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ORCHARD NETWORK

For Commercial Apple Producers

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In this issue...

Orchard Management

Apple IPM for the Future

Margaret Appleby, IPM Systems Specialist, OMAFRA

Every year at this time, apple IPM scouts take a one day course on IPM for apples. I tell them that apple orchards are one of the most complex crops to grow, especially in pest management. We know that this crop is never boring, especially with over 35 diseases and insect pests affecting apples. It takes years of experience to master the art of growing apples and the complicated IPM program developed over the last 50 years. But this mature IPM program is not static: its dynamic nature shows when every year is different.

In my involvement with apple IPM, there has been a move away from broad-spectrum pesticides to reduced-risk, targeted products that requires thorough understanding of the pest dynamics and crop protection products. Now and into the future, we can see opportunities to continue this movement by incorporating biopesticides and biological control agents into the apple IPM system.

We have incorporated mating disruption for several years with good success in managing Oriental fruit moth. The next challenge will be incorporating biopesticide products such as granulovirus, garlic powder, mineral oils, yeasts, beneficial bacteria and phages for various other pests.

Ministry of Agriculture, Food and Rural Affairs

Ontario

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This issue of the **Orchard Network Newsletter** was compiled by Carolyn Prieur, Client Service Representative, OMAFRA, Vineland Station

We have learned that biological control agents need patience in research, development and lastly, introduction. We have learned to not expect overnight results, but to rely on an increasing build-up of the agent over time to help balance the pest population. We have learned that a soft approach to insecticides used for other pests is needed. We also have a new appreciation of providing food and shelter for beneficial insects and wild pollinators in the form of wild flower refuges. Research on diversity borders for orchards by David Biddinger from Pennsylvania State University and Mark Whalon from Michigan State University looks promising. www.ipmcenters.org/ipmsymposiumv/sessions/57-1.pdf

Some biological control agents ready to go. For example, the larval parasitoid *Lathrolestes ensator* (Brauns), for European apple sawfly has been introduced to Quebec and Eastern Ontario orchards. Once this parasite is established at these sites, these sites will be used as seed orchards to disseminate the larval parasite to sawfly-infested orchards. This is not a stand-alone method of control but should be used in conjunction with reduced risk pesticides and cultural methods to reduce the population of European apple sawfly.

Remember Spotted tentiform leafminer, a major indirect pest in the 70's and 80's? A resistance management program, introduction of new products and encouraging parasitoids has made this a pest of the past. Now, pupae of parasitic wasps can be regularly found in the mines of tentiform leafminer. Recently, apple leaf curling midge is the indirect pest of concern and biological control agents are being investigated by Dr. Peter Mason, Dr. Joan Cossentine, Andrea Brauner of AFFC and OMAFRA specialists. See the article by Andrea Brauner in this newsletter.

Culturally, I have observed that orchard floor sanitation (using mulching or urea in the fall to break up overwintering leaves, and by removing drops) will be key to reducing diseases and insects such as scab, apple maggot and codling moth. We have learned that this additional cost to your apple IPM system will reduced populations and future costs.

The investment in intensive high density orchards means that IPM scouting becomes even more important. The future will bring remote trapping, sensors and drones to gather information; however, there is still much to be gained from scouting and walking your orchard on a regular and timely fashion.

Sharing information with each other has been a great part of how apple IPM has developed. OMAFRA specialists working with growers, researchers and industry have kept apple production and IPM techniques on the forefront of discussion and innovation. Locally, there has been great sharing at the Durham apple study group that started in 1996 and is still going strong today.

For me, working in apple IPM has never been work but an intriguing and rewarding study. My position with OMAFRA has afforded me the opportunity to learn and understand this dynamic system. As this will be my last article before I retire, thank you for all support, and I wish you many good harvests.

Ontario Fruit Blog: ONfruit

If you are a commercial fruit grower in Ontario, sign up for the new ONfruit blog. Fruit specialists from the Ministry of Agriculture, Food and Rural Affairs (OMAFRA) contribute to the blog and can answer technical questions you may have. All information is specific to growing fruit in Ontario.

Topics on the blog include:

- Fruit crop production
- Insects, diseases and weeds monitoring and management
- Weather related issues
- Soil and crop nutrition
- Industry events

Subscribe at https://onfruit.wordpress.com.

Pre-bloom Micronutrient Applications for Pears and Apples

Christoph Kessel, Nutrition (Horticulture) – Program Lead, OMAFRA

Some micronutrients can be applied pre-bloom to assist fruit buds in recovering from cold winter temperatures injury. The table[1] on page 3 summaries micronutrients and application timing.

Always check labels for rates, compatibility and precautions before combining and applying products.

