indicate that New Zealand's largest manuka honey producer, Comvita, may soon be sold to a Chinese government owned business. News of the possible sale emerged in the middle of April when Comvita revealed that its 2018 honey production and profits will be less than previously announced.

The U.S. government authorities announced investigations in 50 states of Chinese acquisitions of companies either direct or through surrogate venture capital firms related to strategic resources, intellectual property, etc.

Beekeepers in North and South America, Europe and Australia, consistently report that at the current low price levels, in a market where they must compete with adulterated honey, they cannot maintain and increase production. Remunerative price levels would allow them to increase production.

5. Completing the Circle

In a previous International Honey Market Report, we defined illicit modes of production, including 1) the extraction of immature honey, 2) the use of resin technology, 3) the blending of extraneous sweeteners, 4) the blending of conventional honey with organic honey, and 5) the intrusion of extraneous pollens. These illicit modes of production associated with correlative modes of adulteration constitute honey fraud. Also described were scientific technologies, including advanced technologies such as NMR, which can detect honey adulteration in its several modes. In addition, there must be much more robust, vigorous and intrusive traceability regimes than are provided by mere documentation. Fraudulent documents have facilitated adulteration and circumvention. A vigorous regime of traceability entails independent inspections which are conducted with utmost professionalism, integrity and openness of modes of production. There has to be a more continuous traceability and documentation since, as has been shown by prior scientific inspectors, once the inspectors are gone, adulteration has resumed. Some of the modes, such as the Chinese resin technology are highly mobile, compounding the problem.

A massive glut of sugar stockpiles is growing worldwide, making sugar the worst-performing commodity of 2018, down 25%. The cause may be health concerns about the impact of consuming products with sugar. Production of sugar is booming, especially in India and Thailand. In July, the price of raw sugar futures fell to \$0.11/lb. The surplus is expected to last for some years. The presence of abundant cheap sweeteners, like sugar, engineered rice syrups and beet syrup facilitate economically motivated adulteration.

Completing the circle means a highly insightful integration of modes of production, modes of adulteration, advanced modes of scientific detection and more vigorous traceability regimes.

Efforts to complete the circle have recently been expressed during the World Honey Congress, which included a session on economically motivated modes of adulteration. This session was chaired by Prof. Norberto Garcia, and participants included members of the European commission, the U.S. Department of Agriculture, Dr. Michael Roberts and other leaders. Following that Congress, the scientific committee has mobilized international experts in numerous disciplines to complete the circle. Prof. Michael Roberts in his excellent White Paper recommended that the solution to the problem of adulteration may be addressed by the USP. The formation of a honey group has been announced.

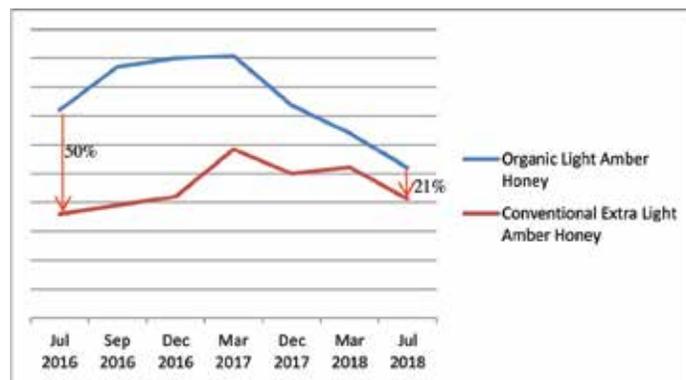


Chart 4. Organic vs. Conventional Honey Import Price Trend

The fundamental problem for the honey industry is that the modes of production that have been utilized create a situation in which “there is no ceiling to quantities, no floor to prices, and no future for honest hardworking beekeepers.” The collapse in honey prices is rooted in market manipulation, the adulteration of honey, food fraud, label fraud and customs fraud.

6. NMR Testing

“NMR profiling is a very powerful tool to uncover adulteration of honey...As the database continues to grow, the power of the potential analytics improves... and helps protect the buyer of honey from unpleasant surprises. (Dübecke 2018).” The database of primary samples has grown to 19,000 samples. The profiles of blends are being investigated and adjustments are being made to capture the tweaks in the modes of adulteration.

Comparing Dr. White's Carbon SIRA test and the current NMR technology, the SIRA test had 100 authentic samples, 99 of which were U.S. honey, at the initial stage of development and used 1 variable (C13); NMR currently has 19,000 honey samples in the database and provides information about 38 variables.

The past five years have witnessed the most extensive collaboration and dialogue in history among government laboratories, private laboratories and independent academic scientists regarding modes of detection of food fraud in general and honey fraud in particular. Be-

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cause NMR is the most sophisticated technology with the largest global database and measures the largest number of variables and parameters found in honey, NMR can detect the key modes of adulteration. There is a conflict between those who want to maximize its use as a key component in the toolbox and those who want to deny, disparage, dismiss or at least delay its implementation. It is relevant to note that the Chinese website Alibaba openly describes Chinese manufactured resin technology as useful to “get rid of the barriers from U.S. due to the restrictions on antibiotics.”

7. Food Fraud

In Prof. Roberts seminal work on *Food Law in the United States*, he cites in his chapter Economically Motivated Adulteration, “The substitution of any substance in whole or in part...[which] typically occurs when a substance is replaced with something less valuable, an example of which is where beet sugar is used instead of honey (Roberts, 2015).” In his presentation to Apimondia, Roberts described a long history of adulteration of honey, stretching back in time to the Roman Empire. The modern forms of honey adulteration cited earlier are more insidious and sophisticated.

