

The Bee Cause



Volume 11, Issue 1

January 2014

- Next general meeting is 7:30 Tuesday, January 14th at the River Heights Community Centre, 1370 Grosvenor Ave., Winnipeg.
- (in room right off maindoor)

Speaker: Waldemar Damert
What do bees need in January / February and How to meet that need"

Inside this issue:

- *An Essential substance in the hive* Pg 1
- **RRAA Presidents** Pg 2
- **RRAA minutes of November 2013 meeting** Pg 3
- **MBA Report - Neonicotinoids Washington State** Pg 4
- *The Classifieds* Pg 6
- *Editor's Notes:*
- **Growing Assurance on the farm** Pg 8
- **Liability assurance for RRAA members** Pg 9
- MBA Submission to PMRA on Neonic issues. Pg 10
- **RRAA Registration**

An Essential if not the Number One substance in a Hive of Bees

compiled by ken Rowes

With the many triggers impacting bees, chemicals are the highest on the list. Temperature, moisture, parasites and other pathogens all affect the Honey Bees chemistry and its ability to maintain stable behaviour or healthy defences. The one substance that is the corner stone of the hive and for that matter the bee physiology is Pollen.

Pollen is essential for the hive to build, for a queen or other bee to exist. And note foragers bring the pollen into the hive but they need nurse/house bees to feed them in their tasks with an inevitable death end. Interestingly foraging bees can't eat the pollen they carry. The pollen built to withstand long, hazardous voyages, is an impenetrable capsule. It comes in a silica (glass) shell, with just one tiny opening to let the sperm out at the appropriate time. Honey bees lack the digestive enzymes to pop open these capsules, so they let bacteria do that for them. The gathered nectar that helps glue pollen grains together encourages the growth of the lactic acid bacteria like those that turn milk sour or milk into Yogurt. The bacteria work their way into the pollen breaking through the glass exterior capsules. The fermented pollen, known as bee bread, is much more nutritious, digestible and get this, mould resistant.

So how does this substance govern the hive?

Nurse bees (young bees) eat the bee bread then use those nutrients to produce royal jelly through glands in their heads called hypopharyngeal glands. These glands are the bee's equivalent of mammary glands. Like breast milk, royal jelly is an easily digestible liquid protein suspension that provides numerous health benefits. It is (vitellogenin) in Royal Jelly , a protein that bolsters the immune defence in bees, reduces stress, and acts as a powerful anti-

oxidant preventing wear and tear.

The primary measure of a colony's well-ness (health) is its vitellogenin reserves. It is not stored like honey. It is used to make bees! Note a cornerstone building block of a colony. Most colonies' protein supply are stored within the bodies of the nurse bees and brood. Can you see how fragile this is!

Royal jelly is the same "stuff" that goes for all larval bee feed. It has been labelled Royal due to its association to the queen bee production. However, there is a difference in protein between which each larvae cast is fed, such as 17% vitellogenin to workers, 19% to drones and 21% to

queen larvae. That is why you can take regular larvae in a worker brood cell and make a queen wherein it automatically changes as the level of vitellogenin goes up. The catch is the age of that larva must be 4 days period, due to internal physiological advanced developments. The nurse bees usually recycle such eggs in queen cells if too old and are placed into a queen cell.

The queen bee's vitellogenin intensive diet allows her an extended life span over 3 years instead of the 6 weeks of the foraging worker. Foragers, the oldest bees are fed the least royal jelly and can not produce their own because their hypopharyngeal glands have atrophied (shrivelled and recycled). With little vitellogenin in their bodies their immunity defences are reduced and (continued on page 5)

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Presidents Comments -- January 2014

It is always a challenge to start off the beekeeping year with low temperatures, and even more so when it seems that we have endured very cold temperatures for most of November as well as December. I hope that the bees we put away in late October are clustering in the right places in their hives. There is not much we can do at this point in our beekeeping year except hope that they will make it through into the warmer days of March and April. And now for something different from me.

I would like to share with you a recent beekeeping experience of November in the Philippines I was asked by the CESO organisation which is based in Toronto to do an Apiculture Survey for two Universities in the central and northern parts of Luzon Island in the Philippines. After a 3 hr flight to Vancouver on October 31st, and then a 12 hr flight to Manila I arrived somewhat tired. I was able to take an hour flight a day later to a city somewhat closer to the university, and after a 6 hr drive arrived at the Byambong Campus to Nueva Vizcaya, a University of 10,000 students at two locations.

The primary questions were the suitability for an Apiculture Program for the Citrus Area in the central province and the possibility of expanding beekeeping in the northern part of Luzon Island. Several days were spent in the central province in a Van traveling about with a driver and 2 University staff members. The roads were mostly paved, but narrow with much local traffic as well as newly harvested rice being dried in different highway lanes or basketball courts.

