

The Bee Cause



Volume 11, Issue 4

April 2014

- Next general meeting is 7:30 Tuesday, April 8th at the River Heights Community Centre, 1370 Grosvenor Ave., Winnipeg.
- (in room right off main-door)

Speaker:

- Ms. Dupius U. of W:
Rooftop Beekeeping
- Lance Waldner :
Making Nucs

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Chemicals Beyond Control

I wonder where this story is going to end! Is it death by misadventure Agri-genocide? It has been disturbing to publish articles on chemical misuse. When I studied chemistry and entomological control, 1968-1971 (physical and organic chemistries, including toxicology) I believed the rule was to prove safe before use. Today the rule seems to me to be reversed. Money, corporate wealth and again it seems to me political jobs govern the sweet language and government statements of the day to Save Face! It used to be that human health was number one concern then livestock. Well we have seen what has happened to our beef and fish. There is no evaluation that I have read explaining the ultimate damaging affect that the manipulation of the replicating helical coil in DNA on our natural stable systems in the development of plants, insects or human organs (brain matter for instance) and neurological impairment. Yet in the bee it is clear, studied and repeatedly proven. Two articles follow on the latest attempts to adjust the concerns or to save some Face.

Editorial comment.

Article 1

North Dakota becomes first state to protect honeybee population

By Marvin Baker
The Kenmare News
Kenmare, North Dakota

Back in December North Dakota became the first state in the nation to put into place safeguards to protect honeybees from colony collapse disorder. Agriculture Commissioner Doug Goehring convened a meeting among farmers, ranchers, landowners and beekeepers in an effort to better protect honeybees. Goehring said the plan, titled the North Dakota Pollinator Plan, was developed in response to a growing need for a balanced public policy that reduces risk to honeybees, while minimizing the impact of that mitigation on production agriculture.

Goehring stopped short of blaming any one catalyst for CCD. Ag Commissioner Doug Goehring said a number of things, perhaps simultaneously, are decreasing health of the bees including stress, malnutrition, pests, parasites disease, pesticide exposure, lack of genetic diversity and migratory beekeeping. Since that Dec. 10 meeting, several other states have taken action to protect their honeybee populations from CCD, a mysterious condition that has swept the nation since 2006 and killed millions of honeybees. They include the Oregon Department of Agriculture, which recently announced a series of measures designed to protect bees and other pollinators from exposure

to certain pesticide products. Oregon is now requiring specific label statements restricting use of products containing the active ingredients dinotefuran and imidacloprid, while strengthening its outreach and education efforts to pesticide users regarding pollinator protection. Oregon took its step in January after recognizing a mass die off of bumble bees last summer across the state. Both dinotefuran and imidacloprid are the active ingredients in a class of insecticides called neonicotinoids. Dinotefuran, among other things, is used to control grasshoppers and cockroaches and is used as a flea and tick control on dogs. Imidacloprid is the most widely used insecticide in the world and is most **(cont'd on Pg 4)**

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Presidents Comments -- April 2014

There is still a lot of snow on the ground and the forecast for warmer days is always ahead. Some of my indoor wintered bees are still alive, but I wonder for how long they can stay inside.

The ideas offered by Randy Oliver at the MBA convention at the end of February in regard to making certain that the bees have access to syrup/honey and pollen are good for his geographical area, but not for us. His bees are flying. We don't have spring yet, and I am in a quandary of what to do for my indoor wintered hives. Many of our members have hives that are wintered outdoors and I can hope that they can survive until good flying time arrives. I do have pollen patties from a commercial box that has a list of ingredients which seem suitable, but they are not fresh. But I shall utilize them for my hives and hope that the bees find them to their taste.

The world honey market indicates that there is a shortage of quality honey everywhere, as changing weather patterns have affected production in a variety of countries. This could lead to an increase in price for quality bulk honey so perhaps beekeepers should not be in a hurry to clear out their stored honey. The bulk wholesale price could approach the \$3.00 mark. so that a barrel or pail of honey in storage has become more valuable.

There seems to be evidence that some of the natural pollen that bees bring into the hive is likely contaminated with a variety of pesticides. The bees use this pollen to make beebread which is fed to the larva. In some cases the result is damaged larva or an adult bee that has a shortened lifespan. Any if these situations can be detrimental to the health and population of the hive.

It is reported in the ABJ of April that some European countries are refusing delivery of honey that comes from some GMO plants or they will only accept the honey at a much lower price.

I am aware that Canada has been reluctant to take a stand on the use of some pesticides, but the health of the bees is more important than the bottom line of the large chemical companies...The government of Canada has to pass strong regulations that protect the Bees. The fact that a large part of the diet for humans requires the pollination of a variety of foods and vegetables that is done by a variety of insects, many of which are at risk due to pollution and loss of habitat. Honey Bees are at risk, and the number of them is decreasing. It is up to us as Beekeepers to sound the alarm before it is too late. Contact your local provincial and federal representatives with your concerns, not only for today's population but for future generations.

Yours in Beekeeping---- Charles Polcyn RRAA President

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Please Note : Retailers are concerned.