Recent analyses are linking food fraud with food safety. The European Commission has detected potentially carcinogenic resin residues in honey and wax that have been subject to resin technology.

If the productivity per hive in developed countries like Argentina and the U.S. has declined as a function of environmental degradation, how much more severe such declines would be in India and China, both of which have the most toxic air, water and soil conditions in the history of human civilization. Of course, if illicit modes of production and sophisticated modes of adulteration, like “honey hive factories,” extraction of immature honey, blending of sophisticated engineered extraneous sweeteners and resin technology are utilized, then productivity per hive becomes a question of total irrelevance.

8. Current Global Climate and Agriculture

Concerns with global food security remain tense not only because of international trade tension and trade wars but global environmental conditions. This year we are witnessing unprecedented floods in Japan and growing stress upon the majestic forests of Lebanon cedars, known to the ancients, whose ranges are retreating to higher and higher elevations and whose rates of reproduction are declining. Forest fires have raged in Sweden reaching the Arctic Circle. The heat and drought are drying up the grasses which are essential to feeding the cattle in Sweden’s dairy farms during Sweden’s long winters. Columbia’s Lamont-Doherty Earth Observatory has warned of unprecedented breakup of icebergs in Greenland, imperiling villages and foretelling rising sea levels.

As this report is being prepared, magnificent Yosemite Park has wildfires, Athens, Greece is surrounded by wildfires, records for high temperatures have been broken in Death Valley, and the west coast is suffering a new round of wildfires. The frequency and severity of extreme rain is breaking records.

We are currently in the middle of a scorching hot summer with heat records being set around the world. On July 5, it reached 124 degrees Fahrenheit in Algeria: an all-time record both for the country and the entire African continent. The following day, Los Angeles set an all-time record at 111 degrees. This past Sunday, Japan logged its hottest temperature ever amid a heat wave that’s killed 77 so far (Slate).

In the U.S. southwest, where a “heat dome” has dropped over several states, the National Weather service also recorded a new maximum temperature yesterday when the mercury touched 52.7 C in Death Valley, CA, shattering a record that had stood for 102 years. (CBS)

The current heat wave builds upon a trend in recent years that continues to impact global agriculture in myriad ways, in some cases boosting yields in the short-term but in the long-term the increased volatility and severity of weather events has undermined both productivity and introduced a crippling level of instability into an already historically volatile industry. The acceleration of this trend has pushed global agriculture to a tipping point in 2018.

All of these events are obviously relevant to ecological sustainability but they are also relevant to global food security and the ability of beekeepers to have adequate financial incentives to produce honey. If productivity per hive declines, agricultural conditions continue to experience increased severity, frequency and volatility of weather disasters, then the low prices for authentic honey will render the production of natural pure honey economically inviolable.

9. Honey and Pollination



Richard Adee, Professor Emeritus of American beekeeping.

After the January, 2018, convention, several speakers were invited to visit the Adee Honey Farms to see the wintering of the bees in the Central Valley. As the world’s biggest beekeepers, their operation is crucial and complex. The discussions included the contradiction, which Prof. Garcia and I have

pointed out, that world exports of honey increased dramatically, but colony numbers have remained stable, and productivity per hive of authentic pure honey has dramatically declined. Bret Adee described how the industrial practices of agribusinesses, with synthetic fertilizers, pesticides, and herbicides, have harmed the rich communities of organisms in the soil. In addition, the long journeys involved in modern migratory beekeeping, the reduction of wild foraging areas for wildlife, and the resulting monodiets, have greatly increased the stress on bee populations. The losses of bee colonies and increased expenses of keeping bees have made the low prices for honey a factor that diminishes the incentive to produce honey. If the honey prices were attractive, then the need for migratory beekeeping practices would be reduced.

This would help to revitalize the domestic beekeeping industry, where low returns have caused beekeepers to abandon the industry. The collapse of honey prices has caused beekeepers in developing countries like Vietnam to leave beekeeping, as they struggle to repay their debts, often compelled to sell their hives.

Conclusion

As Dr. Stan Daberkow, Economist Emeritus of the USDA, has shown, the price of honey on the retail level has grown slightly while the cost of raw material inputs has plunged. This means the current market is one in which there is economic incentive for the few. According to a marketing index, consumers’ perception of value decreases when prices are low, but increases when prices are higher. The wise path is to create perception of value through a positive marketing program. Apimondia has created a committee to promote the creative marketing of honey on a global basis. The members include Jodie Goldsworthy, Chris Hiatt, Norberto Garcia, Etienne Bruneau, myself and others. We want to develop and promote the health halo of honey. Adulterated or fake honey is inconsistent with developing that positive agenda. ■



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Help Wanted

Interlake Honey Producers

Positions: 3 Apiary Workers for the 2019 Honey season. Seasonal full time, days, evenings and some Saturdays. Work is mostly outdoors, so must be able to work under hot conditions. The job starts April 1st – July 1st. End Date: Sept 10th – October 28th. Wages: \$12.94-\$16.00/hour depending on experience. Performance and/or production bonus may be available. Require one or more years of apiary work experience. Duties include but not limited to, feed and care for bees, replacement of hives, moving hives, supering hives, collecting honey, working on extracting line, cleaning extracting equipment and honey house, assembling and maintenance of bee equipment, maintain and drive vehicle. Work is very physically demanding, with long days and heavy lifting. The job is located 2 hours north of Winnipeg in the RM of Fisher NE 33-23-1W in Fisher Branch, MB.
Please apply to Box 328 Fisher Branch, MB R0C 0Z0 or email anitag@interlakeforagesecds.com

Help Wanted: Ethelbert (MB)

WEST 10 HONEY LTD, PO Box 205, Ethelbert, MB R0L 0T0 has the following positions available:
APIARY TECHNICIAN (10)
Wage: \$13.15- \$16.00. Dates Required: March 1, 2019 for a 2 year Term position. Minimum 3 years experience preferred. Duties: Handle and feed hives; Replacement of hives and production of nucs; Detect and report hive health and apply correct disease cures and/or controls; Keep field and/or production records; Harvest honey; Raise queens; Drive and maintain vehicles; Other duties as assigned.
THE POSITIONS: Seasonal full time, days, evenings, Saturdays as required; Medical Benefits; Language is English and Spanish; Must have own transportation; Must be able to handle heavy loads as work is physically demanding; Must work well with others and be able to learn continuously.
Send resume by mail to above mailing address or by email to workatwest10@gmail.com.

