

2013 SUPPLEMENT

Guide to Fruit Production

Publication 360S – January 2013

This supplement is an update to OMAF and MRA Publication 360, *Guide to Fruit Production 2012–2013*, published in February 2012. The following information includes new product registrations and changes from January 2012 to January 2013. For complete information, please refer to the full edition of Publication 360, *Guide to Fruit Production*.

This supplement can be downloaded from the OMAF and MRA website at www.ontario.ca/crops. Refer to this website for updates throughout the year. Printed copies are available from OMAF and MRA Resource Centres or through ServiceOntario Publications.

EXPIRED REGISTRATIONS

This is a partial list of registrations that expired in 2012–2013.

Product	Registration changes
azinphosmethyl (Guthion 50 WSB, Sniper)	Last date of use: December 31, 2012 Crops affected: apples, apricots, cherries, grapes, peaches, plums, pears, raspberries
carbofuran (Furadan 480 F)	Last date of use: December 31, 2012 Crops affected: strawberries
diazinon (Diazinon 500 E, Diazinon 50 WSP)	Registration has expired on grapes.
endosulfan (Thiodan 4E, Thionex 50 WP)	Last date of use: December 31, 2012 Crops affected: apple, grape, pear (Last date of use is December 31, 2016, on apricot, cherry, peach, plum, strawberry)
phosalone (Zolone Flo)	Last date of use: September 30, 2012 Crops affected: apples, cherries
mancozeb + dinocap (Dikar)	Last date of use: December 31, 2012 Crops affected: apples, pears, grapes

NEW PRODUCTS

New Products	Registrant	Registration number	Crops	Pests (controlled, unless suppression or otherwise is indicated)	Relative acute toxicity (Table 13–1, p. 262)	Bee toxicity (Table 13–3, p. 268)
Acrobat 50 WP (dimethomorph, 50%)	BASF Canada Inc., distributed by Engage Agro	27700	grape	downy mildew	No poison symbol on label: lower acute toxicity	Relatively non-toxic
Blossom Protect (two strains of <i>Aureobasidium pullulans</i>)	Biomin Canada Inc., distributed by UAP Canada Inc.	30552	apple pear (pome fruit group)	fire blight	No poison symbol on label: lower acute toxicity	Relatively non-toxic
Fontelis Fungicide (penthioopyrad 200 g/L)	E.I. du Pont Canada	30331	strawberry	botrytis grey mould	No poison symbol on label: lower acute toxicity	Relatively non-toxic
			apples pears (pome fruit group)	apple scab, pear scab, cedar apple rust, powdery mildew		
			apricot sour cherry sweet cherry peach plum (stone fruit group)	botrytis, brown rot, powdery mildew, scab, cherry leaf spot (suppression)		
Isomate DWB (pheromone components)	Pacific Biocontrol Corporation, distributed by N.M. Bartlett Inc.	30589	apple (pome fruit group)	dogwood borer (reduces mating of this pest)	No poison symbol on label: lower acute toxicity	Relatively non-toxic
Isomate-PTB Dual (pheromone components)	Pacific Biocontrol Corporation, distributed by N.M. Bartlett Inc.	30042	apricot sour cherry sweet cherry peach plum (stone fruit group)	lesser peach tree borer, peach tree borer (reduces mating of these pests)	No poison symbol on label: lower acute toxicity	Relatively non-toxic
Kocide 2000 Fungicide (copper hydroxide 53.8%)	E.I. du Pont Canada	27348	grape	downy mildew	Caution poison symbol on label: low acute toxicity	Relatively non-toxic
Luna Tranquility (fluopyram 125 g/L + pyrimethanil 375 g/L)	Bayer CropScience Inc.	30510	apple	apple scab, powdery mildew	No poison symbol on label: lower acute toxicity	Relatively non-toxic
			grape	botrytis, powdery mildew		
MPT MustGrow Crop Biofumigant (Oriental mustard seed meal 100%)	MPT Mustard Products and Technologies Inc.	30263	strawberry	red stele (suppression), root lesion nematode (suppression)	No poison symbol on label: lower acute toxicity	Highly toxic, although risk is low due to minimal exposure.
			raspberry	phytophthora root rot (suppression) root lesion nematode (suppression)		

