

The Bee Cause



Volume 11, Issue 5

May 2014

- Next general meeting is 7:30 Tuesday, May 13th at the **River Heights Community Centre, 1370 Grosvenor Ave., Winnipeg.**
- (in room right off main-door)

Speaker: Rhéal Lafreniere
Spring Management Part 2 & Winter Survival & Mortality: What Have We Learned In The Last Ten Years?
 Waldemar Damert : **queen rearing**

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The Varroa Destructor Mite- My Observations and Experience by Ted Scheuneman

The reason I am writing this article is because I have read articles and have heard comments from beekeepers and experts that a screened bottom board offers no advantage over a solid bottom board, as it still allows the mites to crawl back up into the hive. In my research, once discovering Varroa in my apiary, I have found that although the mite is capable of doing this it is not doing this. I believe this is because they don't have the ability to jump and are unable to see that if they were to move to the edges of the pan they could climb up the sides and ultimately back into the hive. The mites in the pan will move to where the strongest smell and warmth from the bees is, therefore it runs around in the pan underneath the bee cluster until it is exhausted and dies. I did an experiment where I put a live bee in the pan. About 90% of its movements took place where the greatest concentration of bees was. It was fed through the screen by the other bees. That bee can hop onto the screen and run along it from underneath but the Varroa cannot do that. Within 1 hour that bee had picked up about 80% of the live Varroa in the pan. Had that bee been left there for any length of time I believe the Varroa could have transferred from that bee to the bees above the screen, during food exchange. Under normal circumstances there would be no bees underneath the screen in the pan. So if you have a good mite grooming colony without a screened bottom board their hard work would not benefit them as every time a bee walks by a mite can crawl back onto the bee and be back in the cluster ready to find the next suitable cell to reproduce in.

If you clean the pan drawer, or whatever you have under your screen, for a natural mite drop count in a 3 to 5 day period and find 30 to 50% live mites in the pan you have a good Varroa grooming colony. If you find 50 to 70% live Varroa of total drop this would be an excellent Varroa grooming colony. You should breed from this colony. As a point of information, remember a colony that displays good hygienic behavior may not necessarily be a good

Varroa groomer and vice versa.

I'd like to review the biology of the Varroa mite:

The Varroa mite has 8 legs which makes it a member of the spider family. It lives mainly off the blood of bee larvae and bees. Some can live up to 7 days without a host, provided the temperature does not drop below +15 C. It has no eyes. Its keenest sense, for survival, is its sense of smell. Its olfactory glands are located on hairs on its front legs. With these glands the mite can distinguish whether a bee is between one and 6 days old. These bees don't bring it close enough to a 9 day old larvae (brood cell). A 7 to 13 day old bee

(nurse bee) is preferred. It brings it close to an open 9 day old brood cell. This is the place the mite is safe, has shelter, food and can reproduce in peace. The mite can also distinguish between a bee older than 14 days and a drone. The mite avoids these as they don't bring it close enough to a 9 day old brood cell. With the same glands the mite can also detect humidity, temperature and distinguish between bee and drone brood. Drone brood is preferred over bee brood by 10 to 1 or more. On its original Asian host *Apis Ceranae* the Varroa mite can only reproduce successfully in drone brood. Bee brood of *Apis Ceranae* takes only 19 days to mature, which is not enough time to produce a mature young Varroa. The mites know this. Therefore it is important to cut the drone brood comb in **(Continued on pg 4)**

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Presidents Comments for May, 2014

It has been a long cold April and the bees have been in their hives since late October or early November. Food supplies are running short and often the cluster goes the wrong way in a hive and has frames of food too far away for their use. This is only discovered after unwrapping or moving them outside. Many of the hives are very strong while others of equal weight have died despite full frames only a short distance away. Another hive mystery to unravel.

The almond pollination in early March in California is over, but there was a loss of over 80,000 hives that arrived strong at the beginning of the pollination period in February. That number is close to the total number of hives in Manitoba, which would be a disaster for all of the beekeepers in Manitoba. A meeting has taken place in California which has tried to unravel this event, but there are no easy answers.

What is worrisome is that all of these of over a million hives were strong when they arrived on the West coast, but something happened during their stay. This is different from CCD.

I wonder at the wisdom of trying to re-open the borders to the shipment of package bees as seems to be the position of many of the major bee groups on the Prairies. It would likely result in new diseases/problems that would make beekeeping difficult for all of us. Perhaps we should try to expand our wintering successes and not look for the easy imports from other countries.

