



HOME

WHAT'S NEW

CALENDAR

PRODUCTS

NEWS RELEASES

2003 Provincial Apiarist Annual Report

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Creation Date: 15 January 2004
Last Reviewed: 15 January 2004

Table of Contents

1. [Beekeeping Industry Statistics](#)
2. [Diseases and Pests](#)
3. [Comments](#)

Beekeeping Industry Statistics

Number of Beekeepers: 2,650

Number of Producing Colonies: 71,000

Average Yield/Colony (lb/kg): 104.5 lb/47.4 kg

Total Estimated Crop (lb/kg x1000): 7,415 lb/3.363 kg x 1,000

Colonies Wintered Last Year: 75,000

Average Winter Mortality (%): 19.76%

Diseases and Pests

Disease/Pest	Number of Colonies Inspected	Number of Bee Yards Inspected	Disease Colony Incidence (%)	Disease Bee Yards Incidence (%)
AFB	8333	719	1.70	7.0
EFB	8333	719	0	0
Chalkbrood	7673	719	2.5	N/A

Sacbrood	7673	719	0.3	N/A
Tracheal Mite	45% of Bee Yards	940		76
Varroa Mite	All areas except Thunder Bay; Three areas of Check-Mite™ resistance - Cornwall, Kingston, Haldimand-Norfolk.			
Small Hive Beetle	No Small Hive Beetle has been found in Ontario.			

| [Top of Page](#) |

Comments

Varroa Testing in Ontario in 2003

In the spring of 2003 the bee inspectors looked though many colonies to find 12 in Haldimand-Norfolk to do the "Pettis Test" for Apistan resistance. Three showed >90% control. Three showed 80-89% control. Two showed 70-80% control. Four showed 40-51% control. There were definite problems in Haldimand-Norfolk Region with Apistan.

This season the Tech-Transfer Team were doing some checking using the "Pettis test" for resistance to Apistan and Check-Mite on four colonies in Hastings County and three colonies in Wellington county. Apistan in Hastings was 85.7% - 97% effective. Check-Mite in Hastings was 91.6% - 100% effective. In Wellington County the Apistan was 50.7 - 99% and the Check-Mite was 95 – 97% effective.

In the fall of 2003 the bee inspection program checked 314 colonies belonging to 9 beekeepers in 14 bee yards.

Russell, Glenngary: 22 colonies were tested and the survival rates after Apistan for two week was 37.5 % and for Check-Mite it was 0%. This is the original area that Apistan Resistance was first determined.

Grenville, Leeds, Frontenac, and Lennox-Addington: 222 colonies were tested and the survival after two weeks was 36.6% for Apistan and 4.1% for Check-Mite. This is the Kingston area.

Northumberland, Victoria and Prince Edward Counties: 70 colonies were tested and they had 15% survival for Apistan and 8% for Check-Mite. This area is moving towards Apistan resistance.

The weather this past winter and spring made beekeeping rather frustrating. The price of honey went up to about \$2.00 per pound last season and it has stayed there this year. Beekeepers wanted to expand their colony counts but were not even able to maintain their numbers. About 20% of the colonies died over last winter. In 2002 there were 75,000 colonies in Ontario and in 2003 after much recovery effort there were 71,000 production colonies. The 2003 average is estimated at 104.5 pounds per hive. This is down from 142 pounds per hive in 2002. With the price at about \$2.00 per pound for bulk honey and the price in the store not catching up, many beekeepers in 2002 just put the honey in barrels and shipped it to packers. They gave up many of their traditional markets, as it was easier to sell the bulk product.

The Varroa mites suffer from the backward spring. If there is a break in the brood cycle as there were several last spring, the Varroa do very poorly. In the fall of 2003 is very difficult to find significant levels of this mite. If beekeepers were set up to monitor the Varroa populations in each individual hive, they could have gotten away with treating very few colonies.

The areas of resistance to Apistan® did not seem to have changed much this past fall but winter will tell the real tale. Everyone was encouraged to use Check-Mite™ in the fall of 2003. We know from sales that there was still a lot of Apistan® used. In discussions with Bayer it is apparent that the review of coumaphos will not be completed in time to let them apply for a registration for 2004. Emergency Registration will be the only available route. Check-Mite™ is still needed. It is hoped to develop a strategy using Formic Acid in spring and fall followed by Oxalic Acid when the bees are broodless in late fall to replace either Apistan® or Check-Mite™ but this needs more testing to get a reliable and consistent treatment regime. Check-Mite™ will be recommended for everyone again next fall in Ontario.

Resistance of American Foulbrood (AFB) to Oxytetracycline has not shown up yet in Ontario but some of the samples sent to the Beltsville, Maryland USDA Lab have come back with 45-50mm zones of inhibition instead of the 55 mm zones indicating 100% susceptibility. These 45-50-mm zones are moderately susceptible to Oxytetracycline. Beekeepers need to be watchful for signs of AFB and completely destroy all combs from the infected colony or irradiate them. Obtaining a registration for Tylosin® and Lyncomycin® would be the best solution to this problem. Dr. Steve Pernal of Ag Canada Research Station at Beaverlodge Alberta is heading up this project and he will soon have all of his data ready to present to the two companies involved adding them to their labels. Hopefully this will be completed this winter.

The breeding of the bees to be resistant to the Honey Bee Tracheal Mites (HBTM) and the Varroa mites is continuing to be of great interest to Ontario beekeepers and beekeepers elsewhere. Ontario queen bees are in demand. Dr. Tibor Szabo has sold over 3,000 queens of his stock this year. It is reportedly quite resistant to the Varroa. Francois Petit sold all the queens he could produce this year from the "Russian Bees" that have been brought into Ontario from the United States. The OBA Tech-Transfer Team worked with Francois to bring more of the lines in 2003 and it is planned to bring the latest lines in 2004.

Tech-Transfer for the bee industry occurs through the OMAF Apiculture Program and field type research of the applied nature occurs through the OBA Tech-Transfer Team. Both programs complement each other. If something is going to be recommended in the OMAF disease control recommendation, often the Tech-Transfer Team will do practical field projects to test the procedure before it is recommended. Recommendations are continually being re-evaluated in light of new data from all sources. The Bee inspection program also complements the other segments. An example of that this year was the work on the side by side test to show that Check-Mite™ was working better than Apistan® in some areas. It took a lot of looking to find bee yards with high enough levels of Varroa to get reasonable tests but the bee inspectors persisted until we had a significant number of bee yard locations tested. The bee inspectors did the fieldwork and the OBA Tech-Transfer Team analyzed the data and prepared the report for PMRA. This should end the testing requirements from PMRA for resistance testing. We can now concentrate the resources on finding other control alternatives and communicating these methods to the general beekeeping population.

Queen Breeders continue to work with their own stocks to develop resistant bees for their customers. Dr. Szabo has said that probably the best selection tool is to do a 24-hour, natural drop about the first of September. Those with the lowest readings should be used to breed from. The Tech-Transfer Team is doing a test on a sample of bees from each hive that is being considered for a breeder hive. The sample is shaken for Varroa mites. The breeder can select more resistant breeder colonies by using these tests. As the colonies that develop higher populations of Varroa are selected out of the breeding program, more resistant bees will result. The lists of who is developing these bees are circulated to beekeepers at each available chance and they are available on the OMAF and OBA web sites.

Overall it was a good year for Ontario beekeepers as they currently have money in their pockets and they are purchasing some new equipment.

| [Top of Page](#) |

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