NEW PRODUCTS

New Products	Registrant	Registration number	Crops	Pests (controlled, unless suppression or otherwise is indicated)	Relative acute toxicity (Table 13-1, p. 262)	Bee toxicity (Table 13-3, p. 268)
Phostrol Fungicide (mono and dibasic sodium, potassium and ammonium phosphites 53.6%)	Engage Agro	30449	raspberry blackberry	phytophthora root rot (suppression)	No poison symbol on label: lower acute toxicity	Relatively non-toxic
			strawberry	leather rot		
			grape	downy mildew		
Pyganic Crop Protection EC 1.4 II (pyrethrins 1.4%)	MGK Co.	30164	blueberry grape raspberry	aphid, leafhopper	No poison symbol on label: lower acute toxicity	Highly toxic
Quadris Flowable Fungicide (azoxystrobin 250 g/L)	Syngenta Canada Inc.	26153	June-bearing strawberry	black root rot (suppression)	No poison symbol on label: lower acute toxicity	Relatively non-toxic
Quash Fungicide (metconazole 50%)	Valent Canada	30402	highbush blueberry	mummyberry, anthracnose ripe rot, phomopsis twig blight	Caution poison symbol on label: low acute toxicity	Relatively non-toxic
Regalia Maxx (extract of <i>Reynoutria sachalinensis</i> 20%)	Marrone Bio Innovations Inc., distributed by Engage Agro	30199	grape	powdery mildew (suppression), botrytis bunch rot (suppression)	No poison symbol on label: lower acute toxicity	Relatively non-toxic
			strawberry	powdery mildew (suppression)		
Tivano (citric acid 10.73 g/L + lactic acid 21.37 g/L)	AEF Global, distributed by UAP Canada	30468	strawberry	angular leaf spot (suppression), powdery mildew (suppression)	No poison symbol on label: lower acute toxicity	Relatively non-toxic
			grape	downy mildew (suppression)		
Warhawk 480 EC (chlorpyrifos 480 g/L)	Loveland Products Inc., distributed by UAP Canada	29984	strawberry	strawberry cutworm, strawberry crown borer	Danger poison symbol on label: high acute toxicity	Highly toxic
			filbert	filbert aphid		
Zampro Fungicide (dimethomorph 225 g/L + ametoctradin 300 g/L)	BASF Canada Inc.	30321	grape	downy mildew	Warning symbol: moderate acute toxicity	Relatively non-toxic

LABEL EXPANSIONS AND NEW USES

Product	Crop	Pest controlled (unless suppression is indicated)
Actara 25 WG	strawberry	black vine weevil adults, cranberry weevil adults
	sweet cherry	aphid, including black cherry aphid
Admire 240 F (foliar application)	sour cherry, peach, plum (stone fruit group)	aphid
	walnut, pecan and sweet chestnut, filbert/hazelnut (tree nuts)	aphid, leafhopper
	grape	leafhopper, phylloxera
	blueberry	blueberry maggot
	currant, elderberry (bushberry crop group)	aphid, leafhopper (suppression)
	strawberry (except day neutral) (berry crop group)	aphid, leafhopper (suppression)
Admire 240 F (soil application)	currant, gooseberry, saskatoon (bushberry group)	European chafer larvae (reduction in numbers), Japanese beetle larvae (reduction in numbers)
	strawberry	European chafer larvae (reduction in numbers), Japanese beetle larvae (reduction in numbers)
Altacor	apple	European apple sawfly, green fruitworm, eye-spotted bud moth, redbanded leafroller, tufted apple bud moth, variegated leafroller, dogwood borer, apple maggot (suppression), white apple leafhopper (suppression), Japanese beetle (suppression)
	blueberry, currant, elderberry (bushberry crop group)	cranberry fruitworm, cherry fruitworm, three-lined leafroller, obliquebanded leafroller, lesser appleworm, red-striped fireworm, blueberry spanworm, Japanese beetle (suppression)
	grape	Japanese beetle (suppression)
	apricot, sour cherry, sweet cherry, peach, plum (stone fruit group)	redbanded leafroller, cherry fruit fly (suppression), Japanese beetle (suppression)
Apogee	sour cherry, sweet cherry	plant growth regulator
Delegate WG	walnut	codling moth, huskfly/maggot (suppression), leafrollers, butternut curculio (suppression)
	pecan and sweet chestnut	leafrollers
	filbert/hazelnut	leafrollers, butternut curculio (suppression)
Entrust 80 W	nectarine	western flower thrips (suppression)
	walnut	leafroller, codling moth (suppression)
Envidor 240 SC	walnut, pecan and sweet chestnut, filbert/hazelnut (tree nuts)	European red mite, two-spotted spider mite
Flint Fungicide	strawberry	powdery mildew
	peach	powdery mildew
Lannate Toss-N-Go	apple	brown marmorated stink bug
Matador 120 EC	strawberry	black vine weevil adults (suppression)
Rimon 10 EC	apple	apple clearwing moth, dogwood borer
Ripcord 400 EC	grape	yellow jacket wasps
Silencer 120 EC	strawberry	black vine weevil adults (suppression)
Success 480 SC	nectarine	western flower thrips (suppression)
Switch 62.5 WG	grape	botrytis
Syllit 400 FL	apple	apple scab

