the Queen City Buzzzzzz

Official Newsletter of the Regina & District Bee Club, **2017 Autumn**

That's a wrap for this season!

Your Bee Club is excited to bring you our autumn newsletter.

A special end-of-season thanks goes to **Doreen Bradshaw** who managed the club Extractor Rental Program, and **Mimi Mouthaan** for managing the Bulk Shipping Program.
These two silently went about the summer as busy as the rest of us, yet still had time to do a lot of extra work.

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There's a Law For That

2016 Saskatchewan Beekeepers' Convention Report

For our winter issue, if you've got story ideas, a need for information about any specific beekeeping topic, a favourite honey recipe or tips that others can learn from, please e-mail us at klanekennels@gmail.com and we'll get your information into future editions.

Enjoy!

Upcoming Events: Mark Your Calendars

CANADIAN WESTERN Agribition

Trade Show Booth
By Janine Heinrich

This year Canadian Western Agribition is November 20 – 25, 2017, at Evraz Place in Regina and the Regina and District Bee Club has a booth to showcase and sell products of the hive. This requires both products and

volunteers.

Working at the Trade show booth is interesting, educational and enjoyable. We generally schedule 2 shifts per day, 10:00 – 2:30 and 2:30 to 7:00, with two volunteers working each shift.

This Trade Show booth runs from Monday to Saturday. Volunteering in this way is a great opportunity to meet Agribition visitors from all around the world as well as work with some other great Bee Club members.

If you have product to sell or are interested in volunteering at this year's Agribition Trade Show and contact Janine Heinrich at j9withatwist@gmail.com.

Educational Booth
By Ed Rodger

The Regina Bee Club hosts an education booth at Agribition every year, and is planning to do so for 2017 as well. The booth consists of various displays about beekeeping and honey, with a focus on the situation in Saskatchewan, and also features an observation hive. The booth is usually very popular with visitors, including school groups, families and Agribition attendees in general.

The booth operates on volunteer work, and bee club members or other beekeepers are invited to help out by giving some time at the booth to explain the displays, talk about beekeeping and answer questions. It's a great way to promote beekeeping, meet fellow beekeepers and learn some new things.

If you think you could help out by volunteering at the Agribition booth this year, or have questions, please contact Ed Rodger at ed.rodger@sasktel.net , or at (306) 757-7059. Volunteer shifts can be as little as a few hours, or as many times as you'd like over the days that the booth is up. Agribition 2017 will run from Monday November 20 to Saturday November 25. Any level of beekeeping experience is fine.

The annual provincial beekeepers' convention is scheduled November 30th 9:00 a.m. until noon-ish December 2nd in Saskatoon. Contact SBDC for more information.

Nuggets for Newbees

By Colette Stushnoff

Most beginners ask how to learn to become a beekeeper. We highly recommend the beginning beekeeper course offered by the club. Read about beekeeping, but keep in mind that keeping bees in the Canadian prairies will require different methods than in most parts of Canada and/or the world. Attend meetings, and take advice from local, successful beekeepers, as well as the provincial apiculturist. Find one to be your mentor and visit them throughout the year when they are working their bees to help, observe and ask questions. Ask their advice when you need it.

Are all queen bees equal? Try to obtain locally adapted queens and/or nucs for best winter survivability. When you buy bees, always ask about the source of the queen. They may be local bees, but an off-shore queen. In that case, you may be able to buy a locally adapted queen (or queen cell) later in the summer to requeen or to make a nuc with. Some stock is much more prone to swarming

than others; this applies to chalkbrood susceptibility, as well as other characteristics. The solution to these problems is to requeen with better stock. Strive to learn how to breed your own bees from your best stock to become more self-sufficient--it does not have to be complicated.

New and potential beekeepers should ask themselves if they are committed to this form of animal husbandry, in other words, do they have the spare time in their busy lives to look after the bees in a timely fashion. Are they willing to make a schedule for operations, and perform them as close as possible to the schedule. The health and welfare of the bees should not be an afterthought--in our climate, late or forgotten operations may mean the difference between life and death for the colony. Respect the bees, they should not be treated as disposable.

Ask yourself why you want to keep honeybees. Are you fascinated by them or perhaps you want an interesting hobby with potential to grow into a business? These are good reasons to keep bees. Realize that beekeeping is not a get-rich-quick scheme. If you want to "save the bees" but do not really have the time or finances to commit to honeybees, investigate how to support and encourage native bumblebees and solitary bees, a very valuable yet much less expensive and less time-consuming endeavour.

The Hamiltons:

William: Hive inspections do not require you to find the queen. Check for eggs and disease, if you happen to see the queen in the process then bonus.

Annamaria: Check your hive every two weeks to ensure they have enough space. Shuffle any foundation around as needed.

Rosalie: Get a mentor. Visit bee yards. Talk to as many as you can. There are lots of different ideas and procedures out there. Try to stick to the most common and recommended ones for your first 5 years.

Aksel: Fall prep is very important. Test your mites in early September and get a mite treatment on as quickly as you can if needed. Feed your bees through September, it may be too cold to in October. Wrap your bees properly insuring adequate insulation and ventilation.

Daphne Murphy

I use thin gloves. Feels more like bare and the bees slip off so less likely to sting. Also - easy to pull the sting out by just lifting the glove if they do sting (yes, I was stung through one).

Celine Holloway

When I make a sale, I mention that all honey eventually crystallizes and that my go-to solution is to put the container on a heating pad, covered by a towel, to heat gently overnight. Next morning, voilà!

