



# ORCHARD NETWORK

For Commercial Apple Producers

VOLUME #13, ISSUE #2

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## Orchard Management

### Pollination Pointers

*Leslie Huffman, Apple Specialist, OMAFRA*

Apples are now in bloom, and beekeepers have delivered rental hives to orchards to complete the important task of pollination. Did you know these facts about pollination?

- A bloom requires 8 - 24 visits by pollinators.
- Larger apples result when pollen is sourced from more than 1 cultivar.
- Bee pollinators do not generally move across more than 3 – 4 rows.
- Pollen tends to travel only a few trees down the row.

Here are some tips for using honeybees effectively:

- Request strong, healthy colonies. Weak colonies are of little value when it's cool.

*(Continued on page 2)*

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Ministry of Agriculture,  
Food and Rural Affairs



ORCHARD NETWORK

May, 2009

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This issue of the **Orchard Network  
Newsletter** was compiled by Client  
Service Representative, Patti Arts,  
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*(Continued from page 1)*

- 2 to 3 honeybee colonies per hectare are recommended.
- Protect beehives from cold winds. Group hives in sunny, sheltered locations or behind a wall of straw bales or orchard bins.
- Situate the colonies so that the morning sun warms the entrance.
- Provide fresh water with floating sticks so bees can land without drowning.
- Avoid contaminated water eg. puddles near your sprayer loading area.

Protect your bees from poisoning. It is an offence under the Bees Act to apply insecticides while fruit trees are in bloom. Here are more ways to protect bees:

- Contact local beekeepers 24 hours in advance of spraying within 1 km.
- Do not spray insecticides on any crop where bees are foraging.
- Avoid insecticides during the day. Bees return to their hives in early evening, so spraying after 7 pm is the safest. Complete morning sprays by 7 am.
- Bees do not forage at temperatures below 13°C.
- Block the hive entrance with wet bags for up to 12 hours after spraying. Leave a space for bees to exit to cool the hive.
- Be aware of cover crops in bloom or with blooming weeds – this is the most common site of bee poisonings.
- Avoid spray drift by avoiding windy days.
- Remove bees ASAP when bloom is finished before applying petal fall sprays.
- Choose insecticides that are less toxic to bees. See **Table 9-4, Relative Toxicity of Pesticides to Honey Bees** on page 193, Publication 360, Fruit Production Recommendations. Here are the products **most toxic** to bees: Actara, Admire, Agri-Mek, Alias, Cygon, Decis, Diazinon, Entrust, Furadan, GF-120, Guthion, Imidan, Lagon, Lannate, Lorsban, Malathion, Matador, Nexter, Orthene, Pounce, Pyramite, Ripcord, Sevin, Success, Sniper, and Vydate.

Successful pollination is the first step to a good crop. Allow those bees to do their job for you and your neighbours.

## Care for New Plantings

*Leslie Huffman, Apple Specialist, OMAFRA*

Many growers have been planting new orchards this spring, which is optimistic for our industry. But buying and planting the trees is just the first step. The investment in a new orchard will approach \$10,000 per acre to bring the planting into full production. So here's a checklist to ensure that this investment pays off:

- Make a **map**. Include number of trees, cultivars, rootstock, source of trees and planting date. This information may be useful later for tree census, and if problems arise.
- Install the **support** system now. Research has shown that support (trellis, stakes, whatever) encourages the tree to direct energy to fruit buds rather than structural wood.
- Control **weeds** now. Research has shown that **any** weed growth in the first three months will reduce tree growth, and that yields from weedy trees will be reduced two years later. Concentrate your efforts (and money) from planting until July.
- Use **irrigation** or **mulch** to prevent water stress. Water stress can happen very early in the season, sometimes during May. This is especially important on sandier soils, but in most years and on most soils, additional water will be needed.
- Maintain good and balanced **fertility** levels. Use information from many

sources, including preplant soil tests, leaf analysis, and evaluation of terminal growth.

- Manage **insects** and **diseases** to maximize growth. Weekly scouting is very important and can be done quickly. Refer to “Guidelines to Protect Non-Bearing Apple Plantings” on p. 64 of Publication 360.
- If **nematode** levels are high (as indicated by a test of moist, cool soils), see recommendations on p. 19 of Publication 360.
- **Avoid pruning** cuts where possible. Lateral branch removal is only recommended if one (or two) strong shoots are present. It is preferable to tie strong laterals below the horizontal to slow growth and encourage fruiting.
- If fruiting is expected in high density orchards, use a foliar **calcium** spray program to reduce bitter pit.