New Zealand Packages experiencing 25% cut back for spring 2014. Arataki NZ has run into capacity issues in regard to the availability of bees and infrastructure which means we are not able to get all the pkgs in from NZ that we had expected. Suffice it to say it is a complicated mess but we are expecting a net reduction of about 25% of the capacity we took orders for. **Chris Bartel**, Bartel Honey Farms Inc is asking for voluntary reductions .

**Red River Apiarist's Association
March 11, 2014
Minutes**

Chair: Charles Polcyn
Recording Secretary: Art Quanbury

Approval of Minutes of Feb. 11, 2014
Moved: Albert Anderson
Seconded: Alex Remkes

Summary of Annual Bee convention –Charles Polcyn

Comments from Beaverlodge Centre
Lab Facilities in Manitoba. Darryl Wright will be taking over the testing lab facilities in Manitoba for the MBA. Volunteer help will be needed so contact Darryl if you want to help out.

African Bees. They are in Florida and are taking over native hives. They are very "lively" but not likely to survive our cold winters.

Small hive beetle. Not a serious problem here because of our cold winters.

Local Queens. We should develop our own Queens because they will be better adapted to our particular climate and environment.

Comments from Randy Oliver

Bees need early season nutrition, particularly pollen. If the hive does not get sufficient nutrition there will be no egg laying.

Lyme disease. It is a growing problem. Be aware of it and remove ticks as promptly as possible. See a doctor for doxycycline if you suspect a problem bite. Elizabeth May of the Green Party has put together a forum on Lyme disease. A new tick, the lone star tick, is coming to Manitoba. It carries several diseases.

Comments by David Ostermann

GMO canola seed carries pesticides and fungicides. Contact with these chemicals can add stress to bees. Keep hives as far away from these crops as possible.

There are new viruses that have not been seen before in bees. They appear to enter the bee through open sores created by the varroa mite.

Formic acid is still an effective treatment for VM. Miteaway strips are also effective and available from the supplier in Austin, MB.

MBA Report – Jim Campbell

Confirmed that Darryl Wright will be overseeing the inspection program but is not sure when the lab will be open for doing tests. Part time workers will be needed. Government funds are essential for MBA to run this program and MBA will be meeting government officials soon. Alberta has lost its inspection program. The state of Saskatchewan's program is not known. More details should be known by the end of March.

Food at the coffee break was provided by Josh and Alex Remkes. Thanks to both.

Beekeeping in Cuba – Charles Polcyn

Charles commented on some details of beekeeping that he learned about during his visit there. He was not able to learn very much.

Door Prize winners

| | |
|-------------------|------------------------|
| Alex Remkes | bee doll |
| Ron Rudiak | honey and package |
| Murray Smith | honey and AFB test kit |
| John Russell | water bottle |
| Mike Grysiuk Jr | trap and test kit |
| Doug Beckingham | bee doll and test kit |
| Maureen Bodnar | hat and test kit |
| Carol Anderson | honey and test kit |
| Mike Grysiuk Jr. | honey and package |
| Christos Argiriou | toque |

Adjournment

The meeting adjourned at 9:00 pm. Next meeting is Tuesday April 8, 2014 at River Heights Community Club. Time is 7:30 pm.

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MBA Report March 2014

Jim Campbell, MBA Representative

Manitoba Beekeepers' Association (MBA) hosted a successful Symposium February 28 and March 1, 2014 with 108 guests plus 18 Tradeshow vendors. The keynote speakers, Randy Oliver, Commercial beekeeper from Grass Valley, California, and James Ellis, Assoc Prof of Entomology, U of Florida, Gainesville, Florida, attracted an attentive audience. Through the Growing Forward 2 program, we should receive 75% of the fees for bringing in these two high calibre speakers.

MBA met with Minister R. Kostychyn, MAFRD, on 18 March to discuss several industry issues. Minister commented on a conversation with his Alberta counterpart and assured the group he took their concern to Federal Minister Ritz. The Temporary Foreign Worker issue will create a situation where none of the current Nicaragua workers will return in 2015, as they need to stay out of Canada for 4 years. This will create additional training expense or a reduction in production for producers. A transition time is being sought so training of 1/3 staff can be done each year to minimize impacts.

MBA board reviewed the current disease surveillance criteria targeting 4000 colonies to be inspected each year. Although the target is valid, many commercial operations may not be inspected in the normal routine of every two years, since no inspection was done in 2013. This may take some time to correct and producers requesting inspection may take some time to fit

back into the routine.

MBA representatives met with Manitoba Agricultural Services Corporation board recently to review the over-winter Bee Mortality Insurance program, and other MASC programs. The number of producers in the program increased from 47 to 53, indicating the desire to insure colonies from unusual losses. The program is based on individual performance, so producers are encouraged to maintain accurate records of hive survivability to keep premiums lower.

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(From Pg 1) often used as a seed treatment in sunflowers and corn. It is also widely used on canola acres and is commonly sold in North Dakota under the brand name Gaucho and is manufactured by Bayer Crop Science. Neonics, for short, are a class of neuro-active insecticides chemically similar to nicotine.

A number of theories have been published since 1999, mostly in Europe, that point to neonics causing colony collapse disorder.

But published studies in the United States and Canada have been more recent.