The citrus growers in the central province were keen on having their crops well pollinated as well as having the potential to produce and market honey. They were happy to have something else to take to the Manila markets in addition to citrus fruits. Since the Citrus growing areas were several hours drive away from Byambong, it meant that we enjoyed the local hospitality and sleeping arrangements from the farmers in the area.

The northern location was at a University that started with 20 or more hives a few years ago, but has suffered from predation by migrating birds, The University has established colonies of local stingless bees that seem to flourish in houses composed of coconut shells. These bees are very small, do collect pollen, propolis and a small amount of honey. Their scientific name is *Apis Trigona* and they are native to tropical countries. There seems to a demand from overseas for the propolis and honey produced by these insects, and since the birds don't feed on them easily, the number of bees seem to flourish. It may be a direction that the University is able to offer its students as opposed to beekeeping with *Apis Mellifera*

I was in the Philippines when the major typhoon swept through the southern parts of the country. The TV coverage showed the devastation that a 12 tall wall of water can do to any location. I was more than willing to donate some of my clothes and money to groups that seemed to be well organized to provide assistance to those affected by the storm.

It was interesting for me to arrive at Sanchez Mira a location that had its own smaller typhoon in late October.. Electricity was still not available after 2.5 weeks, so I managed traveling about the campus at night by flashlight and having daily meals prepared on gas stoves. Of course the AC bedroom was warmer than usual, but sleeping under a sheet is an easy adaptation to the local situation. The power was back on a few days later after I arrived in Sanchez Mira, the northern University. At Sanchez Mira I provided some assistance on dealing with varroa mites using powdered sugar as well as demonstrating the use of Oxalic Acid for mite control.

I was flown back to Manila on the 21st of November and then back to Canada on the 22nd. It was certainly a change from shorts and sandals to return to Manitoba and the much colder temperatures.

The RRAA meeting on January 14th will feature an election of the Executive

for the 2014 year. Many of the current Executive are willing to serve again, but there is always an opportunity for nominations from the floor so if anyone is interested as well as qualified they may be elected. There will be a presentation by one of our members on what might be done by a beekeeper in January to assist the bees to remain happy, healthy and alive until spring. His ideas will likely work for indoor or outdoor wintered bees.

The question of the use of neonicotinoids as a pesticide has been referred to PMRA for discussion and exploration. They have heard from many beekeepers including me, I believe that Europe has already made that decision in regard to a ban, and Canada will likely follow suit in the future. However it is difficult to deal with the large chemical companies as they have strong worldwide political support.

We will continue to consult with the Ontario beekeepers in regard to pesticides and share our concerns. There is considerable acreage planted in Manitoba for corn and soybeans, both of whose seeds are treated with the neopesticide and we are beginning to see some of the problems here in our hives.

There will be continued dialogue with the city of Winnipeg in regard to small scale beekeeping within the city. The encouragement of community gardens by the city should help us in that direction, as well as a future article in the Free Press regarding small scale city wide beekeeping.

I will not be at the RRAA meetings in January or February so one or the Vice-Presidents will be in charge of the meeting. I hope that you all had a good holiday season and I wish you a Happy New Year.

Yours in Beekeeping-
Charles Polcyn RRAA 2014 President
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examined. It is made from sturdy steel and painted white. Members can purchase one for \$30.00 by contacting Christos.

Ron Rudiak showed a pollen cleaner that he had made a number of years ago. He also gave a very detailed presentation on the whole process of pollen collection. The pollen cleaner is basically a winnowing device that uses a small fan to blow air over three hoppers that collect in the second and third chambers. He doesn't have detailed measurements but could produce some working drawing to allow duplicate to be built. With this cleaner he can collect an ice cream pail of cleaned pollen in 10 minutes.

Ted Scheuneman showed equipment he used for holding queen cell cages and described how he harvested swarm cells and used them to produce queen cells. The caps on the tubes holding the cells are hydraulic hose plugs.

Waldemar Damert showed a nuc box with a screen bottom that he uses for queen cages. He provided much detail on the best way and time to introduce a queen into a colony to improve acceptance of her by the colony. He leaves the nuc box in the dark 24 hours before putting it in the bee yard so it will become a unit otherwise the mature bees might leave.

Lance Waldner showed a comb that the bees had made in a glass Mason jar.

Questions / Answers

Lance explained the use of an LED light on a 24 inch flexible arm as a good way to explore inside a hive without opening it up.

A queen excluder can be cleaned of comb and propolis in a number of ways. A scraper is available but doesn't work too well. It can be heated with a heat gun until all the material melts and falls off. It can be scrapped with a BBQ brush in winter when the material is brittle and it will fall off.

