



ORCHARD NETWORK

For Commercial Apple Producers

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Orchard Management

The Amazing Cold Hardiness Process in Fruit Trees

Leslie Huffman, Apple Specialist, OMAF and MRA

Baby, it's cold outside! That's been the main topic of conversation recently, and many have asked how the fruit trees are surviving this winter.

Mother Nature has an amazing process to move trees into **dormancy** and develop **cold hardiness**. When daylength got shorter last summer, trees responded by ripening fruit, storing carbohydrates in their roots and wood, and wrapping their buds in thick, waxy protective scales. Leaves fell off the trees, but respiration continued at low rates. This stage is called **quiescence**, when it is best to avoid practices like fall pruning, fertilization or cultivation that "wake them up" and reduce hardiness.

As temperatures got progressively cooler through the fall, plant tissue started exporting water from inside their cells into the spaces between cells. The goal is twofold: firstly, to avoid cell wall damage by encouraging ice crystals to form between cells instead of inside them, and secondly, to concentrate the cell

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contents and lower the freezing temperature, similar to antifreeze. By January, trees had entered the **rest stage**, when they require many days of cold before they re-enter spring quiescence. Fortunately, this **chilling requirement** keeps trees dormant through early winter thaws.

Cold hardiness is a continuous process, and reaches a maximum by mid- to late January. Each day of cold temperatures results in plant tissues that can withstand progressively colder temperatures. And each warm day results in reduced ability to withstand cold.

So how much cold will fruit trees tolerate? This depends on many factors, and will vary between species and cultivars. For example, some apple cultivars might be damaged below -28 C, while others can tolerate -35 C. Peaches, grapes and berries are less hardy than apples and pears. We know that healthy trees are the hardiest, and that snow cover helps protect lower trunks and roots, which are less hardy tissues. Fortunately, trees do not experience wind chill like we do, although excessive winds can cause desiccation.

Some growers are cutting buds to assess if damage occurred, but the winter is not yet over. The next thaw will reduce hardiness, and the daily temperature changes are critical in late winter. For now, it is important to understand the amazing process of cold hardiness, and assess if management changes could enhance hardiness in the future.

Rootstock Performance when Growing 'Honeycrisp'

John A. Cline, University of Guelph, Simcoe and John Zandstra, University of Guelph, Ridgetown

Most producers would agree that among the two dozen or so apple cultivars grown commercially in Canada, few present as many horticultural and postharvest challenges as 'Honeycrisp'. In the latest planting statistics (OAG, 2013), 'Honeycrisp' acreage has been increasing at a rate of ~150% since 2005, placing it within the top 6 of cultivars grown in Ontario. Were it not for its high eating quality and attractive market returns, this cultivar would most certainly not remain as popular amongst growers. Its horticultural challenges are arguably unmatched – as it is prone to biennial bearing, calcium disorders, graft union breakage, weak tree growth, and a puzzling leaf zonal chlorosis that appears unrelated to tree nutrition or virus status.

The Canadian Horticultural Council has received funding through the AAFC AgriInnovation Fund to support a 5-yr research project to evaluate the performance of 'Honeycrisp' apples trees on several new Vineland and Cornell-Geneva rootstocks. Trees on 16 rootstocks (B.10, G.11, G.202, G.214, G.30, G.41, G.5890, G.935, G.969, M.26 EMLA, M.9 T337, M.7, MM.106, Vineland.5, Vineland.6, Vineland.7) will be planted in 2014 at two University of Guelph locations: the Horticultural Station in Simcoe, and the Cedar Springs Research Station near Blenheim. Trees will be spaced 4.0 ft x 12 ft (1.22 m x 3.66m) (907 trees/acre) and grown using a tall spindle-type orchard system. As well, at the Simcoe site, 'Aztec Fuji' trees will be grown at a slightly wider spacing of 5 ft X 13 ft (1.52 m X 3.96 m) (672 trees/acre). This is a redder and earlier maturity strain of 'Fuji' that is gaining attention amongst growers in warmer regions. Trees will be monitored annually for tree growth, yield, fruit size, rootstock suckering and longevity. Once fruiting, additional studies such as rootstock effect on calcium uptake and propensity to bitter pit will be investigated. Similar plantings will be established in other apple growing regions of the US and Mexico as part of a NC-140 study (www.nc140.org). Statistical analyses will be done to compare the performance of rootstocks within and between locations.