One hypothesis is gaining a lot of attention.

Christy Morrissey, a biology professor at the University of Saskatchewan in Saskatoon, is working on the first year of a four-year research that already suggests neonics are killing honeybees and several bird species in the prairie provinces of Canada where 5 million acres of canola are raised annually.

Morrissey's partial manuscript is detailed but points to the Environmental Protection Agency in the United States for underestimating the risk of neonics using scientifically unsound, outdated methodology that has more to do with a game of chance than with a rigorous scientific process. Meanwhile, Health Canada said its research shows "the use of neonic treated corn and soybean seed is affecting the environment due to its impact on bees and other pollinators."

It found that about 70 percent of dead bee samples tested positive for neonic residue, whereas the chemical was detected in one sample of unaffected bees.

From its own conclusion, Oregon is now requiring a specific label statement on dinotefuran and imidacloprid products being sold or distributed in the state that prohibits the application of these products.

Bee deaths reported in Oregon in 2013 involved products containing these active ingredients applied to European linden trees. It appears the tree species' natural toxicity to bumble bees in combination with the pesticide contributed to the deaths.

Taking the rare step of requiring an Oregon-specific label statement on pesticide products indicates the importance Oregon places on protecting its pollinators.

Secondly, the Oregon Department of Agriculture has sent a letter to the EPA requesting additional evaluation of these pesticide active ingredients and other neonics to determine if use limitations on a national basis should be considered.

Instead of banning or placing additional controls on neonics, the North Dakota Pollinator Plan looks at best management practices for landowners, pesticide applicators and beekeepers. It states growers and pesticide users can't help beekeepers manage threats from mites, beetles and the microbes that weaken their hives. They can, however, help with reducing their exposure to pesticides and improving the quality of forage available.

The eight-page draft plan does not mention neonics, instead refers to "pesticides" numerous times.

The goal of this plan is not to eliminate pesticide use or to ban pesticides in hives or in close proximity to hives.

Instead, the goal is to bring awareness to the issues faced by all parties and find a way for everyone to be part of a solution. The Pollinator Plan contains voluntary best management practices for pesticide users, landowners/growers, and beekeepers in hopes of creating the following positive outcomes:

- Ensuring positive relationships and peaceful co-existence among beekeepers, landowners, and pesticide applicators,

- Reducing pesticide exposure and subsequent risk of pesticides to pollinators,

- Ensuring both a robust apiary industry and agriculture economy, and,

- Continued high compliance with state pesticide and apiary requirements.

"It is completely non-regulatory," Goehring said. "It contains Best Management Practices and other proactive measures and ideas to help agricultural producers and beekeepers find common ground, all on a voluntary basis. The pollinator plan is not a static document, but a work in progress. We intend to revisit it annually and update it as needed."

A public comment period ended in January and a draft copy will soon be finalized. The draft copy is currently available for reading on the Ag Department's web site.

Susan Brunner is the state apiary inspector. She has been on staff for one year but hasn't noticed any obvious red flags pertaining to CCD.

"I have not personally seen any definitive evidence of neonics killing bees, and beekeepers don't report many kills," she said.

"One was reported in 2013, but that doesn't mean it isn't happening, but rather that they are not reporting the incidents."

North Dakota has enjoyed a decade of being the nation's leader in honey production. And with a U.S. per-capita consumption of 1.3 pounds a year, honey has become a valuable commodity across the state.

In 2012, honey production in North Dakota dwarfed other leading states. North Dakota produced 34 million pounds of honey, twice the amount of its next competitor, South Dakota, which came in at 17 million pounds. Florida was third on the list with 13 million pounds, California fourth with 12 million pounds and Minnesota rounded out the top five with 9 million pounds.

The value of North Dakota's honey crop in 2012 was valued at \$64.5 million.

The United States ranks fourth in **(Cont'd on Pg 5)**

(From Pg 4) the world in honey production behind China, Turkey and Ukraine. North Dakota's total has accounted for up to 40 percent of the U.S. total in one of the past four years.

The Agricultural Research Service cites prior studies not being conclusive because bees were exposed to unrealistic doses of neonics when those experiments were taking place.

However, ARS will continue to monitor CCD because ARS apiary inspectors have uncovered an alarming trend in bee deaths.

In 2012 total losses of honeybee colonies from all causes, including neonics, was 22 percent, however, prior years were much higher. In 2011, it was 30 percent, in 2010, 34 percent, in 2009, 29 percent, in 2008, the loss peaked at 36 percent and in 2007, 32 percent of managed colonies in the U.S. were lost.

In a statement, the ARS said, "If losses continue at the 33 percent level, it could threaten the economic viability of the bee pollination industry. Honey bees would not disappear entirely, but the cost of honey bee pollination services would rise, and those increased costs would ultimately be passed on to consumers through higher food costs. Now is the time for research into the cause and treatment of CCD before CCD becomes an agricultural crisis."

Goehring is taking that warning very seriously and although sources in the Ag Department say some of the groups didn't want to compromise on the pollinator plan, one was hammered out because honeybees can't continue to be lost at more than 20 percent annually.

