

The Bee Cause



Volume 12, Issue 8

October 2015

Next general meeting is 7:30 Tuesday, 13 October 2015 at the **The Elmwood Legion 920 Narin avenue , Winnipeg**. west of the Cross-roads on the south side: Parking in the rear.

Speaker: **October** addresses the honey show review, [questions & answers]. establish a nomination committee , pose a discussion on queen rearing, and a possible RRAA beeyard for demos and field days followed by a social time with eats and drink. A good time to speak to avid beekeepers for their take on any of your issues.

Inside this issue:

- Bee immunity	Pg 1
. RRAA President's Report	Pg 2
. RRAA Minutes of May meeting	Pg 3
• MBA Report	Pg 4
• Obsolete chemical disposal	
<i>The Classifieds</i>	Pg 6
- Editor's Notes	
• N. ceranae alters Bees	Pg 7
• Honey Facts	
• Honey Show Results	Pg 8
	Pg 9
- RRAA MBA rep. sot.	Pg 10
- RRAA registration	

Immunity and resistance in the Bee World

BEE CULTURE – December 2009

Immunity: When a harmful bug has no effect on an organism.

Resistance: An organism tolerates a harmful bug but with little or no economic damage to the organism (100% resistance = immunity).

Humans are immune to a number of bugs, either through long-time exposure or by vaccination. Antibodies (developed through either exposure or vaccination) protect us from being overcome by a disease. The introduction of new diseases into the indigenous populations of the New World by disease-carrying Europeans decimated native populations – some historians make a good argument that these diseases changed the course of history (just as varroa has changed the history of beekeeping). With time, the natives developed requisite antibodies and their populations rebounded. Visitors to Mexico (and some other countries) often get sick if they drink the local water but this same water has no effect on the local population because the locals have built up an immunity (or at the very least a high degree of resistance) to the bugs in the water through generations of exposure.

Home-schooled children are more likely to get sick in college because they have had limited exposure to the myriad of bugs prevalent in public schools – their systems have limited antibody resources. Conscientious mothers that spray home surfaces with disinfectants may be putting the brakes on immune system development in their offspring. And makers of these anti-germ sprays (and of hand sanitizers) may be doing more harm than good by neutralizing a tried and true method of boosting immune systems (just as chemical treatments for varroa and other pests and diseases impede resistance development in honey bees and increase tolerance to the chemicals in the target pest). Currently, health officials tell us that older people

are less likely to get the HINI flu virus because their systems contain antibodies developed through previous exposure to related viruses. For young people that come down with HINI, it's not all bad: they could well be protected from succumbing to a super-virus 50 years hence.

Compared with humans, honey bees have a relatively fragile immune system. A less than robust immune system means greater susceptibility to pests and diseases. A highly developed immune system, however, diverts resources that might otherwise be used to benefit an organism – in the case of bees, more brood rearing and more foraging for pollen and nectar; there is no free lunch. Honey bees use a number of strategies to compensate for deficien-

cies in their immune systems:

1. When sick, bees altruistically die in the field so that they do not infect others.
2. House-cleaning bees remove dead bees (inoculum sources) from the hive.
3. Bees are good house cleaners, a trait that can be amplified (e.g., hygienic bees).
4. The anti-microbial properties of propolis protect bees.
5. House bees are healthy, nutrition-wise. Old bees die, depleted of nutrients. (Nutrient reserves, diverted to young bees, provide resistance to diseases.) (Continued on Pg 5)

2015 Executive**President: Waldemar Damert**

Ph 204-755-2340
 Box 15 Grp. 150
 Beausejour, MB R0E 0C0
 Email: wdamert@yahoo.ca

1st Vice President: John Badiuk

Ph .204-943-0166
 128 Victoria Ave W
 Winnipeg, MB R2C 1S5
 Email:honeyb@mymts.net

2nd Vice President: Armand St

Hilaire
 Ph 204-427-2757
 P0 Box 93
 Roseau River, MB. R0A 1P0
 Email: asthil@mymts.net

Secretary: Art Quanbury

Ph 204-489-6994
 35 Cordova St.
 Winnipeg, MB R3N 0Z9
 Email: quanbury@shaw.ca

Treasurer: John Speer

Ph 204-222-3007
 Box 16, Group 555, RR 5
 Winnipeg, MB R2C 2Z2
 Email: jurnss@outlook.com

MBA Delegate: Jim Campbell *

Ph 204-467-5246
 Box 234
 Stonewall, MB R0C 2Z0
 Email: jaycam@mts.net

RRAA web site administrator:

Duane Versluis
 Ph 204-268-4223
 Box 12
 Tyndall, MB R0E 2B0
 Email: rraaweb@gmail.com

Newsletter Editor:

Ken Rowes
 Ph 204-755-3427
 Cloverleaf Box 758
 RRI Anola, MB R0E 0A0
 Email: Roweskd@mymts.net

* in position till replacement

Presidents Comments for September, 2015

Greetings to all the Beekeepers!

