Orchard Outlook

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Apple Industry Growth and Efficiency Program (AIGEP) – Now Receiving Applications for 2016!

The Apple Industry Growth and Efficiency Program (AIGEP) is a partnership between the Government of Nova Scotia and apple growers which will encourage innovation through orchard renewal. This program will help apple growers with their initial capital investment to plant orchards with new, higher value varieties that will help the industry to innovate, grow and be more profitable.

The Apple Industry Growth and Efficiency Program (AIGEP) applications are now being accepted for next year. The application and guidelines have been emailed to Orchard Outlook contact list. To request a copy, please contact the Nova Scotia Fruit Growers' Association office. The application is titled **AIGEP Application for 2016 Planting** (.pdf fillable for convenience) and the guidelines document is the **AIGEP Technical & Administrative Guidelines for 2016 Planting**.

Note: Fully completed Applications for 2016 Planting **must** be received by the **Nova Scotia Fruit Growers' Association on or before November 30, 2015**. All applications postmarked after the deadline of November 30th shall not be considered in that application year.

Very important: Before completing the application form, please read the Apple Industry Growth and Efficiency Program (AIGEP) Technical and Administrative Guidelines. Technical questions regarding AIGEP can be directed to cduyvelshoff@perennia.ca or at 902-678-7722.

2015 Degree Day Accumulations

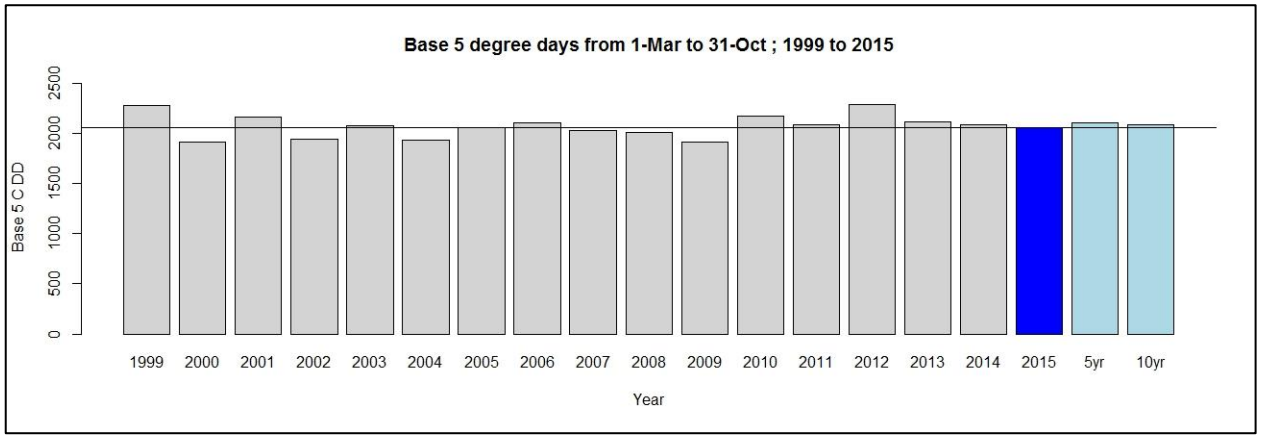

Figure 1: Degree day accumulations from March 1st for the past 17 seasons. Provided by Jeff Franklin (AAFC).

Heat accumulation from March 1st through October 31st was (Figure 1):

- About 2% fewer plant development heat units compared to the 5-year average.
- About 1% fewer plant development heat units compared to 2014.
- About 1% more insect development heat units compared to the 5-year average.

2015 Season Summary

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.

Fortunately, due to cool air temperatures, bud break on apples did not occur until about May 6th near Kentville which is two-weeks behind average. This allowed pruning crews a chance to catch up considerably before the season started. Similar to 2014, May was quite dry with fine weather and allowed for a lot of pruning to be accomplished in a short time.