Mimi Mouthaan

Don't wear yoga pants and flip-flops when you are inspecting your bees.
If you are using feeder pails, add a bit of canola oil around the rubber part of the lid. That will help with the seal.
If you are worried about your feeder pail leaking into the hive, move the screen hole away from the cover opening. Angle your hive, so if there is leakage, the liquid will run away from the hive entrance.
When you are mixing your syrup water, weigh and add your sugar water all at once. Don't do it in increments. This way, 1) you won't lose track of how much sugar/water you put in and 2) it's quicker to dissolve the sugar.
Use an entrance reducer when you are pulling frames out for extracting and feeding. Reduces robbing.

Louise Yates

Make sure your hives are really level. It's not a big deal in year one, but for year two when your honey supers are stacked six or seven high, any slant gets pretty noticeable.
Make sure everything you buy for extracting the first year is “food grade”. Otherwise you just have to replace it all later once you figure that out.
Keep notes – on the computer or in a binder – whatever works. It'll make your next year much easier.
Get ready for your first cranky hive. Sting. Sting. Sting. Ouch!!
Use a hand vacuum to remove bees from the extraction area. Then you can bring them back to the hives.
Sprinkle diatomaceous earth around the stored honey supers to keep ants away.
Put wine corks in your bee water station. They float, so you can fill the water bucket fuller and was the water evaporates, the corks just move down in the bucket.

Julie-Anne Howe

Wear gloves – nitrile gloves will protect you allow for more feel than a leather glove
Buy gentle bees over productive bees. Especially when your bees will be close to your home.
Get an electric extractor if you can afford it. If not, I have a nice 3-frame manual extractor for sale :)
Get educated. Take the courses put on by the SBA. Use the mentorship program and read the Beekeeping in Western Canada Manual often.
Don't leave your wax cappings tank full to deal with at the end of the season or you may have a big brick of honeyl/wax/bee goo to wrangle with
Also Pure bees wax candles tend to crack when they cool if you try to make them in mason jars or teacups. Silicone molds work well.

Jenelle Quigley

Last winter - our first winter to keep our bees over - we got a lot of snow drifting up in our yard. After a bad storm I realized the beehive was buried in a 6' snow drift. We were worried after reading online about condensation so we used the snow blower on the tractor to dig out the hive but knew the next storm would cause it to happen again so we emailed Andrew and he said they would create an igloo in the snow. There were dead bees in the snow but that was a sign the hive was alive and had cleared out the old bees. We left them until the spring thaw and snow was melted about a foot all around the sides of the insulated bee hive (their igloo!) and all was fine!

Yens Pedersen

My advice for the winter: Leave your bees alone and hold on to your honey!

Fall Feeding Dilemma

By Andrew Hamilton

How much feed do you give you bees in the fall? Each beekeeper will have his or her own opinion on this. There are many factors that need to be considered. Are you running singles or doubles? How much honey was in the brood chamber at the end of the honey season? Do you want to block the queen out or leave her some space to brood in? How many food stores do you wish the bees to have in the spring? What breed of bee do you have (some breeds winter eat less during the winter)? What kind of winter will we have? All of these factors need to be considered when feeding.

Typically a colony will eat between 50 and 60 pounds over the winter. As a general rule you should feed your hive at least 12 liters of feed. Usually they will empty a 12 liter pail in a week during first round feeding. Temperature can be a big factor in how much they take. It is important to start feeding in September when it is still warm. Once it becomes cool out the bees will be less willing to leave the cluster to collect feed. Once the bees have taken their first pail of feed you need to decide if you want to feed a second round. Many beekeepers will simply lift the side of the hive to determine if it is heavy enough for winter.

From my personal experience I like to give the bees a second pail. Sometimes it is only half a pail. I have a scale hive (hive that sits on a scale and is weighed daily) which I often use as an approximation of how heavy the majority of colonies are. I prefer that a double colony weighs around 150 pounds going into winter.

A Consumer's Guide to Buying Local Honey

Spoiler: Look for the Label

By Louise Yates

Our club spends a lot of time educating members about keeping healthy bees. The other equally important side of the equation is food safety – pulling honey with the right moisture content so it doesn't ferment and packaging it under sanitary conditions into new clean and sanitized containers.

In the same way that you eat meals with friends and family, you're more than welcome to eat anyone's honey. However, in the same way that for health and safety reasons you would not buy a side of beef off a guy in the parking lot, it's important to make sure that your apiarist knows what they're doing so can be assured that your food is clean and safe.

But how does a buyer know how to spot this reputable honey?

- **Home Food Processors**

At minimum, to meet provincial regulation a local honey seller should take the RQHR Food Safety Course, test their water annually for potability (coliforms can be in the water source or the faucets themselves), operate under sanitary conditions, and label their honey with the statement “Made in a Home Kitchen

That is Not Inspected by a Government Agency". Provincial Public Health Inspectors may request a honey sample. This honey cannot be sold to restaurants, food manufacturing facilities or into care facilities (hospitals, day cares, etc.) The Health District provides a very concise fact sheet to help people meet the provincial requirements.

Honey is considered to be a low-risk food, but that doesn't mean that it's a no-risk food. If a consumer sees the Home Food Processor's label, the seller should be able to explain when they've last taken the food safety course, how they clean and sanitize their containers, and when they've last tested their water.

- **Licensed Establishment or Public Eating Establishments**

It would be really rare for a honey producer to be provincially licensed because it's typically a restaurant or food processing facility. If the apiarist is licensed by the province, they would quite likely be at a licensed restaurant that has a few side hives. Rather than being inspected by provincial health inspectors, apiarists will more than likely opt for the CFIA registration.