The overall objective of this research is to measure the performance of several of the new Cornell-Geneva and Vineland apple rootstocks using weak ('Honeycrisp')

and vigorous ('Aztec Fuji') scion cultivars and determine their long-term performance over several difference temperate growing regimes in North America. The outcome of this study will help growers make informed cultural decisions concerning the growing of these two cultivars on many of the new rootstocks which will become available commercially over the next decade. In addition, these experimental plantings will serve as local demonstration sites for the industry to gauge overall tree growth and performance using a relatively high density, modern orchard system currently being promoted throughout North America.

Building Strong Trellises to Support Large Apple Crops

Hugh Fraser, Agricultural Engineer and Leslie Huffman, Apple Specialist, OMAF and MRA

The support system of the high density apple orchard is a key factor for achieving early tree growth, as well as early and high yields. The support system signals the tree to direct its energy into growing fruit spurs and fruit buds, as well grow a strong root system to feed the tree and crop. A tree supported from the time of planting will produce 30% or more yield in the first five years.

Apple growers have been moving from individual tree stakes to a post-and-wire trellis system for several reasons:

- at tree densities higher than 700 trees/acre, a trellis is more economical than individual stakes
- attaching trees to wires reduces twisting in wind events, with hopefully less graft union breakage
- trellis wires give more options for branch positioning to encourage fruit bud initiation and fill the cropping area.

Recent failures of orchard trellises after wind, snow and heavy rain events have highlighted some critical areas for proper construction:

- **Anchors** should be screwed into the ground at least 3 ft. and preferably 4 ft. deep.
- **Anchor posts** should be at a 60° angle for maximum strength.
- **In-row posts** should be a maximum of 40 ft. apart, but 30 ft. is much stronger.
- **Post depth** should be at least 3 ft. in the ground, preferably 4-5 ft. (depending on their height).
- **Post installation** is best done by pounding or vibration, instead of augering.
- **Wires** should be 12.5 gauge high-tensile wire, joined with gripple or similar fasteners, and attached to posts with carefully placed staples, avoiding damaging the wire.

The Ontario Apple Growers are installing trellis demonstration areas on 5 farms across the province this spring, following these and other best management practices. The performance of these trellises will be

monitored as these orchards grow to full production. These trellises will need to support more than 60,000 lb of fruit per acre, under many kinds of conditions. Hopefully, their design will withstand this tremendous load and protect the crop until harvest is complete.

For more information on building trellises, see "Tall Spindle Orchard Support Systems" at www.omafr.gov.on.ca/neworchard/english/apples/9trellis.html.

Pondering Precision Pruning in 2014

Leslie Huffman, Apple Specialist, OMAF and MRA

Last March, at the Cornell Apple Summit on Precision Cropload Management, we learned techniques to more accurately achieve the desired cropload for our yield goals. In 2013, we field tested 2 of these techniques: Precision pruning in March, and in May, the Fruitlet Growth model to predict how many fruitlets will drop after a chemical thinner. Both techniques gave good information for further management decisions on cropload.

After a heavy crop in most areas in 2013, there could be a smaller set of fruit buds for 2014. Of course, this will depend on many factors including cultivar, tree age and health, and last year's weather. Using Precision Pruning can still be useful this year, and in fact, may be more important to do earlier – before any pruning is done.

The first step is to determine how many fruit buds you need for your yield goals. Here is a chart that compares three common systems in Ontario – for each of your blocks, you should develop a similar chart:

Orchard system	Tall Spindle	Slender Spindle	Conventional
Yield goal	1500 bu/acre	1000 bu/acre	800 bu/ac
Tree density	1000 trees/ac	622 trees/ac	145 trees/ac
Tree spacing	11 x 4'	14 x 5'	20 x 15'
Yield per tree	1.5 bu/tree	1.6 bu/tree	5.5 bu/tree
Fruit per tree (100 count)	150 fruit/tree	160 fruit/tree	550 fruit/tree
Branches per tree	24	12	12
Fruit per branch	6-7	13-14	44-46
Buds needed*	12-14	26-28	88-92

**Includes an insurance factor of 2 to ensure that enough buds set. This should be varied by cultivar (eg. 2.5 for Honeycrisp, Jonagold; 2.0 for Empire, McIntosh; 1.8 for Gala)*

The next step is to carefully look at fruit buds in each block. In mid-winter, it is harder to differentiate between fruit and leaf buds. Look at the spur structure, where apples were picked last year. Bring some buds inside to slice open – with a good hand lens, you can see floral parts.

If your crop potential is light, prune a demonstration tree and do a final bud count. If needed, adjust your pruning to leave more fruiting area.

If your crop potential is heavier, remove more large branches with fruiting buds. Reducing crop in the dormant stage results in the biggest increase in fruit size. The energy is directed to fruit size rather than setting too many fruit. Reducing your crop load through pruning is a win-win situation.