Door Prizes:

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|----------------|--------------------|
| Murray Smith | Girl Guide cookies |
| Duane Versluis | Soft bear |
| Ken Rows | Girl Guide cookies |
| John Speer | Honey Jar |

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**Minutes of the RRAA General Meeting
River Heights Community Club November, 2013**

Chair: Armand St. Hilaire
Recording Secretary: Art Quanbury

Approval of Minutes from October 8
Moved by Chris Argiriou
Seconded by Ted Scheuneman
Carried

Business arising / members comments	none
MBA Report	none

Gadget night Presentations

Chris Argiriou showed a frame extension holder that he had made by a friend. It is much more sturdy than ones from Bee Maid. It hangs over the edge of an open super and will hold one or more frames while others are being

Readings from the American bee Journal

Elbert Jaycox pointed out in 1964, we can no longer accept, without proof, the of ten repeated statements that the purity of honey is assured because bees gathering poisoned nectar are killed in the field or die in the hive before giving up their contaminated load. The question is, what is the protective (cleaning) mechanism for honey and how can we use it to further protect the colony?

It is said that pesticide residues seldom occur in honey, and indeed many studies bear this out. Certainly, when they do occur they are usually at comparatively small micro-levels. -/\-

MBA Report January 2014

Jim Campbell, MBA Representative

Manitoba Beekeepers' Association (MBA) sent a letter to Minister Ron Kostychyn, Manitoba Agriculture, Food and Rural Development, requesting a meeting in mid January or February 2014. The purpose of the meeting is to discuss three important issues faced by the beekeeping industry.

MBA wants to understand why the province cut the 2013 budget for the Apiary Inspection Program and the Honey Bee Diagnostic lab, as these are valuable services, especially since the industry is just responding to the highest winter losses in history. In addition, MBA wants to understand how a cost shared service (70% govt, 30% industry) can be cut without consultation with its' partner, who has been contributing \$12,000/year to the service.

In another area, MBA has responded to Canadian Food Inspection Agency, refuting several assumptions that led to their Risk Assessment conclusion of maintaining border closure to package bee imports from USA. MBA desires Minister Kostychyn carry a message to Minister Ritz, detailing the need to permit an exemption allowing Manitoba to access package bees from California, similar to the way Canada accesses queen bees.

MBA directors are also concerned the new rules for Temporary Foreign Workers of working in Canada for 4 years, then having to stay away for 4 years will adversely impact producers who have spent time and energy building their business based on using these trained workers. In addition, Philippine work approval delays are creating difficulties in meeting staffing needs.

Regarding the Neonicotinoid issue, MBA posted their recently formulated policy on the web. MBA desires to work collaboratively with seed growers in Manitoba to find a resolution, while encouraging Pest Management Review Agency to expediently investigate the issue and take regulatory action.

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Did you know that:

Bees normally start flying late in the morning and stop early in the evening similar to flowering plants.

Hexagons are basically circles fitting together with no gaps using the least amount of wax.

Empty cells in a brood pattern usually means the queen has poor fertilization. —/\—

Neonicotinoid Pesticides and Honey Bees - Washington State University Extension Fact Sheet. FS122E

Introduction

Recently, concern has been raised regarding the impact of a common class of pesticide known as neonicotinoids (pronounced neo-nih-CAH-tin-oids) on honey bees, (*Apis mellifera*, Figure 1) and native bee pollinators. Many people feel the decline in honey bee populations known as Colony Collapse Disorder (CCD) is directly linked to the increased use of these products.

In this paper, we will discuss the use of neonicotinoids as well as declines in honey bee populations. Finally, we will review what is currently known about the relationship between neonicotinoid pesticides and honey bees.

What are Neonicotinoids?

Neonicotinoids are systemic insecticides that are taken up by a plant through either its roots or leaves and move through the plant just like water and nutrients do. These insecticides provide very effective control of piercing and sucking insects. Over the last few years, the neonicotinoid class of insecticides has become important for use in agriculture and home landscapes. There are currently more than 465 products containing neonicotinoids (often called "neonics") approved for use in the state of Washington. Approximately 150 are approved for use in the home or garden.

Neonicotinoids are relatively safe for use around people, animals, and the environment (Mohamed 2009; Tomizawa 2004). Because of their effectiveness and relative safety, neonicotinoids have become one of the fastest growing classes of pesticides used in agriculture as well as in home and garden products (Jeschke and Nauen, 2008).

One of the main advantages for using neonicotinoid products is that they move systemically within the plant, thus reducing the direct pesticide exposure to both the applicator and the environment. Ironically, it is this systemic action that makes the neonicotinoids a problem for honey bees and other pollinators: because a neonicotinoid pesticide spreads within the entire plant, it can also be found in the nectar and pollen of the flowers.

Bee Exposure

In laboratory experiments, researchers have documented several neonicotinoid products that are toxic to bees. Depending on the amount of exposure to neonicotinoids, the effect on bees can be either sub-lethal or lethal. The sub-lethal effects of neonicotinoids include impaired learning behavior, short- and long-term memory loss, reduced fecundity (fertility and reproduction), and altered foraging behavior and motor activity of the bees. Researchers have documented similar issues with other pesticides including some products used by beekeepers to control Varroa, a parasitic mite (cont'd on Pg 5) (from Pg 4 Neonicotinoids) of the honey bee. Neonicotinoids have also been implicated, along with some fungicides, in either depressing bees' immune systems or increasing their susceptibility to biological infections (Wu et al., 2012; Pettis et al., 2013).