Nutrient	Green tip - ¼" green	½" green	Tight cluster-pink	Cover sprays	Comments
Copper	Apply from silver tip to ¼" green and/or after harvest				Later applications or use during freezing temperatures will cause injury to apples.
Boron		Assist recovery from winter injury	Improve fruit set and correct low boron levels if the previous season analysis was less than 35 ppm, or when buds have been injured by cold weather.	7-10 day after petal fall and 20-25 days after petal fall.	Pre-bloom sprays generally do not increase boron for leaf samples taken at the normal leaf sampling time (60-70 days after petal fall timing)
Manganese				7-10 days after petal fall	
Zinc		Assist recovery from winter injury	When leaf analysis shows deficient levels or symptoms of winter injury are evident.	2-4 cover sprays required to obtain adequate response.	

[1]Adapted from Stiles, W.C., 2004. Micronutrient Management in Apple Orchards, *New York State Horticultural Society.*

2015 International Year of Soils

Christoph Kessel, Nutrition (Horticulture) – Program Lead, OMAFRA

Soil is a non-renewable and finite resource. Soils need to be recognized and valued for their productive capacities, for their contribution to food security, and the maintenance of complex ecosystems.

To increase our awareness of our global dependence on soils, The Food and Agriculture Organization of the United Nations (FAO) has designated 2015 as the International Year of Soils.

For more information visit: www.fao.org/soils-2015/about/en/

Trellis Support Systems for High Density Apple Orchards

Hugh W. Fraser, Agricultural Engineer and Leslie Huffman, Apple Specialist
Ontario Ministry of Agriculture, Food and Rural Affairs

Why install a trellis support system?

- Trees direct energy to fruiting, rather than strong trunk wood
- Tall supported leaders control the tree's growth
- Light interception is optimized for improved fruit quality
- Earlier yields start in years 2-3, creating higher yields over time
- GPS guided mechanization is more possible
- Labour costs decrease with uniform trees, makes tasks easier
- Trees twist less in wind, so graft union breakage is minimized

What materials and methods ensure strong trellises?

- Quality wood posts, with few knots
- Posts long enough to ensure ~1/4 their length is driven into soil
- Install posts by vibrating or pounding, not augering
- 12.5 gauge high tensile wire and good quality staples/fasteners
- In-row posts at least 4" in diameter
- Angled and H-brace post anchors at least 4" to 5" in diameter
- Good planning to maximize profits, while minimizing problems

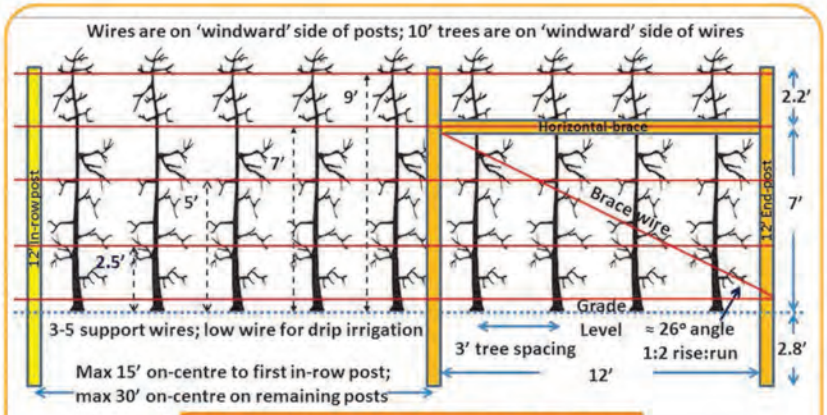
Common Trellises and Anchors

Adapted from *Support Systems for High-Density Orchards, BC Ministry of Agriculture and Fisheries, 1989*
(Note: Trees in sketches should show in 'front' of wires and braces)

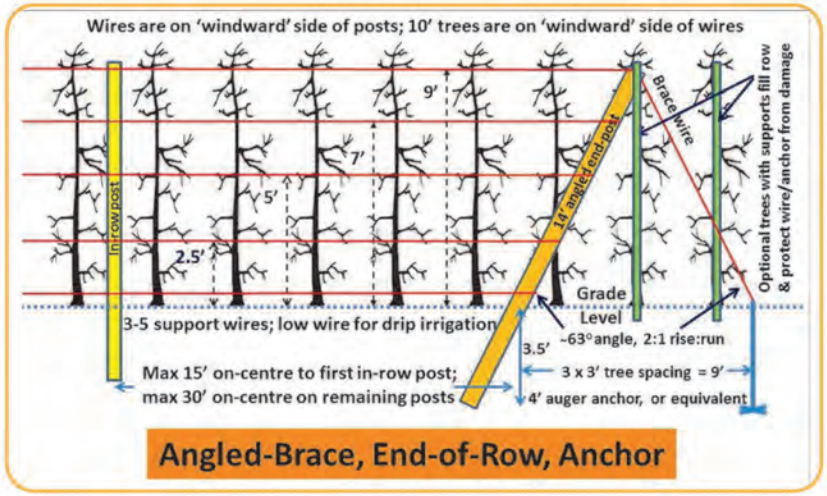
Trees supported from planting time have increased yields of 30+% in the first five years