Two Practices to Improve On-farm Water Use Efficiency

Rebecca Shortt, Water Quantity Engineer, OMAF

Are you considering improving your on-farm water use efficiency? Do you know what practices are eligible for cost-share funding under the Growing Forward 2 (GF2) Implementation Funding Assistance program for producers?

The following paragraphs outline my top 2 recommended practices for improving water efficiency – and they are both eligible for GF2 funding.

Importance of Monitoring Water Use with a Meter

Knowing how much water you use is the first step to increasing farm water use efficiency. Installing a water meter is a beneficial step for any farm practice which uses water.

A water meter provides an instantaneous reading of the flow of water for the application (e.g. irrigation system) and helps to diagnose if the system is operating as designed.

- Higher than usual flow? Check the system for leaks, worn nozzles and malfunctioning valves.
- Lower than usual flow? Check the system for plugging, malfunctioning valves and pump station performance.

Monitoring the water flow from an application over a period of time, and tracking the total flow reading will help to assess the on-going water use from each application and will help you to evaluate new practices or equipment.

- Assesses the impact of new management practices on the basis of their water usage.
- Allows for an optimization of water use by comparing the water use and associated costs of different practices.

Under scenarios of climate change and where water supplies are stressed, a water monitoring program is the first tool needed to identify water-efficient opportunities.

References:

- Canada-Ontario Environmental Farm Plan (EFP), Worksheet #13, question 1: "Knowledge of water use and supply system". Using a meter and logging the data from the meter is rated as a "Best" practice.
- Technical Bulletin, Ministry of Environment, Permit To

Take Water Program, Monitoring and Reporting of Water Takings: Continuous metering at the point of water taking is the normally accepted, most accurate, and easy-to-use method of monitoring the volume of water taken daily.

In addition to the meter itself, wireless transmission of the meter readings, loggers and software to graph the output are all useful tools to assist you in making good use of the data collected in a timely manner.

Importance of Monitoring Soil Moisture with an Instrument

Monitoring soil moisture is the key to getting the right amount of water to crops at the right time. The use of soil moisture monitoring equipment will benefit decision-making on all irrigated farms.

Monitoring soil moisture and taking action to use the information provided in irrigation decisions will help growers manage soil moisture. Choosing the right times and the right amounts to irrigate can lead to:

- Higher yields
- Better product quality
- Improved plant vigour
- Reduction in disease
- More effective use of water (water efficiency)
- Reduced irrigation costs

Soil moisture instrument demonstrations have occurred in southern Ontario and cooperating farms reported the following outcomes:

- "My understanding of soil moisture monitoring has improved. I now know the field capacity, wilting point and my optimum irrigation trigger points."
- "Soil moisture monitoring helps me determine when irrigation is beneficial."
- "Now I know what is going on in the soil profile; before I was guessing"
- "The soil moisture instruments taught me the best timing and quantities to apply; you can see the trends in the graphs to see if you've applied enough or too much."
- "From the soil moisture instruments I learned that I was not applying enough water."

References:

- Environmental Farm Plan (EFP), Worksheet #13, question 7 "Irrigation Scheduling". Using a soil moisture gauge is rated as a "Best" practice.
- Monitoring Soil Moisture to Improve Irrigation Decisions. OMAF Fact Sheet www.omafra.gov.on.ca/english/engineer/irrigation.htm
- Best Management Practices: Irrigation Management. 2004. Agriculture and Agri-Food Canada. p. 29-37

In addition to the soil moisture instruments themselves, wireless transmission of the moisture readings, loggers and software to graph the output are all useful tools to assist you in making good decisions based on the data collected.

Crop Protection

Phase-Out of Diazinon Products for Apple Growers

Kristy Grigg-McGuffin, Pome Fruit IPM Specialist, OMAF and MRA

Health Canada's Pest Management Regulatory Agency (PMRA) conducted a re-evaluation of diazinon uses in Canada and determined that most uses could no longer be supported due to health and environmental risk concerns. Through consultation with stakeholders, critical diazinon uses that had no alternative control strategies were identified for longer-term phase-out to provide more time to develop a risk management plan. In June 2013, PMRA communicated the phase-out dates for diazinon products and the mitigation measures required to further protect workers and the environment, which is found in their consultation document titled [REV2013-01, Diazinon Risk Management Plan](#).