The biggest challenge is finding the time to do these tasks on a timely basis in the planting year, but doing it right will pay dividends for years to come.

## Tips on Using Apogee to Control Vegetative Growth

*Leslie Huffman, Apple Specialist, OMAFRA*

Apogee is a plant growth regulator that reduces terminal shoot growth. Apogee can also reduce the incidence and severity of fire blight **shoot** infections.

- Apply first spray when new growth is 2.5 to 5.0 cm (1-2” shoots) (usually late bloom or petal fall). Don’t be late! Apogee is non-toxic to bees.
- A 2<sup>nd</sup> spray may be needed in 14-21 days (depends of level of growth control required). Up to 4 sprays may be needed on high vigour trees.
- Rate is dependent on tree vigour, amount of pruning, crop load, and length of growing season. See Table 4-16, Publication 360.
- Maximum seasonal rate is 5.4 kg/ha of Apogee.
- Thorough wetting of canopy is required. Application rate of 1000L water/ha is the dilute rate and can be adjusted for Tree Row Volume.
- Include the adjuvant Agral 90 to improve uptake.
- For hard water, add AMS fertilizer (high quality, greenhouse grade).

### Precautions when using Apogee:

- Do not tank-mix with calcium sprays.
  - Apogee may make thinning more difficult, especially at concentrations above 125 ppm.
  - Apogee may cause fruit cracking in Empire and Stayman.
  - Apogee does not control blossom infections.
- For full recommendations, see p. 85, Publication 360, Fruit Production Recommendations or online at [www.omafra.gov.on.ca/english/crops/pub360/4apogee.htm](http://www.omafra.gov.on.ca/english/crops/pub360/4apogee.htm)

## Postharvest

### Postharvest Treatment of Whole Apples in Relation to Fresh-Cut Slice Quality

*Jennifer R. DeEll, Fresh Market Quality Program Lead, and Behrouz Ehsani-Moghaddam, OMAFRA*

‘Empire’ is a major apple cultivar used for slices in the North East. This apple can be usually stored for 7-8 months in controlled atmosphere (CA) before physiological disorders related to flesh browning become problems.

The objective of this study was to evaluate the effects of common commercial postharvest treatments on the development of flesh browning in whole ‘Empire’ and the subsequent quality of apple slices. ‘Empire’ apples of optimum maturity for long-term storage were harvested twice from a commercial orchard for two consecutive years. Half of the apples from each harvest were drenched with diphenylamine (DPA, ~900 ppm) and all fruit were cooled overnight to 3°C. Half of the apples from each treatment combination were then treated with 1-methylcyclopropene (1-MCP, 1 ppm for 24 hours). Apples were held in CA storage (2.5% O<sub>2</sub> + 2% CO<sub>2</sub>) at 0.5 or 3°C for up to 9 months, plus 2 or 7 days in ambient air at the same temperature. Apples were removed from cold storage, sliced within 1 hour, dipped in Nature Seal (label rate for 2 min), and rinsed in tap water. Bagged slices were held at 3°C for 21 to 30 days and then assessed for quality based on the UC Davis *Visual Quality Scores for Apple Slices*.

**‘Empire’ from the first harvest developed less flesh browning and generally produced better quality slices** than those from the second harvest. DPA had no significant main effect on slice quality, although it interacted occasionally with other factors.

**1-MCP treatment tended to increase apple flesh browning in long-term storage** and consequently reduced slice quality at these times. Apples stored at 0.5°C were more prone to flesh browning, but those not brown produced higher quality slices compared to fruit held at 3°C.

**Slices from apples kept for 7 days in cold storage prior to slicing often had higher quality scores than those held for 2 days.**

The results of this study indicate that apple slice quality is dependent on the inherent susceptibility of the whole fruit to develop flesh browning in storage.

## Ethylene Inhibition Influences Physiological Disorders in Apples

Jennifer DeEll and Behrouz Ehsani-Moghaddam, OMAFRA, and Chris B. Watkins, Cornell University

1-Methylcyclopropene (1-MCP), an inhibitor of ethylene action, delays the ripening and senescence of many climacteric fruits, including apple. As such, 1-MCP reduces respiration and ethylene production, and slows softening and deterioration of apple fruit.