Trellises help us conceive orchards differently; narrow, tall, dense fruiting walls, more 2-D than 3-D

Row Spacing x 0.9 = Tree Height
11' rows x 0.9 = 10' tree height; 10' trees need at least 9' wire height



H-Brace, End-of-Row, Anchor



Angled-Brace, End-of-Row, Anchor

Wind loads push trellises sideways while lifting them out of the ground; wind varies greatly across Ontario

Trellises support high yields, helping justify platforms, facilitate irrigation, wind machines and/or hail netting

Watch traditional snowdrift patterns, as freeze/thaw cycles and drifting snow can damage branches

Ministry of Agriculture, Food and Rural Affairs

Ontario

Crop Protection

Airblast Sprayer Start-up Tips

Dr. Jason S.T. Deveau, Application Technology Specialist, OMAFRA
Mr. Brian Henderson, Sales Representative, HYPRO/ SHURflo
Mr. Murray Thiessen - Consulting Agricultural Mechanic

You should plan for half-a-day per sprayer for your start-up routine. It may not take that long, but pressure gauges snap off, fittings crack, and bearings seize – have a plan for getting replacement parts! (see Figure 1)
Here are a few bulleted tips for you to consider as you get your sprayers rolling for the 2015 season.

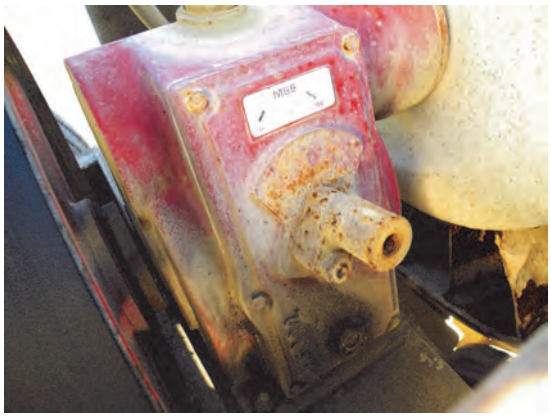


Figure 1 – It takes time and elbow-grease to get seized parts, such as this fan gear box, moving again. Plan for half-a-day per sprayer when performing you seasonal start-up, and be sure you have a source for replacement parts.

Visual inspection, general cleaning and lubrication. Do an operational check of the sight gauge (it should not be opaque), regulator and valves. Inspect the frame for corrosion or broken welds – it might even need a paint job. Test the hitch integrity, safety chains and the tank mount, too. Clean and inspect the fan blades, housing, screen and trash guard. Be sure to clean and lubricate the power take-off telescoping shafts and the shields. Wheels bearings and tire pressure should be inspected. An article on wheel maintenance can be found here: www.omafra.gov.on.ca/english/crops/hort/news/hortmatt/2012/30hrt12a2.htm

Pump Maintenance. One of the most common causes for faulty pump performance is "gumming" or corrosion inside the pump. You should get into the habit of flushing the pump and the entire system with a solution that will chemically neutralize whatever you sprayed that day. This will dissolve most residues remaining in the pump and will also leave the inside of the pump clean for the next use.

⇒ *Diaphragm Pumps*
Hypro recommends changing oil after 40 hours of break-in operation and every 500 hours after that. Diaphragms should be replaced every 500 hours and check valves should be replaced every 1,000 hours. Generally Speaking, EPDM (Black Diaphragms) are a better choice for airblast sprayers while the Desmopan (Amber Diaphragms) are a better choice for lawn care sprayers.

⇒ *Centrifugal Pumps*
Corrosion is the biggest concern. When you winterized your sprayer, you should have cleaned it and flushed it with a 50% solution of permanent-type automobile antifreeze (Prestone® , Zerex® , etc.) containing a rust inhibitor. Alternately, you could have filled the pump with Fluid Film® and then drained and saved the excess for the next application. The ports should have been plugged to keep out air during storage.

Flush the lines. If they aren't already off, remove the nozzles, strainers and filters. Run a few tanks of clean water through the system with the agitation running. This is when rust, scale, anti-freeze and who-knows-what-else breaks free of the sprayer tank and lines. Run them until the discharge is clear, then clean and replace the nozzles, strainers and filters.

