

77th Annual New York, New England, Canadian Fruit Pest Management Workshop
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2015 Report - Nova Scotia Tree Fruits

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A. Weather

The 2015 growing season began with an exceptional snow load from near record breaking snowfall in February, March, and April. On March 31st, there was still 80 cm of snow remaining on the ground at the Kentville Agriculture Centre. The next snowiest March 31st for the previous few decades was in 2004 where about 40 cm of snow was on the ground – half as much. This delayed the bulk of dormant pruning substantially into April and May. Numerous trees, particularly the young ones, had branches stripped off due to the weight of the snow load.

Spring was delayed in arriving with heat units being behind the 10 year average until well into June. Green tip occurred around May 6, and was about a week later than in 2014 and two weeks behind average. Rainfall was higher than 2014 at this time, providing ample opportunities for disease. Majority of bloom took place during the last few days of May, only 4-5 days behind the historical average. Pollination conditions were excellent during the early stages of bloom, however, a cold front during the final half of bloom left a lot of uncertainty in the later advancing areas and on late varieties.

Weather into June was wet with above average monthly rainfall. Dry conditions prevailed throughout July and August causing some concern about fruit sizing potential but looks to have had a minimal impact on fruit development. Above average temperatures were present throughout the month of September which delayed harvesting as growers were waiting for colour development. Despite catching up on average heat units, fruit maturity is running about a week later than average.

B. Production

Apples were delayed this year, with harvest starting in early September for early varieties, a good week later than typical. 'Honeycrisp' harvest started a solid week to 10 days later than is typical, with the color not developing as quickly as anticipated. This is likely due to the warmer nighttime temperatures. Total production is expected to be in the range of 1.8 million bushels which is down about 5% from 2014. This is mostly due to tree removals due to orchard renewal and tree losses from fire blight infections. The 2015 crop is coming in with excellent fruit size and good quality with the exception of reduced colour development on some varieties. Several growers are reporting that fruit size is compensating for fruit numbers in making up volume.

C. Insects

Aphid s – Rosy Apple Aphid (*Dysaphis plantaginea*) is usually the most predominant aphid in NS apple blocks. Populations were lower than in 2014 but Green Aphid (*Aphis pomi*) was more

prevalent. Black cherry aphid (*Myzus cerasi*) was also higher in 2015 compared with 2014 populations.

European apple sawfly (*Hoplocampa testudinea*) – populations were about equal to populations in 2014. Emergence occurred 5 days later in 2015 compared with 2014 (May 25 compared with May 20) with 50% of the population emerging by early June in 2014 and mid-June in 2015. Organic growers reported EAS damage this season. Damage in commercial orchards appeared visibly higher than in previous years.

Codling moth (*Cydia pomonella*) – first capture occurred on June 3 with 50% of the population in flight by July 2. This represents a more staggered flight when compared with 2014 where first capture occurred on June 8 and 50% of flight occurred by June 13. Organic growers experienced damage from CM although trap captures did not indicate a need to spray. Damage of 10-15% was realized.

Apple maggot (*Rhagoletis pomonella*) – emergence of apple maggot was delayed and staggered compared with 2014. First capture occurred on July 17 in 2015, compared with June 30 in 2014. Damage experienced in early varieties was low. GF-120 was used in organic orchards with reasonable results.

European shot-hole borer (*Xyleborus dispar*) – one grower reported concerns with this species. Traps baited with ethanol were placed at the site but only a handful of beetles were captured over the season.

Apple leaf curling midge (*Dasineura mali*) - populations were higher in 2015 compared with 2013 and 2014. New orchards were reporting damage from this pest, which typically only affects a few blocks. This is likely due to the increased rainfall during the growing season.

Oblique-banded leafroller (*Choristoneura rosaceana*) – populations were not noted as higher than typical in conventional orchards, however, organic growers experienced higher than usual damage from this pest.

Brown marmorated stink bug (*Halyomorpha halys*) – surveys for this pest continue with no confirmed captures during 2015.

D. Disease

Powdery mildew (*Erysiphe* spp.) – Powdery mildew pressure was low again in 2015. Most growers are using 1-2 mildewcides at critical timings prebloom with satisfactory control. The last year significant mildew pressure was observed was 2013.

Apple scab (*Venturia inaequalis*) – Moderate apple scab pressure was observed in 2015 with 4-5 primary infections and 8-9 secondary infections from budbreak through the end of July. There was one 76-hour infection period from May 31 to June 3 that was the source of most primary infections. A trace of scab was observed in several commercial orchards that was attributable to secondary infection periods which were plentiful between approximately June 20 and the end of July. Scab is typically well controlled in most seasons. Damage was noted in varieties reported to be scab resistant, i.e. 'Liberty'.

Fireblight (*Erwinia amylovora*) – After Hurricane Arthur in 2014 spread fire blight around to several orchards and caused significant losses to many growers, 2015 was anticipated to be another bad year. Despite extreme conditions for blossom blight development during bloom, losses to fire blight were few with many orchards having applied preventative sprays including copper, streptomycin, and Apogee at critical points during year.

Cedar apple rust (*Gymnosporangium juniperivirginianae*) - noted for the first time in a 'Liberty' organic block.

E. Projects

Blatt Entomology Lab:

1. Rootstock trials and interactions between rosy apple aphid and root lesion nematode
2. Degree day model for European apple sawfly and apple maggot
3. BMSB surveys
4. Biocontrol of Leaf Curling Midge

Reekie Organic Tree Fruit Lab:

1. Development of IPM program for fruit orchards incorporating the bioinsecticide Quassia.
2. Impact of a modified Swiss sandwich system on soil nitrogen supply, tree performance and fruit quality in organic 'Honeycrisp' production in Nova Scotia.

Perennia Extension:

1. Evaluation of mechanical pruning on high-density plantings of high-value cultivars
2. Comparison of Quassia & Altacor for field control of European Apple Sawfly (with Julia Reekie)