"Reducing honey bee exposure to pesticides is ideal," Goehring said. "Our hope is to achieve this while continuing to provide access to habitat that supports bee health and derived benefits to agriculture. Effective communication among all parties is essential to the success of this plan. Unless we communicate freely and openly with one another, the rest of our goals cannot be reached. Working together – farmers, beekeepers, pesticide applicators, scientists – North Dakota can protect its honey bees, while maintaining its position as a leading supplier of honey." —/\—

Article 2

Nation's leading bee researcher explains colony collapse

By Marvin Baker
The Kenmare News
Kenmare, North Dakota

Eric Mussen, who will retire in June, has spent the past 38 years studying honeybees. He too, is alarmed about the abrupt loss of honeybees in recent years.

Mussen, an extension apiculturalist at the University of California at Davis, is considered the nation's expert in academic apiculture as well as in real-world beekeeping. He believes neonics are a contributing factor in the death of bees, but they don't act alone to kill the insects.

As an example, he explained that honeybees will take neonic-tainted pollen back to the hive, spread it to other bees and suddenly the entire colony is exposed.

But in Mussen's research, he says neonics, that are chemically similar to nicotine (another toxic substance to certain insects) affect the immune system of the bees and disrupt their ability to remain healthy.

"Neonics have interfered with the ability of the honeybee and native bees to conduct their life activities properly," Mussen said. "Since laboratory studies have detailed the disruptive effect on those insects, it was suggested the same things were happening in the field. Unanticipated losses of formerly strong honeybee colonies, and easily observable decreases in bumble bee sightings, correlated well with increased use of neonics."

According to Mussen, the European Food Safety Agency has concluded that neonicotinoid pesticides pose a high, acute risk to pollinators, including honeybees.

He said analysis of residue of pesticides in beeswax, stored pollens and bees themselves in the United States, including North Dakota, suggest a myriad of chemicals stored in the hives are likely impacting honeybee physiology negatively including a few detections of very low levels of neonics.

According to Mussen, honeybees abruptly disappearing has happened throughout the history of beekeeping, but the phenomenon was renamed colony collapse disorder in 2006.

By definition, CCD could be caused by any number of factors, some of which have yet to be explained, but there is bona fide scientific data that points to neonics being at least one of the causes of CCD.

"Proving colony collapse is pretty hard, since we cannot pinpoint a specific cause to look for. However, when the collapse fits the CCD description, we call it CCD," Mussen told The Kenmare News.

"It appears the final blow to the colony may very well be an overwhelming combination of a fungal, and one, or many more, viruses overwhelming the bees. It seems this is due to the bee having its immune system compromised."

Mussen added that in all his experience, he hasn't found any evidence related to contaminated honey. "None of the infectious agents or chemicals found in the hives contaminates the honey, in terms of human consumption," he said.

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Editorial note:

When do you start to eliminate the impacting factors that you can eliminate to correct the wrongs when you know the impact is catastrophic, wide spread and affecting a multiple of biological entities? There appears to be a fixated stance to be nice and kind because of a hammer swinging somewhere up above.



Editor's Note by Ken Rowes
Spring is here and the cold is persistently hanging on. The concern has switched to the bees nutrition and the right time to open up and feed if needed. Willow buds are purging with each cast of warm sunshine but still tight. Snow drifts in my yard have two seams of 3/8 to 1/2 inch solid ice so the melt will be slower. Bees dug out 2 weeks now have been flying with no apparent disease. This 1st outdoor wintering in 10 years have several combinations to test different systems, others have said don't work so like all good beekeepers I have to see for myself. All hives were completely snow covered.

You will have read articles with an editorial comment. They are meant to stimulate thought as to slowing down the ultimate loss of what we have now. For instance DDT banned over 60-70 years and is still observed in northern ice packs. (or is it still used where regulation is weak or inactive). Bee well - bee safe. See you at the meeting. It's a GREEN queen year.

CLASSIFIEDS

1 For Sale: Plastic queen excluders \$3.50 each. SS Tank holds 8 drums of honey, \$1800 OBO. Contact, Lance W. **Phone 204-712-6783, Email; lancewld@gmail.com**

2 For Sale: For sale : heavy frames of pollen - \$60 per super of ten frames, 15 supers of plastic frames - \$34 ea. Wrecking 2005 F-350 4x4 - asking \$4,000 OBO

Booking spring colonies - minimum 4 frames of brood - mid May - \$250 30 honey supers with plastic comb - \$32 each Winter wraps made to your specifications - \$45 to \$65 each Interlake Honey Producers Ltd. Interlake Honey Producers, Fisher Branch, MB 204-372-6920. Can deliver to Winnipeg. Supers are in good to average shape and all the frames are fully drawn out plastic frames. We have no AFB history.

Paul Gregory paul@interlakeforageeds.com

3 For Sale: Bee Equipment, Nucs, Plastic Feeder Frames, Box & Frame Parts. Contact **Charles Polcyn at (204) 284-7064** or by Email- **charles_polcyn@ymail.com**

4 For Sale: 6 hive top feeders, 20 frames with foundation call 204-612-2754 **Doug Beck** or email **doug-janetb@hotmail.com**

6 For Sale: nucs for sale, 3 frame \$100, 4 frame \$125. and 5 frame \$150. all nucs come with new queens. available approximately 15 th may, weather permitting. contact **Den-**

The Bee Cause is the official publication of the Red River Apiarists' Association for distribution to its members and their colleagues in the bee-keeping industry. It is published eight times a year on a monthly basis except December and the summer months of June, July, and August when membership meetings do not occur.