There was a meeting in Ontario regarding concerns about beekeeping which had a large representation from many of the key groups in Beekeeping. There is a concern from many groups that the decrease in bee populations would have an impact on many aspects of agriculture as well as food production,

There are some dates to be aware of: May 31st is the Day of the Honeybee at the Forks, so it is an opportunity for the public to meet with beekeepers and any member of RRAA is welcome for a 3 hr shift to meet with anyone who comes by the display. The time is from 9:30 A.M. to 6:30 P.M. Contact Charles Polcyn at 284-7064 if you are available for some time on that day.

The other date is the last weekend of September starting on the 26th for the 3 day Honey Show. This is an opportunity for any beekeeper to enter some of their honey production for the Show. More details will be in the September RRAA newsletter, so put some of your best honey away to enter in the Show. It is also an opportunity to wear the Yellow Shirt and meet with the public who have many questions about honeybees

This will be a challenging beekeeper season as the cold April puts all plants behind their normal schedule. This will include the traditional sources of pollen and nectar that the bees use to build up their populations so perhaps supplements may need to be used longer. The bees will be able to catch up but they may need some help from us.

We all need to remain positive as adaptation is what we all need to do.

Yours in Beekeeping---- Charles Polcyn RRAA President

**Red River Apiarist's Association
April 8, 2014
Minutes**

Chair: Charles Polcyn
Recording Secretary: Art Quanbury

Approval of Minutes of March 11, 2014
Moved: Ron Rudiak
Seconded: Gilles Lantagne Carried

Correspondence

Letter from Minister of Agriculture in response to our letter regarding inspection program. Basically saying that the inspection program will be managed by MBA. Information we already knew through Jim Campbell's MBA reports.

MBA Report – Jim Campbell

Members of MBA met with canola growers to discuss the benefits of bees to canola growers. A meeting with corn growers is to take place on April 9. John Deere has been working to develop a shield for planters that will keep the neonic dust from planting down.

Treasurer's Report

Bank balance is about \$3,000.00. We have paid the registration for students from Fort Whyte to attend the university beekeeping course.

Presentation by Melissa Dupuis.

Melissa set up two colonies on the roof top of University of Winnipeg last year. She discussed the many safety requirements required of the university and how she was able to get a student group, all women, involved in looking after the bees.

Presentation by Lance Waldner

Lance gave a presentation on how he starts nucs. He houses 2 five frame nucs in a ten frame super with a divider between the two halves to keep the colonies separate. He starts the nucs in early June when the queens are ready. He takes brood and bees from a weak colony, one frame of brood and bees. By end of June, early July, the queens are laying eggs. He feeds the two nucs in the fall like a regular colony and wraps the hive in 2 inches of insulation for the winter. The next season he makes two separate hives from the two nucs in the 2nd week of May when the dandelions are in bloom.

Door Prize winners

Guy Briscoe	dark honey
Gilles Lantagne	roof top honey from U of W
Larry Huziy	jujubes
Keith Bamford	Indian honey
Keith Bamford	jujubes
Maureen Bodner	melo honey

Adjournment

The meeting adjourned at 9:00 pm. Next meeting is Tues-

day May 13, 2014 at River Heights Community Club. Time is 7:30 pm.

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MBA Report May 2014

Jim Campbell, MBA Representative

Manitoba Beekeepers' Association (MBA) continues its' focus on Bee Health as it finalizes the Bee Disease Inspection issues, and meets with seed producer groups.

MBA participated in a Conference call meeting with MAFRD staff to determine the status of the funding for the 2014 Surveillance and Diagnostic services. It seems funding has been approved by the Treasury Board, and now a formal Service Agreement needs to be developed and approved by the provinces legal staff. The concern is the approval could take some time, and hives need to be checked before the honey flow is underway. In the interim, MBA directors agreed to generate a "loan" to get the programs underway.

MBA board was invited to make a presentation at the Manitoba Farm Products Marketing Council (The board overseeing MBA and other food commodity groups) meeting to update them on the status of the surveillance program plus planned bylaw revisions.

MBA representatives met with Manitoba Corn Growers Association board, in Carman, on 9 April. The presentation and discussion was to maintain open lines of communication between the two groups, as well as look at ways to demonstrate to our respective members that we are both seeking a manageable response to the issues raised in Ontario and Quebec. In a similar vein, a meeting with Canola Council of Canada, Canadian Canola Growers and Manitoba Canola Growers Association representatives took place the previous day. As with the later meeting, a possible option is for a similar article, based on beekeepers and seed growers collaborating with each other, could appear in our respective newsletters.