Hope you all have been busy finishing your bee-maintenance and feeding-time!

September was great for it, the warmer weather still allowed us to manipulate the hives, replace Queens, treat for mites and feed. Syrup was taken down quick and stored in frames. Beekeepers were reporting that their hives consumed more syrup while feeding for winter.

May own bees started bringing in more pollen when the feeder-pails went on. The brooding slowed down by the middle of Septembers with-2 frames of capped brood left. Nukes had no brood at all. I checked to see if the nukes were queen-right, and all had their marked queens present. With lots of heat most flowers finished blooming early, shutting down the honey flow in August and the queens stopped brooding. With plenty of young winter bees in the hives and nukes the wintering shall not be a problem, as long as we feed plenty of syrup and do the winter preparations. In the mean time we held our annual honey show and competition. The turnout was good. Friday was busy with groups of kids coming through, looking at the live-hive display. Some were fascinated, others more scared. All had their own bee-chasing story to tell. Sunday we had more adults with questions about how the bees are doing and commenting on the encounters they had with bees. Higher number of adults did not know the difference between the honey-bees and the wasps. It is good to have the live hive and educate the public on honey-bees and honey!

The honey in the jars and the honey-frames looked exceptionally good. We did not have many participants in the honey competition. I just can encourage everyone to enter. There is lots of room for everyone. The vendors did well with the sales as well. Local honey is in demand.

Recently, I was traveling out west and did see first-hand the impact of the weather on the land and the crops. Saskatchewan looked fairly bleak in some areas. Farmers were cutting and scraping the straw or what was planted on the fields was piled and being burned. Alberta looked better, especially the irrigated Alfalfa fields. Beeyards had up to 36 hives with two plastic drums for feeding. It was the same set-up on the side of the rolling hills throughout Alberta. However, lately I did not see any feeder-pails in Alberta. No flying weather with 4-8C* day time temperature and 0-2C* at night. On Saturday Oct. 3rd Calgary had snow. Mixed reports are coming out from both provinces on honey production. Pockets of good flow and pockets with poor honey crops.

We will see how the honey market will react with the honey pricing. Looking forward to seeing you all on the October 13th.

Waldemar

Red River Apiarist's Association

Minutes of the Regular Meeting
September 8, 2015

Chairman: Waldemar Damert
Recording Secretary: Art Quanbury

Introductions

There were several new members in attendance and they introduced themselves as the President welcomed them to the meeting.

Approval of the May Minutes General Meeting

Motion: That the minutes of the AGM held on May 12, 2015 be accepted

Moved: Albert Anderson

Seconded: Ted Scheuneman

Carried

President's comments

Waldemar commented that the honey flow was strong at the beginning of the season then dropped off. Bee keepers were getting 50 to 160 lbs/hive. The May snow storm damaged some of the crops that would have provided early nectar and pollen. Swarming was higher than usual. The large range between day and night temperatures causes stress in the hive and results in more swarming.

Fall treatment

The topic of the evening's meeting was fall treatment but discussion was fall ranging. Waldemar showed a high density Styrofoam Bee Box that came from Finland. Cost is about \$140.00 and is available through Bee Maid. The box has several limitations for our climate; insulation value is not high enough, has no top venting, has no insulation on the bottom, has no entrance reducer or top feeder.

Waldemar discussed proper procedures for "packing bees" for our winters. Bottom insulation should be at least R5 and the sides and top should be R7.5 or even R10. He packages his colonies in pairs, side by side, to keep them warmer. Extruded polystyrene insulation is expensive but much cheaper in the US. The commercial "bee cozy" is not sufficient for our severe winters due to the crimping in the corners providing no insulation in corners that can develop icing inside the hives.

It is important to have the same size opening in the Styrofoam covering top and bottom to provide ventilation to remove moisture without creating a draft.