Phase-out timelines: (Reference: REV2013-01, Diazinon Risk Management Plan – 4.1 Phase-Out Schedule)

Last Date of Use	Crops
December 31, 2013	apricot, peach, plum and prune
December 31, 2016	cherry, <u>apple</u> , blackberry, carrot, Christmas tree, cranberry, currant, gooseberry, loganberry, onion, parsnip, pear, radish, raspberry, rutabaga, strawberry, tobacco and turnip

How Will This Affect Apple Growers?

In apples, this phase-out includes both registered diazinon products, **Diazinon 50 WSP** (PCP #29976) and **Diazinon 500 E** (PCP #11889). Options for diazinon alternatives are available for most apple pests. However, alternative products may be limited based on the number of different chemical groups to rotate between for resistance management and/or certain alternatives may not provide as effective/ consistent control as diazinon for some insect pests. The table below provides a list of insect pests that Ontario growers are more likely to use diazinon for control of and the alternative products that are registered.

Insect	Alternative products registered
Mullein bug	Group 4: Admire 240 F, Alias 240 SC, Assail 70 WP, Actara 25 WG, Calypso 480 SC
Apple maggot	Group 1: Imidan 70-WP Instapak Group 4: Assail 70 WP, Calypso 480 SC Group 5: GF-120 Fruit Fly Bait (suppression) Group 28: Altacor (suppression), Exirel Group NC (not classified): Surround WP
Rosy apple aphid Green apple aphid	Group 4: Admire 240 F, Alias 240 SC, Assail 70 WP, Actara 25 WG, Calypso 480 SC, Clutch 50 WDG, Closer SC Group 9: Beleaf 50 SG Group 23: Movento 240 SC Group 28: Exirel
Wooly apple aphid	Group 1: Malathion 25 W, Malathion 85 E Group 4: Closer SC (suppression) Group 23: Movento 240 SC
San Jose scale	Group 4: Closer SC Group 23: Movento 240 SC Group NC (not classified): Purespray Green Spray Oil 13 E, Superior 70 Oil
Apple leafcurling midge (Diazinon 50 WSP only)	Group 3: Ripcord, Up-Cyde 2.5 EC

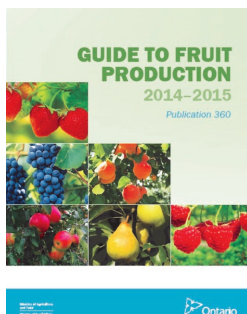
See Publication 360: Guide to Fruit Production for more information on uses of alternative products for the above pests and others listed on the diazinon labels.

The re-evaluation decision also required additional buffer zones for **airblast** applications of diazinon on tree fruit. As of December 31, 2013, these buffer zones are required to be updated as follows:

Crop		Buffer zones (metres) required for the protection of:			
		Freshwater habitat of depths:		Estuarine/marine habitats of depths:	
		Less than 1 m	Greater than 1 m	Less than 1 m	Greater than 1 m
Apple/pear	Early growth stage	75	65	40	35
	Late growth stage	65	55	30	25
Stone fruit	Early growth stage	70	60	35	30
	Late growth stage	60	50	30	20

Coming Soon! 2014-2015 Publication 360, Guide to Fruit Production

A full revision of the OMAF and MRA Publication 360, Guide to Fruit Production will be available in late March 2014. This will have the latest information on pest management, crop nutrition, pesticide safety, resistance management and thinning tree fruit. New this year are more reference tables, including crop groups and degree-day models, new organic and biopesticides section, and new products added to the apple, berry, grape, tender fruit and tree nut calendars.



The Ontario Apple Growers will be purchasing a copy for all their members.

Publication 360 along with many other factsheets, publications and resources can be ordered from Service Ontario:

- Online at ServiceOntario Publications – www.publications.serviceontario.ca/ecom
- By phone through the ServiceOntario Contact Centre, Monday-Friday, 8:30 am-5:00 pm
- 416-326-5300
- 416-325-3408 (TTY)
- 1-800-668-9938 (Toll-free across Canada)
- 1-800-268-7095 (TTY Toll-free across Canada)
- In person at ServiceOntario Centres located throughout the province or at any OMAF Resource Centre. Many can also be found online at www.ontario.ca/omafra

For a complete list of publications from OMAF, visit www.ontario.ca/omafra.

New Products for Ontario Apple Growers in 2014

Kristy Grigg-McGuffin, Pome Fruit IPM Specialist, OMAF and MRA

With the new 2014-2015 Publication 360, Guide to Fruit Production becoming available shortly, here is a list of new product additions Ontario apple growers can look forward to seeing in the new apple calendar. Products including **Fontelis**, **Luna Tranquility**, **Syllit 400 FL**, **Blossom Protect**, **Isomate DWB**, **Lannate Toss-N-Go**, **Altacor** and **Rimon 10 EC** were included in the 2013 Supplement, or information can be found in the [February 2013 Orchard Network Newsletter](#).