Search for leaks. With the tank full, check it for leaks. If the agitator shaft is leaking a little, tighten the packing. If it has bottomed-out you will have to repack it. Get the sprayer up to pressure and look for wet areas on all hoses and connections. If your booms drain through the nozzles when the boom is off, consider new nozzle bodies with check-valves. They cost about $40.00 each (does not apply to Turbomist).

Check your strainers and filters. If you don't already have three levels of filtration (including the tank-opening basket) then consider slotted (not mesh) strainers behind the nozzles in the nozzle body. If you don't use them because they plug up, then look to your agitation system: If there sludge at the bottom of your tank when it's empty, then your pesticide is not mixed or staying suspended properly. That leads to clogged strainers and nozzles. It may also be your sprayer hygiene: You should be washing nozzles and strainers after each spray day.

Are you sure your pressure gauges are accurate? The relief valve should always be in the by-pass position during sprayer start up. If you get a pressure spike during start-up and the needle buries, then the gauge will always read high and must be replaced. An opaque, leaking, or otherwise old gauge should be replaced. Consider purchasing a really good gauge (e.g. www.winters.com) rather than a $20 dollar version for a farm supply store. New or old, test your gauge for accuracy. A tool to do this can be found here: www.omafra.gov.on.ca/english/crops/field/news/croppest/2012/06cpo12a3.htm

So, there are lots of other tips – more than we could include here. For more information, go to www.sprayers101.com.
Happy Spraying!

Sprayers101
@Spray_Guy

Early Application of Copper for Managing Fire Blight

Michael Celetti - Plant Pathologist, OMAFRA
Margaret Appleby - IPM Systems Specialist, OMAFRA

The application of copper from the silver tip to green tip bud stage of apples has been shown to reduce the spread of fire blight inoculum from overwintering cankers. Copper applied at this time of year may also provide some protection against apple scab.

Growers that had fire blight in their orchards last year may want to consider an early season application of copper to reduce the spread the fire blight bacteria oozing from cankers overwintering in the orchard. Orchards that have not had fire blight infections over the past few years probably do not have overwintering cankers, and would not benefit from the use of copper sprays at this time except for managing scab. The objective is to cover the bark of all limbs and trunks with a film of copper. The copper residue will provide an unfriendly barrier over the bark and bud surfaces of the trees to prevent the fire blight bacteria from getting established. The bacteria that cause fire blight are dispersed through the orchard before bloom when the initial infections occur. At this time of year, temperatures above 18^{o}C allow the bacteria to multiply in the canker until the numbers of cells increase and they ooze out of the canker onto the bark. The rate at which the cells divide is temperature dependent. Rain events splash the bacteria cells that ooze out of the cankers around the orchard. Bacteria cells that land on bark can remain alive for some time. When the bacteria come in contact with the film of copper, they die and therefore cannot be further splashed into blossoms later in the spring. Copper sprays at this time of year do not eliminate the need to prune out overwintering fire blight cankers, or the use of streptomycin, kasugamycin at bloom, but they do reduce the population of overwintering fire blight bacteria that ooze out of cankers that may have been missed during pruning.

Copper sprays can be applied from dormant through to green tip, but green tip is the preferred timing of application. Heavy rainfalls after application can partially washing off the copper therefore reduce the effect of this treatment. The use of copper applications after the half-inch green stage can result in phytotoxicity and severe fruit russetting and is not recommended.

Copper sprays work best when applied to all of the trees in the block. Untreated trees (even non-susceptible varieties) provide a safe haven for the bacteria. The copper should be applied with lots of water (at least 1000 L/ha) to insure good coverage.

Copper formulations that contain finely ground fixed coppers such as copper oxychloride in Copper 53W tend to be less phytotoxic and stick to plant surfaces better resulting in better protection from bacteria. Copper Spray contains copper sulfate and should only be applied as a Bordeaux mixture (copper sulfate, hydrated lime and water mix). Adding lime to the copper sulfate reduces but does not entirely eliminate the phytotoxicity (burning action) that would occur if copper sulfate was used alone. When preparing Bordeaux mixture, dissolve 1kg of copper sulfate in 1000 L water in the spray tank following label directions. Turn on the mechanical agitator. Premix the hydrated spray lime in a bucket with enough water to make a slurry and pour the lime slurry through a 0.3 mm screen into the spray tank. Mix the lime and copper sulfate for about 15 minutes before spraying, and keep the agitator running while spraying. The objective is to make a 1:6:1000 Bordeaux mixture (1kg of copper sulfate: 6 kg hydrated lime: 1000 liters of water) and apply as a dilute spray at a rate of 3000 L/ha. Do not use as a concentrate. Bordeaux mixture is not compatible with other pesticides. Do not use Streptomycin after using bordeaux mixture, as the high pH of the Bordeaux will break down the streptomycin. Bordeux mixture is corrosive and sprayers should be thoroughly washed after use.