PRODUCT CHANGES OR CORRECTIONS

Chapter	Crop	Product to change	Diseases and insects	Change
4, 6, 7, 8	apple, grape, pear, cherry, filbert/hazelnut	Flint 50 WG	All pests listed	Formulation has changed to Flint Fungicide (Registration # 30169)
4, 5, 6, 7	apple, blueberry, grape, sour cherry, pear, plum	Imidan 50 WP	All pests listed	Formulation has changed to Imidan 70-WP Instapak (Registration # 29064) New rate is: <ul style="list-style-type: none"> • apple, pear, sour cherry, plum: 2.68 kg/ha • blueberry: 1.6 kg in 1,000 L water per ha • grape: 1.36 kg/ha (prebloom), 1.78 kg/ha (postbloom), 2.2 kg/ha (first cover)
4, 5, 6, 7	apple, strawberry, grape, peach, pear	Ripcord 400 EC	All pests listed	Formulation has changed to Ripcord (Registration # 30316) New registrant: Engage Agro Corporation.
7	pear	Syllit 400 FL	pear scab	New rate: 5.28 L/ha Syllit plus 2.8 kg/ha Supra Captan 80 WDG or Maestro 80 DF Use Syllit 400 FL from green tip, through first cover. Use only twice per season and rotate to a different fungicide group between applications.
6	grape	Nexter	European red mite (page 153)	Change rate from 600 g/ha to 300 g/ha.

ADDITIONS AND NEW USES FOR 2013

Product to add	Diseases and insects	Timing	Rate	Comments	Other information
Chapter 4: Apple Calendar, page 40					
Altacor	European apple sawfly	<ul style="list-style-type: none"> petal fall (calyx) – when most petals have fallen 	215 g/ha	<p>Re-apply, if necessary, every 10–14 days.</p> <p>For spring-feeding caterpillars, use high rate under high pressure. Includes green fruitworm, eye-spotted bud moth and variegated leafroller.</p> <p>For dogwood borer, apply as trunk drench at first sign of feeding.</p> <p>Provides suppression only for apple maggot, white apple leafhopper and Japanese beetle.</p>	<p>Common name: chlorantraniliprole</p> <p>Group: 28</p> <p>Preharvest interval: 5 days</p> <p>Re-entry period: 12 hr</p> <p>Maximum # applications: apply no more than 645 g/ha per season</p>
	spring-feeding caterpillar	<ul style="list-style-type: none"> tight cluster to pink non-bearing orchards 	145–285 g/ha		
	dogwood borer	<ul style="list-style-type: none"> special summer sprays 	285 g/ha		
	apple maggot (suppression)	<ul style="list-style-type: none"> subsequent summer sprays 			
	white apple leafhopper (suppression)	<ul style="list-style-type: none"> special summer sprays non-bearing orchards 			
	Japanese beetle (suppression)	<ul style="list-style-type: none"> special summer sprays 			
Blossom Protect	fire blight	<ul style="list-style-type: none"> bloom 	See comments	<p>Rate is dependent on tree height. For every 1 m of tree height, dilute 5.25 kg Component A in 500 L/ha water and add dilution to 0.75 kg Component B. See table, <i>Examples of Blossom Protect Rate Based on Tree Height</i>, on page 26 of this supplement.</p> <p>If a forecast system (e.g., Maryblyt, Cougar Blight) is available, apply 1–2 days before an infection date. Repeat after 2 days and up to 5 times if infection continues. If no forecast system is available, apply at 10%, 40%, 70% and 90% open blossoms.</p> <p>This product is sensitive to fungicides and may have reduced efficacy if tank mixed. Increased russetting of fruit from sensitive varieties is possible. This is a biopesticide and may not provide the same level of control as conventional products. There is limited-to-no experience with this product in Ontario.</p>	<p>Common name: <i>Aureobasidium pullulans</i></p> <p>Group: n/a</p> <p>Preharvest interval: n/a</p> <p>Re-entry period: when dry</p> <p>Maximum # applications: 5</p>
Fontelis Fungicide	apple scab powdery mildew cedar apple rust	<ul style="list-style-type: none"> green tip to half-inch green half-inch green to tight cluster tight cluster to pink pink bloom petal fall (calyx) – when most petals have fallen first summer spray (7–14 days after petal fall (calyx)) subsequent summer sprays non-bearing orchards 	1.0–1.5 L/ha	<p>Begin applications at green tip and continue as needed on a 7–10-day interval for scab and 7–14-day interval for powdery mildew or rust. Use the higher rate and shorter interval when disease pressure is high. Avoid repeated use of this product or other products from Group 7. Maximum 2 applications/season.</p>	<p>Common name: penthiopyrad</p> <p>Group: 7</p> <p>Preharvest interval: 28 days</p> <p>Re-entry period: 12 hr</p> <p>Maximum # applications: 4 (no more than 4.5 L/ha per season)</p>