The following products are new additions to the apple calendar for 2014:

- **Folpan 80 WDG** (*folpet*) is a Group M fungicide registered for control of scab, black rot, fly speck/sooty blotch at 3.0-3.75 kg/ha. Begin applications at green tip and continue as needed on a 7-10 day interval for scab. Apply fungicides preventatively to susceptible varieties beginning at pink in orchards with a history of black rot and petal fall for orchards with a history of fly speck/sooty blotch. This product may cause russetting to Delicious and other sensitive varieties when used at pink to 30 days after petal fall. Do not use within 14 days of oil. *Preharvest interval (PHI)*: not specified on product label; *Re-entry period (REI)*: 24 hours; *Maximum # of applications per year (on label)*: 6.
- **Granuflo-T** and **Thiram 75 WP** (*thiram*) are Group M fungicides registered for control of scab, black rot, bitter rot and fly speck/sooty blotch at 1.5-2.225 kg/1,000 L water. Begin applications at green tip and continue as needed on a 7-10 day interval for scab. If scab is controlled in your orchard, 1.0-1.5 kg/1,000 L water may be used for summer (secondary) control. Apply fungicides preventatively to susceptible varieties beginning at pink in orchards with a history of black rot and petal fall for orchards with a history of bitter rot or fly speck/sooty blotch. *Preharvest interval (PHI)*: 1 day; *Re-entry period (REI)*: 24 hours; *Maximum # of applications per year (on label)*: not specified on the product label.
- **Inspire Super** (*difenoconazole + cyprodinil*) is a Group 3+9 fungicide registered for control of scab at 560-836 mL/ha and for rust, fly speck/sooty blotch and suppression of powdery mildew at 836 mL/ha. Do begin applications of this product for scab earlier than tight cluster. Use high rate under high disease pressure. This product is weak on fruit scab; do not use if lesions are present. If the alternate rust host, Eastern red cedar is nearby, this product may be used up to and including first summer spray. Apply Inspire Super for fly speck/sooty blotch at petal fall if these diseases were a problem in the past. *Preharvest interval (PHI)*: 14 days; *Re-entry period (REI)*: 12 hours; *Maximum # of applications per year (on label)*: 4.
- **Kasumin 2L** (*kasugamycin*) is a Group 24 fungicide registered for control of fire blight at 5 L/ha. Models to time fire blight sprays (e.g., Maryblyt, Cougar Blight) are available. See www.ontario.ca/cropIPM. Otherwise, apply at 20-30% bloom if temperatures are over 18°C with high humidity (over 69%), heavy dews or rainfall. Do not make more than 2 consecutive applications before rotating to another fire blight product. Do not use after petal fall. *Preharvest interval (PHI)*: 90 days; *Re-entry period (REI)*: 12 hours; *Maximum # of applications per year (on label)*: 4.
- **Buran** (*garlic powder*) is a biopesticide registered for the suppression of scab at 18 L/ha. Begin

applications at green tip and continue as needed on a 7-14 day interval. Repeat applications and thorough coverage are required for efficacy as the active ingredient works by inhibiting germination of fungal spores. This product may be organic. Consult with your certifying body before use. *Preharvest interval (PHI)*: 0 days; *Re-entry period (REI)*: when dried; *Maximum # of applications per year (on label)*: not specified on product label.

- **Exirel** (*cyantraniliprole*) is a Group 28 insecticide registered for control of tentiform leafminer, Oriental fruit moth and codling moth at 500-750 mL/ha; spring-feeding caterpillar and obliquebanded leafroller at 0.5-1.0 L/ha; European apple sawfly and white apple leafhopper at 1.0 L/ha; plum curculio and Japanese beetle at 1.0-1.5 L/ha; and rosy/green apple aphid and apple maggot at 1.5 L/ha. Do not tank-mix or make sequential applications with strobilurin, copper or captan fungicides. *Preharvest interval (PHI)*: 3 days; *Re-entry period (REI)*: 12 hrs; *Maximum # of applications per year (on label)*: 4 (max. 4.5 L/ha).
- **Closer SC** (*sulfoxaflor*) is a Group 4C insecticide registered for the control of rosy/green apple aphid at 100-200 mL/ha, San Jose scale at 400 mL/ha and suppression of wooly apple aphid at 200 mL/ha. Maximum of 2 applications of products from Group 4 per season. Repeated use may result in mite outbreaks. Although products in Group 4A (neonicotinoids) and 4C are thought to have the same target site, current evidence suggests the risk of metabolic cross-resistance between these groups to be low. If there are no other alternatives, products from these groups may be rotated. *Preharvest interval (PHI)*: 7 days; *Re-entry period (REI)*: 12 hrs; *Maximum # of applications per year (on label)*: 2.