Help Wanted: Tees (AB)

TEES BEES INC. requires:
Three APIARY TECHNICIANS (NOC 8431) with a minimum of 2-3 years (seasons) experience working on a Canadian style commercial apiary in the min. capacity of Apiary Worker or General Farm Worker with employment March thru October 2019 (\$15-\$19/hr depending on exp. with possible bonus) (40+ hrs/wk);
Duties include: caring for honeybee colonies in the appropriate manner; coordinating the production of replacement bees and equipment; recognizing, reporting, monitoring hive health issues and applying appropriate treatment/controls; harvest and fill honey barrels and containers; supervise small teams of workers; driving and daily maintenance of vehicles; operate and maintain other apiary equipment; conduct bee yard maintenance; keep some field production records. A motor vehicle operator's licence with no serious infractions, recognized by the Province of Alberta and major insurance companies is required.
Three APIARY WORKERS (NOC 8431) with a minimum of 1 year (season) experience and with employment March thru October 2019 (\$15-\$17/hr depending on exp. with possible bonus) (40+ hrs/wk);
Duties include caring for honeybee colonies in the appropriate manner; assisting Technicians with bees and equipment; assisting with harvesting honey; assisting with the bee yard and equipment maintenance.
All wages are negotiable based on experience and productivity. Applicants must be able to work in the presence of honey bees. All positions may require some evening, night & weekend work. All applicants must be in good physical condition and able to work in a team environment. Ability to speak English is an asset. Contact Jeremy Olthof at 23318-Hwy 50, Tees, AB; mail to RR1, Tees, AB T0C 2N0; or email at teesbeesinc@gmail.com

Help Wanted: Granum, Alberta

SUPERNUC APIARIES located near Granum, AB (M.A. 251032 TWP RD 104) has the following positions for the 2019 season.
APIARY WORKERS (Technician/worker NOC 8431) 4 posi-

tions; wage starting at \$15.00/hr (or current wage according to NOC code), needed full time (45+ hrs/wk) from Mar 1, 2019 through October 31, 2019. Some evening, night and weekend work will be required. Accommodations are available. 1 year experience required. Duties include assisting with beehive maintenance and treatments, building and repairing bee equipment, moving hives, harvesting and extracting honey, and winter preparation. All wages are negotiable based on experience and productivity. A valid driver's license and the ability to speak English is an asset. Must be physically fit and accustomed to working with honeybees.
Email resumes to aovinge@gmail.com or fax to 403-687-2154.

Help Wanted: Mission (BC)

Apiary Workers
Golden Ears Apiaries Inc. requires 9 Apiary Technicians (NOC 8253) at \$14.52/hr starting Feb 1, 2019 until Nov 15, 2019, working 40+ hrs/wk. Apiary Technicians must have a minimum 3 seasons working full-time (40+ hrs/wk) in a Canadian style commercial beekeeping operation, and must have a good understanding of honeybee management and have the ability to independently assess hive health and make decisions regarding individual hive management. We also require 6 Apiary workers (NOC 8431) at \$13.83/hr working 40+ hrs/wk, from March 1, 2019 to Nov. 15/2019. Apiary workers must have a minimum of 1-2 seasons working in a Canadian style commercial apiary as an Apiary harvester. Apiary Workers will be required to assist Apiary Technicians with day to day colony management, extracting and honey processing. All positions do require some evening, night and weekend work. All applicants must be in good physical condition and able to work in a team environment. English is an asset as well as a valid driving license. Work will be in southern BC (Fraser Valley), and Elk Point Alberta. Accommodations available. Contact Carolyn Shipley at 33197 Ito Place, Mission, BC. V2V-3W7. Or by email at jmcs Shipley@shaw.ca.

Help Wanted: Wetaskiwin (AB)

*Pleasant Valley Honey LTD.** (SW 15 46 27 W4) requires*:
Four APIARY TECHNICIANS (NOC 8431) with a minimum of 2-3 years (seasons) experience working on a Canadian style commercial apiary in the min. capacity of Apiary Worker or General Farm Worker with employment March thru November 2019 (\$15-\$19/hr depending on exp.) (40+ hrs/wk); Duties include: caring for honeybee colonies in the appropriate manner; coordinating the production of replacement bees and equipment; recognizing, reporting, monitoring hive health issues and applying appropriate treatment/controls; harvest and fill honey barrels and containers; supervise small teams of workers; driving and daily maintenance of vehicles; operate and maintain other apiary equipment; conduct bee yard maintenance; keep some field production records. A motor vehicle operator's licence with no serious infractions, recognized by the Province of Alberta and major insurance companies is required.
Six APIARY WORKERS (NOC 8431) with a minimum of 1 year (season) experience and with employment March thru November 2019 (\$15-\$17/hr depending on exp.) (40+ hrs/wk); Duties include caring for honeybee colonies in the appropriate manner; assisting Technicians with bees and equipment; assisting with harvesting honey; assisting with the bee yard and equipment maintenance. All wages are negotiable based on experience and productivity. Applicants must be able to work in the presence of honey bees. All positions may require some evening, night & weekend work. All applicants must be in good physical condition and able to work in a team environment. Ability to speak English is an asset.
*Contact Ryan Olthof at 272072 Highway 13, Falun, AB; mail to RR1, Wetaskiwin, AB T9A 1W8; or email at pvhpbbees@gmail.com