You do not need to shovel the snow from in front of the hive.

The hive heat will melt a cavity in the snow to provide air. However, if you do shovel snow away drifting snow might be too hard packed for adequate air supply and you must then keep the entrances clear.

Fall feeding requires 24 L of sugar syrup per colony according to Waldemar. Feeding should be continuous so the queen stops laying eggs and the brood frames get used for honey storage. It is a good idea to feed honey in the spring. The rim on the inner cover can be increased to 3/4 inch to provide space for pollen patties and honey/icing sugar mix in ziplock bags.

Sugar syrup should be made with cold water to prevent the formation of HMF which is toxic to bees. Sugar syrup ratio should be 1 L water to 1.4 kg sugar.

Honey Show, September 25-27, 2015

Display items are provided by Bee Maid. Jim Campbell provided tips for entrants: -Check the glass jars for any air bubbles or

other flaws in the glass and discard them

-Wash the jars but do not dry with a towel that can leave lint

It is very important to filter the honey to remove all impurities

-Ideal moisture content of honey is 16%

-Jars should all be filled to the same level, choose one of the threads as a reference point

-Honey cannot be added afterwards. It never mixes thoroughly with the honey already in the jar.

-Filled jars can be left in the sunshine so any air bubbles in the honey will rise to the surface

-Jars filled in August can use the brighter summer sun

-Honey can also be warmed in a microwave to encourage bubbles to rise

-A baby spoon can be used to get air bubbles past the neck of the jar

-A tooth pick can be used to puncture air bubbles

-A speck in the honey can be removed by inserting a straw with your finger over the top until the bottom is just above the speck then remove your finger until speck moves into straw then put your finger back over the end of the straw and remove it.

-Keep honey in the freezer so it will not granulate but canola honey will still granulate when thawing. Honey granulates most quickly at 14 to 15 degrees so the jars can be kept outside at night where it is cooler to slow down granulation.

-Creamed honey should be kept cool. Below room temperature but not frozen but it will shrink when it thaws

-Wipe any honey or dust off the outside of the jar.

Armand talked about the importance of the honey show to educate the public about honey bees and circulated a sign up sheet and encouraged members to sign up and volunteer.

More on Fall Management

Three main points to remember:

- 1) Assess the hive – should be done in late July to see if requeening is needed
- 2) Check for mite levels. Mites generally do not like higher summer temperatures. Flash treatment with formic acid can be done even during honey flow. Keep in mind the 42 days needed for Apivar strip treatment.
- 3) Feed continuously so queen is discouraged from laying eggs. 24 L/colony with 1.48 kg honey per 1 L of water.

Looney Draw winners

Numerous winners (19). Thanks to everyone who brought prizes for the draw. (corn, cucumbers, flower bulbs, gallon jars, etc)

Adjournment

The meeting adjourned at 9:45 pm

The next meeting will be held on October 13, 2015 at the Elmwood Legion on Nairn Avenue at 7:30 pm.

—/\\—

MBA Report OCTOBER 2015
Jim Campbell, RRAA MBA Representative

Manitoba Beekeepers' Association is continuing to monitor the Small Hive Beetle (SHB) incursion in Manitoba and kept aware across Canada. There have been discoveries of adult SHB in Quebec, Ontario and British Columbia. Small hive beetle is a scavenger beetle that first arrived in Canada in 2002. It is an invasive pest that causes stress to honey bee colonies, weakens colony health and may contribute to spoilage of honey and other hive products.

In Quebec, hives were monitored for the small hive beetle (SHB) in the at-risk zone located along the US and Ontario (Cornwall sector) borders in the Western Montérégie region. Initially one SHB adult specimen was found in a small (2-hives) apiary located four kilometres from the US border. Most likely cause is flying across border. There have been a few additional discoveries in Quebec. Meanwhile Ontario is stepping up monitoring and extending its' current Windsor/Essex quarantine areas, as beetles are occurring beyond the initial boundaries. About 6 cases of SHB have been found in the Niagara Region. This prompted OBA to seek support from CHC in establishing a Canada wide position supporting movement of bees to meet the demands for pollination. In addition, BC found SHB at various areas along the USA-Canada border. The major concern here is also for access to pollination for Blueberries and Cranberries.