- **CFIA Registered**

These facilities register and are inspected annually by CFIA to ensure the following:

- bee hive treatments and withdrawal periods are applied according to labels
- the facility is clean and sanitary both inside and out, and designed for food processing (eg. only stainless steel, plastic or painted wood surfaces - no drywall, has separate hand-washing stations, uses appropriate food-grade cleaners, doesn't allow hair, dust, other items to fall into or cleaning residues to get into the honey, etc.)
- staff are trained in safe food handling process and understand hygienic dress codes and proper hand-washing technique
- new, verified-food-grade bulk and consumer containers are cleaned and sanitized
- water testing is done originally for heavy metals and annually for potability
- labels are verified for compliance to federal packaging laws
- sanitation, pest control, packaging, glass breakage and recall plans are documented and adhered to

Additionally, CFIA collects honey samples and tests for chemical residues such as veterinary drugs, pesticides, agricultural chemicals, and environmental contaminants including heavy metals. If a consumer sees a four digit Registration number and lot numbers, it is probably a CFIA registered facility and the honey therefore meets the national standard. A beekeeper doesn't need to have lots of hives to be CFIA Registered.

In summary, the label is the honey-buyer's first telltale point. Anyone buying honey from someone they don't know should see one of two things:

1. a disclaimer that states “Made in a Home Kitchen That is Not Inspected by a Government Agency” or
2. a CFIA Registration number and product lot numbers

The Regina Qu'Appelle Health District expects restaurants and food retailers to buy their food for use and resale from reputable sources - if food is prepared on-site, they should only sell provincially licensed or federally registered honey. However, some smaller restaurants and stores don't know and sell locally honey that is not provincially licensed or federally registered.

So even if you're buying local honey in a restaurant or store, always look at the label. If a honey-buyer doesn't personally know the honey-seller and the label shows neither, it's probably best to buy honey elsewhere.

Lessons from the Farmers Market

By Julie-Anne Howe & Angie Benson

Learning to navigate the Farmer's Market has been a fantastic way to market honey products. From food safety to marketing, there is a lot to be aware of before starting at the Farmers Market. Here's what we have learned.

First off, you will need to apply for a permit or admission to your local Farmer's Market. Generally, you need apply to the board and through the local health authority for admission to the market. It is strongly recommended that you have your basic food safety courses completed before this. Some farmer's markets require you to have your food safety course before admission. Even though honey is a low risk product, it's a good idea have the training to know you are doing the right things and have the documentation to prove it. Local health regions have various offerings of dates for the Food Safe Level 1 Course. The schedule for the Regina Qu'appelle Heath Region courses can be found online .

A big part of the farmer's market is the prep work that needs to be done beforehand. Making sure you have a well thought out brand and display is a key to catching your customer's eye. Angie's brand is "Benson's Bitching Bees" and Julie-Anne runs "Bar Over 3H Honey." Both brands have their pros and cons. Angie's brand is catchy, but she has had the odd person comment on the use of profanity in the brand. Julie-Anne's brand is traditional to her farm brand she uses for her cattle, but that isn't always clear to some city folk. She joke's that her honey is so ranch-y it even gets a brand. Think about what the brand means to you and what it'll mean to your customer.

Some markets will have multiple honey vendors, so you should set yourself apart visually. Having a unique logo, label and signage helps. Using services like Vista Print and Staple's Print and Copy center can go a long way. Many times, you can get these companies to design a logo for you with your brand or use other online services such as Fiverr and Canva for a minimal charge. Once you have a brand, you can get everything from labels to banners for your table and promotional pieces for walk by traffic to remember you by. Beyond that think of how you can differentiate your products with unique packaging and how are your displaying your goods.

Marketing yourself online and locally really helps with the success of the market as well. Having a presence in social media channels like Facebook and Instagram is helpful. A simple website is a great landing spot for clients too. It doesn't have to be fancy, Just functional. Many of the people frequenting the farmers market truly want to know more about you, so having a way to share that is a terrific way to foster that relationship and grow your clientele through online contests and advertising. Above that, having a presence in the community through education/outreach and donations goes a long way to fostering goodwill and bring on customers. In small towns, the local newspapers are still read; so getting your photo or an ad in the paper can go a long way.

One thing to consider at the farmers market as well is the atmosphere around competition and competitors. Some markets had clear guidelines on competitive pricing set out in their house rules or bylaws. Be sure to know what they are and how you plan on working with the system.

For the logistical parts of the Farmer's market here are a few things to consider. If you are outdoors, you likely should invest in a pop up tent that is easy to set up and some weights to anchor it down from the wind. Also, you need to know how set up and take down works. Can you have your vehicle nearby or at your spot? As you know, honey is heavy to lug around. If you can't be close to your vehicle, a cart is a good idea. Julie-Anne prefers a collapsible wagon to use that can handle a good amount of weight (100 lbs.) but is compact enough to fit in the back of a SUV easily. A light weight table and a decent chair are good things to have as well. Some vendors even bring rubber matting to stand on as a full day on concrete can be hard on the joints.

The social dynamics within the farmer's market and vendors are fascinating too. It's a great chance to meet other local businesses and network. You never know who is looking to use honey in their products! Most times the other vendors are the markets are great to work with. Having a helping hand to help one another to set up if you're working solo can be a godsend or to watch the booth during quick restroom trip.

All in all, the farmers markets are a wonderful way to get your honey sold, meet some new people and have an enjoyable time. Best of luck selling ☺

The Colours of Honey

By Louise Yates

There's nothing quite like the pallet of honey colours. Those diligent little obsessive compulsive bees actually colour sort their honey. We asked two commercial beekeepers about their advice about honey colours. Colette Stushnoff explains that “soil and rain make a difference –terroir. In dry years the honey is darker from the same sources”. And, Karen Pedersen has been sampling honeys for years. She says that “if you smell the flower, the honey will smell/taste like the smell.” However, some honey like buckwheat might surprise you. Colette thinks “if there is a small amount of nectar in a flower, your nose may not smell much until it is concentrated by the bees.”