Help Wanted: Fort Macleod (AB)

POELMAN APIARIES LTD. located near Fort Macleod, AB (102007A Range Rd 254) has the following positions available for the 2019 season:
6 SUPERVISORS (SKILLED WORKER, NOC 8253) with a minimum of 5 years(seasons) experience working at a

Canadian apiary. Employment needed from March through October 2019; wage starting at \$15.00 - \$17.50 (depending on exp. with possible bonus) (40 + hrs/week). Duties will include: caring for honeybee colonies in the appropriate manner; coordinating the production of replacement bees and equipment; recognizing, reporting, monitoring hive health issues and applying appropriate treatment/controls; harvest and fill honey barrels and containers; supervise small teams of workers; driving of vehicles; operate and maintain other apiary equipment; conduct bee yard maintenance.

15 TECHNICIAN/WORKERS (LOW SKILL WORKER, NOC 8431) with a minimum of 1-2 years experience. Employment needed from April through November 2019; wage starting at \$15.00- \$16.50(depending on exp. with a possible bonus) (40 + hrs/week). Duties will include: caring for honeybee colonies in the appropriate manner; assisting Technicians with bees and equipment; assisting with harvesting honey; assisting with the bee yard and equipment maintenance.

2 GENERAL FARM LABOURERS (LOW SKILL WORKER, NOC 8431) experience is an asset but will be trained. Employment needed for April through November 2019; wage starting at \$15.00 per/hour (with possible bonus) (40 + hrs/week). Duties will include: Supering and harvesting honey, cleaning honey extraction and storage equipment, barrel moving prep, filling and storage, manufacture and assemble and maintain hive equipment, and bee yard maintenance.

All wages are negotiable based on experience and productivity. Housing is available. Applicants must be able to work in the presence of honey bees. All positions may require some evening, night & weekend work. All applicants must be in good physical condition and able to work in a team environment. Ability to speak English is an asset. Email resumes to pollenpal@gmail.com attention Poelman Apiaries or fax to 403-687-2410 or mail to Box 1887 Fort Macleod, AB T0L 0Z0.

Help Wanted: East Selkirk (MB)

Apiary Technicians 2 positions (NOC 8252) Minimum 3 years beekeeping experience preferred. Wage range \$13.00-\$16.50 per hour. Employment from March 1/2019 to October 31/2019
Apiary Worker 2 positions (NOC 8431) \$12.00-13.50 per hour. Employment from March 1/ 2019-October 31/2019. Minimum 1year experience required.

Seasonal full time, days, evenings, Saturdays. Language is English. Duties would be to handle, feed and care for bees; help in replacement of hives and production of nucs; move hives; collect honey; 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 email to philip@waldbee.com. Address: Waldbee Honey Farms Inc. Box 9 Group 19 RR1, East Selkirk, MB. R0E 0M0

Help Wanted: Argyle (MB)

Grysiuk Apiary Inc., 5 Full time seasonal apiarists 2019. Full time seasonal apiarists, wages are \$12 to \$15 per hr. depending on exp. job is physically demanding, must help with wrapping, feeding, making nucs, supering, pulling honey, honey extraction, medicating hives, and winter preparation. Please call Cal Grysiuk, ph./fax 204-831-7838, Email acgrysiuk@shaw.ca, or mail: Grysiuk Apiary Inc. 83 Acheson Dr. Winnipeg, MB R2Y 2E8.

Help Wanted: East of Saskatoon (SK)

Meadow Ridge Enterprises Ltd requires 5 Seasonal Apiary Harvest Labourers for the 2019 season. Meadow Ridge Enterprises is commercial beekeeping and queen rearing operation. 5 full time seasonal positions are needed commencing in April and ending in October. Minimum one year beekeeping experience, with wage starting at \$12.00 - \$14.00 per hour dependent on experience. Potential to earn bonuses. Duties include: spring feeding, hive maintenance, grafting, raising new queens and building nucs. Supering hives, harvesting honey, extraction of honey, fall feeding, wrapping of colonies, equipment cleaning, repairing and yard maintenance. Must be able to work long hours, weekends and holidays in all kinds of outdoor weather. Job requires heavy lifting, and a valid driver's license. Meadow Ridge Enterprises is located 10 miles east of Saskatoon. Please email resumes to a.j.robertson@sasktel.net

Help Wanted: Souris (MB)

3 Apiary Workers (8431) for the 2019 season, April 1-Oct.31/19 Wage \$13.-\$15. hr. depending on experience. 1-2 years experi-

ence preferred.