The following products are label expansions for existing products in the apple calendar:

- **Actara 25 WG** (*thiamethoxam*), **Clutch 50 WDG** (*clothianidin*) and **Malathion 85E** (*malathion*) are Group 4A (Actara, Clutch) and 1B (Malathion) insecticides registered for the suppression of brown marmorated stink bug at 385 g/ha (Actara), 210-420 g/ha (Clutch) and 1.22 L/ha (Malathion). This pest has not been detected in orchards, but breeding populations are present in Ontario. Check the OMAF website at www.ontario.ca/stinkbug for updates on pest development, registered products and management strategies for control. Apply when insects first appear. *Preharvest interval (PHI)*: 60 days (Actara), 7 days (Clutch), 3 days (Malathion); *Re-entry period (REI)*: 12 hours; *Maximum # of applications per year (on label)*: 2.
- **Up-Cyde 2.5 EC** (*cypermethrin*) is a Group 3 insecticide that is registered for the control of tarnished plant bug at 400 mL/ha. Apply from tight

cluster to pink if feeding damage is observed. Group 3 products are highly toxic to beneficial insects and may lead to mite outbreaks. Do not apply when bees are active in the orchard. Maximum of 1 application per season. *Preharvest interval (PHI)*: 7 days; *Re-entry period (REI)*: 12 hours; *Maximum # of applications per year (on label)*: 3.

- **Delegate WG** (*spinetoram*) is a Group 5 insecticide that is registered for the control of dogwood borer at 420 g/ha. Apply to trunk 7 days after peak flight of adults (typically early to mid-July) in orchards with a history of borer problems. Re-apply at 2 week intervals for the duration of adult flight, which may extend well into September. Direct the spray to the lower portion of the trunk, particularly the graft union and any pruning cuts. *Preharvest interval (PHI)*: 7 days; *Re-entry period (REI)*: 12 hours; *Maximum # of applications per year*: 3.

Getting Ready for Your IPM Program

Margaret Appleby, IPM Systems Specialist, OMAF and MRA

Hard to believe with the winter we are having, that the growing season is only a couple of months away. Now is the time to get ready and order the tools for an effective IPM program for your orchard.

With highly targeted insecticides with short residual activity available it is important to know exactly when these products should be applied in your orchard. Degree day models which predict the life stages of pests have been developed to precisely time products to manage orchard pests. For example, the application timings of products for first generation codling moth range from 83-138 DDC (base 10C) and could be a difference of one or two weeks depending on the temperature in any one year. Similar scenarios play out for Oriental fruit moth and oblique banded leafroller.

To use these degree day models you will need put up pheromone traps and weather monitoring equipment in your orchard. Check out the [apple module of Ontario cropIPM](#) for guidelines for using insect pheromone and visual traps. There you will find information on trap type, number, placement and when to deploy for each pest.

Visit the OMAF website to find a list of [IPM suppliers](#). When you do get your traps and lures, store the lures in the fridge until you are ready to put them out.

Food Safety

How to Prepare For and Respond to a Product Recall

Wayne Du, On-Farm Food Safety Specialist

Having an effective recall system in place is essential to removing contaminated food products from the supply chain quickly and preventing foodborne illness. Are you ready to conduct a product recall? Here are some helpful tips.

Preparing for a recall

- Identify and record contact information for local regulatory authorities and relevant parties such as the Canadian Food Inspection Agency (CFIA), inspectors, your suppliers and buyers, commodity organizations, emergency personnel and veterinarians.
- Have the production information and supporting records organized and handy in the event of a recall.
- Perform a mock recall to test the effectiveness and efficiency of your recall system.
- Ensure you can identify, locate and recall 100% of affected product within 48 hrs.

Responding to a recall

- If a problem has been identified within your operation or with your product, and a recall needs to be initiated, notify the CFIA immediately with the following information:
 - * A detailed description of the nature of the problem.
 - * Details of complaints received and any illnesses reported.
 - * The name or brand of the product, product description and quantity and lot number(s) of the product affected.
 - * Label(s) of the product(s).
 - * Distribution of the product.
 - * Dates of the product distributed.
 - * Contact information of your operation's recall coordinator for both working and off- working hours.
- Notify your buyers and other relevant parties of the situation immediately.