MBA is already making plans for the 110th Annual Convention February 27-28, 2016, and to this end has secured agreement from three keynote speakers so far. Confirmed speakers include Ernesto Guzman, University of Guelph, Ontario, Pierre Giovenazzo, University of Laval, Quebec, and Samantha Brunner, Department of Agriculture, North Dakota. More details will be announced on MBA web and Winter issue of Manitoba Beekeeper.

Daryl Wright has been appointed MBA secretary, effective 1 October 2015. He became involved in beekeeping in mid 1960s' with his dad Walter. Walter was one of the founding members of RRAA in 1963. Daryl has worked at U of M with Dr's Jay and Currie, as well as working as Regional Bee Inspector in the United Kingdom. Daryl looks forward to the MBA secretarial position, as well as continuing with other contracts such as with the Province in the honey bee and leaf cutter surveillance programs, and the National Honey Bee Health Survey. Daryl replaces Jim Campbell who retired at the end of September.

—/\\—

HONEY SHOW 2015 [Sept 25--26--27]

Again this year our Honey Show was a very good success in public bee awareness and education. A steady crowd of young and old interested in bee health and bee-keeping kept us busy all weekend.

The show's success depends on dedicated volunteers. It would not be possible without you. THANK-YOU:--Rheal Lafreniere---Jim Campbell---Natasha Klapon-ski---Ken Rows---Waldemar Damert---Art Quambury---Monica Wiebe---Victor Dyck---Ron & Shirley Rudiak---Alex Remkes---Hans & Dini Borst---John Russell---Duane Versluis---Laura Rogasky---Jim Oke---John Speer---Joelle Boucher

We are all beneficiaries

Submitted by: Armand St Hilaire
 Coordinator

/\\

Obsolete pesticide and vet med disposal

Information on the CleanFarms program (free) and private programs (fee for service):

The CleanFarms Obsolete Pesticide and Vet Medications Collection Campaign is scheduled for **October 2016**: www.clenfarms.ca/programs/obsolete_pesticides_collection.

If clients need to dispose of the pesticides before then, there are a few places that are licensed to do this on a fee for service basis:

1. Miller Environmental: www.millergroup.ca/waste_management/hazardous_waste/
2. Tervita : www.tervita.com/solutions/challenge/waste-management-and-disposal

Salut!

Rhéal Lafrenière M.Sc. P. Ag.

Industry Development Specialist - Provincial Apiarist
 Manitoba Agriculture, Food and Rural Development

—/\\—

(from Pg 1) Honey bee caretakers (keepers of bees, or beekeepers) also allow bees to perform at a high level by providing bees with good pasture (easier said than done) and/or supplemental protein feeding (although no supplemental feed is as beneficial to honey bee health as a multi-coloured variety of natural pollens). Beekeeper control of pests and diseases – foul brood, tracheal mites, nosema and especially varroa mites – also allows honey bees to remain healthy in spite of their relatively fragile immune systems (providing beekeepers rotate comb on a regular basis to prevent a build up of harmful chemicals).

Like humans, honey bees have been challenged by viruses for eons. All bees carry viruses and this virus complex changes over time as new viruses enter the system and old viruses mutate. In 1980 BV (Before Varroa) when a new virus entered a honey bee population, the spread of the virus was gradual, allowing bees ample time to come up with methods of neutralizing the virus, including incorporating resistance into the bee genome. Varroa mites, acting as contaminated hypodermic needles, short-circuited this natural disease-fighting mechanism, overwhelming a colony by rapidly spreading viruses throughout the colony and then throughout an apiary. Honey bees had no defence against varroa mites and current varroa-control measures are less than stellar.

Without an effective transmission agent it is difficult for a disease to establish a toe-hold in a population. The most effective method of controlling some diseases is by attacking the vector that transmits the disease, e.g., killing mosquitoes to control malaria. A consensus is forming that the combination of a virus (or viruses) + varroa (and possibly nosema ceranae) is the cause of current problems with honey bees. Add a robbing environment into the mix and you compound the problem. Without the varroa vector, viruses would cause far less damage. For example, IAPV (Israeli Acute Paralysis Virus) is widespread in Australia but is not considered a major threat (Australia does not yet have varroa). Some feel that the combination of IAPV + varroa represents a threat to U.S. bee colonies and they make a good case for banning the importation of Aussie bees (too late now). Viruses are constantly mutating and some feel that the Aussie strain of IAPV is less deadly than other strains and therefore Aussie imports are not a problem. Or, perhaps, incremental exposure to IAPV by Aussie bees gave them sufficient time to incorporate immunity, or at least some degree of resistance, into their genome. There will always be new viruses — develop resistance (or a vaccine) against one, and another will pop up and take you down.