Drivers license an asset. Must be able to operate a Fork Lift. Duties include. feeding, unwrapping beehives, moving beehives to summer locations, queen checking, disease inspection, supering hives, pulling and extracting honey, fall feeding, moving hives to winter locations, wrapping hives for winter. Requires heavy lifting. Please send resume: Harlton Apiaries (Irwin Harlton) Box 644 Souris, MB. R0K 2C0 email: iharlton@mymts.net Phone 204-483-2382

Help Wanted: MacNutt (SK)

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

12 full-time positions available at Wendell Honey in 2019

• Apiarist Technician (NOC 8252)

- o help with Spring check, hive assessment and manipulation
- o help with pest and disease control
- o help with grafting, making nucs and raising queens
- o assemble equipment
- o help super hives
- o help harvest honey
- o help keep field production records
- o help maintain beeyards
- o help with Fall feeding, assessment and treatments
- o help to wrap bees
- o other duties as assigned

• Positions available from April 8, 2018 to mid-October 2018

• Min. 2 years of experience working with bees necessary

• Work is physically demanding

• Wages \$15.00 - \$21.00 per hour depending on experience with Wendell Honey

• Possible production bonus

Email Isabel Wendell at isy@wendell.ca for fax 204-564-2568 or phone 204-937-7767

12 full-time seasonal positions available at Wendell Honey in 2019

• Apiary Worker (NOC 8431) to

- o assemble equipment
- o help super hives
- o help harvest honey
- o help maintain beeyards
- o help with Fall feeding
- o help to wrap bees

• Positions available from May 13, 2018 to mid October 2018

• No experience necessary

• Work is physically demanding

• Wages \$12.00 - \$15.00 per hour depending on experience with Wendell Honey

• Possible production bonus

Email Isabel Wendell at isy@wendell.ca for fax 204-564-2568 or phone 204-937-7767

Help Wanted: Langenburg (SK)

4 Apiary Technicians available from February 2019 to October 2019. The work is physically demanding and the wages are \$18.00 negotiable on experience.

Required Skills:

- Help with Spring check, do hive assessment
- Help with pest and disease control
- Help with Queen Raising, grafting, building, maintaining nucs

- No education required, but 2 years beekeeping experience required 8 Beekeeper's Assistants seasonal: F-T \$14.00 an hour depending on experience.

We require help in all work related to the production of honey. Duties include:

- Making brood chambers
- Honey removal
- Feeding bees
- Wrapping bees

- Some woodwork is involved Mail, fax or email your resume to: Glory Bee Honey, P. O. Box 878

Langenburg, SK S0A 2A0 Att: Dennis Glennie Phone: 306-743-5469. Fax: 306-743-2817

Email: dennisglennie@sasktel.net

Help Wanted: Delta (BC)

CASPIAN APIARIES INC is seeking 15 seasonal full time (40+ hrs/week). Apiary Workers (NOC 8431) \$13.83/hr for the 2019 season. 5 Workers for Feb 1 to Aug 31. 5 workers for March 15 to Sept 30. 5 workers April 10 to Nov 1. There is evening, night/weekend work. Applicants must be in good

physical condition and be able to work in a team environment. Duties include handling, feeding and caring for honeybee colonies, assisting in the production of nucs and/or replacement hives, diagnose and treat hive health issues, moving hives to and from pollination, collecting/extracting honey, as well as bee yard maintenance and the manufacture, assembly and the maintenance of hive equipment. Work is in the Fraser Valley of BC until the end of blueberry/cranberry pollination, then colonies may be moved to NE Alberta for honey production, working in Alberta til hives return to BC starting mid September. Applicants must have a minimum of 1 year experience in commercial migratory beekeeping. Applicants should send resumes to Hossein Yeganehrad by email at 10473 Main st., Delta, BC V4C 2P7, or email to jmcshiple@shaw.ca

Help Wanted: Ethelbert, (MB)

WEST 10 HONEY LTD, PO Box 205, Ethelbert, MB R0L 0T0 has the following positions available:

APIARY TECHNICIAN (10) Wage: \$13.15- \$16.00. Dates Required:

March 1, 2019 for up to 8 months. Minimum 3 years experience preferred. Duties: Handle and feed hives; Replacement of hives and production of nucs; Detect and report hive health and apply correct disease cures and/or controls; Keep field and/or production records; Harvest honey; Raise queens; Drive and maintain vehicles; Other duties as assigned.

THE POSITIONS: Seasonal full time, days, evenings, Saturdays as required; Medical Benefits; Language is English and Spanish;

Must have own transportation; Must be able to handle heavy loads as work is physically demanding; Must work well with others and be able to learn continuously.

Send resume by mail to above mailing address or by email to workatwest10@gmail.com

Help Wanted: Shellbrook (SK)

Sand Hills Honey, PO Box 247, Shellbrook, SK. S0J 2E0

April 1 to November 15, 2019. Dates may vary according to weather. Beekeeper Labourers \$11.06/hr. Beekeeper Technicians \$11.83/hr. Bonuses may be awarded. Primary work place is Sand Hills Honey, located 14.5 km South of Shellbrook. No previous work experience required, no education required, drivers licence not required but an asset.

Job duties include but not limited to: assist with honey extraction, cleaning and maintaining hive equipment, unwrapping and wrapping hives, all training will be provided. email: jasonrinas@hotmail.com

HELP WANTED: Rocanville (SK)

APIARY TECHNICIAN

5 seasonal positions available from April 21 - October 21 (2019). Reporting to work at B. Strong Apiaries Ltd. 1 mile south west of Rocanville, Sk. (NE 17-16-31 W1) Wages dependent on experience (\$14.28 - \$17.00) Possible production bonus at end of the season.

Duties include but are not limited to: Unwrapping/wrapping hives, colony manipulation, application of honey bee treatments, making nucs, supering, maintaining equipment and a clean shop, pulling and extraction of honey, moving and feeding hives, keeping accurate and up to date yard records, etc.

Requirements;

-Minimum of 2 years beekeeping experience.

-Must not be allergic to honey bee stings.

-The work is physically demanding, applicants must be in strong and active physical condition to maintain the safe work environment.

-Required long hours and occasional weekend/holiday work (minimum 40hours a week).

-Must work well with others, and able to work long hours in the heat.

-Ability to speak English is an asset but not a requirement.