If you want to really nerd out, different nectar produces a different ratio of the simple sugars - fructose to glucose. It is the glucose component in honey that crystallizes quickly. Canola produces high-glucose honey that crystalizes quickly. Legumes produce high fructose honey, which crystallizes slowly.

Colour Class Designations

To meet the honey regulations, honey is assigned a Colour Class Designation. Colour is determined by using a Pfund Honey Grader or a simple Jack's Scale Colour Grader to designate honey as white, golden, amber or dark.

If sold in a bulk container, this honey is designated as Extra White because it's not more than 13 mm. If it's packed in a Consumer Container, it is designated as White because it's not more than 30 mm.

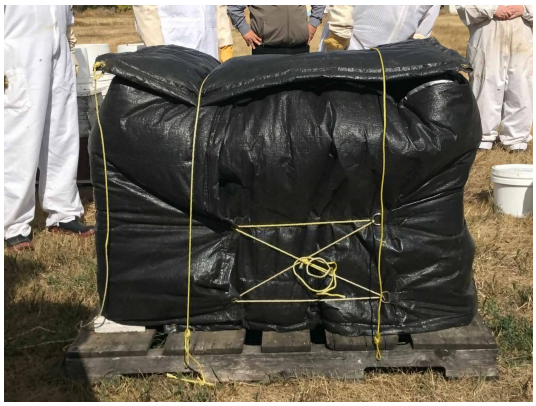
Here are spring, summer and fall honey from the same year from my wee apiary. What a difference the seasons make.

There are plenty of plant lists, but none for our prairie region, so here's our summary of what you're likely to experience with your honey.

- Wolfwillow is whitish to yellowish It is often mixed with dandelion. It is very slow to crystalize with a strong flavour and aroma (that some people like and others dislike).Can be a 'smelly feet' smell.
- Willow is an amber bitter-tasting honey.
- Maple and ash trees are hard to detect because the bees eat it as soon as it comes in spring.
- Pincherry is also amber and smells like dirty feet.
- Caragana is white and mild or bland.
- Legumes can be water white to white and most people love the taste, and do not crystallize as quickly as canola honey.
    - Sainfoin is a light gold colour with a distinct and pleasantly floral flavoured, and is not as white as alfalfa and sweet clover. Unlike most legumes that make white wax, sainfoin wax is yellow--maybe not quite as yellow as dandelion wax.
    - Red clover honey has a slight pinkish tinge to it.
    - Sweet clover is white and floral but not as white as alfalfa. It's almost a cinnamon flavour.
    - Alfalfa is white and mild.
- Canola is water white, tastes like the fields smell and crystalizes quickly.
- Canada Thistle is white with a strong flavour. I think of it as a very floral honey. I think the flowers smell lovely.
- Sow thistle is dark and smells like the flower – a lot like a dandelion.
- Dandelion is dark with a strong flavour. I would not call it dark. Maybe yellow or light amber. Dark implies it is like goldenrod and buckwheat. Ditto for the sow thistle "dark".
- Sunflower is golden yellow with a beautiful almost buttery flavour with a hint of citrus.
- Goldenrod is amber to brown honey that smelt and tasted like smelly feet.I would not of called it that but it is a very strong taste
- Borage is white and tastes like icing sugar.A very bland honey, but does not crystallize quickly
- Buckwheat is dark to almost black. with strong aroma and flavour. It's an acquired taste that people either love or hate.
- Honeydew can be quite strong flavoured and brown.

Your Club has Been as Busy as Bees

University of Regina Intermediate Beekeeping



Photos: Instructor Andrew Hamilton checks for mites, a Saskatraz queen, a Saskatchewan winterized hive , and next generation beekeepers, William and Anna

By Celine Holloway

On September 29, 2017, I attended my first of eight classes in Intermediate Beekeeping via the University of Regina's Lifelong Learning Centre. A group of approximately thirty beekeepers, of varying experience, are enjoying sessions presented by our very own Andrew Hamilton of Hamilton Apiaries. Okay, enjoying may be a bit of a stretch since the very first class began with a QUIZ! Truly, we are learning and sharing a variety of approaches to enrich our beekeeping knowledge.

We were very fortunate to be invited out to Hamilton Apiaries where Andrew shared with us techniques involving mite tests, queen searches, and winterizing our hives with adequate insulation wraps topped with plywood sheets. We also saw, first hand, the next generation of Hamilton beekeepers in action! (See pictures of the mini-models)

The class includes urban and rural beekeepers, those with a few hives and others with considerably more. It was soon evident that there may be a number of different ways to reach the same outcome, but certainly Andrew's experience weighs heavily in our decisions regarding steps we might take to keep our

own colonies healthy and productive. The class also includes lots of troubleshooting tips and everyone is encouraged to share.

We are looking forward to a discussion of major beekeeping topics in the coming weeks, including a visit with our provincial apiculturist, Geoff Wilson on Oct. 16.

I must admit that I feel much more comfortable in this class than I did in the Introduction to Beekeeping I took four years ago. At least now I understand the terminology a little better (i.e. brood box vs. honey super vs. colony vs. entrance reducer vs. queen excluder….you get my drift!) Tips include: using cow tags to date colonies and their queen, entrance reducers should be on now, mound snow around the bottom of hives to help with winter insulation, Saskatraz is not Saskatchewan's version of Alcatraz but a queen variety, moisture is one of the biggest killers of hives and a queen is only as good as the pollen she is fed.

Slowly but surely, things are beginning to fall into place and I am pleased to glean information from my peers that will make my beekeeping years to come more enjoyable and my techniques more efficient. Stay tuned for more information in the Spring newsletter.