Some viruses inflict considerably more damage on a population than others. The 1918 flu virus was a super-bug that killed millions of people and on a scale of 1 to 10 (10 being most severe) would rate a 10. Most flu viruses would rate a 1 or 2; H1N1 might currently rate a 5 (subject to change after it has run its course). Past honey bee viruses that caused disappearing bees or collapsing colonies could be

similarly rated. Assuming a virus caused CCD in 2007-2008, affected beekeepers might rate this virus a 10. Apiaries that did not (or have not) come down with CCD in recent years likely either were isolated from a virus source or enjoyed robust health when exposed to the virus (and yes, pesticide exposure would compromise colony health). Like humans, honey bees carry chronic viruses and such viruses flare up when the health of a population is impaired. DWV (Deformed Wing Virus) appears to be a chronic bee virus and one that is often associated with collapsing colonies (and with varroa).

How severely a virus affects a population – whether humans or bees — depends on 3 factors:

1. The degree of exposure to (or isolation from) infected individuals.
2. The general health of the population (esp. nutrition-wise).
3. The age distribution of the population (in general, the elderly are more susceptible).

For honey bees, the population of a vectoring agent – mainly varroa, possibly nosema – is also a factor. In the presence of varroa, honey bees must wage a battle on two fronts. An analogy is a man holding his own against a bear attack but succumbing when he is simultaneously attacked by a pack of wolves. Fighting both a virus and varroa is a daunting task for honey bees. In the case of honey bees, a frontal attack on varroa should be more productive than attacking viruses.

Any breeding program that incorporates resistance to mites and diseases comes at a cost. Take an extreme example: posting a guard bee by every brood cell to immediately target and kill varroa could develop a varroa-free population, but at a significant cost – those guard bees would otherwise be foraging bees. We all face tradeoffs in life – work vs. family, mind development vs. body development – honey bees are no different: invest too many resources in combating varroa and colony production will suffer. One strategy for bees to develop varroa resistance is by producing minimal amounts of food – bee brood – for the mites. Reduce brood too far though, and consequent lower worker populations will mean much lower honey production. Biologist Raphael Sagarin put it succinctly: *“organisms inherently understand that there is risk in life. The idea that we can eliminate these risks would be selected against quickly in the natural world since any organism that tried to do so would not have enough resources left for reproduction or feeding itself.”* (New Scientist, February 9, 2008, p.49). Building a bee with total immunity to pests and diseases would come at too great a cost to the bee.

The Holy Grail in the war against varroa – immunity (or 100% resistance) – is likely impossible. U.S. bee breeding programs aimed at varroa resistance have been hampered by the ever-narrowing number of genes in U.S. bee populations to the point where some feel that our bees are excessively inbred (assuming the relatively recent introduction of African and Australian genes has not been beneficial). (cont'd on Pg 7)



Editor's Note by Ken Rowes
September flew by so quickly and I just finished my last extraction October 2. It was the latest I have ever done. So save to say my honey production was exceptional for me.

Another concern: as I did my fall inspections mite counts were very high and in 3 colonies I found the greater wax moth. I checked all frames and bottom boards and will check one more time. Where I found them is in the bottom board under the screen so I must have missed a period of cleaning. I also found them in brood frames of weak hives and the odd one or two in honey frames in the extracting room.
So be aware check.

All treatments should be almost over and all feeding done so feeding equipment can be off the bees now cleaned and stored. Bees should be on there winter palates entrances reducers conserving night time heat in turn reducing syrup consumption.

I am finding the bees still cleaning up my extracting equipment which is great.

If you are wintering outdoors you may consider a coarse media of small gravel and a palate to raise colonies 6 inches or so. The 2" Styrofoam has been successful, however, if you have the black poly wraps you may consider a 1" Styrofoam outer sleeve to assure a better R-value in the corners.