Exposure levels from dust created during planting of neonicotinoid-treated seed are known to have a (cont'd on pg 5)

(from Page 1) their aging enhanced.

SO protein regulation falls to the nurse bees. If protein is scarce they (nurse bees) stop feeding it to the foragers. They will even cannibalize new eggs and young brood recycling the protein! If really tight they eat new eggs to control the number of emergent bees linked to what the colony can support. "There is no board room discussion, no subcommittees or extended studies". The protein is vital and is governing the colony's behaviour at the root level (the cornerstone).

The winter Bee

In late fall when temperatures begin to fall the last batches of bees to hatch who would normally gorge themselves on pollen, convert it to royal jelly the lipoprotein vitellogenin, and become nurse bees but have no new bees to nurse. Instead they keep the vitellogenin giving them an extended life span and their sole purpose becomes to keep the colony alive till spring.

Pollen

The essential substance Pollen comes from a variety of sources and quality. Here is where another critical and lethal area surfaces with mono-cropping and manufactured gene structures that can weaken this hive cornerstone.

Honey bees require an assortment of pollens to create the complex proteins necessary for the varied complex life processes of making babies, brains, and immune systems. Colonies have a built-in taste for variety; they will go out of their way to mix their proteins.

Pollen quality depends on growing conditions, where playing a role is soil nutrients, weather, the blast of hot temperatures around the time flower buds are forming and pollen grains are beginning to form. UNSUITABLE CONDITIONS produce poor or sterile pollen, ultimately weakening our hive cornerstones!

Nurse bees eat and parcel out the protein in royal jelly feeding members of the colony. As protein runs out, the level of vitellogenin in nurse bees fall. Vitellogenin as the key to immune defences and stress reduction becomes increasingly limited. Malnourished these bees become stressed, weakened, and short-lived foragers. Low vitellogenin levels may even trigger winter bees to try foraging when they shouldn't. The colony begins to dwindle because the foragers are dying faster than the new bees if any are being born.

The diet of the newborn's first 4 days is critical upon its behaviour. Low vitellogenin triggers new bees to forage earlier and thus live shorter life spans.

There is no substitute for a balanced diet of quality natural food.

References:

Ferrari, Thomas 2007 When Bees Carry Dead Pollen, Bee Culture

Jacobsen, Rowan 2008 Fruitless Fall, Bloomsbury, New York

Oliver, Randy 2007 Fat Bees, American Bee Journal

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(from pg 4) devastating lethal impact on honey bees. However, this mode of exposure can be avoided and more work needs to be done on controlling levels of dust during planting. A more pressing concern is the chronic exposure of bees to neonicotinoids in nectar and pollen, as well as in water expressed from plants via a process known as guttation, that is picked up by foraging bees and brought back to the hive.

As is evident from the articles cited in Table I, a great deal of research is currently under way, in both Europe and the United States, looking very intently at the effects of neonicotinoids on honey bees. Researchers at the University of Minnesota, Washington State University, and Washington Department of Agriculture are specifically looking at the issue of neonicotinoids in urban areas.

Declines in Honey Bee Populations

The sudden disappearance of honey bees from hives has been reported by beekeepers and researched by scientists for decades and called "Disappearing Disease" (Wilson and Menapace 1979). In 2006 the widespread appearance of this phenomenon in the United States was noted and referred to as Colony Collapse Disorder by researchers, beekeepers, and the media. This increase in colony losses also corresponded to increased use of neonicotinoid pesticides (Johnson et al. 2010; Cresswell et al. 2012). This has led to speculation that there is a causative relationship between the increased use of neonicotinoids and widespread decline in bee populations (Suryanarayanan 2013). However, it is important to look at all the variables associated with CCD.

Reports of dramatic declines in honey bee colonies have been widely reported in the United States and Europe (Mullin et al. 2010). FAO data reveal that, globally, there has been an approximate 45% increase in managed colonies (as opposed to wild or feral colonies) since 1960 (Aizen and Lawrence 2009). The definitive cause for the declines in the United States and Europe has yet to be fully understood. More than sixty-one variables have been associated with CCD, although none have been clearly identified as the definitive cause the phenomenon (Van Engelsdorp, D., 2009). Some of the major factors associated with the decline in honey bee stocks in the United States include the Varroa mite, pesticides, pathogens, loss of habitat, and nutritional deficiencies. One additional stress placed on honey bees in some regions are the intense management strategies (that is, large congregations of bees are fed pollen substitute and sugar syrup) needed to (cont'd on pg 7)



Editor's Note

by Ken Rows

December has been bitterly cold if not the coldest on record. My mercury froze at - 40 C three times and it has been in the - 30's quite often. Snow-blower has frozen after use twice.