In other news, directors discussed Best Management Practices being promoted by Syngenta in radio advertisements and on their web www.beehealth.ca. For our beekeepers, the group agreed to publish the following –

Management Reminder: Beekeepers are encouraged to be proactive in protecting Honey Bees by communicating with farmers about their crop and treatment plans, and letting them know of your plans for hive placement.
Jim Campbell, MBA Representative

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(From pg 1) the summertime. It is an excellent Varroa mite trap. Cutting drone brood comb has no adverse effect on the performance of the colony. It may even inhibit or delay swarming.

Once the cell is capped off if the mite has gone undetected it will use its front legs as a piercing instrument to pierce a hole into the larvae's body which is used to suck out the larvae's blood. For the first 3 to 3 & ½ days, after invading a cell, it gorges itself before it lays its first egg. The first egg is always an unfertilized egg which turns into a male. The subsequent eggs that are laid are fertilized and become females. With a single parasitism of a cell the brother mates with his sisters. The adult mite can lay an egg every 24 to 30 hours, but it is usually only the first fertilized egg which has enough time to turn into a fully matured and mated female. When the bee emerges the male and the immature females die within hours. The mother and mature daughter immediately search for a nurse bee that will bring them close to a 9 day old larvae so the process can begin again. A mature mite can lay 30 to 40 eggs in its lifetime.

In drone brood the Varroa has 3 extra days in the cell. Therefore 3 to 4 mature mated young mites can emerge. This is another reason they prefer drone brood.

When the mite occupies a suitable cell it only pierces one feeder hole into the larvae's body. This is used by the mite and its offspring or any other adult mite which may have made its way into the same cell and any offspring that they may produce. Piercing a second hole into the larvae could kill it which in turn would be lethal to the mites. Only adult mites are able to pierce a feeder hole into a larvae or adult bee's body. This is a wound that never heals. The defecation site of the Varroa is right beside the feeder hole on the larvae's body. The odour produced from their excrement draws the mites to the location of the feeder hole.

Personal observations of the abilities of the Varroa mite:

On a few occasions I was able to observe a mite getting off a bee on a brood comb onto the rim of a cell and running around on top of the rim with great speed, for its size. This was done on only 6 legs. The 2 front legs were activated in a manner like a bee that is using its antennae. If the first cell was not suitable it ran around to the next. I never observed more than 3 attempts before it found a suitable larvae. Once in the cell it seemed to disappear. The mite was hiding under the larvae or in the food. It has to hide otherwise the bees will find and remove it before the cell is capped off. The Varroa mite is an excellent climber on any surface. I have picked up Varroa mites with a knife and observed them run on the sharp edge, turn around on it on 2 legs and run back with amazing speed. I turned the blade around to shake the mite off, which didn't work. Only when I hit the blade on a table did they fall off. This demonstrates their tremendous ability to hang on

to things, which is accomplished with hook shaped hair like appendages. I have also observed the mite on the back of a bee, where the bee tried to comb it off with its legs. That did not work. It seems to require teamwork whereby another bee uses its mandibles perhaps temporarily paralysing the mite which then allows it to fall through the screen. Simply dislodging the mite would not be enough as it would simply latch onto the next passing bee.

The Varroa mite as a carrier of bee viruses:

With the development of the electron microscope more than 20 bee viruses have been identified over the last 50 years. Most of them have been around for millions of years and bees have learned to cope with them by developing an outside body armour that continued into their mouth and insides. Viruses could not penetrate this armour and harm the bees. However, with the parasitism of the European honey bee by Varroa Destructor this has changed. These viruses can live and multiply in the Varroa's body and can then be introduced into the larvae by the mite. The larvae has no defenses at this stage of its life. Until it emerges the immune system is not activated, in order to conserve energy. The most devastating virus is perhaps the deformed wing virus (D.W.V.). A virus infected larvae is unlikely to live for more than a few hours or at best a few days, after it emerges from the cell. This is a waste of time and energy for the hive. The viral load will determine the outcome. A load of 10 to 100 may not be critical but a load of a few 1000 would be fatal.

Not every mite carries viruses, but every mite is able to cause enough damage that a bee will not be able to survive through the winter. This is why it is important to treat bees in the fall before the mite population builds up beyond 2000. Please refer to my previously written articles on mite management. Even with good treatment the bees that were infested by a mite likely will not survive the winter. When a colony is investigated in the spring and found dead, even though there may be very few Varroa found it is still likely that Varroa was the cause of the colony's demise.