Field Day at Grandpa's Garden

On September 9th, the Regina and District Bee Club members descended on Grandpa's Garden. The u-pick and meadarie operation started in February 2016 with their first batch of mead out in June of 2016. Since then they've already won best in class at the Outside the Grape Competition in the states.

Crystal and Vicki toured club members through their operation followed by a mead-tasting. Their estate is a tribute to their families. The couple's parents had strong rural roots and from that passion for the land, they created this beautiful prairie oasis.

In addition to the tour, the club provided demonstrations that we captured on video to share with you all.

Mimi, Celine, Lawrence and Andrew explain how to feed bees.

Mimi explains how to use Fumagillan to treat and prevent Nosema.

Yens demonstrates how to check bees Varroa mite levels.

Yens demonstrates how to use Apivar strips to treat Varroa mites.

Symphony Under the Sky

By Janine Heinrich

August 25th was a beautiful sunny day and a great day to enjoy the music of the Symphony Under the Sky coming the main stage. This year was the third year the RDBC had opportunity to have a booth at the Field to Fork Festival.

The day was a filled with activities including threshing demonstrations, wagon rides, the Field to Fork Festival and kids activities. Along with lots of good food and drinks to enjoy including an exclusive cold Bushwakker Motherwell Red Fife Witbier at the homestead. There were many visitors to the booth from young to the young at heart who had many great questions. My favourite part of the day is when visitors would just stop by to tell a story about their experiences with bees.

A special thanks to the volunteers who came out to the Motherwell Homestead and helped at the booth.

Bee the Educator

On September 19th, club member Jamie Stjean shared his love of bees with about 100 children in four classes from kindergarten to grade 6.

On September 28, 2017, the University of Regina hosted an Urban Beekeeping talk with yours truly. The discussion mainly focused on Urban Beekeeping and what the Regina & District Beekeeping Club does. I kept my audience enraptured with my one-line zingers and hilarious stories from my 'so far' career as a beekeeper: I included pictures of my attempts to capture a swarm (plus discussed the many encouragements that I received on Facebook when I was capturing the swarm), the time-consuming struggles wrestling 10 enormously strong and temperamental hives in 2015, and my story about being stung 19 times in one morning. Overall, it

was a lovely hour spent with a group of people who were interested in bees and beekeeping just like I am.

Ron Kraushaar and daughter-in-law Jennifer Kraushaar from Grenfell were recently featured in the Grassland News.

There's a Law For That

By Louise Yates

Beekeeping is a hobby for some, a livelihood for others. One of the biggest beekeeping risks is the spread of disease from your hive to someone else's. It's not a big deal if it's your hobby, but it's critical for those who feed their families because they're beekeepers.

Every beekeeper - whether they have one hive or thousands - must abide by the *The Apiaries Act, 2005 of Saskatchewan*.

To avoid the spread of disease, beekeepers must:

1. Register with the province
2. Use movable comb that can be inspected
3. Import and transport bees and equipment that have the proper permits
4. Ensure that all used equipment is inspected prior to purchase
5. Inform the Agriculture Ministry if your bees have a disease and the location of those diseased hives
6. Handle bees and pull honey in a way that does not promote robbing

Provincial apiarist may:

1. Enter property without a warrant
2. Seize bees and equipment
3. Examine records
4. Quarantine, destroy and/or disinfect bees and equipment
5. Send the beekeeper a bill for any of the above work
6. Charge a beekeeper for contravening the Act

For more information or to register contact Geoff Wilson, Provincial Apiculture Specialist geoff.wilson@gov.sk.ca

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2016 Saskatchewan Beekeepers Convention

By Yens Pedersen

I made the mistake of taking copious amounts of notes from the 2016 SBA convention, thinking that it would then be easier to report back to the membership on the material discussed. However, condensing nearly 30 typed pages of notes into digestible amount proved to be a time-consuming task. In the interests of getting the 2016 convention report to you before the 2017 convention happens, I haven't reported on every single presentation or discussion, just those I judged to be most relevant to our members.

The Ontario Beekeepers Association runs a technology transfer program, which conducts experiments and studies looking at the practical application of techniques or knowledge. **Les Eccles**, the program lead, reported on their project, **Ontario Resistant Honey Bee Selections**. The goal of the project is to support queen breeders in developing standardized methods of measuring and selecting different traits. Selection criteria included defensive behaviour, honey production, overwintering ability, spring buildup, low swarming tendency, comb stability (how active the bees are when manipulating the combs), queen longevity, varroa resistance, nosema resistance, hygienic behaviour. Selection criteria are rated on a 5 point scale and each selection criterion has a different weight depending on breeder's desired traits. Some traits are not rated on a point scale but are instead eliminated if the trait is present (e.g. sac brood, chalk brood, AFB). He recommends not measuring and selecting for all traits but to start with 3-4 most important ones. It's important to measure traits when colony is most likely to exhibit the trait – i.e. measure nosema resistance in spring, varroa resistance in fall, defensiveness on a poor honey flow day. He stressed that it's important for one to be good at raising queens before they become a queen breeder. The ORHBS goal is not to develop academically superior bees – their goal is to get bees that commercial beekeepers want. They are not trying to define the perfect bee because everyone has a different view of the 'perfect balance' of different traits.

Medhat Nasr (Alberta Provincial Apiculturalist) presented on **sustainable varroa management** from an industry level. His query is whether the industry approach to varroa management is sustainable, or whether we are simply living from one varroa treatment product to next? In USA there is resistance to all products, and so we too have to prepare for disaster – we just can't be sure what impact will be. The varroa mite has completely changed landscape (just like a natural disaster). In his view, colony collapse disorder (CCD) that was widely reported in the USA in 2006-7 was really chemical resistant varroa.