APIARY WORKER

5 seasonal positions available from April 21 - October 21 (2019). Reporting to work at B. Strong Apiaries Ltd. 1 mile south west of Rocanville, Sk. (NE 17-16-31 W1)

Wages dependent on experience (\$13.00 - \$15.00) Possible production bonus at end of the season.

Duties include but are not limited to; Assisting apiary technicians in the unwrapping/wrapping of hives, colony manipulation, application of honey bee treatments, making nucs, supering, maintaining equipment and a clean shop, pulling and extraction of honey, wrapping and feeding hives, safely securing truckloads of honey/equipment, etc.

Requirements;

-Must not be allergic to honey bee stings.

-The work is physically demanding, applicants must be in strong and active physical condition to maintain the safe work environment.

-Required long hours and occasional weekend/holiday work (minimum 40hours a week).

-Must work well with others, and able to work long hours in the heat.

-Ability to speak English is an asset but not a requirement.

APIARY WORKER

5 seasonal positions available from July 3rd - September 15 (2019). Reporting to work at B. Strong Apiaries Ltd. 1 mile south west of Rocanville, Sk. (NE 17-16-31 W1)

Wages dependent on experience (\$13.00 - \$15.00) Possible production bonus at end of the season.

Duties include but are not limited to; Cleaning warehouse at start of season. Daily upkeep and maintenance of extracting area/honey house, extraction of honey, painting of honey supers, etc.

Requirements;

-Must not be allergic to honey bee stings.

-Required long hours and occasional weekend/holiday work (minimum 40hours a week).

-Must work well with others, and able to work long hours in the heat.

-Ability to speak English is an asset but not a requirement.

Contact Brian Strong @ bdstrong@sasktel.net or fax resume to (306) 645-4591

Help Wanted: Ardmore (AB)

T'N'T Apiaries require:

An APIARY FOREPERSON (NOC 8252) for immediate full-time (40+ hrs/wk) year round employment (\$19.00-\$25/hr depending on experience. Bonuses possible). Applicant must have a minimum of 5 years (seasons) fulltime in a Canadian style commercial apiary environment with a minimum of 3 years (seasons) working as an Apiary Technician.

Duties include:

- Caring for honeybee colonies in the appropriate manner.
 - Co-ordinating the production of replacement bees & equipment.
 - Recognizing, reporting, monitoring and controlling hive health issues.
 - Harvest & package honey, pollen & beeswax.
 - Supervise & train workers.
 - Drive (including std transmission & medium duty trucks) & daily maintain vehicles.
 - Operate & maintain other apiary equipment (including forklifts, chainsaws & pumps).
 - Conduct bee yard maintenance.
 - Keep field and/or production records.
 - Interact with external farm personnel.
- 5 APIARY TECHNICIANS (NOC 8431) for full time (40+ hrs/wk) employment (\$17.00-\$22/hr depending on experience. Bonuses possible) December 2018 thru October 2019. Must have a minimum of 2 years (seasons) working fulltime on a Canadian style commercial apiary in the min. capacity of Apiary Assistant or General Farm Worker.

Duties include:

- Caring for honeybee colonies in the appropriate manner.
 - Co-ordinating the production of replacement bees & equipment.
 - Recognizing, reporting, monitoring hive health issues and applying appropriate treatment/controls.
 - Harvest & package honey, pollen & beeswax.
 - Supervise small teams of workers.
 - Drive (including std transmission & medium duty trucks) & daily maintain vehicles.
 - Operate & maintain other apiary equipment (including forklifts, chainsaws & pumps).
 - Conduct bee yard maintenance.
 - Keep some field and/or production records.
- 6 APIARY WORKERS (NOC 8431) for full time (40+ hrs/wk) employment (\$15.00-\$19.00/hr. depending on experience. Bonuses Possible) January thru October 2019. Applicants must be able to work in the presence of honey bees.

Duties include:

- Caring for honeybee colonies in the appropriate manner
 - Assisting Technicians with bees & equipment.
 - Assisting with harvesting honey, pollen & beeswax.
 - Assisting with the bee yard and equipment maintenance.
- All positions may require some evening, night & weekend work. All applicants must be in good physical condition and able to work in a team environment. A motor vehicle Operator's license with no serious infractions, recognized by the Province of Alberta & major insurance companies, is required for the Foreperson position and preference will be given to

those Technician & Worker applicants holding one.
Contact Dave Tharle, 44116 - Hwy 659, Ardmore, AB or Box 80, Ardmore, AB. (Fax 780-826-6013) Email: ttapi@mcsnet.ca

Help Wanted : Nipawin, SK

Yves Garez Honey Inc, P.O Box 2016, Nipawin, SK, S0E 1E0 seeks employees

for the March 2019 to October 2019 season at facilities located 10 km North-East of Nipawin, Saskatchewan.

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

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

-8 Apiary Workers (NOC 8431) without experience. We will train successful applicants in bee yard maintenance and hive manipulations. Wages \$ 11.00 to \$ 14.00 per hour. email: y.garez@sasktel.net

Help Wanted: MacGregor (MB)

12 SEASONAL BEEKEEPERS (Applicants must be permanent residents or citizens of Canada only)

5 Apiary Technicians, wage range \$13.00-\$16.50 per hour
7 Apiary Workers, wage range \$12.00-\$13.50 per hour. Ex-

pected employment duration (Feb 1 - Oct 31, 2019) one position of Apiary technician (Feb1/19 to Jan31/21)Start/end dates are flexible due to the season. Valid driver's license an asset, previous experience working with honeybees is necessary for technicians and recommended for apiary workers. Candidates must be willing to work flexible hours in a fast paced, repetitive & physically demanding environment.