Photos were lacking in the photo section of the honey show. If you have any please forward for interest and a share view at a meeting. C U Oct. 13
Bee Well

CLASSIFIEDS

1 Wanted: Automatic uncapper; honey tank.
Phone 204-712-6783, Email; lancewld@gmail.com

2 For Sale: Plastic queen excluders \$3.50 each.
Contact, Lance W. Phone # 712-6783, Email; lancewld@gmail.com

3 For Sale: One 525 gallon water tank, in very good condition, excellent for mixing and transporting sugar syrup. \$390.00 OBO
One upright scale, like you would find in a Doctor's office, in good condition. Good for weighing larger containers of honey. \$150.00 OBO
One 4-drawer metal filing cabinet. \$30.00 OBO

The Bee Cause is the official publication of the Red River Apiarists' Association for distribution to its members and their colleagues in the beekeeping 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 **Corydon Community Centre River Heights** 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

Contact Ted Scheuneman: 204-338-6066

4. For Sale: Brood boxes, hive stands, cobana boxes, fencers, smokers, queen excluders, nuc boxes, plastic honey pails, inner feeder covers, bee blowers, plain bottom boards, electric uncapping planer, beekeeper's suit, gloves, hats, and veils—all in excellent condition. Pre-cut wood pieces for assembly of frames and supers, frame building jig, wiring jig, pure beeswax foundation. **Contact Charles_polcyn@ymail.com or Charles 204-284-7064 Wpg. Or farm 204-348-2506.**

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

—/\—

(from Pg 5) The recent importation of drone semen from promising stock in other countries should greatly improve our gene pool*. The current success of Marla Spivak's Minnesota Hygienic stock shows that good varroa resistance (and resistance to brood diseases) can be obtained without significantly sacrificing honey production. MN Hygienic bees recruit potential foragers for cell cleaning (and mite-biting) duties but apparently not in great enough numbers to affect honey production.

Hygienic bees don't eliminate mites but reduce mite numbers to levels that can be more easily controlled with minimal (or no) use of chemicals. Yes, these few mites can still carry and transmit viruses, but hopefully mite numbers will be low enough to prevent a virus epidemic in an apiary. Currently, the best method of protecting bees from viruses is the same as protecting humans from the H1N1 flu virus: isolation from others that might be carrying the virus. Admittedly, this is far easier said than done for both bees and humans.

Rather than developing 100% resistance (or immunity) from varroa, a frontal attack on this insidious pest is preferable. Promising work on varroa control includes using odours to lure varroa to their doom or to confuse them so they cannot locate brood cells. Breeding non-pathogenic varroa or inserting a suicide gene into the varroa genome would certainly have benefits. Work to develop additional chemicals to control varroa should continue (although formic acid treatment for varroa control is not new, the new, slow-release, formic acid strip shows promise here; some essential oils also show promise). Until such offensive measures bear fruit, a combination of resistant bees (e.g., hygienic bees), chemical treatments, supplemental feeding, isolation (where possible), nosema control and regular comb rotation will continue to be the best method of keeping healthy bees.

—/\—

Nosema ceranae alters a highly conserved hormonal stress pathway in honeybees

C Mayack · M E Natsopoulou · D P McMahon

Insect Molecular Biology 20 September 2015

ABSTRACT: *Nosema ceranae*, an emerging pathogen of the western honeybee (*Apis mellifera*), is implicated in recent pollinator losses and causes severe energetic stress. However, whether precocious foraging and accelerated behavioural maturation in infected bees are caused by the infection itself or via indirect energetic stress remains unknown. Using a combination of nutritional and infection treatments, we investigated how starvation and infection alters the regulation of adipokinetic hormone (AKH) and octopamine, two highly conserved physiological pathways that respond to energetic stress by mobiliz-

ing fat stores and increasing search activity for food. Although there was no response from AKH when bees were experimentally infected with *N. ceranae* or starved, supporting the notion that honeybees have lost this pathway, there were significant regulatory changes in the octopamine pathway. Significantly, we found no evidence of acute energetic stress being the only cause of symptoms associated with *N. ceranae* infection. Therefore, the parasite itself appears to alter regulatory components along a highly conserved physiological pathway in an infection-specific manner. This indicates that pathogen-induced behavioural alteration of chronically infected bees should not just be viewed as a coincidental short-term by-product of pathogenesis (acute energetic stress) and may be a result of a generalist manipulation strategy to obtain energy for reproduction. © 2015 The Royal Entomological Society.

—/\—

Honey Facts from free Wikipedia

Floral source

Generally, honey is classified by the floral source of the nectar from which it was made. honeys can be from specific types of flower nectars or can be blended after collection. The pollen in honey is traceable to floral source and therefore region of origin. The rheological and melissopalynological properties of honey can be used to identify the major plant nectar source used in its production.¹

Blended

Most commercially available honey is blended meaning it is a mixture of two or more honeys differing in floral source, colour, flavour, density or geographic origin.