ADDITIONS AND NEW USES FOR 2013

Product to add	Diseases and insects	Timing	Rate	Comments	Other information
Chapter 4: Apple Calendar, page 40					
Isomate DWB	dogwood borer	<ul style="list-style-type: none"> petal fall (calyx) – when most petals have fallen 	250–375 dispensers/ha	Apply before adult borer emergence (end of May). Use high rate for high pressure areas or initial year of treatment.	Common name: pheromone Group: pheromone Preharvest interval: n/a Re-entry period: n/a Maximum # applications: 1
Lannate Toss-N-Go	brown marmorated stink bug	<ul style="list-style-type: none"> special summer sprays 	2.1 kg/ha	Apply when insects first appear.	Common name: methomyl Group: 1A Preharvest interval: 8 days Re-entry period: 5 days Maximum # applications: 1
Luna Tranquility	apple scab	<ul style="list-style-type: none"> green tip to half-inch green half-inch green to tight cluster tight cluster to pink pink non-bearing orchards 	800 mL/ha	Begin application at green tip and continue as needed on a 7–14-day interval. Will provide up to 72 hr of post-infection control of apple scab. This product is weak on fruit scab and should be tank-mixed with a protectant fungicide for powdery mildew control after pink. Avoid repeated use of this product or other products from Group 7 or 9.	Common name: fluopyram + pyrimethanil Group: 7 + 9 Preharvest interval: 14 days Re-entry period: 12 hr/24 hr (hand thinning) Maximum # applications: 4 (no more than 3.2 L/ha per season)
	powdery mildew	<ul style="list-style-type: none"> green tip to half-inch green half-inch green to tight cluster tight cluster to pink petal fall (calyx) – when most petals have fallen first summer spray (7–14 days after petal fall (calyx)) non-bearing orchards 	600 mL/ha		
Rimon 10 EC	apple clearwing moth dogwood borer	<ul style="list-style-type: none"> special summer sprays 	1.4 L/1,000 L water	Begin applications when economic thresholds are reached. Make 1–2 applications at 14-day intervals, targeting 25%–75% egg laying. Applications should target the tree trunk. Do not exceed 2,000 L water/ha.	Common name: novaluron Group: 15 Preharvest interval: 14 days Re-entry period: 12 hr Maximum # applications: 2
Syllit 400 FL	apple scab	<ul style="list-style-type: none"> green tip to half-inch green half-inch green to tight cluster 	1.75 L/ha plus 2.8 kg/ha Supra Captan 80 WDG or Maestro 80 DF OR plus 3.36 kg/ha Dithane 75 DG or Manzate Pro-stick or Penncozeb 75 DF	Resistance to U12 fungicides is present in some Ontario orchards. Check the status of resistance to U12 fungicides in your orchard before using it. Use Syllit 400 FL early season starting at green tip and 7 days later. Do not use after tight cluster. Use only twice per season.	Common name: dodine Group: U12 Preharvest interval: 7 days Re-entry period: 48 hr Maximum # applications: 2

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 5: Blueberry Calendar, page 92					
Admire 240 F (foliar application)	aphids	• petal fall	175 mL/ha	Do not make a foliar ADMIRE 240 Flowable Systemic Insecticide application following a soil application of a group 4 insecticide. Monitor for aphids, and apply as a foliar spray once the aphid population has started to build up but before winged aphids are seen.	Common name: imidacloprid Group: 4 Preharvest interval: 3 days Re-entry period: 24 hr Maximum # applications: 2 (foliar)
	blueberry maggot	• green fruit	230–350 mL/ha		
	Japanese beetle adults	• green fruit	350 mL/ha		
	leafhoppers (suppression)	• postharvest	175 mL/ha		
Altacor	cranberry fruitworm cherry fruitworm	• petal fall	215–285 g/ha	For cranberry fruitworm and cherry fruitworm. Use pheromone traps to monitor for moth activity. Apply insecticide at first sustained upswing in trap catch. A second application of Altacor or a different insecticide registered for this use may be required in 7–10 days.	Common name: chlorantraniliprole Group: 28 Preharvest interval: 1 day Re-entry period: 12 hr Maximum # applications: Apply no more than 645 g/ha per season. Altacor is also registered for blueberry spanworm, three-lined leafroller and several other spring-feeding caterpillars that may be present on blueberries. See label for additional uses.
	obliquebanded leafroller	• green fruit	285 g/ha	For obliquebanded leafroller control, apply when eggs are hatching and young larvae are present. Use pheromone traps to determine this timing and spray at peak trap catch.	
	Japanese beetle (suppression)	• green fruit	285 g/ha	Altacor provides suppression rather than control of Japanese beetle.	
Pyganic Crop Protection EC 1.4 II	aphids	• petal fall	2.32–4.65 L/ha	Use high rate for maximum efficacy. Adjust spray solution to pH of 5.5–7.0. If possible, apply in the early morning or evening hours. Apply promptly after mixing. Apply when pests are first observed; do not wait until plants are heavily infested. Repeat application if necessary, as indicated by monitoring.	Common name: pyrethrins Group: 3 Preharvest interval: 12 hr Re-entry period: 12 hr Maximum # applications: 8 Before making widespread applications of Pyganic, treat a small area and observe for phytotoxicity over a 10-day period.
	leafhoppers	• postharvest			
Quash Fungicide	mummyberry	• green tip	180 g/ha	Quash is in the same fungicide group as Topas, Mission, Jade and Funginex but has a shorter preharvest interval.	Common name: metconazole Group: 3 Preharvest interval: 12 days Re-entry period: 12 hr for scouting, hand-weeding except 12 days for pruning, training Maximum # applications: 1
	phomopsis twig blight	• pink bud			
	anthracnose fruit rot	• bloom			