Wintering outdoors will be a test for sure. My bees have been under a snow cap and I see the odd 1/2 dozen frozen on the snow. I've cleared entrances twice where there was quite a frost or ice build-up. Inside temperature have been between 8.5 to 15 C using a lazar thermometer.

It is this time I review my previous goals and accomplishments setting new ones. From maintenance on bee equipment to reading equipment for raising queens and nucs, analyzing the hive records as to which to use for queens and cells. I also perk up choosing and ordering garden seeds.

If you have lost bees in the fall or plan on purchasing now is the time to get on the producer's list - last year supply vapourized quickly.

I have herd that next summer will be dry. Last years long cold winter reduced mite numbers so with some luck moisture will produce a reasonable pollen and nectar supply. I get to dream reach of gobs of honey, and untamed flavours of wild sweetness.

I have also made a note of the lack of butterflies and bumble bees last summer, so this summer will begin a collection and count of them in and around my garden. You may find this interesting on two to three days a week to record what you see visiting your garden or the activity of your bees during a 30 minute observation. We are all a unique bread of buggers, whose art of buggery is entwined in the intensive interest of the honey bee and its community. Bee blessed. Next meeting will be another you won't want to miss.

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

CLASSIFIEDS

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

3 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@interlakeforageseeds.com

5 Wanted: Looking for good used Cowen type horizontal 28 to 60 frame extractor, plus sump and pump. Call **Don Friesen, Rosenfeld, at 204-746-8863 or e-mail stonefield71@hotmail.com**

9 For Sale: Man Lake SS Extractor 9/18 frame. Asking \$1300, used twice. **Contact Janice at 204-895-9667.**

10 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**

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

12 For Sale: 2 frame manual extractor, uncapping knife, bee suit, smoker bellows, hive cover (metal), 5 supers (assembled), 50 frames (plastic & wire), 2 hive bottoms, hive scrapers, and much more for \$ 450.00 Please call **Adrian at 204-338-7172**

Please review ads and renew for the next February meetings. (just email to keep the ad going or update it)

Thanks the Editor

(from pg 5) ensure strong colonies for certain crop pollination requirements, such as almond pollination in California in late winter (mid-February through mid-March).

Researchers have ruled out individual stressors such as long distance hauling of bees on tractor-trailers (Ahn et al. 2012). However, recent studies have indicated additional concerns about the “feedlot” feeding widely practiced by commercial beekeepers. Beekeepers’ reliance on high-fructose corn syrup and sucrose in these feedlot situations, where tens of thousands of bee hives are kept prior to their movement into fields and orchards, may significantly reduce the bees’ ability to detoxify pesticides (Mao et al. 2013). Similarly, because the ingestion of protein may increase bee susceptibility to some pesticides, beekeepers’ reliance on pollen substitutes may also make adult bees more susceptible to decline (Geraldine Wright, unpublished data).

Varroa Mite

The Varroa mite (*Varroa destructor*, Figure 2) plays a major role in overall losses of managed honey bee colonies in the United States—not only the actual direct impact of the mite, an ectoparasite (an external parasite) that affects adults, pupae, and larvae by feeding on hemolymph (the circulatory fluid of insects, comparable to blood), but also the chemical control measures used by beekeepers to control the mite. Both registered and unregistered chemical products are widely used by beekeepers to control the mite. Without treatment, Varroa-infested honey bee colonies in temperate climates typically die within two years.

Often the highest levels of pesticides found in beeswax and pollen from commercial honey bee colonies are of those products used by beekeepers to control this mite (Wu et al. 2011; Mullin et al. 2010). Regardless of the levels of pesticides found in the colonies, sub-lethal effects of many pesticides, including some mite control products and neonicotinoids, have been shown to cause memory impairment of honey bees at field-realistic levels. (Williamson and Wright 2013).

European Concerns

The supposition of a direct link between the decline of honey bees and native bees and the increased use of neonicotinoids has yet to be conclusively substantiated. Use of neonicotinoid insecticides has not been proven as a primary or even secondary cause of bee population decline. However, based on current evidence, the European Union has opted to take a cautious approach and has suspended the use of neonicotinoids in 2013 for at least a two-year period, while they reassess its impact on bees.

The growing body of evidence (see References and Further Reading lists) does provide justification for taking a closer look at neonicotinoids and encouraging caution in

their use. As of this writing, there are insufficient data to suggest that neonicotinoids are a substantial contributor to the decline of either native bees or honey bees. (Table Attached) The value and benefit of neonicotinoids—when used as prescribed on the product label—to agriculture, professional landscapers, and homeowners, are that of a relatively safe and effective product, and this should be kept in mind when considering changes in availability or restrictions for this class of pesticides.

Summary

(Table attached.)