Articles can be best submitted in word documents as email attachments. Though they may be edited for spelling and basic grammar, no changes will be made to their contents, message and opinions. They are those of their originator and not of the Red River Apiarist Association.

Deadline for any submission to this newsletter is the second Saturday preceding the membership meeting to allow for publishing and mailing delays. Regular membership meetings are normally scheduled 7:30 PM on the second Tuesday of every month at the River Heights Community Centre located at 1370 Grosvenor Avenue in Winnipeg except the months as noted above.

The Red River Apiarists' Association, formed in 1963, represents the beekeepers of the Red River Valley and environs in southern Manitoba. The association provides a forum for the promotion of sound beekeeping practices through education, networking opportunities, meetings, field days, workshops, presentations by local apicultural experts, as well as the dissemination of this monthly newsletter.

We are on the web!
www.beekeepingmanitoba.com

nis Ross 204 878-2924 e-mail rosskr@mts.net

5 For Sale: Strong 4 frame nucs, with laying queens. Will accommodate 3 or 5 frame nucs. Available approximately May 15 weather permitting. Ph **Chris Argiriou 296-4848 (cell) or 885-4588 (home).**

7 For Sale: 4 frame Splits end of May; Queens beginning of June \$25 own 2013 Stock. Call for pre-order availability (weather permitting). Contact **Waldemar Damert @ 1204-755-2340 or 204-266-2276 or e-mail wdamert@yahoo.ca**

8 For sale: (1)-Nucs with Manitoba raised queens; 4 frames covered with bees, 2 of them full of brood. Available end of May, beginning of June. (2) New inner covers 7/8" x 7/8" pine rimmed with 3/8" solid plywood. \$8.50 each (3) New rosin-paraffin dipped hive boxes assembled with stainless steel frame rests. Good for lifetime. \$20.00 each (4) New assembled standard wood frames with self-made chemical and disease-free beeswax wired foundation. \$3.50/ frame. (5) Food grade white plastic 20 lb. pails, never been used. \$1.50 each or best offer (6) Approximately 50 empty wine bottles. Free of charge. Contact: **Ted Scheuneman 204-338-6066**

9 For Sale: large water jacketed milk tank used for honey storage, holds 6 - 45 gal drums of honey asking \$500.00 **contact: Ken 204-755-3427 or at roweskd@mymts.net.**

10 For Sale: Clean bee keeping equipment all in excellent condition. Perfect start up for a hobbyist. Bee suit with veil, 6 bottom boards, 1 box wired foundation, 4 brood chambers with bottom boards, 1 electric uncapper, 1 fumigation riser, queen excluders (4 metal, 2 plastic), 1 mite screen, 2 mite screens with bottom boards, 3 pollen collectors, 21 Empty Supers, 40 Supers with drawn wax comb, 11 top boards, 9 Hive Lids, Dadant 6 frame electric radial stainless steel extractor. \$3500 for the lot. Option of selling extractor separately. Also 2 double brood chamber hives (over wintered bees) with queen excluder, mite screen, bottom board, top board and top cover for sale, call for price. Please contact Katherine 204.771.3242 Lowe Farm MB or e-mail khebert@burnbraefarms.com

11 Wanted: Honey contact: John at 204-943-0166 Email:honeyb@mymts.net

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Lyme Disease Avoidance
By Jim Campbell, MBA Secretary

Beekeepers are experiencing cases of Lyme disease, likely due to the environment and nature of their job.

At a panel discussion session, conducted during the Beekeepers Symposium February 28-March 1, 2014, three producers related experiences attempting to have their cases dealt with by the health system. Each relayed their story of a tick bite and their search to identify the situation and obtain proper treatments. A likely treatment is Doxycycline.

Dr Rusk presented a map charting areas of Manitoba where ticks carrying Lyme disease exist. The downfall is that unless doctors report the appropriate data, people could get a false impression of the risks of contacting the disease. The ticks most likely carrying the disease are very small, and can go undetected unless a full body check is undertaken. Canlyme web suggests High Risk Areas include Wooded areas, Nature parks, Grassy fields and Beaches. For example, ticks were found in wooded areas around Anola as late as mid November.

Some may envy neighbours in USA having access to insect repellants containing Permethrin. Walmart USA web site identifies a couple of products, No. 550917979 Sawyer spray, and No. 551943103 Repellent Pump. (Note: these products are not approved by Health Canada).

One panel member recommended mowing grass at apiary sites, as one way to reduce risk. See recommendations on web at <http://canlyme.com/lyme-prevention/> as referenced below:

Lyme disease is preventable. By taking the right precautions and spreading the word, you can effectively protect

your family from Lyme.
Preventing infection
The best way to prevent infection is to avoid tick-infested areas whenever possible, particularly in spring and early summer when nymph ticks feed. Adult ticks are a bigger threat in fall. Ticks favour moist, shaded environments; especially leafy wooded areas and overgrown grassy habitats.