Bees going in to winter should have <3% (1% ideal) varroa levels. Testing *before and after* treatments is essential – you can't rely on what your neighbor doing. You have to measure hive by hive – efficacy resistance can vary significantly by hive. Resistance to Apivar is coming. One beekeeper tried using two kinds of synthetic treatments at same time – this is NOT recommended. You need to alternate and use IPM (Integrated Pest Management).

When you're looking at the product information, turn the numbers upside down – 97% efficacy means 3% survivors will be developing resistance. Those 3% are then the parents of the next generation of varroa in your hive.

He is currently researching Hopguard – initially they were not getting good results but then they changed the substrate. Two applications were needed to get 85-95% efficacy and the strips had to be where brood/bees are – don't put in top super even if using top feeder. Use of proper dose is essential! Don't skimp or overdo it. Many products are toxic to bees too if used improperly – for instance Amitraz is highly toxic to bees too. They are also testing some other products in the lab and getting some promising results, but it's too soon to say for sure or release the product. There is a new product from Bayer, Baverol, but it is a chemical in the same family as Apistan so you may need to determine whether your varroa are resistant before relying on it.

A couple of presentations touched on **biosecurity**, which is essential for access to global markets. **Svenja Belaoussoff** (Canadian Honey Council Biosecurity project) provided the succinct formula: Food safety + bee biosecurity = reputation of Canadian honey. When you think of issues with the reputation of another country's honey (e.g. China), it's generally a biosecurity issue. If we can't export because of a biosecurity issue will be devastating to sector. **Geoff Wilson** (Saskatchewan Provincial Specialist in Apiculture) reminded us that the **responsible use of antibiotics** (follow the label) is important from a biosecurity point of view. When sulfa residue was found in western honey in 1986, it had an important impact on market access and honey prices. More recently, Japan barred honey with tylosin residue in 2014/15.

For biosecurity, good record keeping is important. It's voluntary, but HIGHLY recommended and also makes good business sense for the individual. Better records means a better beekeeper, healthier bees, more honey, more money, protecting the reputation of Canadian honey, need information to expand into different markets. Traceability is important. Both the CHC and OBA have developed tools to make it easier to stay organized for record keeping, all of which are on the CHC website.

Rob Currie from the University of Manitoba reported on the **interrelationship between Varroa management and honeybee viruses and the impact on winter survival**. The identification of honey bee viruses is very recent. By 1978 only a very short list had been identified. Varroa mites had been identified but not identified as problem. They are still trying to understand interactions between varroa mites and viruses, as well as learning how viruses move within and between colonies. Varroa is a vector because it moves around within a colony and between colonies. The varroa mites also injects virus into hemolymph (bee blood), which results in a completely different exposure than the bee would otherwise experience. Current research is trying to figuring out the distribution of viruses across Canada. Seven important viruses are everywhere and their existence is not as important as determining the level. We currently don't have well defined levels of economic impact for the viruses. Virus levels can fluctuate widely and depending on time of year. If there are high levels of varroa mite, there will be high levels of virus. However, even if you treat the mites, the bees may still die because of virus load. They are looking at various methods including wintering method, comb management, genetic diversity, bee genetics, RNA interference, control of varroa, and anti-virus drugs to manage viruses.

He mentioned that their research indicates a significant difference in survival rates between indoor and outdoor wintering for highly infected colonies. This

was not necessarily true of non-infected colonies. Their results indicated that if varroa levels were high going into winter, indoor wintering had a better survival rate. Another interesting observation they made was that there was a dramatic reduction in honey production when using comb from deadouts – 75+ lbs/hive (i.e. using comb from deadouts reduced honey production). However, they are not yet sure how long the viruses survive on comb.

Their research indicated that there was some difference in virus resistence between different genetic lines of bees. Their research indicated that there is significant potential using RNA interference. They would feed double stranded RNA to bees which made a significant difference with deformed wing virus (DWV).

A 3.5% infestation level of varroa in the spring results in 40% infestation in the fall and likely winter losses. The highest level in the fall that a hive could manage to survive the winter was 10%.

In their experiment, it was necessary to try to uncouple virus levels from mite levels. In doing so they noted that not treating for varroa mites seems to cause a lasting ripple effect later. If varroa mites levels were allowed to get high in previous year, moderate virus loads in gthe following year were observed, even if the mites were then treated.

Another project the Ontario Beekeepers Assocation worked on was the **treatment of comb with ozone**. Ozone is O_2 with extra O atom. Ozone roughs everything it touches and is highly reactive and unstable. It is a simple but very powerful agent. Its half life in air is 12 hours and 30 min in water so it can be released, however safety protocols are needed. In water, ozone is much more efficient than chlorine. Ozone only works as surface treatment so it is ineffective at removing chemical contamination of comb.

The project built on the work of R. James, of the USDA. Ozone was effective at treating wax moth. James found significant improvement on pest contamination in comb at 1,000 ppm on new comb, but that is was not that effective on old comb. Ozone worked very well on chalkbrood at 1,500 ppm; at 4,000 ppm with 122˚F, there was a high removal of AFB spores (80-100%). Their theory is that ozone should be effective at treating small hive beetle.

The OBA pilot project was to develop a mobile lab to apply 4,000 ppm. The cost to set up the ‘reefer’ trailer for ozone treatment was about $50,000. They used PVC piping and built a fumehood for stacks of super, stacks 7 high, open at bottom. They blew O_3 down through stacks. Their sensors showed good concentration of ozone at the top of the stack, but much lower at bottom. If they were doing it again, they would try to get a more even spread by reusing air. The ozone treatment also requires heat (which is dangerous with such flammable materials). For safety concerns, after treatment the room was exhausted and then doors were opened. No one was allowed to go in for 12 hours, they would suggest increasing that time.