Neonicotinoids do have a negative effect on honey bees and other insect pollinators including important species of native bees such as bumble bees, mason bees, and others. However, it is unclear whether neonicotinoids have a significant lethal or sub-lethal effect on bees at realistic field levels. The real concern is the acute exposure of bees to neonicotinoids from exposure to airborne dust during planting. However, there is growing concern for chronic exposure through nectar, pollen, and water picked up by foraging bees and carried back to the hive. The best means of minimizing adverse effects may be by increasing people’s awareness of the potential issues through educational forums and via improvements in the instructions on the pesticide label.

Ongoing research is increasing our understanding of the impact of these types of pesticides on bees. For now, the best recommendation is to carefully follow the product label, be judicious in your application, and avoid applying any insecticide product when bees are actively foraging in or near the target area.

References

- Ahn, K., X. Xie, J. Riddle, J. Riddle, J. Pettis, and Z.Y. Huang. 2012. Effects of long distance transportation on honey bee physiology. *Psyche: A Journal of Entomology* 2012 (article ID 193029). doi: <http://dx.doi.org/10.1155/2012/193029>.
- Aizen, M. A. and L. D. Harder. 2009. The global stock of domesticated honey bees is growing slower than agricultural demand for pollination. *Current Biology* 19:1-4. doi: 10.1016/j.cub.2009.03.071.
- Cresswell, J. E., N. Desneux, and D. vanEngelsdorp. 2012. Dietary traces of neonicotinoid pesticides as a cause of population declines in honey bees: An evaluation by Hill’s epidemiological criteria. *Pest Management Science* 68(6): 819–827.
- Cresswell, J. E., F.-X. L. Robert, H. Florance, and N. Smirnoff. 2013. Clearance of ingested neonicotinoid pesticide (imidacloprid) in honey bees (*Apis mellifera*) and bumble bees (*Bombus terrestris*). *Pest Management Science*. doi: 10.1002/ps.3569.
- Elston, C., H. M. Thompson, and K. F. A. Walters. 2013. Sub-lethal effects of thiamethoxam, a neonicotinoid pesticide, and propiconazole, a DMI fungicide, on colony initiation in bumblebee (*Bombus terrestris*) micro-colonies. *Apidologie* 44(5): 1–12. doi: 10.1007/s13592-013-0206-9.

(cont’d on pg 8)

(from pg 7)

Henry, M., M. Béguin, F. Requier, O. Rollin, J.-F. Odoux, P. Aupinel, J. Aptel et al. 2012. A common pesticide decreases foraging success and survival in honey bees. *Science* 20:336 no. 6079. pp 348–350. doi: 10.1126/science.1215039.

Jeschke, P. and R. Nauen. 2008. Neonicotinoids-From zero to hero in insecticide chemistry. *Pest Management Science* 64(11): 1084–1098. doi: 10.1002/ps.1631.

Johnson, R. M., M. D. Ellis, C. A. Mullin, and M. Frazier. 2010. Pesticides and honey bee toxicity—USA. *Apidologie* 41(3): 312–331. doi: 10.1051/apido/2010018.

Krupke, C. H., G. J. Hunt, B. D. Eitzer, G. Andino, and K. Given. 2012. Multiple routes of pesticide exposure for honey bees living near agricultural fields. *PLoS One* 7(1): e29268. doi: 10.1371/journal.pone.0029268.

Laycock, I., K. M. Lenthall, A. T. Barratt, and J. E. Cresswell. 2012. Effects of imidacloprid, a neonicotinoid pesticide, on reproduction in worker bumble bees (*Bombus terrestris*). *Ecotoxicology* 21(7): 1937–1945. doi: 10.1007/s10646-012-0927-y.

Mao, W., M. A. Schuler, and M. R. Berenbaum. 2013. Honey constituents up-regulate detoxification and immunity genes in the western honey bee *Apis mellifera*. *Proc Natl Acad Sci USA (PNAS)*. doi: 10.1073/pnas.1303884110.

Matsumoto, T. 2013. Reduction in homing flights in the honey bee *Apis mellifera* after a sublethal dose of neonicotinoid insecticides. *Bulletin of Insectology* 66(1): 1–9. <http://www.bulletinofinsectology.org/pdfarticles/vol66-2013-001-009matsumoto.pdf>.

Mohamed, F., I. Gawarammana, T. A. Robertson, M. S. Roberts, C. Palangasinghe, S. Zawahir, S. Jayamanne et al. 2009. Acute human self-poisoning with imidacloprid compound: A neonicotinoid insecticide. *PLoS One* 4.4: e5127. doi: 10.1371/journal.pone.0005127.

Mullin, C. A., M. Frazier, J. L. Frazier, S. Ashcraft, R. Simonds, D. vanEngelsdorp, and J. S. Pettis. 2010. High levels of miticides and agrochemicals in North American apiaries: Implications for honey bee health. *PLoS ONE* 5(3): e9754. doi: 10.1371/journal.pone.0009754.