The objective of this work was to examine the effects of 1-MCP on common physiological and storage disorders in apples. 'Empire', 'Honeycrisp', and 'McIntosh' apples were harvested in multiple years and cooled over night to ~3°C. Half of the fruit were then treated with 1-MCP (1 ppm) for 24 hours. All apples were stored in either ambient air (0 or 3°C) for 3-4 months or in controlled atmosphere (CA) for 6-10 months. CA regimes ranged from:

2 to 2.5% O<sub>2</sub> + 2% CO<sub>2</sub> at 1-3°C for 'Empire'  
1.7 to 2.5% O<sub>2</sub> + 12.5% CO<sub>2</sub> at 3°C or 'Honeycrisp'  
2.5% O<sub>2</sub> + 2.5 to 4.5% CO<sub>2</sub> at 3°C for 'McIntosh'

**Senescent-related disorders were substantially reduced in apples treated with 1-MCP**, such as senescent breakdown and peel greasiness. Superficial scald and core browning in air-stored 'McIntosh' were also reduced with 1-MCP.

**Conversely, disorders related to CA stress tended to be exacerbated by 1-MCP.** The incidence of external and/or internal CO<sub>2</sub> injury was greatly increased in all cultivars treated with 1-MCP. Flesh browning (i.e. low temperature breakdown, vascular breakdown, and/or internal browning) incidence and severity also increased in 1-MCP-treated 'Empire' stored in CA for 9 or 10 months.

The role of ethylene and 1-MCP in the development of stress-related physiological disorders in apples needs to be investigated further.

## Crop Protection

### Apple Scab Review

Kathryn Carter, Pome Fruit IPM Specialist, OMAFRA

This season is off to a rapid start with green tissue present and plenty of rainfall, so growers have kick started their scab management programs. Dr. David Rosenberger, a pathologist from Cornell University stresses the importance of early season scab prevention since the early infections cause the greatest economic loss. Scab is difficult to control when established early, and fungicide application to sporulating scab lesions may

increase the risk of resistance.

Good scab management begins early at green tip and continues to the end the primary infection period (late June). If scab is in the orchard at the end of this period, management must continue until harvest. With scab already in some orchards (lesions appear 9 to 17 days after an infection), here is some useful tips for your scab management program:

- **Monitor weather** in your orchard (maximum and minimum daily temperature as well as leaf wetness). Regional weather forecasts or agri-phones may differ site-specific weather information.
- Be aware of the **level of inoculum** in your orchard. If your orchard had apple scab last year, or is near abandoned or high pressure orchards, consider your orchard to be a high inoculum orchard. Remember that the very wet summer last year throughout the province has created higher scab pressure this year.
- When **calculating primary infection periods, consider the inoculum level in your orchard.** Research in New York has shown that 96% of ascospores are released during the day (between 8 am and 7 pm). The remaining 4% can still cause significant problems in high inoculum orchards, but are not a large concern in low inoculum orchards.
- In **low inoculum orchards**, rain that occurs between 8 am and 7 pm are counted from the first hour the rain was recorded until it ends. So if rain begins at 9 am, and continues until midnight, count 15 hrs of leaf wetness. When rain begins at night between 7 pm and 8 am, count the hours of leaf wetness from 8 am until the leaves are dry. So if rain falls from 10 pm until 10 am the next day, start counting at 8 am, for a total of 2 hrs of wetting.
- In **high inoculum orchards**, calculate the length of the wetting period from the start of the rain until the leaves are dry, regardless of the time of day. Add together wet periods caused by intermittent rain, unless wet periods are separated by 10 hours or more of dry sunny weather. Calculate the average temperature over the hours of wetness, and consult Table 4-4, Publication 310, Apple IPM Manual (pg. 111) to see if an infection occurred.
- Once **primary infections** have occurred, lesions on the leaves and fruit produce secondary spores or conidia, which spread short distances by splashing rain. Conidia require a slightly longer period of leaf wetness than for primary infection, but unlike ascospores, they do not require rainfall to initiate spore release. Early morning dew is more important in initiating wetting periods. **Secondary infections can occur day or night**, so calculate the length of the wetting period from the beginning of the wetting period regardless of the time of day. Scab infection periods can continue throughout the summer from lesions with conidia.