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 5: Currant and Gooseberry Calendar, page 101					
Admire 240 (foliar application)	aphids leafhoppers	<ul style="list-style-type: none"> green fruit postharvest (after bloom, when monitoring indicates the need) 	175 mL/ha	<p>Do not apply during bud stage or bloom or when bees are actively foraging.</p> <p>Admire is also labelled as a soil application for white grubs. See label for this additional use. Do not use both soil applications and foliar sprays of Admire in the same year.</p>	<p>Common name: imidacloprid Group: 4 Preharvest interval: 3 days Re-entry period: 24 hr Maximum # applications: 2 (foliar)</p>
Altacor	Japanese beetle (suppression)	<ul style="list-style-type: none"> postharvest 	285 g/ha	<p>Japanese beetle is not usually a problem on currants. Apply pre- or post-harvest if necessary.</p>	<p>Common name: chlorantraniliprole Group: 28 Preharvest interval: 1 day Re-entry period: 12 hr Maximum # applications: Apply no more than 645 g/ha per season.</p>

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 5: Elderberries, page 104					
Admire 240 (foliar application)	aphids leafhoppers	<ul style="list-style-type: none"> special sprays, when monitoring indicates the need 	175 mL/ha	Do not apply during bud stage or bloom or when bees are actively foraging. Admire is also labelled as a soil application for white grubs. See label for this additional use.	Common name: imidacloprid Group: 4 Preharvest interval: 3 days Re-entry period: 24 hr Maximum # applications: 2 (foliar)
Altacor	obliquebanded leafroller Japanese beetle (suppression) three-lined leafroller lesser appleworm	<ul style="list-style-type: none"> when monitoring indicates the need 	285 g/ha	These pests do not usually cause problems on elderberries.	Common name: chlorantraniliprole Group: 28 Preharvest interval: 1 day Re-entry period: 12 hr Maximum # applications: Apply no more than 645 g/ha per season.
Quash Fungicide	anthracnose phomopsis	<ul style="list-style-type: none"> when conditions favour disease 	180 g/ha	Apply when conditions favour disease, prior to infection.	Common name: metconazole Group: 3 Preharvest interval: 12 days Re-entry period: 12 hr for scouting, hand-weeding <i>except</i> 12 days for pruning, training Maximum # applications: 1

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 5: Raspberry Calendar, page 105, 109					
MPT MustGrow Crop Biofumigant	root lesion nematode (suppression) phytophthora root rot (suppression)	• before planting	980–2,240 kg/ha	MustGrow is a pelleted formulation of oriental mustard seed meal. Apply with a calibrated spreader, in early spring, when soil temperatures are above 10°C, but at least 2 weeks before planting. Incorporate into the upper soil layer to a depth of 10–15 cm, followed by irrigation to ensure the top 10–15 cm of soil is well moistened.	Common name: oriental mustard seed meal Re-entry period: 24 hr after activation with water Maximum # applications: 1
Phostrol Fungicide	phytophthora root rot (suppression)	• special sprays, early spring and/or fall	5.2 L/ha	Apply in early spring when plants produce at least 3–6 cm of new growth and again in 45–60 days. In fall, apply once or twice when conditions favour disease (high soil moisture, cool temperatures). Apply at least 30 days before leaf drop.	Common name: mono and dibasic sodium, potassium and ammonium phosphites Group: 33 Preharvest interval: 1 day Re-entry period: 12 hr Maximum # applications: 4
Pyganic Crop Protection EC 1.4 II	aphids leafhoppers	• prebloom • green fruit	2.32–4.65 L/ha	Use high rate for maximum efficacy. Adjust spray solution to pH of 5.5–7.0, if outside that range. If possible, apply in the early morning or evening hours. Apply promptly after mixing. Apply when pests are first observed; do not wait until plants are heavily infested. Repeat application if necessary, as indicated by monitoring.	Common name: pyrethrin Group: 3 Preharvest interval: 12 hr Re-entry period: 12 hr Maximum # applications: 8 Before making widespread applications of Pyganic, treat a small area and observe for phytotoxicity over a 10-day period.