Pettis, J. S., E. M. Lichtenberg, M. Andree, J. Stitzinger, R. Rose, and D. vanEngelsdorp. 2013. Crop pollination exposes honey bees to pesticides which alters their susceptibility to the gut pathogen *Nosema ceranae*. *PLoS One* 8(7): e70182. doi: 10.1371/journal.pone.0070182.

Schneider, C. W., J. Tautz, B. Grünwald, and S. Fuchs. 2012. RFID tracking of sublethal effects of two neonicotinoid insecticides on the foraging behavior of *Apis mellifera*. *PLoS One* 7(1): e30023. doi: 10.1371/journal.pone.0030023.

Suryanarayanan, S. 2013. Balancing control and complexity in field studies of neonicotinoids and honey bee health. *Insects* 4(1): 153–167. doi: 10.3390/insects4010153.

Tapparo, A., D. Marton, C. Giorio, A. Zanella, L. Soldà, M. Marzaro, L. Vivan, and V. Girolami. 2012. Assessment of the environmental exposure of honeybees to particulate matter containing neonicotinoid insecticides coming from corn coated seeds. *Environ. Sci. Technol.* 46(5): 2592–2599. doi: 10.1021/es2035152.

Tomizawa, M. 2004. Neonicotinoids and derivatives: effects in mammalian cells and mice. *J. of Pestic. Sci.* 29(3): 177–183. doi: 10.1584/jpestics.29.177.

VanEngelsdorp, D., J. D. Evans, C. Saegerman, C. Mullin, E. Haubruge, B. K. Nguyen, M. Frazier et al. 2009. Colony collapse disorder: A descriptive study. *PLoS One* 4(8): e6481. doi: 10.1371/journal.pone.0006481.

Williamson, S. M. and G. A. Wright. 2013. Exposure to multiple cholinergic pesticides impairs olfactory learning and memory in honeybees. *J. Exp. Biol.* 216: 1799–1807. doi: 10.1242/jeb.083931.

Wilson, W. T. and D. M. Menapace. 1979. Disappearing disease of honey bees: A survey of the United States. *American Bee Journal* 119: 184–186 and 217. <http://www.nal.usda.gov/ref/disappearing.pdf>.

Whitehorn, P. R., S. O'Connor, F. L. Wackers, and D. Goulson. 2012. Neonicotinoid pesticide reduces bumble bee colony growth and queen production. *Science* 336(6079): 351–352. doi: 10.1126/science.1215025.

Wright, G. n.d. Reader in Neuroethology. Institute of Neuroscience, Newcastle University, Newcastle upon Tyne, UK.

Wu, J. Y., C. M. Anelli, and W. S. Sheppard. 2011. Sub-lethal effects of pesticide residues in brood comb on worker honey bee (*Apis mellifera*) development and longevity. *PLoS ONE* 6(2): e14720. doi: 10.1371/journal.pone.0014720.

Wu, J. Y., M. D. Smart, C. M. Anelli, and W. S. Sheppard. 2012. Honey bees (*Apis mellifera*) reared in brood combs containing high levels of pesticide residues exhibit increased susceptibility to *Nosema* (Microsporidia) infection. *J. Invertebr. Pathol.* 109(3): 326–329. doi: 10.1016/j.jip.2012.01.005. —/\\—

Growing Assurance - Food Safety On-Farm DESCRIPTION

- This program provides funds to help adopt assurance systems and best management practices at the farm related to food safety, biosecurity, plant and animal health, traceability and animal health.

WHO QUALIFIES (Eligible applicants include):

- individual and incorporated agriculture producers
- Applicants must have an Access Manitoba client identification number.
- Applicants must ensure their projects are in accordance with applicable federal and provincial acts, regulations and environmental directives.

Open to RRAA members.

2014 Bee Biosecurity Training Workshop (9 am to 2 pm)

Steinbach	14 Jan 2014	204 346 6080
Stonewall (Tuelon)	16 Jan	204 886 2696
Carman	26 Jan	204 745 5660
Dauphin	4 Feb	204 622 2006
Winnipeg	6 Feb	204 945 4825

Manitoba Agriculture, Food and Rural Development
PO Box 1240, 810 Phillips Street
Portage la Prairie, Manitoba, R1N 3J9
Email: MafriGF2@gov.mb.ca Fax: 204-239-3180 —/\\—

INDIVIDUAL BEEKEEPER LIABILITY INSURANCE

Often Large Commercial Beekeeping Operations have an overall Farm Insurance policy to cover all elements of their business, while some beekeepers may be able to add an endorsement to their Home Insurance policies to cover beekeeping only on their own property. For those desiring coverage for bees on their property or when moved to someone else's property, this could help you.