Then there is Nosema Apis which the European honey bee has been exposed to for millennia. It is a single cell organism that lives in the cells of the bee's gut and causes diarrhea. It can lead to weakening of or the death of a colony. Now we also have Nosema Ceranae which originated on the Asian honey bee. More and more parasites are brought in with bee imports. Beware of imports. There are some sub species of Varroa in Asia which have not as yet successfully adapted to the European honey bee. I believe it is only a matter of time before this happens.

Summertime availability of brood: 30 to 40 eggs amounts to 5 to 7 brood cycles in about 8 to 10 weeks. However in winter even with no brood available the Varroa is able to live. It appears the egg laying process is halted and therefore the aging process is halted. As with the winter bees, with no larvae to be fed, the bees can live about 8 months as **(Continued on pg 5)**

(from pg 4) compared to the 30 to 40 day lifespan in the summer. Even if the bees are brood free for 5 to 6 months the Varroa are a future threat if they were not groomed off, falling through the screen and thus eliminated, or decimated by a chemical treatment if and when necessary. No currently available chemical treatment will kill 100% of the mites. Some Varroa are just temporarily stunned by a treatment because they did not receive the full dose. Therefore if they fall down onto a solid bottom board they can recover and re-enter the hive and continue to infect its members. Resistance is built up and eventually they become immune to the chemical treatment. With a screened bottom board this cannot occur as the mite does not re-enter the hive and eventually dies.

Initially when I got the mite into my operation I wanted to eliminate it biologically. Two winters in a row, I caged the queen for 6 months to be absolutely brood free but it didn't make a difference compared to other colonies. The build up of Varroa was the same. At that time we did not know about the ability of the mite to live through the winter. I presumed, incorrectly, that because it originated in a subtropical climate, it would not survive through the winter.

The better we understand Varroa Destructor and other parasites the better we can deal with them.

I feel if we do not manage these threats, the European honey bee will become extinct soon, possibly in less than 10 years.

I believe and have demonstrated that Canada could be self-sufficient at producing our own bees, thus eliminating the import risk, and with a bit of effort could even become an exporter of bees.

In conclusion: I believe the disadvantage of a solid bottom board is that although the bees may groom the mites off themselves or each other there is nothing to prevent the mites from climbing right back onto the next passing bee perpetuating the cycle of infestation. However, I believe I have provided a compelling explanation for why, when a screened bottom board is used, mites do not climb out of the pan and make their way back into the hive, thus proving the superiority of a screened bottom board over a solid bottom board.

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Biosecurity

In the next few issues I would like to insert snippets of the **Honey Bee Biosecurity** training workshop presented in February by Rheal Lafreniere. I am sure many aren't interested or haven't the time but the reality is all beekeepers should be part of this management practise. It is farm-level designed to minimize the introduction and spread of disease-causing pathogens, parasites, insect pests, and predators onto, within, and beyond the farm. Based on understanding and application of measures to minimize the transmission of pests in animal and plant populations. Where a weakness is or measures not fully implemented a route a pest may enter a host exists.

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Examples from British Columbia of How Nucleus Hives Can be Made Up, Wintered and Managed

By Liz Huxter January 14, 2014

No matter what number of hives you manage, having nucleus colonies on hand is very useful. Nucleus hives are a smaller version of regular hives. Typically they are four or 5 frames of standard size. We prefer 5 frame nucs that are in individual boxes. They are much lighter to move and handle yet have plenty of room to service a large enough cluster to winter. They are insurance against winter loss. Nucleus hives are handy for adding to colonies that have gone queenless. Or they can provide an extra income in the spring. They are always in demand in early spring when beekeepers find they need to replace winter losses. Having an established locally bred queen and 3 or 4 frames of brood they are a much better "deal" than a package being sold at the same time. They also offer a means to increase your hives by wintering in a smaller unit that can grow to a honey producer in time for most flows. They are less expensive to feed and treat. They offer a better means to efficiently treat for varroa. For queen breeders, nucs can serve as a preliminary test of queens. As I will describe in detail next, making nucs can sync in well with other hive management practices as equalizing hives and re-queening.