The majority of bloom took place during the last few days of May, which despite a late start, was 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 fruit set in the later advancing areas and on late cultivars. Despite the cool finish to bloom, fruit set was good in all areas with adequate bloom, and crop thinning was required.

Conditions for fire blight development were extreme with warm temperatures during the front half of bloom and frequent wetting – strongly favouring disease development. Despite the huge presence of bacterial cells from 2014 and very favourable disease conditions, fire blight control in 2015 was excellent. This is no doubt due to the high uptake of chemical fire blight controls this season as untreated orchards, though rare, were highly infected again.

July 2015 was unusually cool, however, above average temperatures prevailed throughout the months of August and September and the season ended with average heat unit accumulation. June was quite wet with 167 mm of rain compared to the normal of 82 mm which did cause problems with apple scab control in some orchards. In contrast, July was dry with just 28 mm of rain compared to the normal of 84 mm. Neither of the unusual patterns of heat unit accumulation or rainfall caused major impacts overall to the crop yield or quality in 2015.

Harvest was delayed in 2015 by about a week compared to average despite late summer gains in total heat unit accumulation. Weather throughout harvest was not as clear as in 2014 but generally quite fair for harvesting most days. Fresh fruit harvest wrapped up in the first week of November. Several producers noted excellent fruit size and good quality at harvest with the exception of reduced colour development on some cultivars due an usually warm September. Some growers had to manage with a lack of labour through the harvest season due to other crops running late (e.g. highbush blueberries) which slowed their harvest. Others reported no problems with harvest labour.

The apple crop in 2015 is lower by approximately 5% from the previous year to 1.7 million bushels. The reduction in volume is due in part to certain cultivars being “off” in 2015, however, much of the reduced volume can be attributed to tree removals due to orchard renewal and tree losses from the 2014 fire blight epidemic.

For stone fruit crops, peaches were affected in some areas by winter kill and frost, whereas other peach blocks had an excellent crop. Sweet cherries, plums, and pears all generally had good crops in 2015.

Winterizing Orchards

There are a few orchard practices discussed below than can be done after harvest to prepare orchard blocks for the winter and to get an early start on the next growing season.

Fall Scab Control

Several growers noted some problems with apple scab in 2015. It is worth noting that some steps can be taken in the fall to reduce the inoculum load for the 2016 growing season. Research indicates that both urea fertilizer application and/or flail mowing accelerate the breakdown of apple leaves, thereby reducing the number of viable ascospores in spring.

Reducing apple scab inoculum can be done in two ways:

1) Shredding the leaves on the orchard floor in November or April can reduce the number of scab spores by as much as 85%. The difficulty is being able to shred the leaves under the tree canopy with a fail chopper. If you are only able to flail chop the alleyways you could reduce scab spores by up to 50%. Flail chopping will break the leaves into smaller pieces which allow for a quicker breakdown and consumption by earthworms. Flail mowing in

April will invert about 50 percent of the leaf pieces which can result in ascospores being released towards the soil instead of the air to land on developing apple tissue.

2) The application of urea just prior to leaf fall or after leaf fall will also reduce spore load. Spraying the surface of leaves on the ground can reduce spores by about 66%. The recommended rate is 45 kg/ha in 900 L/ha of water. Coverage should be in both alleyways and under the tree. It would be best to dissolve the urea in warm water before putting it in the tank because it will be slow to dissolve in cold water. It could be applied with an orchard sprayer with only the lower nozzles turned on however a boom-type field sprayer is recommended for best results. The 45 kg/ha rate will supply approximately 20 kg/ha of nitrogen to the ground so nitrogen application next spring should be adjusted accordingly.