(Continued on page 5)

*Continued from page 4)*

- **As fruit matures, it becomes more resistant to apple scab.** As a result longer wet periods are needed for fruit infection to occur as the season progresses. In Publ. 310, Figure 4-5 (pg 112) shows the relationship between temperature, hours of wetting, and weeks after bloom for secondary scab fruit infections. For example, at an average temperature of 14° C, it takes only 8.5 hours of wetting one week after bloom, while at 10 weeks after bloom, 32.5 hours is needed to produce for 2% fruit infection.

In terms of fungicide residues and rainfall as a general rule of thumb:

- Less than 1 inch of rain will not significantly affect residues.
- 1-2 inches of rain will reduce the residue by ½. Reduce the number of days until the next spray by ½.
- Over 2 inches of rain will remove most of the spray residue. Re-apply a fungicide as soon as possible.

## Black Rot Cankers in Apples

*Michael Celetti Plant Pathologist Program Lead, OMAFRA*

Apple trees that were hailed last year should be carefully monitored for cankers this spring. Wounds caused by hail, winter injury, mechanical injury, insects or other diseases provide an entrance for the black rot fungus. The time and severity of the hail may affect how severe this problem is. It is important to recognize the subtle early symptoms of black rot cankers in wounded limbs.

Early canker symptoms first appear as reddish, purplish, or brown, slightly sunken areas under the bark. Although the sunken areas often remain small and superficial, some can enlarge up to half a meter in length under the bark. Regardless, by the second year, the infected bark dies and peels away from the sunken area exposing black diseased wood underneath.

The extent of the damage varies with the canker location on the tree. Cankers on limbs can cause the entire limb to die back, or they can weaken limbs to the point of breaking under heavy fruit loads or during a wind storm. Infections on the main trunk particularly on young trees can eventually girdle and kill the tree.

Pruning out diseased and dead wood during the dormant season helps reduce the inoculum sources. Summer pruning should be avoided if possible, because pruning cuts can provide an entrance for the fungus. It is important to remove the infected prunings from the orchard or burn them, since the fungus can survive on dead wood. Alternatively, chopping up the prunings on the orchard floor with a flail mower will reduce inoculum levels. Avoid stacking wood piles near orchards since

they can act as a major source of inoculum.

The black rot fungus overwinters in cankers on twigs, branches, and trunks of many hardwood trees. Scout surrounding woodlots to identify hardwood trees infected with the disease. If possible and feasible, the infected trees should be removed to decrease potential disease pressure in the future.

There are no apple cultivars that are resistant to black rot; however some cultivars are less susceptible to limb cankers than others. Rootstocks can also impart a certain amount of tolerance to this disease, so selecting less susceptible cultivars on tolerant rootstocks will help to reduce the problem. A fungicide application for disease control immediately after a traumatic event, such as hail, will help protect the wounds on limbs from being colonized by the fungus and reduce canker development.

The black rot pathogen can also cause Frog-eye leaf spot and black rot on fruit therefore directly impacting yield. The management options are different for each phase of this disease and should be integrated into a program to reduce yield losses.



# The Hidden Cost of Damaged Nozzles

Jason Deveau, Application Technology Specialist, OMAFRA

Many factors contribute to a successful spray application: sprayer mechanics, application method, weather conditions, nature of the target, product applied and the aptitude of the operator. All of these factors converge when the spray leaves the nozzle. It is therefore surprising that the most critical part of the sprayer, the nozzles, are so often neglected. Monitoring nozzle performance pays financial dividends because tip damage has a direct impact on product effectiveness and cost (see Table 1). If the application is seriously compromised, the operator might have to re-spray, which incurs additional labour, time, fuel, and wear-and-tear on equipment.

**Table 1. The Potential Impact of Damaged Nozzles**

| Nozzle Damage     | Result             | Possible Causes                                      | Potential Impact                                                    |
|-------------------|--------------------|------------------------------------------------------|---------------------------------------------------------------------|
| Worn Nozzle       | Over Application   | Regular Use<br>(particularly with wet-table powders) | Higher Product Cost                                                 |
|                   |                    |                                                      | Phytotoxicity<br>(particularly on heat or moisture stressed plants) |
|                   |                    |                                                      | Unacceptable Residue level                                          |
| Plugged Orifice   | Under Application  | Debris                                               | Inadequate Protection                                               |
|                   |                    | Dirty Carrier Water                                  | Increased Risk of Resistance                                        |
|                   |                    | Product Build-up                                     | Increased Risk of Resistance                                        |
| Distorted Orifice | Uneven Application | Regular Use                                          | All of the Above                                                    |
|                   |                    | Improper Cleaning                                    |                                                                     |