Now that we understand their usefulness let's have a look at pros and cons of different ways they can be made up. Basically you can think of making them up in the spring summer or fall. Making Spring nucs dovetails nicely with swarm control and equalizing before the honey flow. Hives with too much brood well before the honey flow can be cut back by removing brood by the "topper" or "walk away" method. Here any spare brood is shaken off and put in a spare box above a queen excluder with at least two honey / pollen frames. Then that evening or early the next morning the box with extra brood and the covering bees is taken to another site 2 km or further to make up the nucs. No queen needs to be found before taking away the brood. At this time of the season the nights are warm and the bees don't have too much trouble keeping the brood warm. Another reason nucs can be made up with the least amount of brood at this time of year is because there is still plenty of time before fall to get a well filled out unit ready for winteriness can be made up with only one frame of brood (defined as having at least 60% brood coverage) and two frames covered with bees. If many nucs are needed probably the most efficient way of making up nucs is to break out all the hives in a yard. An advantage here is the brood and bees do not need to be moved. For breeders they can assess the hives as they are being "nuced out" and the best queens retained. Just be sure not to face the nuc entrance in the same direction as the hive did if the nuc is in the same position.

At this time in the spring queen cells are best to use. Drones are plentiful and the matings should be some of the best. Also using queen cells allows for a break in the brood cycle helping to control the buildup of varroa mites. If a treatment for varroa is given just when the new queen's brood is about to be capped, about 19 days after cell up, **(Continued on pg 7)**



Editor's Note

by Ken Rowes

This spring has been slow coming but busy I am. Bees have been flying and like I mentioned are the cleanest in years, due in part to the even micro-climate the styro-foam boxes used to overwinter them. I also put out some Bee Pro and they are into it. Pussy willows are out but no pollen yet (April 24).

I recently watched a video of dr. Ricarda Kather present "Ghosts in the Hive". She continued research on what Nation et.al. 1995 published on the chemical strategies of insects. She explained that the varroa D. can mimic the hive chemicals, more specifically the queen substance that unifies the colony from another. **They can mimic the odour** in the liquid layer on the bee and blend in or adjust its chemical profile from the fluids they removed from larvae or nurse bees. Wherein the hive bees will accept them as part of their colony and not attack or remove them. The mites can adjust their odour to a complete profile in 3 hours. She states that hygienic bees over ride this camouflage and groom mites off.

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 e-mail **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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(From Pg 5) almost all the brood from the original colony will have hatched and so all the mites will be out from under the cappings. This affords greater efficiency for treatments of phoretic mites (on the bees). The oxalic acid drip method is a good choice. Randy Oliver has a wonderful article illustrating this concept and demonstrates the high efficiency for the oxalic acid drip method. (See Scientificbeekeeping.com) The nuc make up in the spring offers the most “bang for the buck” but has the drawback of managing these larger number of units for the rest of the season. One possibility to make up for these costs is getting an “extra” or “free” queen out of these units with very little detriment to the nuc’s build up.

Here’s the reasoning behind getting the “free” queen. The queen from the first queen cell will have laid the entire comb(s) that the bees are covering in a few days. So after the first queen has laid the available comb and there are larvae present she can be pulled and a second queen cell inserted. The brood from the first queen will be hatching in 16 to 17 days. The second queen will typically have mated and be laying eggs within 15 to 16 days. So no brood is “lost”. The potential for laying more brood increases as the first queen’s brood hatches and there are more bees to look after the larger amounts of brood to be laid by the second queen. The first queens can be used in the queenless nucs or for more nucs, splits or requeening. This time of the year (May/June) extra queens come in handy.

Making up nucs in the summer can sync nicely with the end of honey flow and requeening. Our honey flow typically starts in late June and stops in mid to late July. We used to have an August flow as well but the “weeds” that provided that flow have been nearly eradicated with bio controls. So now we take a few days in early August to break out nucs in between extracting the honey.

Some advantages of making nucs up after the honey flow is the bees have “paid” for themselves and you now have

an idea of their propensity to collect honey. The best queens can be kept in nucs for breeders the following year. These summer nucs are usually made by completely breaking out the entire yard of colonies. We take yards with older queens that have had a recent flow and are packed out with brood, pollen and honey. These hives are very efficient for making nucs. Nearly every frame will go into a nuc because it will have either brood, honey or pollen in large amounts. For summer nucs, we use twice as much brood and bees, 2 plus brood frames with a minimum of three frames covered by bees. Here I should be sure to emphasize these brood patches cover 50% or better of the frames and again we feed these nucs right after they are made up. In the summer we typically use queens but cells could be used if there are still plentiful drones in the hives and the nucs are made by the end of the first week of August for our area. At this time varroa treatments can be applied to the new nucs or a mite treatment could be used in the hives before the nucs are made from them.