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 5: Saskatoon Berry Calendar, page 115					
Admire 240 (foliar application)	Japanese beetle adults	<ul style="list-style-type: none"> • green fruit • special sprays, when monitoring indicates the need 	350 mL/ha	Do not make a foliar ADMIRE 240 Flowable Systemic Insecticide application following soil application of a Group 4 Insecticide. Do not apply during bud stage or bloom or when bees are actively foraging.	Common name: imidacloprid Group: 4 Preharvest interval: 3 days Re-entry period: 24 hr Maximum # applications: 1 (soil) or 2 (foliar)
	aphids leafhoppers	<ul style="list-style-type: none"> • special sprays, when monitoring indicates the need 	175 mL/ha		
Admire 240 (soil application)	white grubs (reduction in numbers of larvae of European chafer and Japanese beetle)	<ul style="list-style-type: none"> • after harvest 	1.2 L/ha	Apply just prior to egg hatch (shortly after adults are active) to control young larvae. Apply to soil, before mulch is applied	Common name: imidacloprid Group: 4 Preharvest interval: 14 days Re-entry period: 24 hr Maximum # applications: 1 (soil) or 2 (foliar)
Altacor	Japanese beetle (suppression) obliquebanded leafroller	<ul style="list-style-type: none"> • green fruit 	215–285 g/ha	Altacor provides suppression rather than control of Japanese beetle. For obliquebanded leafroller control, apply when eggs are hatching or young larvae are present. Use pheromone traps to determine this timing and spray at peak trap catch.	Common name: chlorantraniliprole Group: 28 Preharvest interval: 1 day Re-entry period: 12 hr Maximum # applications: Apply no more than 645 g/ha per season.

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 5: Sea Buckthorn Calendar, page 118					
Altacor	obliquebanded leafroller three-lined leafroller lesser appleworm Japanese beetle (suppression)	<ul style="list-style-type: none"> when monitoring indicates the need 	285 g/ha	These pests do not usually cause problems on sea buckthorn.	Common name: chlorantraniliprole Group: 28 Preharvest interval: 1 day Re-entry period: 12 hr Maximum # applications: Apply no more than 645 g/ha per season.

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 5: Non-Bearing Strawberry Calendar (planting year), page 119					
Admire 240 (foliar application)	aphids leafhoppers (suppression)	<ul style="list-style-type: none"> one month after planting July-mid August 	175 mL/ha	Remove all bloom and blossom clusters before application. Do not apply when bees are actively foraging. Do not use both soil and foliar applications of Admire or other group 4 insecticides in the same year.	Common name: imidacloprid Group: 4 Preharvest interval: 7 days Re-entry period: 24 hr Maximum # applications: 2
Admire 240 (soil application)	white grubs (reduction in numbers of European chafer and Japanese beetle larvae)	<ul style="list-style-type: none"> July to mid-August 	1.2 L/ha	Apply just prior to egg hatch (shortly after adults are active) to control young larvae. Apply to soil, before mulch is applied. Do not use both soil and foliar applications of Admire or other group 4 insecticides in the same year.	Common name: imidacloprid Group: 4 Preharvest interval: 30 days Re-entry period: 24 hr Maximum # applications: 1 (soil)
Flint Fungicide	powdery mildew	<ul style="list-style-type: none"> July to mid-August mid-August and again, once or twice, at 2-week intervals 	140 g/ha	Begin applications preventatively and continue as needed on a 7–14-day interval. Use the shorter spray interval when pressure is severe. Use sufficient water to obtain thorough coverage.	Common name: trifloxystrobin Group: 11 Preharvest interval: 0 days Re-entry period: 12 hr Maximum # applications: 3
MPT MustGrow Crop Biofumigant	red stele (suppression) root lesion nematode (suppression)	<ul style="list-style-type: none"> before planting 	980–2,240 kg/ha	MustGrow is a pelleted formulation of oriental mustard seed meal. Apply with a calibrated spreader, in early spring when soil temperatures are above 10°C, but at least 2 weeks before planting. Incorporate into the upper soil layer to a depth of 10–15 cm, followed by irrigation to ensure the top 10–15 cm of soil are well moistened.	Common name: oriental mustard seed meal Re-entry period: 24 hr after product is activated in soil with water Maximum # applications: 1
Quadris Flowable Fungicide	black root rot (suppression)	<ul style="list-style-type: none"> at planting or up to 8 days after planting 	1.1 L/ha or 6 mL/100 m of row for in-furrow in 1,200 L water/ha	Apply once in-furrow at planting or a banded drench application, from immediately after planting to up to 8 days after planting.	Common name: azoxystrobin Group: 11 Preharvest interval: 365 days Re-entry period: when dried Maximum # applications: 1
Regalia Maxx	powdery mildew (suppression)	<ul style="list-style-type: none"> July to mid-August mid-August and again, once or twice, at 2-week intervals 	Use 1.25–2.5 L Regalia Max in 1,000 L of water to obtain a solution of 0.125%–0.25% v/v. Apply 500–1,000 L of this solution/ha.	Regalia Maxx is a biofungicide that works by stimulating plant defence mechanisms. It works best if applied before there is disease present. Repeat applications at 7–10-day intervals. Use this product in rotation with conventional fungicides. Provides suppression rather than control of powdery mildew.	Common name: extract of <i>Reynoutria sachalinensis</i> Group: plant extract, not classified Preharvest interval: 0 days Re-entry period: when dry
Warhawk 480 EC	strawberry cutworm	<ul style="list-style-type: none"> May or early June one month after transplanting 	1.2 L/ha	Apply if cutworm activity is evident, usually June 1–June 15. Apply in 2,000 L water/ha. Do not confuse cutworm damage with deer browsing.	Common name: chlorpyrifos Group: 1B Preharvest interval: 20 days Re-entry period: 24 hr Maximum # applications: 1