Fire Blight Prediction Models

Fire blight prediction models help growers time their product applications. Two decision support prediction models, Maryblyt and Cougar Blight, have been developed to help growers and consultants forecast conditions that lead to the infection of apple blossoms. For best results using these models, collect and record information separately from different blocks and cultivars. Daily information on temperature (a Min-Max thermometer works well for this) and rainfall, along with key observations on tree development, including 50% green tip, first bloom and petal fall are important. Green tip is quickly approaching, so now is the time to familiarize yourself with these models if you're planning to use them.

For a free download of the Cougar Blight model, visit:
county.wsu.edu/chelan-douglas/agriculture/treefruit/Pages/Cougar_Blight_2010.aspx
For a free download of the Maryblyt model, visit:
www.caf.wvu.edu/kearneysville/Maryblyt/index.html

Michael Celetti, OMAFRA Plant Pathologist, Horticulture Crops Program Lead will develop Fire Blight Risk Prediction maps using the Cougar Blight model every Monday, Wednesday and Friday from May 1 until the middle of June during bloom period. Regional fire blight risk information will also be provided again this year. The risk maps will be posted on the OMAFRA website and a link will be will be distributed through the Ontario Apple Growers every time new risk maps are developed.
www.omafra.gov.on.ca/english/crops/facts/fireblight-2.htm

Fire Blight Canker Removal in Early Spring

Michael Celetti, Plant Pathologist Horticulture Crops Program Lead

Apple and pear growers who had fire blight last year should scout their orchards for cankers and remove them in late winter or early spring. In fact late winter and early spring is the perfect time of year to remove fire blight cankers from the orchard before temperatures warm up and the cankers begin to ooze bacteria. These over wintering cankers will be the source of the disease this coming year. Removing them now will eliminate or reduce the inoculum source from the orchard.

There are many reasons for canker removal at this time of year. First of all, the bacteria pathogen *Erwinia amylovora* is dormant in the canker during winter and early spring and therefore it will not be spread on pruning shears or tools. There will be no need to disinfect tools between cuts. Secondly, the cankers are easier to see in the orchard without foliage interfering with scouting for them.

Fire blight cankers can develop on twigs, limbs or trunks of trees and can be various sizes. Often the cankers are located where an infected spur, twig or branch was attached the previous season (Figure 1). They often appear slightly sunken with a narrow ridge along the canker margin and do not penetrate deep into the wood. Some cankers may develop cracks within or around the margins (Figure 1) or they may appear smooth (Figure 2). Smooth margined cankers are more difficult to find and are most likely to become active when the weather warms up in the spring. The inner bark of the canker may appear reddish brown and may ooze billions of bacteria cells in a sticky sugary substance during the spring or early summer particularly during wet warm weather (Figure 3). Black sooty mould sometimes grows on the sugary substances which give the canker a dark or black appearance. Often, fire blight cankers become colonized by other fungi such as the black rot fungus *Botryosphaeria obtusa*.

Locating all fire blight cankers in an orchard is often difficult in one operation and it is recommended to scout the orchards more than once during the early spring and at different times during the day. They are observed more easily during bright sunny days. It is also a good idea to scout for fire blight cankers later in the spring when temperatures warm up, at bud opening or green tip, to locate cankers that were missed earlier. Pruning tools will need to be sterilized between cuts at this stage to prevent the spread of the pathogen because the pathogen may be active at this time.

Pruning cuts should be made at least 30 cm (12 inches) beyond the canker or visible infected tissue into 2nd year wood. Trees that appear to be infected perennially or for more than one year indicate that an active canker has been missed or been misdiagnosed and should be removed altogether.

Figure 1. Fire blight canker with a rough margin on a limb associated with an infected branch from the previous year.

Figure 2. Fire blight cankers often appear discoloured and slightly sunken with smooth margins.

Figure 3. An active fire blight canker oozing bacteria during mid-late spring.

Possible Biological Control Agent for Apple Leaf Curling Midge in Ontario

Andrea Brauner, Research Technician, Biological Control, Agriculture and Agri-Food Canada

Apple leaf curling midge (ALCM) (*Dasineura mali* Kieffer) (Diptera: Cecidomyidae) is what is considered a secondary invasive apple pest. During the springtime, the female midge lays eggs on new terminal apple shoots (Figure 1). The larva then hatch and feed on these leaves (Figure 2), causing them to form a tight curl (gall) around the insect (Figure 3). Eventually, infested leaves will turn brown and drop to the ground. The insect pupates in the ground and emerges as an adult midge (Figure 4). In Ontario, ALCM has approximately 3 generations per year. The galls interfere with normal growth and development of young trees delaying or stunting structural development of nursery trees, and only in extremely high densities, do they have impact on older trees.

