Honey Bees and Pollination
What's the Buzz Newsletter

Fall 2017

Regional Round-Up

This past summer and fall have certainly brought unusual weather conditions for beekeepers in the Maritimes. A dry summer led to decreased honey yields for many beekeepers in NB, NS, and PEI. There seemed to be a slight late honey flow in September, which complicated fall varroa mite treatments. The fall also brought warm weather, and active bees consumed honey stores. Fall feeding was critical, and we anticipate emergency feeding may be needed for some bee hives in late winter.

Populations of winter bees that are raised in the fall risk being compromised by viruses vectored by varroa mites in colonies with high fall mite levels. Brood rearing is halted temporarily in the winter but starts back up even while the bees are still in cluster formation. As per the OMAFRA guidelines, varroa mite levels should now be below the 1% fall treatment threshold: http://www.omafra.gov.on.ca/english/food/inspection/bees/varroa-sampling.htm. Varroa can have significantly damaging effects on bee health during the winter if their levels exceed this threshold. If you are worried that mite levels are above this threshold, the oxalic acid vaporizer method may still be an option.
For more information about drought conditions and impacts on honey yield, stay tuned to our website- we are working on a quick review of what happened this year.

Notes on Winter Management

As winter approaches, Atlantic Canadian beekeepers are once again preparing their hives for many months of cold weather. Hives in northern climates are typically wrapped with insulating and/or thermal heat absorbing material to assist in colony overwintering. See ATTTA's breakdown of the pros and cons of the various wrapping materials used in this region here: http://www.perennia.ca/wp-content/uploads/2016/11/Overwinter-Wrapping-Materials-Pros-and-Cons.pdf. Remember to include both a bottom and top entrance in your hives this winter. A top entrance serves not only as an escape for bees to perform cleansing flight on warm late-winter days but also as a means for excessive and potentially lethal moisture to be vented off.

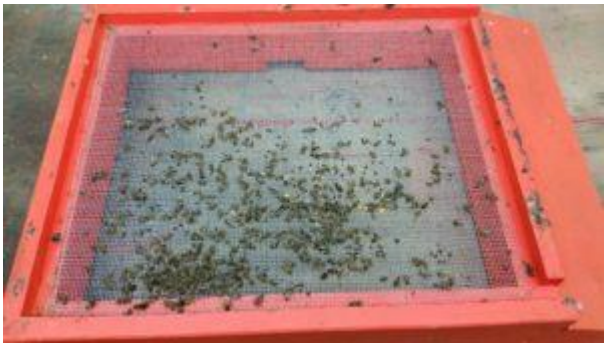
Beekeeper treating hive with oxalic acid vapour.

Hives wrapped with black plastic over top of bubble wrap with entrance reducers installed.

Before leaving your hives to their own devices for the winter – at least until late-winter emergency feeding may be required (see ATTTA's Spring Management Guide http://www.perennia.ca/wp-content/uploads/2016/04/Spring-Management-Guide.pdf) – some late-season pest management should be considered. Beekeepers often employ oxalic acid as a late-fall treatment in dribble or vapour form to knock down phoretic varroa mites one last time before winter. However, varroa is not the only pest beekeepers should be concerned with at this time of year. Beware, the small but mighty and often overlooked pygmy shrew (*Sorex minutus*)!

This tiny mammal can potentially devastate a colony by feeding on bees at the periphery of an overwintering cluster too sluggish to defend themselves. Evidence of predation from these animals is the appearance of beheaded dead bees on the bottom boards of hives whose thoracic contents have been consumed.

Chief Apiary Inspector for New Brunswick, Fletcher Colpitts, has written an informative fact sheet on this pest and tips to guard against it: http://www.nbba.ca/wp-content/uploads/2014/03/shrew_screen.pdf.



Dead bees from pygmy shrew predation (photos courtesy of Guneden Place).

What We've Been Up To

Research

The fall miticide trial using Formic Pro™ – an amended version of Mite Away Quick Strips™ – is nearly finished. This fall, hives in northern Nova Scotia were treated with Formic Pro™ using two separate application methods and the product's ability to control varroa mite levels over the fall was recorded. You can expect the results to be reported in the coming months. An initial study on miticide efficacy and potential resistance was conducted this past spring and summer. For more details, check out our preliminary report here: http://www.perennia.ca/wp-content/uploads/2017/11/Findings-on-Miticide-Efficacy-v2.pdf

We have just released our pollination stocking density report on our website (http://www.perennia.ca/fieldservices/honey-bees-and-pollination/) and hope to expand this study into next year. We are also working on a report of all our nosema diagnostics this past year and will report shortly.

The results of the National Bee Health Survey are expected to be released in the New Year. Thank you to all the beekeepers who participate in our trials and surveys!

Extension
We have been doing some on-farm visits this fall to discuss varroa levels and fall feeding. With the warm fall weather, bees have been eating honey stores rapidly, so be sure to keep an eye out for signs of dwindling food stores/starvation.

ATTTA was pleased to collaborate with the Nova Scotia Beekeepers' Association (NSBA) recently to help bring in Paul Kelly (University of Guelph Bee Research Centre) in mid-October. Paul Kelly spoke to a large audience in Truro about queen breeding, sustainable beekeeper, and tips and tricks for the bee yard. Thank you to all who attended!

We have been collaborating with Biosecurity Nova Scotia to design and distribute bee biosecurity posters for bee yards. These signs include yard ID, emergency contact information, etc. and help reinforce the need for biosecurity in our industry.

We have also been meeting with various industry partners and groups to check in with ATTTA's progress and make plans for moving beyond our funding of March 2018.

Conferences
We attended the Canadian Association of Professional Apiculturists (CAPA), Canadian Honey Council (CHC), and British Columbia Honey Producers' Association Annual General Meeting (BCHPA AGM) in Kelowna in late October. We were able to present on the progress of our tech transfer team, connect with other tech transfer teams and bee researchers, and collaborate with industry members on a national scale. We definitely have some new research ideas to try!

Robyn also attended the Newfoundland and Labrador Beekeeper's Association AGM in Grand Falls/Windsor in early November. This was another opportunity to discuss regional collaboration.

On the Horizon
We are focused on finishing up research reports and sharing our information with the bee industry. We are looking forward to participating in upcoming AGMS within both the bee and blueberry sectors. Stay tuned for updates on how ATTTA plans to move forward.

There are several research questions we hope to tackle in the coming year, including:

- Relation of hive wrapping type with in-hive temperature and humidity over winter
- Pollination stocking density (effects on bee health and fruit development)
- Oxalic acid treatment efficacy
- Queen rearing (on-farm case study)
- Miticide efficacy and resistance
- Nosema treatment efficacy
- The effect of pollination on EFB
- Small hive beetle monitoring and management

We are always open to your feedback. Feel free to contact us with any questions or suggestions for moving forward.