The Co-operators will extend liability insurance to members of the **Manitoba Beekeepers Association and Red River Apiarists Association** through a certificate of insurance issued in the name of the member under the Association's master policy which provides coverage to a limit of \$2,000,000 per occurrence plus the duty by The company to defend the insured including the costs to do so. These certificates will provide you the liability coverage you will need to carry out operations normally considered usual to a beekeepers operation (i.e. keeping bees on your own property, or on others, conducting tours of operations, providing industry education, moving bees and equipment, etc), plus attend trade shows, fairs, exhibits, etc. and are available for \$45 per year.

Commercial Liability Insurance is designed to pay those sums for which an insured becomes legally obligated to pay because of bodily injury or property damage caused to another through pursuits of the insured business. In addition the Member Certificate provides coverage for:

Personal Injury coverage in the amount of \$2,000,000; injury other than bodily such as Oral and/ or written publication of materials that slander/ libel a person or violate their right to privacy.

Medical Expenses coverage in the amount of \$2,500; these are amounts that become payable for bodily injury caused by an accident for which the insured may or may not be legally responsible to pay including things like dental services, ambulance, etc.

Simply review the Certificate of Insurance and forward initial **\$45.00** fees (Cheque payable to MBA) and mail to:

Manitoba Beekeepers' Association
c/o Box 192
Baldur, MB R0K 0B0

(Note: MBA treasurer will do all future insurance billings and collections)

(Note: New Insurance applications may be held to coincide with Certificate renewal date on or about 5 May of each year.)

(Note: Neither the Red River Apiarists' Association, nor the Manitoba Beekeepers' Association, nor their directors or executive or board members or staff shall be liable for errors or omissions in describing or summarizing any group

liability benefits, as benefits and policy terms are subject to change without notice. Summary of benefits may change without notice as description is an interpretation of coverage made by sales staff at Co-operator office).

Page updated Dec 2013

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MANITOBA BEEKEEPERS ASSOCIATION AND RED RIVER APIARISTS ASSOCIATION PROGRAM CERTIFICATE

Attached to and forming part of Master Policy # 3390697 Certificate Issued to MBA & RRAA and Certificate Holder: Address of Insured Premises: Policy in Effect from: May 05, 2013 Expires: May 5, 2014 Total Premium: \$45 Minimum Retained Premium: \$45.00

FORM# A. Liability

- D-1 Bodily Injury & Property Damage \$2,000,000
- D-1 Annual Aggregate on Products & Completed Operations \$2,000,000
- D-1 Personal Injury \$2,000,000
- D-1 Medical Expenses \$2,500

Deductibles

- D-1 Bodily Injury and Property Damage-Each Occurrence \$2,500

Endorsements/Special Exclusions

This policy excludes all claims arising out of "bodily injury" caused by apitherapy or medical treatment using bees.

The Named Insured shall include and cover only those Members who have paid the insurance portion of their membership with the Manitoba Beekeepers Association and the Red River Apiarists Association.

The insurance afforded is subject to the terms, conditions and exclusions of the applicable Master Policy, on file with the Insurer and the offices of Manitoba Beekeepers Association and the Red River Apiarists Association.

THE CO-OPERATORS GENERAL INSURANCE COMPANY

COUNTERSIGNED DATE: _____

AGENT : Slater Roy Agencies – The Co-operators #31184 #15 – 333 Main St, Stonewall, Manitoba R0C 2Z0 Phone: (204) 467- 8927

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MBA Submission to PMRA on Neonic issues.

James Campbell, MBA Secretary
16 December 2013 Pest Management Regulatory Agency
2720 Riverside Drive A.L.6604-E2
Ottawa, ON K1A 0K9

This letter confirms the support of the Manitoba Beekeepers' Association (MBA) for the December 12, 2013 Canadian Honey Council's Submission to Health Canada's call for comments on notice of intent NOI2013-01.

MBA is a province-wide association representing about 550 Manitoba beekeepers, with over 80,000 colonies of honey bees. MBA has a long history of working collaboratively with various groups, and to this end feels it is imperative to find a resolution for the neonicotinoid issue beneficial to both seed growers and pollinator providers. We recognize seed growers could face difficulties if seed suppliers are reluctant to reduce current treatment regimes. We therefore encourage co-operation of industry, beekeepers and government to develop a sustainable solu-

tion. MBA recognizes the importance of the regulatory agency to take quick action to mitigate the ongoing impacts widespread prophylactic neonicotinoid use has on bees. We therefore encourage Pest Management Regulatory Agency to work with various industry groups to develop a process to quickly reduce neonicotinoid dependency.

Should you require additional information on this letter of support, please feel free to contact our association at your convenience. —//\—

From: Conference for Can. Assn. of Professional Apiculturists [mailto:CAPA-L@LISTSERV.UOGUELPH.CA] **On Behalf Of** Pernal, Steve
Sent: December-12-13 12:40 PM

Interesting. The National Farmers Union has recommended a 5 Year moratorium on neonics used in seed treatments to the PMRA.

**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