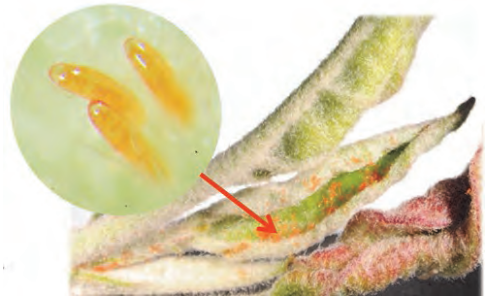


Figure 1: Apple leaf curling midge eggs.

Figure 2: Apple leaf curling midge larvae.

Figure 3: Apple leaf curling midge leaf curl (gall).

Figure 4: Apple leaf curling midge adult.

Because ALCM is an indirect pest of apples, using a biological control agent is a good fit for an IPM program. In 1981 to 1985, a known egg parasitoid of ALCM, *Platygaster demades* Walker (Hymenoptera: Platygasteridae) (Figure 5) was introduced into Quebec, New Brunswick and Nova Scotia (NS) from Austria and Italy. It was imported again into NS in 1993 from the Netherlands. Building on what was learned here; a project was started in 2014 to introduce this egg parasitoid into Ontario and other provinces in Canada. The first important step to introducing this egg parasitoid into other provinces in Canada, is to verify that the ALCM populations do not currently support other parasitoid populations and that the introduction would not damage midge-parasitoid or beneficial midge complexes.

Figure 5: *Platygaster demades*

ALCM surveys have been conducted in select apple orchards in Ontario in the Norfolk, Niagara and Brighton regions to determine the number of generations per year, the percent of infested growing tips in the apple orchards and the local parasitoid communities associated with ALCM.

A minimum number of three generations per year has been recorded in three provinces across the country. In almost all cases, the percent of infested growing tips increases with each generation (Figure 6).

Collections in Ontario show a possibility of a fourth generation of ALCM (Figure 7). Collections further into the fall would be helpful to confirm the actual number of generations per year.

Parasitoids were collected in 8 out of 14 different apple orchards in Ontario (Figure 8). All parasitoids were identified as *Lyrcus nigroaeneus* Ashmead (Hymenoptera: Pteromalidae) (Figure 9) with the exception of one which was a *Eurytoma* species (*Hymenoptera: Eurytomidae*).

In 2015, ALCM surveys in apple orchards will continue in order to strengthen the data and add to the results for the number of generations per year, percent of infested

growing tips and local associated parasitoid communities. In-lab non-target testing will begin with the parasitoid *Platygaster demades* to help determine the impact that introducing this biological control agent into Ontario would have on local related midges – will it attack eggs of similar midge species or will it only attack ALCM eggs? Will *Platygaster demades* have an effect on midge-parasitoid interactions or beneficial midge complexes?

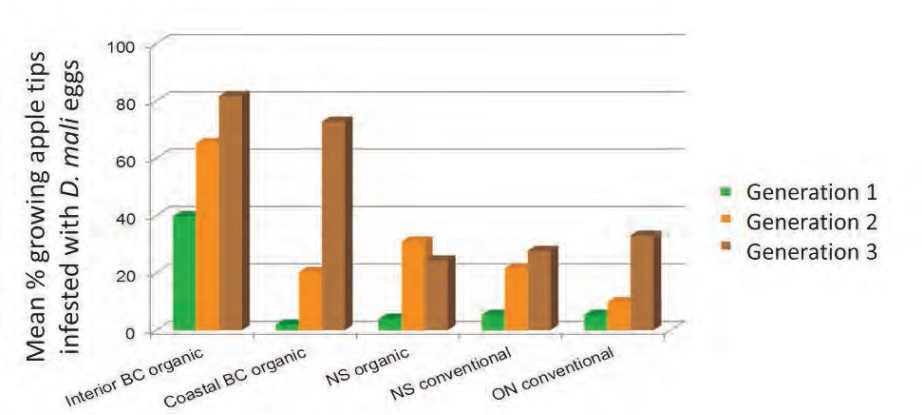


Figure 6: The number of generations per year with percent infested apple tips at each generation in three provinces.