Polyfloral

Polyfloral honey, also known as wildflower honey, is derived from the nectar of many types of flowers.

The taste may vary from year to year, and the aroma and the flavour can be more or less intense, depending on which bloomings are prevalent.

Monofloral

Monofloral honey is made primarily from the nectar of one type of flower. Different monofloral honeys have a distinctive flavour and colour because of differences between their principal nectar sources. To produce monofloral honey, beekeepers keep beehives in an area where the bees have access to only one type of flower. In practice, because of the difficulties in containing bees, a small proportion of any honey will be from additional nectar from other flower types. Typical examples of North American monofloral honeys are clover, orange blossom, blueberry, sage, tupelo, buckwheat, fireweed, mesquite and sourwood. Some typical European examples include thyme, thistle, heather, acacia, dandelion, sunflower, honeysuckle, and varieties from lime and chestnut trees. In North Africa (e.g. Egypt) examples include (cont'd on Pg 8)

MANITOBA HONEY SHOW 2015 Competition Results

Class 1

Liquid Honey, White

First place: Ken Rowes
Second place: Donna Hourd

Liquid Honey, Amber

First place: Ken Rowes

Liquid Honey, Dark

No entries

Granulated Honey, White

First place: Donna Hourd
Second place: Ron Rudiak
Third place: Ken Rowes

Bee-Ginner

First place: Monica Wiebe
Second place: Victor Dyck
Third place: Allan Campbell

Best Taste

First place: Donna Hourd
Second place: Ken Rowes
Third place: John Spears

Class 2

Chunk Honey

No entries

Comb Honey

First place: Alex Remkes
Second place: Ron Rudiak

Frame of Honey

First place: Ken Rowes
Second place: Donna Hourd

Beeswax

First place: Donna Hourd

Class 3

Photography

a) Honey Bee Pollination

First place: ..
Second place: ..

b) Beekeeping in Manitoba

First place: ..
Second place: ..
Third place: ..

c) Other Bees and Insects

First place: ..
Second place: ..

d) Honey – In Many Forms

First place: ..
Second place: ..

Champion Honey Show Exhibitor

“Best in Show: Donna Hourd

Honey Judges:

Rob Currie
Josh Kolesar
Rhéal Lafrenière

Congratulations to all entrants!!

—/\\—

(from Pg 7) clover, cotton, and citrus (mainly orange blossoms).
^{needed]} The unique flora of Australia yields a number of distinctive honeys, with some of the most popular being yellow box, blue gum, ironbark, bush mallee, Tasmanian leatherwood, and macadamia.

Honeydew honey

Instead of taking nectar, bees can take honeydew, the sweet secretions of aphids or other plant sap-sucking insects. Honeydew honey is very dark brown in colour, with a rich fragrance of stewed fruit or fig jam, and is not as sweet as nectar honeys. Germany's Black Forest is a well known source of honeydew-based honeys, as well as some regions in Bulgaria, Tara (mountain) in Serbia and Northern California in the United States. In Greece, pine honey (a type of honeydew honey) constitutes 60–65% of the annual honey production. Honeydew honey is popular in some areas, but in other areas beekeepers have difficulty selling the stronger flavoured product.

The production of honeydew honey has some complications and dangers. The honey has a much larger proportion of indigestibles than light floral honeys, thus causing dysentery to the bees^{needed]}, resulting in the death of colonies in areas with cold winters. Good beekeeping management requires the removal of honeydew prior to winter in colder areas. Bees collecting this resource also have to be fed protein supplements, as honeydew lacks the protein-rich pollen accompaniment gathered from flowers

Classification by packaging and processing

Generally, honey is bottled in its familiar (cont'd on Pg 9)

(from Pg 8) liquid form. However, honey is sold in other forms, and can be subjected to a variety of processing methods.