- Top 5 tick habitat precautions**
1. Wear long pants and long-sleeved shirts. Tuck your pants into your socks to prevent ticks from getting inside your pants.
 2. Check your clothes for ticks often. Ticks will climb upwards until they find an area of exposed skin.
 3. Wear light coloured clothing to make it easier to spot ticks.
 4. Walk on pathways or trails when possible staying in the middle. Avoid low-lying brush or long grass.
 5. Apply insect repellent to your skin and clothing, especially at the openings such as ankle, wrist and neck.

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**Canadian Food Inspection Agency
Apiculture Factsheet #002**

Importing Queens and Packaged Bees
Canadian beekeepers can import queens and packaged bees from several approved sources. All bee Imports into Canada require a Federal Import Permit. Please be aware that the status of honey bee sources can change as disease may be introduced.

- Approved sources include:**
- Queens – New Zealand, Australia, Chile, California and Hawaii
 - Packages – New Zealand, Australia, Chile

Import Permits must be applied for and can be obtained from:
Canadian Food Inspection Agency
Room 175, 17735- 1st Avenue
Surrey, BC V3S 9S1
Ph. 604 541-3363
Fax 604 541-3375

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The Bee's Immunity Perspective

Compiled by Ken Rowes

You may know this but to understand the chemical impact of the Bee's immune system you must know what it is. The University of Maryland expresses the immune system as how a body system recognizes and defends itself against bacteria, viruses and substance that appear foreign. Wikipedia, the free encyclopedia states that the **immune system** is a system of biological structures and processes within an organism that protects against disease. To function properly, an immune system must detect a wide variety of agents, from viruses to parasites and distinguish them from the organism's own healthy tissue. In many species, the immune system can be classified into subsystems, such as the innate immune system versus the adaptive immune system, or humoral immunity versus cell-mediated immunity. Note: **Humoral immu-**

nity (also called the antibody-mediated system) is the aspect of immunity that is mediated by macromolecules (as opposed to cell-mediated immunity) found in extracellular fluids such as secreted antibodies, complement proteins and certain antimicrobial peptides. Humoral immunity is so named because it involves substances found in the humours, or body fluids)

Pathogens can rapidly evolve and adapt, and thereby avoid detection and neutralization by the immune system; however, multiple defence mechanisms have also evolved to recognize and neutralize pathogens. Even simple unicellular organisms such as bacteria possess a rudimentary immune system, in the form of enzymes that protect against bacteriophage infections. Other basic immune mechanisms evolved in ancient eukaryotes and remain in their modern descendants, such as plants and insects. These mechanisms include phagocytosis, antimicrobial peptides called defensins, and the complement system. Jawed vertebrates, including humans, have even more sophisticated defence mechanisms, including the ability to adapt over time to recognize specific pathogens more efficiently. Adaptive (or acquired) immunity creates immunological memory after an initial response to a specific pathogen, leading to an enhanced response to subsequent encounters with that same pathogen. This process of acquired immunity is the basis of vaccination.

Disorders of the immune system can result in autoimmune diseases, inflammatory diseases and cancer. Immunodeficiency occurs when the immune system is less active than normal, resulting in recurring and life-threatening infections. In humans, immunodeficiency can either be the result of a genetic disease such as severe combined immunodeficiency, acquired conditions such as HIV/AIDS, or the use of immunosuppressive medication. In contrast, autoimmunity results from a hyperactive immune system attacking normal tissues as if they were foreign organisms.

So in the chemical sense the Bee must recognize, respond and neutralize toxic attacks on itself, its brood and its hive community. Let us look at the bee history capsulated by Even's 2006. In the hive typically thousands of individuals interact in close quarters, at densities far exceeding those of even the most crowded vertebrate social groups (Wilson, 1971). This density, coupled with a relatively homeostatic nest environment and the presence of stored resources, makes social insects attractive targets for disease agents (Schmid-Hempel, 1998). As expected based on their parasite and pathogen pressures, social insects have evolved both individual and group strategies to combat disease. Grooming, nest hygiene and other behavioural traits found throughout the social insects can reduce the impacts of pathogenic bacteria, fungi and parasitic mites. For example, 'hygienic behaviour' first described for honey bees (Rothenbuhler, 1964) is now a classical example of a social defence, whereby workers identify and remove infected larvae from among the healthy brood (Spivak & Reuter, 2001). Other defenses enabled by sociality include the construction of nests from antimicrobial materials (Christe *et al.*, 2003), the raising of offspring in sterile nurseries (Burgett, 1997), social 'fever' in response to disease (Starks *et al.*, 2000), transference of immune traits (Traniello *et al.*, 2002; Sadd *et al.*, 2005), and heightened risk-taking by infected individuals (Schmid-Hempel, 2005). Like most eukaryotes, colony members also possess individual defenses, including immune responses toward disease agents (Casteels-Josson *et al.*, 1994; Evans, 2004). The recent sequencing of the honey bee genome (Honey Bee Genome Sequencing Consortium, 2006) allows the first global analysis of immune components in honey bees, and the second opportunity (after

humans) to use genomic insights to better understand disease resistance in a highly social organism.