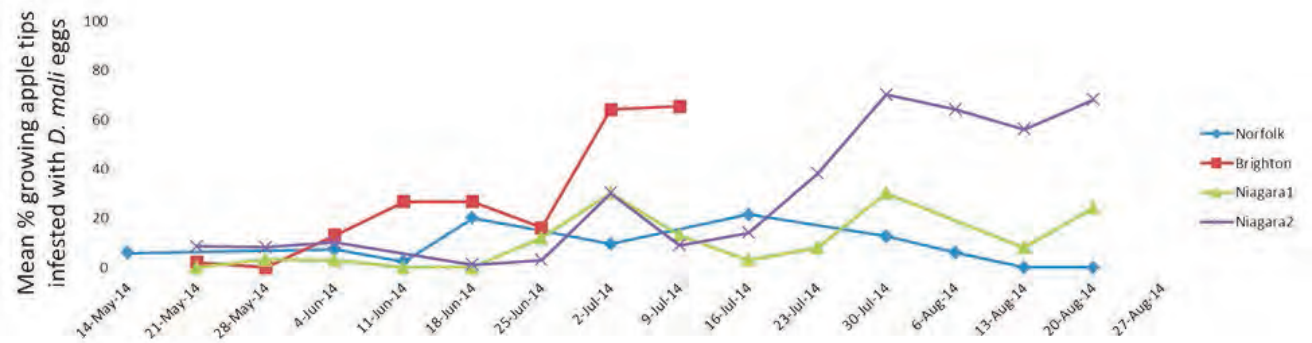


Figure 7: Percent of growing apple tips infested with ALCM eggs in 2014 in Ontario.

Figure 8: Ontario collection sites. Filled circles represent orchards where parasitoids have been found; parasitoids have not been found in the open circle areas.

Figure 9: *Lyrcus nigroaeneus*

Updates and corrections to the 2015 supplement to Publication #360

Correction for the use and timing of Fruitone L.

Chapter 3: Apple Calendar (page 34)

Product to Add	Use/Disease /Insect	Timing	Rate	Comments	Other information
Fruitone L	thinning	- petal fall (3 – 7 mm fruit size) - early fruit set (8 – 10 mm fruit size)	14.8 – 118.3 mL / 378.5 L of water (1.2 – 9.7 ppm)	Level of thinning will vary depending on variety, tree health and climatic conditions. See label for more information. Application to fruit >15 mm may result in misshapen or pygmy fruit on sensitive varieties. Compatible with Sevin XLR for fruit thinning	**Common name:** 1-naphthaleneacetic acid(NAA) **Group:** plant growth regulator **Preharvest interval**: 5 days **Re-entry period**: when dry **Maximum # applications:** 2
	return bloom	- Petal fall (3 – 7 mm fruit size) - early fruit set (8 – 10 mm fruit size)	14.8 – 118.3 mL per 378.5 L of water (1.2 – 9.7 ppm)	Will effectively promote return bloom when used at thinning stage in trees that have biennial bearing.	
	preharvest drop	- 2 weeks prior to harvest - 1 week prior to harvest	Use 10 – 20 ppm for the initial spray. Re-apply at 10 ppm after 5-6 days	Effects will start 1-2 days after application, lasting 7-10 days.	

GRANUFLO T LABEL CHANGES

Granuflo T is a multi-site protectant fungicide which has been growing in popularity since the new formulation was launched in 2013. Granuflo T is registered for control of apple scab, sooty blotch and flyspeck, Brook's Spot, bitter rot, Cedar apple rust and black rot (*Botryosphaeria obtusa*) on apples. It may be mixed with horticultural oil in an early season spray program and, due to its disease control spectrum, is useful as an alternate fungicide in the summer protectant schedule. A recent update to the Granuflo T registration has changed the pre-harvest interval (PHI) from 1 day to 28 days on apples. Apple growers who have used Granuflo T close to harvest should be aware of the longer PHI. The change to 28 days was made in order to better align with international use patterns and destination market residue tolerances.

NOVA LABEL CHANGES

Dow AgroSciences Canada Inc. has advised that there are label changes on Nova fungicide. Specifically, the REI has changed from 12 hours to 12 days for hand thinning for apples. Other activities such as hand pruning, scouting, training, hand weeding, and animal control remain at 12 hours. Growers are reminded to review the label on any product prior to use.

New Products for Ontario Apple Growers

Vivando (metrafenone) is a new fungicide for apples for control of powdery mildew. Apply preventatively when powdery mildew is active starting at tight cluster. The rate is 0.75 – 1.12 L/ha. Use a higher rate when disease pressure is high or during periods of rapid growth. For resistance management apply 2 sequential applications before rotating to a product active against powdery mildew with an alternate mode of action.
Preharvest interval (PHI): 7 days
Re-entry interval (REI): 12 hours
Maximum number of applications: 3

Semios OFM Plus (pheromone) is a mating disruption pheromone registered for reduction in mating of oriental fruit moth in pome fruit. Delivery of this product is unique to Ontario using aerosol technology and wireless mesh network. Apply prior to the flight of the first oriental fruit moth generation. Hang dispenser in upper third of tree canopy with nozzle pointing away from fruit and foliage. Use higher densities (up to double the standard density) at the orchard edge facing the prevailing winds.