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 5: June-Bearing Strawberry Calendar, page 121					
Actara 25 WG	black vine weevil adults cranberry weevil adults	• renovation	210–280 g/ha	Apply to foliage when adults begin to be present, usually during and after harvest. Do not apply when bloom is present. Do not apply if a soil application of a group 4 insecticide (i.e., Admire) was applied.	Common name: thiamethoxam Group: 4 Preharvest interval: 3 days Re-entry period: 12 hr Maximum # applications: 2
Admire 240 (foliar application)	aphids leafhoppers	• new growth after renovation	175 mL/ha	Do not make a foliar ADMIRE 240 Flowable Systemic Insecticide application following soil application of a Group 4 Insecticide. Do not apply during bud stage or bloom or when bees are actively foraging.	Common name: imidacloprid Group: 4 Preharvest interval: 7 days Re-entry period: 24 hr Maximum # applications: 1 (soil) or 2 (foliar)
Admire 240 (soil application)	aphids	• when new growth begins in spring	7.5–12 mL/100 m of row	Rate is approx. 850 mL–1.3 L/ha, but depends on row spacing. See label for conversions.	Common name: imidacloprid Group: 4 Preharvest interval: 30 days Re-entry period: 24 hr Maximum # applications: 1 (soil)
	white grubs (reduction in numbers of larvae of European chafer and Japanese beetle)	• new growth after renovation	1.2 L/ha	Apply just prior to egg hatch (shortly after adults are active) to control young larvae. Apply to soil, before mulch is applied.	
Flint Fungicide	powdery mildew	• new growth after renovation • mid-August and again, once or twice, at 2-week intervals	140 g/ha	Begin applications preventatively and continue as needed on a 7–14-day interval. Use the shorter spray interval when pressure is severe. Use sufficient water to obtain thorough coverage.	Common name: trifloxystrobin Group: 11 Preharvest interval: 0 days Re-entry period: 12 hr Maximum # applications: 3
Fontelis Fungicide	botrytis grey mould	• first bloom • 7–10 days after first bloom • preharvest	1.0–1.75 L/ha	Fontelis is in the same fungicide group as Cantus, Lance and Pristine. Do not rotate with these products.	Common name: penthiopyrad Group: 7 Preharvest interval: 0 days Re-entry period: 12 hr Maximum # applications: 3 (maximum 5.25 L/ha per year)
Matador 120 EC	black vine weevil adults (suppression)	• renovation	104 mL/ha	Apply when adults begin to be present, but not until after harvest. Insecticides in group 3 (pyrethroids) break down more quickly and may be less effective at high temperatures (over 27°C).	Common name: lambda-cyhalothrin Group: 3 Preharvest interval: 7 days Re-entry period: 24 hr Maximum # applications: 3