Their results comparing combs from deadouts vs. the treated combs were that the bees seemed to go on the treated comb faster. The ozone treatment made a significant difference on Fluvalinate residue but not on coumaphos or on amitraz. The ozone treatment also seemed to make a difference with Tebufenozide and Boscalid (both fungicides in blueberries) but was statistically

insignificant. The treatment may also be effective with Nosema spores but it was difficult to determine because the nosema loads were high on the bees. If disease was introduced with a package or nuc, the benefits of the ozone treatment on the comb were negated. Their overall conclusion was that some success was experienced. The biggest cost is the upfront setup – it costs very little to operate the machine. Culling of old comb remains an important management tool. The project illustrated one of the significant risks of such an enterprise – fire, which meant the end of the project.

Geoff Wilson (Provincial Specialist in Apiculture) reported on the **changing regime for the use of antibiotics in agriculture**. The World Health Organization wants to combat antimicrobial resistance (AMR) to antibiotics. 480,000 people per year develop AMR tuberculosis globally. As a result changes to how agricultural anitbiotics are dispensed are coming. Veterinary oversight for dispensing antibiotics is coming in 2017.

AMR develops 1 of 3 ways: natural, genetic mutation, one species acquiring resistance from another. AMR is not a new concern and goes back to 1977. AMR can also spread through cross species transfer. Resistant microbes can be passed from animals to humans. These changes are not really about bees or livestock – it's about human health concerns. The success of major surgery and chemotherapy is significantly comprised if antibiotics are not effective.

How does resistance happen? A limited number of microbes survive the treatment, and are likely more resistant to the antibiotic than the ones killed. The resistant bacteria survive and re breed. Every time that the same antibiotic is used on the population, the surviving microbes are progressively more resistant. There is already have oxytet-resistant AFB. There are also 8 different oxytet-resistant microbes here (compare with only 2 where oxytet is not used prophylactically).

All livestock will be affected by the changes, not just bees. Beekeeping may be inordinately affected because vets don't have adequate training relating to bees.

AFB is very easily spread by robbing bees or using infected equipment. One colony can wipe out an entire operation in 2-3 years. Spores are extraordinarily hardy and long lived (up to 70 years). AFB affects only young larvae. A single scale from an infected larvae produces enough spores to infect hundreds of millions of bees. AFB was identified over 100 years ago. In Saskatchewan, AFB has been here since at least 1926. AFB is the main reason for our legislation and the reason we have a provincial apiarist. The legislation requires a permit and inspection by provincial apiarist for all sales of equipment and bees or transport of equipment. Irradiation is the only permitted method for disinfection. The original treatment method was fire and still works. When AFB is found, the protocol is to destroy the infected hive and equipment immediately. If the equipment does not contain plastic, it can be burned, but otherwise should be buried.

AFB can get out of hand when the beekeeper is not paying attention or not treating (going organic). From 2010-2015, they averaged 6 new finds of AFB per year with 1,000 colonies destroyed per year. This was in a regime where antibiotics are freely available and permitted, so once it becomes harder to access antibiotics, you can expect those numbers to increase.

At the time of the presentation, Geoff was not yet sure how the veterinary supervision will occur. There were 4 proposed models:

1. antibiotic free (New Zealand style) – but need beekeeper buy in (NZ initially had 6%, now down to <1%)
2. beekeeper prescribed – (not vet oversight then)
3. vet prescribed – (not vets trained)
4. vet/Min of Ag prescribed – (personnel issue – not enough people)

The takeaway from Geoff's presentation is that beekeepers will need to become better managers and will have to revert to pre-antibiotic methods – identify disease first. Beekeepers will have to train employees to tell difference between AFB & EFB, will need to inspect hives and equipment every year. Every colony (including brood frames) will need to be inspected every year; more careful biosecurity; be careful what you buy.

Over the past few years, the U of S College of Veterinary Medicine has been doing research and teaching on honeybees, lead by **Dr. Elemir Simko**. The U of S Veterinary College is the first college in North America offering a course on honey bee diseases. The college is doing cutting edge research including looking at sub-clinical impacts of neonics on bees. A number of students from the college presented on research projects that they are conducting. **Dr. Sarah Wood** is currently studying **comparative toxicity of three neonicotinoids on New Zealand packaged honey bees**. The three neonicotinoids (neonics) studied are thiamethoxam, clothianidin, and imidacloprid. Nearly all of the neonics used in Saskathcewan are used as a seed treatment on canola. Even though they are applied as a seed coating, neonics are systemic and are absorbed into the plant tissue. A significant proportion of the honey and pollen samples taken within a 30 km radius of Saskatoon found traces of neonics. Her study is looking at the impact of neonics fed to package bees at two levels, 5 PPB and 20 PPB (both levels are levels observed in field samples). Results that they are examining are weight gain (honey production), brood area, and cluster size. Preliminary observations were that neonics did appear to reduce weight gain, but did not affect brood area or cluster size. She cautioned that the observations were preliminary and that the study was not yet complete.

Ivanna Kozil (M.Sc. candidate) reported on her study **sublethal effects of neonicotinoids (imidacloprid) on reproductive fitness of honey bee queens**. Neonics have been observed to impact reproductivity in vertebrates. Other studies have found that neonics impact honeybee queens' fecundity. Her research project is looking at whether IM affects reproductive fitness of individual honey bee queens specifically looking at larval and pupal histopathology, ovariole count, total sperm count, viability, and polyandry. She is also looking at whether histopathology can be used to detect any toxicological effects of neonicotinoids on the reproductive tract of honey bee queens. Her preliminary observations did not detect significant histapathological differences between the control (no neonics) and the study populations. She will be contrasting her results to existing studies and considering whether more sensitive testing might make a difference as well as other variables.