The following video from Michigan State University summarizes both strategies:
http://www.youtube.com/watch?v=QjfodgZ9pj8&list=PLTX7F7O1t3cI4SXzX0PcmEw_U5RgZP8wp

Fall Herbicide Application

If drop apples have been cleaned up, and tree row soil is almost bare with minimal leaf drop from the orchard trees, a fall application of a preemergent herbicide can offer considerable benefits for weed control in 2016. Benefits of a fall herbicide application include:

- Jump start on weed control during the critical weed-free period of bud break to 30 days post bloom.
- Possibly avoiding the need for spraying herbicide during the spring rush of orchard tasks.
- Fall application of some preemergent herbicides has actually shown better activity than spring applications in residual weed control.
- An effective preemergent program can reduce the need for postemergent herbicides such as glyphosate and glufosinate-ammonium which have been implicated in bark injury to fruit trees.

There are several registered herbicides that can be applied in the fall. These herbicides should be applied before soil freezes and when temperatures are above freezing.

Alion (indaziflam) provides long residual control of a broad spectrum of annual grasses and broadleaf weeds. Do not apply Alion to orchards prior to their 4th leaf.

Chateau (flumioxazin) provides good residual control of many annual weeds when applied in the fall. Do not apply Chateau to green bark or foliage, fine-textured clay soils, orchards in the planting year, or soils with greater than 5% organic matter.

Devrinol (napropamide) controls a wide range of annual grasses and broadleaves and is also labelled for preemergent control of willowherbs in Europe. Avoid contact with bark and foliage. Needs incorporation by rainfall within two days of application.

Sinbar (terbacil) has good residual control of annual grasses and broadleaves. Do not apply Sinbar to orchards prior to their 4th leaf.

Where tough perennial weeds such as brambles, Canada thistle, quackgrass etc. have become established and still have some green foliage, spot applications of glyphosate can be useful. In certain cases, weeds may translocate glyphosate to the root after fall application but its effect will not be observed until spring.

See **Guide to Weed Management in Orchards** for the weed control spectrum of these herbicides.

Winter Rodent Control

When the deluge of snow melted this past spring, many trees were left with stripped bark around the trunk. In several cases, mouse damage extended into the lower set of limbs due to an exceptional snow load. Immediate and extended snow cover throughout the winter will increase the chance of mouse damage to the trunks of orchards. This can be especially damaging in high-density orchards where the trunks remain small and susceptible to damage throughout the life of the planting. The following steps will help to reduce mouse damage over the winter.

- Mow ground cover to a height of 10-20 cm.
- Clean up drop apples from the tree row and alleyways.
- Apply chemical mouse bait by broadcasting or using bait stations as necessary.
- Install tree guards if feasible on young trees. Remove after snow melt in spring.

Consult **Orchard Rodent Control** for further information.

Peach Leaf Curl

Peach leaf curl is a fungal disease of peaches that is usually well controlled by a fungicide application in spring or late fall. Infections occur in the spring at bud swell as overwintering spores are washed from the surfaces of the bark, therefore, a fungicide application prior to bud swell in the spring is preferred. However, early warm temperatures combined with extended snow cover can sometimes make spring applications challenging. If your sprayer is still up and running, a fall application for peach leaf curl can also greatly reduce inoculum and provide good disease control. As the spores overwinter on the bark, applications for peach leaf curl should be made to provide complete coverage of trunks and branches. Fall applications should be made after 90% of leaf drop has occurred in November. Chlorothalonil (Bravo, Echo), Ferbam 76 WDG, fixed copper, and lime sulphur are all registered for peach leaf curl. Chlorothalonil and Ferbam can only be used once per season for peach leaf curl. Where the disease has been a problem, a fall application of chlorothalonil or Ferbam could be followed up with a spring application of the other or fixed copper or lime sulphur. Application of chlorothalonil in spring only has also been very effective for control of peach leaf curl, provided it is made at the appropriate timing and with sufficient coverage.

Events

New Product Innovation Workshops

Are you a rural entrepreneur with a great new agri-food or seafood product idea burning a hole in your pocket, but you don't know what to do with it next? Attend one of the New Product Innovation Workshops held in Wolfville & Yarmouth! Visit this link below for more information http://perennia.ca/Perennia%20New%20Product%20Innovaton%20Workshops%20November%202015.pdf.

Upcoming Fall/Winter Fruit Conventions & Conferences

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