Evens recognize that many immune-gene families in bees to be reduced in number and that these reductions hold for each stage of immunity, from recognition and signalling to immune effectors.

Mikio Yoshiyama in 2008 explained that insects represent one of the most successful organisms on the earth and make up more than half of all living things on the planet. They colonize almost every niche from the Sahara desert to the peaks of the Himalayas. During evolutionary history, insects developed a powerful and effective immune system, which differs from the immune system of vertebrates such as humans. It is considered that insects' unique immune system, which combats a wide variety of pathogens, has led them to become the most diverse and successful animals on the earth. Vertebrates, including the human, have both innate and adaptive immunity with 'immunological memory', whereas insects do not possess the ability to produce antibodies. Although antigenic memory appears to be lacking, insects possess innate immunity which is characterized by non-specific immune reactions against invading pathogens. The defence mechanism in insects consists of cellular and humoral immunity.

Yoshiyama found a genome-wide analysis of immune components in the honey bee had been studied with the aid of the recent completion of sequencing of the honey bee genome. Putative orthologues for almost all predicted signalling pathways associated with immunity in insects (IMD pathway, Toll pathway, etc.) were conserved. When compared to the sequenced *Drosophila* genomes, honey bees possess only one-third as many components in immune related gene families. It is suggested that the reduced number of immune related genes in honey bees reflects either powerful social barriers to pathogens, or that a limited set of bee pathogens have coevolved.

In October 2013 EcoWatch published that Francesco Pennacchio, Ph.D. of the University of Naples Federico II, and his colleagues identified a specific gene that codes for a leucine-rich repeat protein family (LRR) which has been shown to suppress the activity of a key protein involved in immune signalling, called NF- κ B. When the researchers exposed bees to sublethal doses of the neonicotinoid clothianidin, they saw a significant increase in the expression of the gene encoding the LRR protein, and a concomitant suppression of the NF- κ B signalling pathway. These effects were not seen when bees were exposed to the organophosphate insecticide chlorpyrifos.

They infected bees with a common pathogen, deformed wing virus (DWV), and exposed them to clothianidin and another neonicotinoid, imidacloprid, at concentrations similar to those that would be found in the field. The researchers found significantly increased replication of the virus, which was not seen either in untreated bees or those exposed to chlorpyrifos. While the virus is common in bees and usually remains inactive, it is kept in check by the bees' immune system. The data demonstrates that the two neonicotinoids actively promote DWV replication.

"The reported effect on immunity exerted by neonicotinoids will allow additional toxicological tests to be defined to assess if chronic exposure of bees to sub-lethal doses of agrochemicals can adversely affect their immune system and health conditions," says team member Francesco Nazzi, Ph.D. of the University of Udine.

Here is where there seems to be the scientific ploy to encourage further pesticide use and funding of studies. The scientists conclude: The

results we report clearly indicate the need for longer-term toxicity tests, aiming at assessing how the pathogen progression in honey bees is influenced by insecticide residues and by their cumulative effects, both on adults and larvae. A comprehensive and thorough assessment of insecticide impact on bees will significantly contribute to their conservation and to the development of more sustainable protocols of intensive agriculture.

These are just a few studies to relate how bees must respond to the varied chemical impacts either seasonally or in the hive as store and coexisting along with bacteria, viruses or fungi.

References:

Neonicotinoid clothianidin adversely affects insect immunity and promotes replication of a viral pathogen in honey bees. Genaro Di Prisco^a, Valeria Cavaliere^b, Desiderato Annoscia^c, Paola Varrichio^a, Emilio Caprio^a, Francesco Nazzi^c, Giuseppe Gargiulo^b, and Francesco Pennacchio^a.¹ *Dipartimento di Agraria, Laboratorio di Entomologia E. Tremblay, Università degli Studi di Napoli Federico II, I-80055 Portici, Italy;* ^b*Dipartimento di Farmacia e Biotecnologie, Università di Bologna, I-40126 Bologna, Italy;* and ^c*Dipartimento di Scienze Agrarie e Ambientali, Università degli*

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Immune pathways and defense mechanisms in honey bees *Apis mellifera*. J D Evans,^{*} K Aronstein,[†] Y P Chen,^{*} C Hetru,[‡] J-L Imler,[‡] H Jiang,[§] M Kanost,[¶] G J Thompson,^{**} Z Zou,[§] and D Hultmark^{††} ^{*}USDA-ARS Bee Research Laboratory, Beltsville, MD, USA

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EcoWatch **Scientists Discover Key Molecule Linking Neonicotinoids to Honey Bee Viruses** October 2013