We rarely make up nucs in the fall but a neighboring beekeeper routinely makes his nucs in late fall with a high degree of success year after year. Art Ius, of Fruitvale, British Columbia, often takes his hives into the fireweed for a summer flow. In early October he breaks them out into 6 frame nucs with new queens and moves them to their wintering location at lower elevation inside an unheated shed. Moving the 6 frame nuc boxes is far easier than moving the whole colonies and the nucs give Art nearly all new queens in double to triple the number of units. These will be his honey producers (or make up losses) the next year. Why I said nearly all new queens, Art doesn’t necessarily find all the old queens. His 6 frame nuc boxes have a two inch space above the top bars to give the bees plenty of room to cluster in the fall. The clusters still have many of the old bees that will die off shortly but need space initially. He gives them a top entrance with access to outside the shed and feeds through a hole in the lid with a pop bottle starting in March. Art insulates them with 2 inch Styrofoam all around for winter (Art Ius Nuc Set Up).

The Table attached summarizes nuc make up over the bee season.

In south central British Columbia where we winter our nucs we use two different configurations. In the warmer areas (where peaches grow successfully), we winter the 5 frame nucs in rows. Usually they have the entrances alternating east and west in “sandwiches” of 9 or more nucs side by side. (Row of Nucs in spring) These sandwiches consist of 2” Styrofoam sheets top and bottom with a strip of foil covered bubble wrap stapled around the circumference of the “sandwich”. The insulation *under* the nucs proves its worth in the spring. Nucs insulated at their base will have brood further down the frame giving rise to larger populations of bees earlier in the spring. The foil covered bubble wrap serves to deflect wind and retain radiant energy given off by the nucs. The wrap is not tightly wrapped so that moisture can escape. Under the lid, we use plastic to reduce burr comb, to keep bees in their own nucs, and to retain moisture and heat in the spring. A corner of the plastic is folded back in winter to allow moisture to escape. The sandwiches are raised 18 to 24 inches off the ground on stands of 2x4s **(Cont’d on pg 8)**

(From pg 7) and spent bee boxes. Stucco wire is wrapped around the base to prevent skunk predation. In the colder areas (hardy apples grow) we stack the sandwiches on top each other for over winter and move them to single high before spring flight. (Stacked Nuc Sandwiches) These nucs all face south and have their entrances in the center at the bottom of the nuc. The foil covered bubble wrap is stapled up the backs and over the top insulation. The success of wintering nucs improves as you breed from the best of them every year. They become more winter savvy.

Picking good wintering sites is an important factor for wintering success in colder areas. South facing slopes with good wind protection are ideal. Another key factor is having the nucs all of good size going into winter, three to four frame clusters. The shared warmth of larger clusters in winter makes for less stress for all the nucs. Another major key to improving your wintering success is to keep the best wintering nucs for further selection.

The nucs are fed in late summer and early fall so they are going into winter with about 3.5 to 4 frames of honey. In the spring, they usually don't require feeding until the first major pollen flow. Pollen patty is fed about three to four weeks before the first major pollen flow is expected. 2 plus pounds are given to the large nucs with bee clusters of 4 frames. Two to three weeks later a second round of pollen patty will be fed, a third round will be fed in years with inclement weather.

In good years, the nucs can be "nuced" to get them down to a size for sale in early May. The extra bees and brood are used to make more nucs. We also winter queens in small 4 way shallow boxes in a building to have extra local queens available early in the season (early March on). (Picture)

Obviously there are numerous ways to winter nucleus hives successfully. Kirk Webster has a great explanation of how he winters nucs of different sizes in conditions colder than ours. (kirkwesbter.com)

Nucleus hives serve many purposes and give flexibility to any beekeeping operation. Making them up often makes other management practices easier and more efficient. Probably one of their greatest advantages is they allow for local queens to be used at any time of the season, aiding the effort to breed and use bees acclimated to local conditions and pathogens.

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Widespread Use and Frequent Detection of Neonicotinoid Insecticides in Wetlands of Canada's Prairie Pothole Region

Anson R. Main, John V. Headly, Kerry M. Peru, Nicole L. Michel, Allen J. Cessna, Christy A. Momissey mail

