

Honey Bees and Pollination

What's the Buzz Newsletter

Summer 2017

Upcoming Events

- June 22nd, 28th and August 2nd: Commercial Queen Rearing Course – visit <https://www.dal.ca/faculty/agriculture/extended-learning/programs-courses/learn2farm/queen-bee-production.html> for more information
- June 24th and 25th: Modern Beekeeper Module 3 at Dalhousie Agricultural Campus in Bible Hill NS – visit <https://www.dal.ca/faculty/agriculture/extended-learning/programs-courses/learn2farm/the-modern-beekeeper.html> for more information
- July 15th: WBPANS Field Day at Doug Bragg Enterprises in Collingwood NS – visit [http://www.nswildblueberries.com/index.php?option=com_simplecalendar&view=event&id=5:field-day&catid\[0\]=11:events&Itemid=101](http://www.nswildblueberries.com/index.php?option=com_simplecalendar&view=event&id=5:field-day&catid[0]=11:events&Itemid=101) for more information
- September 22nd and 23rd: Maritime Honey Festival (1st annual) in Fredericton NB – visit <http://www.centralbeekeepers.com/maritime-honey-festival-> for more information

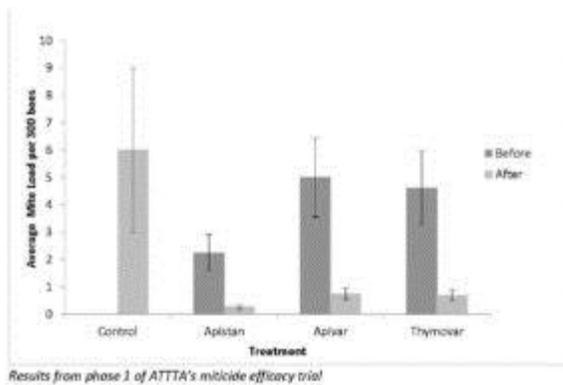
What has ATTTA been up to?

The Atlantic Tech Transfer Team for Apiculture has been busy the last couple months with workshops and field trials. Robyn and Cameron instructed the second module of The Modern Beekeeper course in May. Saturday, and Sunday morning were spent in the classroom at The Dalhousie Agriculture Campus, but mild weather on Sunday afternoon afforded the opportunity for participants to join a local beekeeper in the field and learn about queen introductions, hive splitting, and other spring colony management. The previous weekend, Cameron hosted a one-day workshop in PEI in two separate locations: Charlottetown and Montague the following day. Similar to The Modern Beekeeper workshop, the morning was spent indoors in a classroom and the afternoon was spent outdoors at a local beekeeper's apiary. In late May, Robyn taught a spring management workshop in Albert County, New Brunswick.

Varroa

This spring, ATTTA has kicked off a couple of field trials as well and has enlisted the help of two summer students; Sawyer Olmstead who worked with us last summer and Kathleen Glasgow. In late April, phase 1 of a miticide efficacy trial began. Hives from three different apiaries operated by the same beekeepers were sampled for their *Varroa destructor* mite levels. Commercially available synthetic miticides are routinely used by many Maritime Canadian beekeepers to control populations of mites in their hives. Two synthetic miticides, Apistan® and Apivar®, and one commercial 'natural' miticide alternative, Thymovar®, were placed in the beekeepers' hive following label recommended application rates. Later, in early June, the miticides were removed from the hives and mite levels were assessed again in the hives.

The results of the trial showed all three miticide products to effectively knock back mite levels well below the recommended spring treatment threshold (i.e. 2 mites per 300 bees) compared to the control group, in which some of the hives' mite levels crept up past the treatment threshold. The treatment effect between the three miticides however, did not differ significantly. The data from our trial reinforces the importance of treating for varroa mites in the spring, or at least monitoring for them and ensuring their levels are below the spring treatment threshold. Although we included Apistan® in our trial which has shown in the recent past to be relatively ineffective in some resistant populations of varroa mites in Canada, the product was effective in the beekeepers' hives included in our trial. This is likely due to a gap in several years since Apistan® was last used in their hives. Also interesting to note is the fact that Thymovar® worked just as well as the two synthetic miticides, particularly because many of the spring days during our trial were cool and below the optimal outdoor temperature for treatment recommended by the manufacturers. As expected, Apivar® was effective and continues to be the industry standard in Canada for varroa mite treatments.



Nosema

This spring, ATTTA has been collecting small samples of bees from various beekeepers' hives and assessing their levels of nosema infection (*Nosema spp.*). Using a compound microscope, we observe the contents of the bees' digestive tracts under a microscope and the number of spores of nosema within are estimated. ATTTA has received anecdotal reports from some commercial beekeepers that infections of nosema differ between their bees' departure and return from pollinating wild blueberries. Quantifying colonies' nosema loads is not as simple as with varroa mites, which can be done using a simple alcohol wash beekeepers can do themselves right out in the field. Beekeepers typically only have unreliable visual symptoms to determine if their hives are infected with nosema. By observing nosema loads before and after pollination under the microscope, we seek to help beekeepers better understand their colonies' health so they can make educated management decisions.

Wild blueberries

ATTTA also kicked off a pollination stocking density trial this spring in north-eastern New Brunswick. Fruit set and yield from 12 different wild blueberry growers will be monitored through the 2017 season. The growers are stocking anywhere between zero to over four hives of honey bees per acre, and the varying stocking densities' potential effect on fruit set and bee health will be monitored throughout the season. Previous honey bee/lowbush stocking density work has shown that fruit set and yield significantly increases when growers use honey bees for their pollination service. The pollination that native bees provide to large commercial blueberry fields is simply insufficient for the growers to turn a profit. Increasing the stocking density of hives/acre will in turn increase a field's overall yield but this increase eventually plateaus. Our work seeks to supplement previous stocking density work but with an additional focus on the effect of density on hive strength. Results of this trial will be communicated later this season.

What will ATTTA be up to later this year?

ATTTA will be participating again this year in the **National Bee Health Survey** conducted by The National Bee Diagnostic Centre in Beaverlodge AB. Samples of bees will be taken from numerous apiaries across the Maritimes to determine their pest and pathogen loads and to survey the potential presence of invasive honey bee pests. Wax samples will also be taken and analyzed for the presence of pesticide residues. If you would like your hives sampled for this year's survey, feel free to contact us: cmenzies@perennia.ca or rmccallum@perennia.ca

We will be completing a second phase of the miticide efficacy trial involving a different testing protocol in which samples of bees will be incubated in chambers including miticide strips. Phase 2 will also include a miticide newly registered in Canada: Bayvarol.

In September, ATTTA will participate in the first annual **Maritime Honey Festival** in Fredericton. Joining us again will be Karen Thurlow, a Master Beekeeper from Maine who will be setting up two three-hour sessions of her valuable nosema sampling and identification course. Karen has put on her course in the Maritimes several times and she will be back by popular demand. Details on registration and cost of the course will follow.

If you have any questions or feedback for ATTTA, feel free to get in touch!