- **Crystallized honey** is honey in which some of the glucose content has spontaneously crystallized from solution as the monohydrate. Also called "granulated honey" or "candied honey." Honey that has crystallized (or commercially purchased crystallized) can be returned to a liquid state by warming.
- **Pasteurized honey** is honey that has been heated in a pasteurization process which requires temperatures of 161 °F (72 °C) or higher. Pasteurization destroys yeast cells. It also liquefies any micro crystals in the honey, which delays the onset of visible crystallization. However, excessive heat exposure also results in product deterioration, as it increases the level of hydroxymethylfurfural (HMF) and reduces enzyme (e.g. diastase) activity. Heat also affects appearance (darkens the natural honey colour), taste, and fragrance.
- **Raw honey** is honey as it exists in the beehive or as obtained by extraction, settling or straining, without adding heat (although some honey that has been "minimally processed" is often labelled as raw honey). Raw honey contains some pollen and may contain small particles of wax.
- **Strained honey** has been passed through a mesh material to remove particulate material (pieces of wax, propolis, other defects) without removing pollen, minerals or enzymes.
- **Filtered honey** is honey of any type that has been filtered to the extent that all or most of the fine particles, pollen grains, air bubbles, or other materials normally found in suspension, have been removed. The process typically heats honey to 150–170 °F (66–77 °C) to more easily pass through the filter. Filtered honey is very clear and will not crystallize as quickly, making it preferred by the supermarket trade.
- **Ultrasonicated honey** has been processed by ultrasonication, a non-thermal processing alternative for honey. When honey is exposed to ultrasonication, most of the yeast cells are destroyed. Those cells that survive sonication generally lose their ability to grow, which reduces the rate of honey fermentation substantially. Ultrasonication also eliminates existing crystals and inhibits further crystallization in honey. Ultrasonically aided liquefaction can work at substantially lower temperatures of approximately 95 °F (35 °C) and can

reduce liquefaction time to less than 30 seconds.¹

- **Creamed honey**, also called whipped honey, spun honey, churned honey, honey fondant, and (in the UK) set honey, has been processed to control crystallization. Creamed honey contains a large number of small crystals, which prevent the formation of larger crystals that can occur in unprocessed honey. The processing also produces a honey with a smooth, spreadable consistency.
- **Dried honey** has the moisture extracted from liquid honey to create completely solid, non-sticky granules. This process may or may not include the use of drying and anti-caking agents. Dried honey is used in baked goods, and to garnish desserts.
- **Comb honey** is honey still in the honeybees' wax comb. It traditionally is collected by using standard wooden frames in honey supers. The frames are collected and the comb is cut out in chunks before packaging. As an alternative to this labour-intensive method, plastic rings or cartridges can be used that do not require manual cutting of the comb, and speed packaging. Comb honey harvested in the traditional manner is also referred to as "cut-comb honey".
- **Chunk honey** is packed in wide mouth containers consisting of one or more pieces of comb honey immersed in extracted liquid honey.
- **Honey decoctions** are made from honey or honey by-products which have been dissolved in water, then reduced (usually by means of boiling). Other ingredients may then be added. (For example, abbamele has added citrus.) The resulting product may be similar to molasses.

//\

A hive palate to consider.

Made from recycled palates is 24" x 60"

The seams are 2 x 2's.

The tops are 1 x 5 palate panels or recycled fencing boards.

The bottom runners are recycled cedar fencing.

Two colonies fit nicely side by side for wintering and do fine during summer shifted apart and directed away from one another.



Red River Apiarists Association
New Location
September 8, 2015

New location is **The Elmwood Legion 920 Narin avenue** west of the Crossroads on the south side:

- Regent Avenue west of Lagemodier (59 HWY).

Important Notice:

**Volunteer needed for RRAA
MBA Representative**

A volunteer from the RRAA membership is needed to fill a position on the Executive for 2015. The job description for MBA Representative is fairly simple and outlined in the RRAA By-Laws (published on beekeeping-manitoba.com under "Resources") as follows:

The MBA Representative shall represent the Association views, recommendations, questions, requests and opinions at the Manitoba Beekeepers' Association director's meetings. The representative may provide verbal or written reports of director's discussions during regular or executive Association meetings. Outside of the by-laws, specifics of the role include attending semi monthly meetings of the MBA Board, typically held in Neepawa on the second or third Thursday of a month. The exact dates will vary according to the busy schedule of commercial operators thus April, July, August and September are usually avoided. The representative may participate in discussions of the board, yet are excluded from voting. The role is to act as a liaison between the concerns of the hobbyists and the directions of the commercial operators. In addition the rep typically provides a monthly report for publication in the RRAA newsletter BeeCause with supplemental information at regular club meetings. The our MBA report can give you an idea of position reporting.

Volunteers should contact Waldemar, RRAA President, if you are interested.

—//\—

Red River Apiarists' Association
Winnipeg, Manitoba
2015 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