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Abstract Neonicotinoids currently dominate the insecticide

market as seed treatments on Canada's major Prairie crops (e.g., canola). The potential impact to ecologically significant wetlands in this dominantly agro-environment has largely been overlooked while the distribution of use, incidence and level of contamination remains unreported. We modeled the spatial distribution of neonicotinoid use across the three Prairie Provinces in combination with temporal assessments of water and sediment concentrations in wetlands to measure four active ingredients (clothianidin, thiamethoxam, imidacloprid and acetamiprid). From 2009 to 2012, neonicotinoid use was increasing; by 2012, applications covered an estimated ~11 million hectares (44% of Prairie cropland) with >216,000 kg of active ingredients. Thiamethoxam, followed by clothianidin, were the dominant seed treatments by mass and area. Areas of high neonicotinoid use were identified as high density canola or soybean production. Water sampled four times from 136 wetlands (spring, summer, fall 2012 and spring 2013) across four rural municipalities in Saskatchewan similarly revealed clothianidin and thiamethoxam in the majority of samples. In spring 2012 prior to seeding, 36% of wetlands contained at least one neonicotinoid. Detections increased to 62% in summer 2012, declined to 16% in fall, and increased to 91% the following spring 2013 after ice-off. Peak concentrations were recorded during summer 2012 for both thiamethoxam (range: <LOQ - 1490 ng/L, canola) and clothianidin (range: <LOQ - 3110 ng/L, canola). Sediment samples collected during the same period rarely (6%) contained neonicotinoid concentrations (which did not exceed 20 ng/L). Wetlands situated in barley, canola and oat fields consistently contained higher mean concentrations of neonicotinoids than in grasslands, but no individual crop singularly influenced overall detections or concentrations. Distribution maps indicate neonicotinoid use is increasing and becoming more widespread with concerns for environmental loading, while frequently detected neonicotinoid concentrations in Prairie wetlands suggest high persistence and transport into wetlands.

Conclusion

Modeling neonicotinoid seed treatment applications within the PPR in Canada revealed increasing use over a large geographic area. Due to the intensity of crop rotations with neonicotinoid treated crops and the high environmental persistence of neonicotinoids in soil, the potential for environmental loading and transport into wetlands appears high. Monitoring the water column of a subset of wetlands within the PPR in Saskatchewan confirmed that neonicotinoid insecticides were repeatedly present in many of the wetlands sampled. Our findings have important implications for wetland ecosystem services such as litter breakdown, nutrient cycling and aquatic insect production, with potential consequences for wetland dependent species (e.g., amphibians, waterfowl; aerial insectivorous birds). In order to fully understand the effects of neonicotinoids on PPR wetlands, we recommend future studies: 1) determine levels of neonicotinoid contamination in other regional aquatic systems and across a landscape level scale; 2) determine the ecological features that make PPR wetlands susceptible to neonicotinoid contamination; and 3) identify insect abundance, productivity and emergence responses to chronic and repeated neonicotinoid exposures. -/\-

**Communiqué from the Canadian Honey Council
March 31, 2014**

A national comprehensive approach to bee health
- Stakeholder Workshop Ottawa, Ontario -

The necessity to take a comprehensive look at the various factors impacting bee health in Canada brought together a diverse group of stakeholders at a Bee Health Workshop in Ottawa, on Tuesday 25 March, 2014.

"Bees are critical to both our economy and our ecosystem," said Rod Scarlett Bee Health Workshop chair & executive director of the Canadian Honey Council. "That is why beekeepers, farmers, agronomists, scientists, government and other partners are working on this together. We know if we develop a national and inclusive approach, everyone will be better off. If we can't work together, everyone will lose something because so much is at stake."

The national workshop held this week, was the next step in ensuring all parties with a stake in bee health can collaborate on solutions. Participants included beekeeper groups, grain, horticulture and organic farm groups, chemical and seed industry representatives, federal and provincial governments and bee health experts.

The need and opportunities for Canada's beekeepers are expected to continue to grow and this group of stakeholders is committed to working together to find positive outcomes for pollinator health as well as agricultural production.

"Bees are an important part of agriculture. Grain farmers are pleased with this opportunity to work with beekeepers, scientific experts and governments to promote the health of bees," said William Van Tassel, workshop attendee and first vice-president of la Fédération des producteurs de cultures commerciales du Québec. "A commitment to a coordinated, comprehensive national focus on honey bee health is the right approach."

The group has agreed to continue to meet in a collaborative manner.

Participating Organizations - Bee Health Workshop

- Canadian Honey Council
- Canadian Association of Professional Apiculturists
- Grain Growers of Canada
- Canadian Horticultural Council
- Canadian Organic Growers
- President - Alberta Beekeepers Commission
- Canadian Seed Trade Association
- la Fédération des producteurs de cultures commerciales du Québec
- Grain Farmers of Ontario
- CropLife Canada
- Fédération des apiculteurs du Québec
- Canadian Seed Growers Association
- Association of Equipment Manufacturers
- Canola Council of Canada
- Ontario Apple Growers
- Bee Operations - Oxford Frozen Foods Ltd
- BC Blueberry Council
- Federal government representatives from:
Health Canada's Pest Management Regulatory Agency and Ag and Ag Food Canada
- Provincial government representatives from:
Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick, Nova Scotia, Quebec and the North West Territories

Disclaimer:

These items are circulated as being of interest to beekeepers. The sender has no vested interest in them, pro or con, and does not engage in censorship of what information beekeepers should or should not have access to.