The solution lies in proper maintenance and early detection. Tip orifices have delicate edges, so clean them with a soft-bristled brush or using a can of compressed air. Even a wooden toothpick can distort some plastics, so imagine what a wire does. Better still, carry spares for quick field replacements and clean them later in the workshop where they won't get lost. Be sure to clean nozzle screens with a brush as well because flushing does not dislodge build-up. Nozzle performance should be tested during each calibration (before and mid-way through the season at minimum) or whenever damage is suspected. Testing is simple, quick and inexpensive:

1. Temporarily install a pressure gauge on the boom behind the nozzle (commercial or home-made);
2. Adjust the regulator to compensate for the pressure change between the pump and nozzle to accurately set nozzle pressure;
3. Use a graduated container or commercial tip-tester to measure the discharge of clean water over a one minute interval;
4. Compare the rate to the manufacturer's rate <OR> compare the flow rate from the used tip to the flow rate of a new tip of the same size and shape.

If the flow rate is 10% (or even 5%) more than the ideal rate, replace ALL nozzles, not just the ones that appear damaged. Replace them once a year or at the first signs of deterioration, whichever is first. The cost of renewing an entire set of nozzles is a fraction of the potential cost of wastage and potential crop damage:

**Example:** An airblast sprayer with 16 nozzles sprays a product that costs \$150/hectare (~\$60/acre). Nozzle tips are worn by an average 10%, which sprays an additional \$15/hectare (\$6/acre). 16 new ceramic hollow cone tips and gaskets cost \$80 at \$5 each. The nozzles pay for themselves in 5.3 hectares (13.3 acres).

The rate of tip wear depends on spray pressure, product sprayed, and the material of which the nozzle is made. Upgrading to a harder, more durable tip can reduce maintenance costs.

Never mix nozzle materials on a boom; from softest to hardest:

**Brass < Stainless Steel < Plastics < Hardened Stainless Steel < Ceramic.**

Inevitably, all nozzles wear out so be sure to include regular nozzle maintenance and replacement .

## Petal Fall Sprays

Kathryn Carter, Pome Fruit IPM Specialist,  
OMAFRA

The fit of new reduced risk pesticides in apples depends on which pests are present in your orchard, and the level of pest pressure. Although reduced risk pesticides may be more costly than conventional products, they are often safer products to use, are easier to manage for worker safety (short re-entry periods), have less impact on beneficial insects and non-target organisms, and may provide the opportunity to manage multiple pests at once (this helps offset the costs).

The following table shows which insecticides applied at petal fall will provide control of multiple pests, giving you the biggest bang for your buck. Some useful products that can be used at petal fall are:

| Insecticide        | OBLR    | OFM | CM<br>(eggs) | PC                            | MB | TLM | EAS     |
|--------------------|---------|-----|--------------|-------------------------------|----|-----|---------|
| Assail/<br>Calypso |         | ✓   |              | ✓<br>Assail<br>NR             | ✓  | ✓   | ✓<br>NR |
| Rimon              | ✓<br>NR | ✓   | ✓            |                               |    |     |         |
| Intrepid           | ✓       | ✓   |              |                               |    | ✓   |         |
| Delegate           | ✓       | ✓   |              | ✓<br>suppres-<br>sion<br>only |    | ✓   |         |
| Success            | ✓       |     |              |                               |    |     |         |
| Altacor            | ✓       | ✓   |              |                               |    | ✓   |         |
| Bt                 | ✓       |     |              |                               |    |     |         |
| Actara             |         |     |              | ✓                             | ✓  | ✓   |         |

### Legend

OBLR – Oblique-banded leafroller  
OFM - Oriental fruit moth  
PC - Plum curculio  
CM - Codling moth  
MB - Mullein bug  
TLM - Tentiform leafminer  
EAS - European apple sawfly  
C - Calypso only  
NR – Not registered for this use

Keep in mind that the residual of these products may differ from conventional products. Repeated use of some products may result in an increase in mite populations. The timing of some of these products (particularly later in the season) may differ from conventional products so refer to Pub. 310, Apple IPM Manual for more information.

## Announcements

### Apple Growers and Cider Pressers Can Take Advantage of the New Food Safety And Traceability Funding Under Growing Forward

New federal-provincial Growing Forward programs have been announced on April 1, 2009. The Growing Forward Food Safety and Traceability Initiative (FSTI) is now accepting applications.