Canisters contain 7675 puffs. Typical dispensing rate is 1 puff every 15 minutes over a maximum 12 hours per day (5PM to 5AM). Under typical dispensing rate, canisters should last for ~160 days.
Preharvest interval (PHI) :
not specified on the product label
Re-entry interval (REI) : not specified on the product label
No more than 375 g a.i. / hectare / year

Allegro (fluazinam) a fungicide for the control of apple scab has a new rate range of 0.5 to 1.0L/ha. Control of Bitter rot, Cedar apple rust and Alternaria blotch have been added to the label with a rate of 0.75 to 1.0/ha. Use higher rate for susceptible varieties and/or high disease pressure for all diseases. Apply preventively prior to disease development. Do not mix Allegro with oil.
Preharvest interval (PHI): 28 days
Re-entry interval (REI): 3 days
Maximum number of applications: 9

Pristine, (boscalid and pyraclostrobin), has new diseases added to the label for pome fruit. It is now labelled to control of bitter rot / glomerella leaf blotch and black rot / frogeye leaf spot at a rate of 1.0-1.2 kg/ha. Use a higher rate during periods of rapid growth or when disease pressure is high. Apply preventively prior to disease development.
Preharvest interval (PHI): 4 days
Re-entry interval (REI): Once residues have dried except 2 days for hand thinning and 5 days for hand harvesting
Maximum number of applications: 5

Agri-Mek SC, (abamectin) is a new formulation to replace Agri-Mek 1,9EC, miticide/insecticide There will be both formulations in the market this year, so take note which formulation you are using. Agri-Mek SC rate is 170 mL/ha. Apply with 10L of oil and a minimum of 1000L of water per ha. Apply from petal fall to 28 days after petal fall for the control of European red mite, two-spotted spider mite and tentiform leafminer. May cause russeting on Golden Delicious and other light-skinned varieties. Do not use within 14 days of Supra Captan, Maestro and Folpan.
Preharvest interval (PHI): 28 days,
Re-entry interval (REI) : 12 hours
Maximum of number applications: 1

Pure Spray Green Spray Oil 13 E (mineral oil) now has the control of rosy apple aphid has been added to the label as a summer spray when rosy aphids are active. The rate is 10 L/1000 L. Do not use within 14 days of Supra Captan, Maestro and Folpan.
Preharvest interval (PHI): not specified on the product label
Re-entry interval (REI) 12 HRS
Maximum of number applications: 2 dormant applications and 8 summer spray applications

Announcements

IPM Scout Training Workshop

Margaret Appleby IPM Systems Specialist, OMAFRA, Brighton

Mark your calendars for the 2015 Apple IPM/Scout Training Workshop on Monday, May 11 in Simcoe. The session will start at 9:00 a.m. (registration at 8:30 a.m.) and will be held at the Simcoe OMAFRA Resource Centre, Blueline Rd. and Hwy #3 and session should finish at 3:00 p.m. followed by an orchard visit for hands-on monitoring.

Growers who want to have an IPM refresher course, summer scouts and consultants are all welcome to attend.

Please preregister by contacting the Agricultural Information Contact Centre (toll free) at 1-877-424-1300. There is no charge to attend.

Topics covered will include:

- Understanding the apple tree phenology and orchard practices
- Learning about monitoring techniques
- Understanding apple diseases and insects
- Understanding the beneficial insects and mites
- Finding the information you need

Get primed for the day by having a look at the apple IPM module of Ontario CropIPM (ontario.ca/cropIPM)

OMAFRA Pome Fruit IPM Specialist

Erica Pate was the successful candidate in the competition for the position of acting Pome Fruit Integrated Pest Management Specialist in the Agriculture Development Branch. Erica began her duties on May 4 and is working from the OMAFRA Simcoe Resource Centre. Erica recently graduated from the University of Guelph with a Bachelor of Science in Agriculture. She grew up on a horticulture farm in Brant County and worked in agriculture during the summers. During her university career Erica held summer positions as a crop scout for Cargill, a research assistant for Pioneer, and most recently she completed an Undergraduate Student Experiential Learning project under an agreement between the ministry and the University of Guelph.

She is looking forward to using her education and experience to support the pome fruit sector and to work with stakeholder organizations across the province.

SAVE THE DATE!

Apple Growers Summer Tour
Tuesday July 21 in Essex.