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An Improved Pollen Substitute

An article titled "Pollination, Protein, and Pollen Substitutes" by Les Eccles articulated a research study conducted in Ontario concerning pollination and the nutrient deficiencies wherein the study compared Global Patty substitute, Bee-Pro, and a Homemade patty of granular sugar, Brewer's yeas, Dried whole egg, water, vegetable oil and Lemon juice.

He stated that the nutrient deficiency in honey bees can result in a number of symptoms: Halt to brood rearing, consumption of young larva, premature capping of larva, increased susceptibility to European Foulbrood, poor supercedure, decreased foraging behaviour and poor over wintering. The halt of brood rearing and consumption of larva is important to consider in the recovery time for a colony that reaches a nutrient deficient state. Although a colony may only be nutrient deficient for a short period of time, there is a long lasting effect from the removal of at least one week of brood and restart of brood rearing. It has been shown that it could take 2 weeks to a month for a colony to recover from a protein deficient state.

Although there was a slight improvement with all products by using 5 lbs over 3 lbs of substitute, none of the differences were significant. Global Patties was the closest to showing a significant difference with over 90% of the time resulting in an improvement by using 5 lbs over 3 lbs.

There was a difference between products in how much pollen was stored in the comb. Bee-Pro and Global Patties both showed more stored pollen in their combs compared to the Homemade substitute. This could partially explain why there is a significant improvement in colony conditions upon return from pollination with the use of the homemade substitute. If Bee-Pro and Global patties are being stored in the comb when applied instead of immediately consumed, the colony is not taking advantage of the protein supplement when they most need it during pollination services. This would result in colonies returning in a nutrient deficient state after pollination despite the effort to supply protein substitute.

There results in the 2013 study confirmed their questions from 2012 showing that both product quality and quantity of substitute being used in the industry needed to be investigated to better understand and provide recommendations to beekeepers. Not only did the homemade substitute outperform Bee-Pro and Global Patties, the cost associated is significantly lower for the ingredients to make the homemade patties; which evens out the cost associated to labour necessary to prepare the patties. It is important for colonies to return from pollination with productive populations of bee and brood in order for beekeepers to obtain a honey crop after pollination, and make splits to increase colony numbers to ensure they have sufficient colonies to perform pollination services the following year.

Homemade Patty Pollen Substitute Recipe

Parts	Quantity	Ingredients	Specs
8	100 lbs.	Granulated sugar	
2	25 lbs.	Brewer's Yeast	48 % protein
1	12 lbs.	Dried Whole Egg	47- 48 protein
	5 Litres	Water	
	3 Cups	Vegetable Oil	
	3 Cups	Lemon Juice	
Total	100 lbs		11 %

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Bee Day in May

Jim Campbell, Promotion Committee

Promoting the importance of Honey Bees pollinating plants for fruits, nuts, vegetables and seeds in urban and rural areas, a Day of Celebration is planned for late May.

Saturday May 31, 2014 is slated to celebrate "The Day of The Honey Bee" at the Forks Market, Winnipeg, Manitoba. Based on the theme "Honey Bees – Good For Us", producers can respond to increasing concern the public has to improve plant production in family, neighbourhood, and community gardens. The promotion provides an excellent opportunity for guests to "visit with beekeepers" and learn of steps to save the bees. This often leads to a better understanding about bee-activities, bee-friendly gardening, plus agricultural practices benefiting both bees and plant systems.

At a similar celebration held last year, members of Red River Apiarists' Association hosted the promotional and marketing event on behalf of the Manitoba Beekeepers' Association. The event is co-coordinated with ones in ma-

for cities across Canada. At past events inquisitive visitors verified the benefits of the honey bee for more than just honey, but also for their importance on the whole ecosystem. They also discovered what plants attract bees.

Beekeeper volunteers may help out at the display and/or assist with media contacts. Anyone able to spend an hour or two talking to visitors and helping distribute information, please contact organizers Charles Polcyn at 284-7064, or Jim Campbell at 467-5246 or mbasecretary@mts.net .

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Manitoba Beekeepers' Association 2014 Recommended Honey House Price

\$3.50 per pound

\$7.70 per kilogram

(in customer supplied containers)

Floral Specific Honey could be premium priced

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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