The funding will help facilities adopt food safety and traceability practices. The FSTI provides 75 per cent reimbursement of eligible expenses up to a maximum of \$20,000 under any one, or a combination of, the following three options:

**Option 1:** up to \$20,000 per eligible applicant to develop, write and implement a food safety program, individual food safety practices, or a working traceability system. Option 1 applicants must attend an OMAFRA information session before applying.

**Option 2:** up to \$20,000 per eligible applicant, to make food safety improvements to a currently certified, audited or verified food safety program. A schedule is provided of recognized programs.

**Option 3:** up to \$5,000 per eligible applicant for the purchase of equipment, take training or obtain certification, audit or verification of a recognized food safety program.

**The program is on a first come, first served basis. If one or more options apply to your operation, we encourage you to complete and send an application as soon as possible.**

Applicants interested in applying must attend an FSTI information session prior to submitting an application form. The certificate that participants receive at these sessions must be attached to your application form.

A listing of currently scheduled sessions can be found online at :

[www.omafra.gov.on.ca/english/food/foodsafety/grants/infosessions.htm](http://www.omafra.gov.on.ca/english/food/foodsafety/grants/infosessions.htm)

To pre-register for one of these scheduled information sessions - or to request the scheduling of a session in your region - call toll free 1-888-479-3931 (1-888-GRWFW1).

For more information, see the OMAFRA website at [www.ontario.ca/foodsafety](http://www.ontario.ca/foodsafety) or email us at [FSTI.omafra@ontario.ca](mailto:FSTI.omafra@ontario.ca)

Wednesday July 22<sup>nd</sup>, 2009 (2:00 – 6:00 PM)  
Cedar Springs Research Station

*Growers and industry representatives are invited to an informal orchard meeting where tree fruit research on peach, pear, cherry, and apple will be presented. Speakers from the University of Guelph, Agriculture and Agri-Food Canada, Michigan State University, and OMAFRA will discuss new management techniques, cultivars, advanced breeding selections, pest control and weed management strategies, new approaches to chemical thinning, and growth control using plant bio-regulators. This event, hosted by the University of Guelph, is sponsored by a research project based on the sustainability of the tree fruit industry and partially funded by the University of Guelph/OMAFRA Sustainable Production Systems Research Program.*

## PROGRAM

|                |                                                                         |                                                                                        |
|----------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| <b>2:00 pm</b> | Light Refreshments                                                      | Welcome, Dr. Robert Gordon, Dean, Ontario Agricultural College, University of Guelph   |
| <b>2:15</b>    | Apple performance on Dwarfing Rootstocks; High Density Peach Production | John Zandstra, University of Guelph, Ridgetown Campus                                  |
| <b>2:35</b>    | Improving Efficiencies in Apples                                        | Leslie Huffman, Apple Specialist, OMAFRA Harrow                                        |
| <b>2:55</b>    | Are Pears in Your Future?                                               | Dr. David Hunter, Research Scientist, AAFC, Vineland                                   |
| <b>3:15</b>    | Michigan's approach to Chemical Thinning and the Use of Apogee™         | Phil Schwallier, District Hort. Educator & CHES Coordinator, Michigan State University |
| <b>3:45</b>    | Stone Fruit Breeding Selections                                         | Dr. Jay Subramanian, Stone Fruit Breeding and Biotech, University of Guelph, Vineland  |
| <b>4:05</b>    | New Advances in Tender Fruit                                            | Ken Slingerland, Tender Fruit and Grape Specialist, OMAFRA, Vineland                   |
| <b>4:25</b>    | Plant Bio-regulators for Apples and Stone Fruits                        | Dr. John Cline, Pomologist, University of Guelph, Simcoe and Vineland                  |
| <b>5:00</b>    | Barbeque Dinner                                                         |                                                                                        |
| <b>6:00</b>    | Adjourn                                                                 |                                                                                        |

### Directions

The Cedar Springs Research Station is located on Highway #3 ~5 km east of Cedar Springs,.  
The address is 7350 Talbot Trail, Blenheim, Ontario

### Information

**Agricultural Information Contact Centre:** 1-877-424-1300

**E-mail:** [ag.info.omafra@ontario.ca](mailto:ag.info.omafra@ontario.ca)

**Northern Ontario Regional Office:** 1-800-461-6132

**[www.ontario.ca/omafra](http://www.ontario.ca/omafra)**