Although producers do everything they can to ensure safe quality products, recalls can and do occur. Being prepared for a recall will help save your time, overall costs to your business and most importantly it will ensure the safety of consumers.

For more information on food recalls, refer to "**Food Recall and Emergency Response**" on the CFIA website or attend our free online workshops on recall. Visit us at: www.ontario.ca/foodsafety or call: 1-877-424-1300 for the workshops.

Announcements

OFVC Apple Program Thursday, February 20 Ballroom A



- 9:30 a.m. **My progression to fruiting walls and mechanical hedging**
Mo Tougas, Tougas Family Fruit Farm, Northborough, Massachusetts
- 10:00 am **Making AppleTracker work for you**
Matt Deir, Dragonfly IT, Kingston
Andrea Otten, Josmar Acres, Lynden
- 10:30 am **Introducing the 'Arctic Apple'**
Neal Carter, Okanogan Specialty Fruits, Summerland
- 10:45 a.m. **Panel: Growing Honeycrisp apples**
Moderator: Leslie Huffman, OMAF and MRA, Harrow
- * *Shane Ardiel, Apple Springs Orchards, Clarksburg*
 - * *Cathy McKay, Nature's Bounty Farm, Port Perry*
 - * *Murray Porteous, Lingwood Farms, Simcoe*

Lunch & Trade Show

- 2:00 p.m. **Horticultural management of Honeycrisp apples in Washington**
Dr. Ines Hanrahan, Washington Tree Fruit Research Commission, Yakima
- 2:30 p.m. **Advances in apple storage recommendations and technology**
Dr. Jennifer DeEll, Fresh Market Quality Lead, OMAF/MRA, Simcoe
- 3:00 p.m. **Sorting out spots on apples**
Kristy Grigg-McGuffin, OMAF/MRA, Simcoe
- 3:30 p.m. **Current horticultural challenges for tree fruit growers in Washington**
Dr. Ines Hanrahan, Washington Tree Fruit Research Commission, Yakima

OFVC Apple Cider Workshop (Sweet and Hard Cider) Wednesday, February 19 Room 206

- 9:30 a.m. **New Cider Technologies: Mobile Pressing, Bag-in-Box**
Garry and Gord Geissburger, Farmhouse Ciders, Clarington
- 10:00 a.m. **Making Winning Cider at Delhaven Orchards**
Hector and Mark Delanghe, Delhaven Orchards, Blenheim
- 10:30 a.m. **Choosing the Right Apples for Better Ciders**
Ben Watson, Chelsea Greene Publishing, New Hampshire
- 11:00 a.m. **Economic Impact Study for the Ontario Hard Cider Industry**
Nick Sutcliffe, Ontario Craft Cider Association, Caledon East

Beverages Featured at OFVC

Three competitions will be held at the Ontario Fruit and Vegetable Convention (OFVC) in Niagara Falls on November 19.

The **Ontario Sweet Cider Competition** returns for its 4th year, and the competition is again expected to be keen.

The **Great Ontario-Hopped Craft Beer Competition** will return for its second year, where Ontario hop growers have been matched with craft brewers to make an "American brown ale"-style beer.

And for the first time this year, the **Ontario Craft Cider Competition** will feature delicious hard apple ciders made by commercial craft cideries in Ontario. The newly formed Ontario Craft Cider Association (OCCA) now has 17 members and we hope to sample ciders from many of them.

The Ontario beverage industry is expanding into new products, creating high quality products made from Ontario-grown ingredients. Sweet apple cider has been a traditional beverage made with tree-picked Ontario apples, and the recent interest in hard cider has resulted in impressive growth in sales of ciders, both commercial and craft ciders. The recent expansion of the Ontario hops industry and their linkage with Ontario craft brewers has helped grow the craft beer industry.

Drop into the Port Colborne lounge on Wednesday afternoon to watch our judges sip their way through this year's entries.

Plan your time at the OFVC



So much to see and do at OFVC! Maybe more than one person from your farm needs to head to Niagara Falls for Nov. 19-20. There are many sessions on vegetables, tender fruit, berries and grapes, as well as apples and cider. But there are many other workshops and session that may be of interest. Here is a general listing:

	Wednesday	Thursday
am	Water management Organic crops	Nematode management Vegetable pathology Specialty fruits
pm	Irrigation Biopesticides	Funding programs Neighbour relations Labour-saving technology
All day	Direct farm sales Farmers' Markets	

The full detailed program can be found at www.ofvc.ca. See you next week in Niagara Falls!