Duties include: assess, feed, and medicate honeybee colonies, remove/extract honey, split/balance/relocate colonies, clean/collect pollen, build/repair beehive equipment, and perform routine light maintenance on machinery/vehicles.

Contact: Nichol Honey Farm Ltd., Box 461, MacGregor, MB, R0H0R0,

Phone (204) 252-2770, Fax (204) 252-2129, or email: nichol-honey@yahoo.ca

Help Wanted: Kinistino, SK

Apiary Harvest Labourers and Apiary Harvest workers required for seasonal work in a commercial honey production and bee rearing operation for the 2019 season.

Three Apiary Harvest Labourer positions available for 5-7 months (starting no earlier than February). Labourers perform (but are not limited to) tasks such as supering hives, harvesting honey, cleaning honey extraction and storage equipment; barrel filling and moving; repair, assemble and maintain hive equipment and bee equipment; bee yard maintenance. Knowledge of the industry, a valid drivers licence and English speaking skills an asset but not mandatory. Wage starts at \$11.10/hr with subsidized housing option, transportation and potential for bonuses based on performance, attitude and character.

Three Apiary Harvest worker positions available for up to 8.5 months (Feb to November). Apiary Harvest Workers perform (but are not limited to) tasks such as supering hives, harvesting honey, cleaning honey extraction and storage equipment; barrel filling and moving; repair, assemble and maintain hive equipment and bee equipment; bee yard maintenance; assist with colony manipulation; assist with colony treatments; assist with moving colonies; assist with feeding colonies. Canadian

beekeeping industry knowledge, 1 year experience, valid drivers licence and English skills required. Wage starts at \$12.15/hr+ with subsidized housing option, transportation and potential for bonuses based on performance, attitude and character. Availability to work long hours, evenings/nights, holidays and weekends is required for all positions. Work is faced paced and physically demanding with heavy lifting. Must be able to work in all weather conditions. Email resume and cover letter with references to B's Bee Ranch Inc at beeranch@sasktel.net

Help Wanted: Pitt Meadows (BC)

Honeyland Canada located in Pitt Meadows, British Columbia is seeking for 2 apiary technicians (NOC 8431) for the 2019 seasonal fulltime employment (\$15-17/hr depending on experience) starting March 01 and 1 honeybee farm manager (NOC 8252) for fulltime year round employment (\$23-26/hr depending on experience). Eligible for comprehensive benefit program following 3 months of work. Accommodations available.

Preference will be given to candidates with experience in queen rearing/production of royal jelly. Candidates can apply by emailing your resume to Honeylandcanada@gmail.com

Help Wanted: Sexsmith (AB)

Moondance Honey Inc. located at 55063 TWP RD 750, Sexsmith, AB has the following positions for the 2019 season. Beekeeper Technician (NOC 8431)-3 seasonal positions, 3 full time. Wages \$16 - 18.50/hour depending on experience. Duties include hive management, queen introduction, nuc production, pest/disease recognition and treatment, hive supering, honey removal and extraction, equipment construction and repair, and winter hive preparation. Apiary Worker (NOC 8431)-3 seasonal positions, wages \$15-16/hour, depending on experience. Minimum of 1 year experience or equivalent training program.

Duties include assisting beekeeper technicians with spring hive management, nuc production, supering, honey lifting and extraction, moving hives and feeding and wrapping hives for winter. Seasonal positions run from mid-April to mid-October. Apply to termeerbill@yahoo.ca or fax resume to 780-833-5747.

Help Wanted: Zenon Park (SK)

10 Apiary Workers (NOC 8431) with a minimum of 2 years experience working at a Canadian apiary.

- Start date March 1st 2019 to October 2019.

-Wage starting at \$14-\$18 (depending on experience) (40+hrs/week).

-Job duties include but not limited to:

- Working outdoors in all Canadian climates. (snow, rain, hot sun)

- Assist with the needs of a colony at every point of the season.

- Assist in recording apiary data and process data to organize equipment for following apiary visits.

- Assist to apply colony treatments in appropriate manner/timing.

- Make nucs and care for new queens.

- Assist in raising queens.

- Work to keep a clean work environment.

-Work in Supering, harvesting honey, maintaining old/new hive equipment, feeding, cutting grass, building bear fences, moving bees and filling barrels.

Applicants must be in good physical condition. Ability to work with bees. Ability to speak english is an asset. Drivers license is also an asset. Weekend/evening work when required. Apply by Dec 15th 2018

10 Apiary Workers (NOC 8431) no experience required.

- Start date June 15th 2019 to September 15th 2019.

- Wage starting at 13\$

-Job duties include but not limited to:

- Cleaning,harvesting/extracting honey, maintaining old/new hive equipment, feeding,cutting grass, filling containers.

Applicants must be in good physical condition. Ability to work with bees. Ability to speak english is an asset. Drivers license is also an asset. Weekend/evening work when required. Apply by Dec 15th 2018

Send resumes to moyenhoneyfarms@gmail.com or by mail to Moyen Honey Farms P.O Box 249 Zenon Park,Saskatchewan S0E1W0

Help Wanted: Austin, MB

New Rutherford Apiaries (4647204 Manitoba Ltd) located north-west of Austin, MB in the RM of North Norfolk (69033) requires two full time, seasonal Apiary Workers for the 2019 season. Available March 20, 2019 to November 5, 2019. Duties include helping with: honey harvesting and extracting, feeding and medicating hives, moving hives, making hive increases, queen rearing, building hive equipment, bee yard maintenance, and clean-up. Must have at least one season of beekeeping experience. Work is physically demanding, often in a very hot environment with weekend and evening hours required. Wage rate of \$12.00 - \$15.00/hour depending on experience. Apply to:

Mike Lewis at: mike-beehive@hotmail.com ph: (204)466-2551 fax:(204)466-2894

Help Wanted: Kinistino, (SK)

Position 1

Bacon Apiaries Ltd, located in Kinistino, Saskatchewan, is looking for an Apiary worker for the 2019 honey crop season. The job will commence approximately on March 15, 2019 to Oct 31, 2019. Primary duties (but may not be limited to) includes moving hives, feeding and medicating colonies, evaluating colonies, supering hives and harvesting honey, extracting and storing of honey and repairing bee equipment. Availability to work long hours, including week-ends and evenings is required. Salary starting from \$11.90/hr to \$ 13.00/hr depending on experience

Position 2

Bacon Apiaries Ltd, located in Kinistino, Saskatchewan, is looking for 5 Honey harvester labourers for the upcoming 2018 honey season. Job duties include using an automatic lift to place full honey supers on a conveyor, running honey frames through an uncapper, moving frames into an extractor, removing empty frames and putting them into supers, stacking them away, making new honey equipment and repairing existing honey equipment. Employees hours will be 40-60 hours/week (5-6 days) with wages starting at 11.00/hr to \$13.00/hr depending on experience.

Employment from July to September 24th 2019.

Send resume to rbacon@sasktel.net

Help Wanted: Shellbrook (SK)

Hannigan Honey Inc. Located at #9 Shell River Road, Shellbrook, SK, is now accepting applications for 8 Apiary Harvest Labourers (NOC 8431). These positions are available on a seasonal basis (45+ hrs/week), running from July to October 2018. Duties include honey extraction, cleaning extraction and storage equipment, filling containers, cleaning and maintaining hive equipment. Workers are required to be mentally and physically fit and must be able to work in the presence of bees. Wages start at \$10.96/per hour.

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



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Zeetumah: Queen Of The Rainbow Honeybees

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Overview

Somewhere in the darkness is a honeycomb mansion, home of galactic honeybees, with a ruling Queen who oversees the flowering planets in this galaxy.

Sacred to these pollinators is an ancient amulet that holds the secret teachings of honeybees and Nature. This amulet, a rare sun diamond, is passed down to a daughter born with rainbow antennae. That beechild, Zeetumah, is destined to be the next Queen to carry on their legacy.

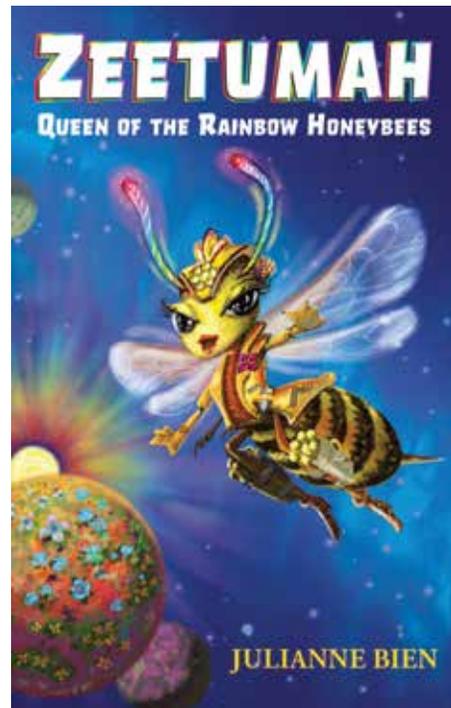
Her beehood training prepares her for a dangerous journey.

With her new knowledge, brave Queen Zeetumah sets off across space to fulfill her destiny. She leads her courageous team on a mission to revive a planet back to its former glory. Honeybee folklore speaks of this place fated for her rainbow children. A place where Zeetumah passes on her gift so their legacy can carry on in a distant world.

About the Author

Julianne Bien, author of the novels: *Color: Awakening the Child Within* and *Adventures of Maximojo: A Warp in Time* is intrigued by the life and mysteries of honeybees.

Zeetumah: Queen of the Rainbow Honeybees is the first work in a series called: *The Rainbow Honeybees Chronicles*. For over two decades, Julianne's field of expertise and interest has been the study and use of the colors of the rainbow.



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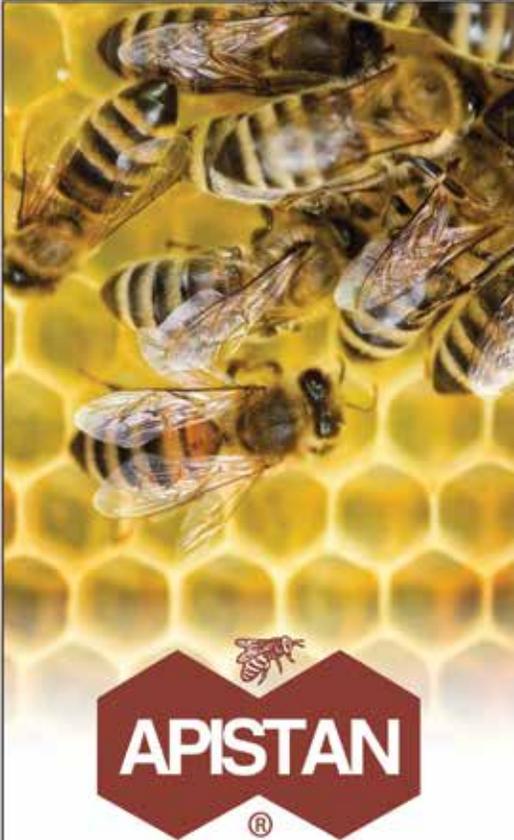
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