Roman Kozij's M. Sc. research is looking at **deformed wing virus**. He studied 5 hives looking at emergence time, and symptoms during emergence. Affected

bees have tongues out during emergence and took longer to emerge. Many died during emergence. Emergence time twice as long (2 hours v. 1 hour). He is doing histapatholigcal analysis, especially looking at glands in head, and muscles in thorax.

Sophie Derveau (Postdoctoral Fellow, Department of Veterinary Pathology) is looking at the **anatomy of honeybee drones**. There is very little information on drones – she is creating a database to use for histapahtology of bees. The most complete study on drones is 100 years old.

Hannah Neil reported on the SBDC's Technology Adaptation Team (TAT). One of the projects that they have been working on was **management of varroa mites**. They are still analysing the results. Fall treatment of Apivar made a significant difference to winter survival compared to no treatment or spring treatment. A new project will be considering pollen substitutes and probiotics.

Robbin Lindsay from the Public Health Agency of Canada informed the convention about **risks from ticks**. Beekeepers are high risk population because they are outdoors so much. The wood tick is the most likely to be seen in Sask. It waits on vegetation for a host to come by, and then falls on the host and eventually introduces anticoagulants to the host. It will feed on any mammal as well as birds. It has seasonality peaks -- in April/May and then late fall. The wood tick is not a risk for spreading Lyme disease. The black legged tick is a potential carrier of Lyme disease. So far, they are not seeing populations in Sask or Alberta – but they are moving here, and the Qu'Appelle valley will be first place they show up. Tick problems will continue to increase with climate warming.

Principal tick-borne diseases are Lyme disease (increasing) and relapsing fever (sporadic). Lyme disease starts with a rash at site, flu like symptoms, non specific symptoms, some get target shaped rash but not everyone gets it, can result in neurological symptoms later, arthritic symptoms, can be fatal in few cases, controversy in diagnosis & treatment, tests are not particularly accurate, oral antibiotics work if given early, but perhaps 20% even if treated will have symptoms, might feel crappy for 6-12 months; easy to confuse with other conditions/diseases. Nymphs (baby mites) are the principal risk. They are much smaller and harder to detect – easily mistaken for a mole. Ticks should be removed by pulling upward with even pressure, then disinfect bite site.

Strategies: increase physician awareness, public awareness on locations and symptoms, PPE strategies. There is a vaccine (but taken off market), prophylactic treatment of tick bites. Use insect repellant, daily tick checks effective, takes 24-36 hours for infectious agent from bite; bath or shower within 2 hours, prompt removal; permethrin impregnated clothing, Environmental spraying did not significantly reduce risk of bites.

Dani Glennie reported from the Canadian Honey Council. In 2015 there were 721,000 colonies, 8,533 registered beekeepers, 95,000,000 lbs honey produced. GMO labelling in Europe is an issue they are looking at. In addition, they are in discussions with the CFIA regarding adulterated honey and transshipping issues

Geoff Wilson reported that the number of beekeepers is up across the province. For preventing AFB, oxytet is still the best product to use. There are a

few beekeepers having to use Tylesin instead. Apivar is still working for varroa, however, beekeepers need to be vigilant and with check for resistance.

There are a couple new treatments for varroa: hopguard AND bayvarol. Hopguard will be used when no brood present 10-14 days but you have to do it twice. Bayvarol is from the same product family as fluvalinate, so if you had apistan resistant mites be careful. All the compounds are potentially problematic used with fungicide.

Although imidacloprid (a neonic) is being phased out, it's because of aquatic insects, nothing to do with bees. That chemical is only used on potatoes, so not expecting any difference. The government is continuing to review. The canola industry is worried because imidacloprid is effective for flea beetles. Geoff is worried because if it gets banned, what is the replacement?

Club Marketing

Brochure

A new Regina and District Bee Club brochure is now available for use by members. The brochure is designed to print on legal sized paper. To receive a PDF that you can print, e-mail klanekennels@gmail.com. Once the new web site is created, the Club brochure will be available for download.

Web Site

We'll be updating the club web site this year and with it, adding a for sale section. If you're a member and have bee-related products to sell, please register online so people can find you and your fabulous honey on our web site.

Regina Bee TV

The Club has created a Regina Bee TV YouTube Channel featuring local beekeepers sharing local information. Check out the current content, and let us know if you have any video ideas.

Infographic

Here's a handy-dandy infographic to share with anyone interested in saving the bees in general or understanding what's involved in beekeeping. Right click to download a copy. A special thanks to Andrew Hamilton from Hamilton Apiaries for his help in creating it.

Renew Your Bee Club Membership Now

Winter Management Native Bees Honey Processing

Regina and District Bee Club

As a cooperative for beekeepers, the Regina and District Bee Club enables members to buy high-quality locally reared bees and queens. The Club educates members and the public about beekeeping, promotes products of the hive, and promotes the beekeeping industry.

Through the Club, members learn how to manage their bees responsibly so they are healthy, to co-exist with neighbours respectfully and peacefully, and produce safe, high-quality honey. Club members are a community resource to:

- educate children about bees and other pollinating insects,
- attend public community events such as Cathedral Arts Festival, Regina Symphony Orchestra's Symphony under the Sky and Canadian Western Agribition,
- promote and sell honey, wax and other products from the hive, and
- develop relationships with other Saskatchewan agricultural producers.

The Club shares best practice knowledge through events, the web site, and Facebook page. New beekeepers are able to connect, network and learn from experienced local beekeepers, provincial regulators and the Newbee/Mentor Program. Member services include the Bee Nuc Order Program, Bulk Club Shipping Program (from Beemaid in Tisdale), the Honey Extractor Rental Program, the Drawn Comb Program and Apivar Strip Sales Program. Details about all programs and services are available on the Club web site.

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