Opportunities with the IFTA

The International Fruit Tree Association (IFTA) has been helping growers learn about growing dwarf fruit trees since 1958. There will be 3 exciting educational opportunities for members of the IFTA to continue this tradition:

- 57th Annual Conference, February 23-26, 2014, Kelowna B.C. A pre-conference workshop on Feb. 22 will focus on cherries, and a post-conference tour will feature orchards in British Columbia and Washington State.
- International Study Tour to South Tyrol in Italy, November 16-23, 2014. This will include the Interpoma Hort Show in Bolzano, as well as speaker presentations and orchard tours.
- 58th Annual Conference will be hosted in Ontario in February-March 2015. The organizing committee is now planning an education session, orchard and industry tours, and hope that many Ontario growers will take advantage of this learning opportunity.

Membership in IFTA costs \$175US, with the benefit of attending annual meetings, and tours. The published proceedings are provided for reference. As a member, you can network with fruit growers across the country and in neighbouring states as well as internationally.

For more information on IFTA, you can talk to Ontario board member Chris Hedges chrish@martinsapples.com or www.ifruittree.org

Cornell in-Depth Fruit School 2014

For the 2nd year, Cornell University and the New York Fruit Team has opened up an educational opportunity for Ontario fruit growers. This year's theme is "The Application of Physiological Principles to Fruit Crops". This one-day intensive school will focus on fruit crop physiology and how it can improve orchard management.

Six international tree fruit plant physiologists will be feature speakers:

- Dr. John Palmer, New Zealand
- Dr. Ted DeJong, California
- Dr. Alan Lakso, New York
- Dr. Duane Green, Massachusetts
- Dr. James Syvertsen, Florida
- Dr. Jim Flore, Michigan

These speakers are international scientists that spent their careers trying to understand the physiology of fruit crops, and apply it to improve orchard practices. Because these researchers will soon be retiring, Cornell University specialists are using this opportunity to bring them together and present their life-time learnings as practical applications for tree fruit production. This is a once-in-a-lifetime opportunity to learn from these scientists.

Topics will include: Light interception, orchard design, fruit quality, photosynthesis, fruit growth and development, plant growth regulation, and water relations and irrigation. Facilitators will keep the discussion on practical aspects in the orchard.

The Fruit School will be Tuesday, March 25, 2014 in Geneva, New York. Registration cost is \$100US, with an optional dinner with the speakers for \$50. Online registration is preferred at <http://events.cal.cornell.edu/indepthschool2014>. See the enclosed flyer for more details. Hope to see you there!

Growing Forward 2 Funding Assistance Program for Producers, Organizations and Collaborations

Growing Forward 2 (GF2) is a federal-provincial-territorial program aimed at encouraging innovation, competitiveness and market development in Canada's agri-food and agri-products sector. In Ontario, farm, food and bioproduct businesses, collaborations and organizations can build their own plan and select opportunities to help grow their profits, expand their markets and manage risks.

Important Dates:

Capacity Building Funding Assistance – ongoing intake from all eligible clients

Implementation Funding Assistance intakes for **producers and processors**

- December 16, 2013 to January 30, 2014
- February 4, 2014 to May 1, 2014
- May 6, 2014 to August 28, 2014
- September 2, 2014 to December 11, 2014

Implementation Funding Assistance intakes for **organizations and collaborations**

- December 16, 2013 to January 30, 2014
- January 31, 2014 to March 13, 2014
- March 14, 2014 to May 1, 2014
- May 2, 2014 to July 3, 2014
- July 4, 2014 to August 28, 2014
- August 29, 2014 to October 16, 2014
- October 17, 2014 to November 9, 2014
- November 10, 2014 to December 11, 2014

Implementation Funding Assistance

Clients may be eligible for cost-share for projects that help to achieve their business goals. Applications for project implementation will be reviewed and assessed based on merit. Having a detailed business and/or workplan, budget and applicable permits and approvals in place prior to submitting an application will increase your success in securing cost-share.

Individual farm businesses may be eligible to receive up to \$350,000 over the five-year program (April 1, 2013 to March 31, 2018)

Producers are strongly encouraged to attend a free capacity building workshop such as the Canada-Ontario Environmental Farm Plan (New 4th edition) and Growing Your Farm Profits workshop.

Please visit the GF2 website at: www.ontario.ca/growingforward2

You can access a full listing of programs and services for Ontario farmers on the website at www.omafra.gov.on.ca/english/busdev/facts/progserv.htm or by calling the Agricultural Information Contact Centre at 1.877.424.1300 and requesting a hard copy of the factsheet 'Programs and Services for Ontario Farmers'.



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

E-mail: ag.info.omafra@ontario.ca

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

www.ontario.ca/omafra

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