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Manitoba Beekeeping Supply Items - Pricing trend 1995 to 2014"
Some Annual Price Comparisons Quantities for Hobby beekeepers
YEAR

| Item | 1995 | 2000 | 2001 | 2004 | 2009 | 2013 | 2014 | |
|-----------------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------|
| Standard super | | | | | | | | |
| 230 001 Standard super | 11.85 1-4 | 13.15 1-49 | 11.55 1-99 | 11.95 1-99 | 12.45 1-99 | 12.45 1-99 | 13.95 | Manitoba cheapest hive box |
| Standard Frame | | | | | | | | |
| 220 001 Standard Frame | 1.00 10's | .95 10's | .95 10's | 1.05 10's | .90 10's | 1.05 1-99 | 1.10 | Cheapest frames |
| Wired Foundation | | | | | | | | |
| 300 001 Wired Foundation | 5.85 1-12 lbs | 5.85 1-12 | 5.65 1-12 | 5.45 12.5-20 | 6.75 12.5 - 19 | 7.75 1-15 | 9.95 | Price per pond |
| Medications | | | | | | | | |
| 700 001 400g Terramycin | 8.75 1-9 | | | | | | | |
| 725 095 9.5g Fumagilin | 63.70 1-5 | 95.80 1-11 | 99.60 1-11 | 110.50 1-11 | 125.00 1-11 | 130.00 1-11 | 139.95 | |
| 705 001 454g Oxytet 25 | 5.25 1-11 | 6.55 | 7.20 | 7.20 | 7.75 | 7.75 | 8.95 | |
| Oxysol 400g | | 6.75 1-9 | 6.75 | 6.75 | 6.75 | 6.75 | 8.95 | |
| Mite Controls | | | | | | | | |
| Apistan 10 pk | 21.00 | 23.40 | 23.95 | 25.50 | 27.50 | 29.50 | 30.95 | |
| Check Mite 10 pk | | | | | 27.50 | 29.50 | 30.95 | |
| Apivar 10 pk | | | | | NA | 26.50 | 28.95 | |
| Formic Acid 4L | 21.50 | 29.95 | 32.50 | 32.50 | 29.95 | 39.95 | 49.95 | |
| Oxalic Acid Dihydrate 140 g | | | | | 3.15 | 3.15 | 3.15 | |
| BEES | | | | | | | | |
| Packages 2 lbs or 1kg | <u>1996</u> 84.00 | <u>2000</u> 84.00 | <u>2001</u> 84.00 | <u>2004</u> 126.00 | <u>2009</u> 124.00 | <u>2013</u> 148.00 | <u>2014</u> 168.00 | cheapest pkg. |
| Queens | 13.50 | 14.75 | 14.75 | 16.95 | 22.50 | 22.75 | 29.95 | cheapest price |

Beekeepers of Manitoba,

The Manitoba Beekeepers' Association (MBA) directors are pleased to announce **Daryl Wright, Winnipeg, will be contracted to operate and manage Bee Disease Monitoring and Diagnostic programs for 2014.**

Daryl brings to the task, experience being a bee inspector in Manitoba, managing a regional apiary inspection program in England and working in the University Bee Research Lab under the direction of Dr Rob Currie. Daryl could start working with the leafcutter bee industry in March, and then focus on the honey bee industry later in the spring.

MBA has applied to the province for grant money to operate the programs for the leafcutter and honey bee industries. As these monies are received, the respective programs will be rolled out. Over the next while, both MBA and the Manitoba Forage Seed Association will be setting monitoring criteria for their respective industries.

In the meantime, should you wish to help with the programs, or know someone interested in short term casual

summer work, please let Daryl know. Contact him directly at the e-mail address in this message, or via his cell at 204-229-9343.

James Campbell, MBA Secretary —/\—

Bee Site Needed

By Jim Campbell, RRAA Executive

Red River Apiarists' Association is known for helping beginning beekeepers get started. This can range from educational information at regular general meetings, to tips on useful beekeeping books, to providing individualized instruction on the art of keeping bees and producing honey.

Several of our members have mentored new beekeepers as they wind their way through the various decisions to make. On the other hand however, some beekeepers in the city are looking for more support. Usually city folk will have a "country cousin" somewhere close by that can offer rural property to place a few hives. However, since not everyone has access to a good bee site for summer, perhaps a club member is aware of a vacant yard site or some such suitable space for a few hives. If anyone knows of, or can provide spare space, relatively close to the city, please let me know and I can pass on the information to our newer beekeepers. Call me at 467-5246 or send an e-mail to jaycam@mymts.net —/\—

**Red River Apiarists' Association
Winnipeg, Manitoba
2014 MEMBERSHIP APPLICATION**

I apply for membership in the Red River Apiarists' Association. Membership includes one-year subscription to the newsletter "The Bee Cause" (8 issues)

RRAA membership fee (cheque payable to RRAA or Red River Apiarists' Association. @ \$25.00/year
NEW: Optional Beekeeper Liability Insurance (**details on RRAA web, Links, Insurance**) @ \$45.00/year

TOTAL PAYMENT ENCLOSED.....\$_____

Name _____ Tel. _____

Address _____

City _____ Prov. _____ Postal Code _____

E-mail address _____

Signature _____

New Member [] Renewal [] Student U of M Beekeeping course [] [free 1st year]

Other. Please specify. _____

Newsletter Delivered in electronic pdf via e-mail [] or on paper via Canada Post []

This completed form may be brought to the meeting or mailed with your cheque to :

John Speer, RRAA Treasurer
Box 16, Group 555. Winnipeg, Manitoba R2C 2Z2.

Please do not send cash in the mail