

**77th Annual New England, New York and Canadian Fruit Pest Management Workshop
Burlington, VT, October 20-21, 2015
2015 EXTENSION/FIELD REPORT –APPLES**

Location: Ontario, Canada
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Pest Types: Disease, Insects, Mites

Overall Situation:

Another long, hard winter hit Ontario once again this year. After two of these harsher winters, more growers experienced winter injury. Growers were not the hardest hit by the cold winter temperatures however; most of our apple growing districts were hit by a late spring frost on May 22-23.

Our spring was very dry in most of the province, resulting in the late frost on May 22-23 having a low dew point; some areas reported a dew point of -6. There was not a strong enough temperature inversion in some areas to protect the apple crop from the low temperatures experienced. Gala, Honeycrisp, and Ambrosia were hit the hardest from the frost. Overall, Ontario experienced an approximate loss of 50%, and of the remaining fruit a significant amount was damaged or misshapen, leaving approximately 40-45% of a normal crop of quality apples.

Other than the major cold events of the season, Ontario experienced a great growing year for apples. With one of the driest springs in memory, followed by an ideal summer and a warm and dry fall for harvesting, growers who had apples experienced perfect growing conditions.

Major Problems or Unusual Events- Disease:

Fire blight: Many orchards across the province were hit hard with fire blight this year, potentially due to the second harsh winter and subsequent winter damage we experienced. Environmental conditions were very high to extreme for fire blight infection of open blossoms from May 15-16 in southwestern Ontario, followed by two other periods of extreme risk late May across the province. Despite recent registrations for streptomycin alternatives, such as kasugamycin and Blossom Protect, most growers still tend to rely heavily on streptomycin. Growers continue to struggle with management options following hail or wind damage. A streptomycin-resistance survey was conducted this year across the province.

Scab: With a dry spring there were fewer scab infection periods experienced across most of the province. With the exception of a few growers that were chasing scab from last year, most were able to maintain good control. Typical scab program used captan and mancozeb season long. There is a general movement away from strobilurins and DMIs due to resistance issues.

Powdery Mildew: This disease was mostly kept under control throughout the season. Resistance issues (preliminary results from Canadian survey suggest resistance developing to strobilurins and DMIs) are causing concern for what products to use.

Bitter rot: This has become an increasing problem in recent years, mainly in Golden Delicious, Gala, Empire, McIntosh, Honeycrisp, and Ambrosia. Some growers are throwing everything at it, including captan, strobilurins, and thiram, and rot is still present. Still have many questions: When does infection actually occur and when do symptoms appear? Is this an increasing storage problem? Trials were carried out this year investigating the relationship between bitter rot and calcium, although results may be limited due to the difficult season.

Major Problems or Unusual Events- Insects:

After not being a concern for the past few years **woolly apple aphid** suddenly became a major problem in some orchards in early September. **Mites** continue to be a challenge for growers. Growers struggled with management decisions in a reduced crop year.

San Jose scale: This is an increasingly problematic pest. Even with regular monitoring, damage still came as a surprise at the end of the season, especially on higher value varieties, such as Honeycrisp and Ambrosia. Growers with a historical SJS problem applied dormant oil, but many would prefer a summer spray alternative. Current labels suggest when crawlers are active, but growers have little understanding of when this is and how to monitor for it. In surveyed orchards this year crawler emergence was predicted between June 21-24 and confirmed June 22 using black electrical tape. We continued to find crawlers right through to harvest using the black electrical tape

Apple leafcurling midge: This is also becoming an increasing issue in all regions. Previously, growers assumed midge to be a problem for young trees only. However, in established orchards this season, up to 50-60% of shoots were infested, and some growers believe this pest has affected yield. This pest can now be found in most orchards. Difficulty lies with monitoring and timing a spray, when pheromones are too expensive for commercial use. As part of a national project, native parasitoids have been reared from midge collected from organic and conventional orchards in Ontario, to determine what parasitoids are present and if it will be possible to introduce other parasitoids.

Apple maggot: Following the extremely high apple maggot population last year growers were not sure what to expect going into this season. However, trap counts did not reach the high numbers we saw last year. Combining lower numbers with good monitoring and management, growers were able to control apple maggot and keep damage to a minimum. Growers are interested to know how to use insecticides for late season pest control with the loss of OPs.

European apple sawfly: This pest has moved slowly westward and damage can now be found as far west as Toronto and north to Georgian Bay. Trials with biological *Quassia* extract continue in Ontario and Nova Scotia, and preliminary results indicate control comparable to conventional products.

Brown marmorated stink bug: Established populations have been confirmed in a number of regions across the province in recent years. Suspected stink bug damage was found in multiple orchards in mid-October, potentially due to the warm fall. Growers are concerned with the limited control options that are available and how these products (eg., malathion, methomyl) will impact established IPM programs.

Ambrosia beetle: This pest was confirmed in an Ontario orchard this year, and suspected damage seen in other orchards, where borer damage and ooze was seen. Healthy trees have been damaged, and growers are looking for effective management strategies, as this pest is new to Ontario and difficult to control.