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 5: June-Bearing Strawberry Calendar, page 121					
Phostrol Fungicide	leather rot (suppression)	<ul style="list-style-type: none"> • first bloom • 7–10 days after first bloom • green fruit 	4.1 L/ha	<p>Begin applications at 10% bloom and continue at 7–14-day intervals if conditions favour disease.</p> <p>Heavy rains, standing water, rain-splashed soil, and a history of damage create favourable conditions for leather rot infection.</p>	<p>Common name: mono and dibasic sodium, potassium and ammonium phosphites</p> <p>Group: 33</p> <p>Preharvest interval: 3 days</p> <p>Re-entry period: 12 hr</p> <p>Maximum # applications: 4</p>
Regalia Maxx	powdery mildew (suppression)	<ul style="list-style-type: none"> • new growth after renovation • mid-August and again, once or twice, at 2-week intervals 	Use 1.25–2.5 L Regalia Max in 1,000 L of water to obtain a solution of 0.125%–0.25% v/v. Apply 500–1,000 L of this solution/ha.	<p>Regalia Maxx is a biofungicide that works by stimulating plant defence mechanisms. It works best if applied before there is disease present. Repeat applications at 7–10-day intervals. Use this product in rotation with conventional fungicides. Provides suppression rather than control of powdery mildew.</p>	<p>Common name: extract of <i>Reynoutria sachalinensis</i></p> <p>Group: plant extract, not classified</p> <p>Preharvest interval: 0 days</p> <p>Re-entry period: when dry</p>
Silencer 120 EC	black vine weevil adults (suppression)	<ul style="list-style-type: none"> • renovation 	104 mL/ha	Apply when adults begin to be present, usually just after harvest.	<p>Common name: lambda-cyhalothrin</p> <p>Group: 3</p> <p>Preharvest interval: 7 days</p> <p>Re-entry period: 24 hr</p> <p>Maximum # applications: 3</p>
Tivano	angular leaf spot (suppression)	<ul style="list-style-type: none"> • when flowers buds are visible in the crown • mid-August and again, once or twice, at 2-week intervals. 	16–24 L in 200 L water to obtain a 8%–12% solution Apply in 200 L water/ha.	<p>Tivano provides suppression rather than control of angular leaf spot and powdery mildew. There is little or no experience with this product in Ontario. Test on a small scale before using more broadly.</p> <p>Multiple applications at 7–10-day intervals are required for control.</p>	<p>Common name: citric acid + lactic acid</p> <p>Group: not classified</p> <p>Preharvest interval: not specified</p> <p>Re-entry period: when residues are dry</p>
	powdery mildew (suppression)	<ul style="list-style-type: none"> • new growth after renovation • mid-August and again, once or twice, at 2-week intervals 			

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 5: Day-Neutral Strawberry Calendar, page 126					
Flint Fungicide	powdery mildew	<ul style="list-style-type: none"> bloom bloom, green fruit and harvest (June, July, August, September) 	140 g/ha	Begin applications preventatively and continue as needed on a 7–14-day interval. Use the shorter spray interval when pressure is severe. Use sufficient water to obtain thorough coverage.	Common name: trifloxystrobin Group: 11 Preharvest interval: 0 days Re-entry period: 12 hr Maximum # applications: 3
Fontelis Fungicide	botrytis grey mould	<ul style="list-style-type: none"> first bloom 7–10 days after first bloom preharvest 	1.0–1.75 L/ha	Fontelis is in the same fungicide group as Cantus, Lance and Pristine. Do not rotate with these products.	Common name: penthiopyrad Group: 7 Preharvest interval: 0 days Re-entry period: 12 hr Maximum # applications: 3 (maximum 5.25 L/ha per year)
Regalia Maxx	powdery mildew (suppression)	<ul style="list-style-type: none"> bloom bloom, green fruit and harvest (June, July, August, September) 	Use 1.25–2.5 L Regalia Max in 1,000 L of water to obtain a solution of 0.125%–0.25% v/v. Apply 500–1,000 L of this solution/ha.	Regalia Maxx is a biofungicide that works by stimulating plant defence mechanisms. It works best if applied before there is disease present. Repeat applications at 7–10-day intervals. Use this product in rotation with conventional fungicides. Provides suppression rather than control of powdery mildew.	Common name: Extract of <i>Reynoutria sachalinensis</i> Group: plant extract, not classified Preharvest interval: 0 days Re-entry period: when dry
Tivano	angular leaf spot (suppression) powdery mildew (suppression)	<ul style="list-style-type: none"> bloom bloom, green fruit and harvest (June, July, August, September) 	16–24 L in 200 L water to obtain a 8%–12% solution Apply in 200 L water/ha.	Tivano provides suppression rather than control of angular leaf spot and powdery mildew. There is little or no experience with this product in Ontario. Test on a small scale before using more broadly. Multiple applications at 7–10-day intervals are required for control.	Common name: citric acid + lactic acid Group: not classified Preharvest interval: not specified Re-entry period: when residues are dry

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 6: Grape Calendar, page 141					
Acrobat 50 WP	downy mildew	<ul style="list-style-type: none"> shoot length 20–25 cm trace bloom (first cap fall) immediate postbloom to early fruit set berries pea sized berry touch to cluster closure beginning of ripening (veraison) through harvest 	450 g/ha	<p>Do not use less than 200 L water/ha.</p> <p>Do not rotate Acrobat with Revus or Zampro.</p> <p>Do not apply to sporulating lesions.</p> <p>Tank mix with a labelled rate of another fungicide registered for downy mildew, but with a different mode of action.</p>	<p>Common name: dimethomorph</p> <p>Group: 40</p> <p>Preharvest interval: 14 days</p> <p>Re-entry period: 12 hr except 12 days for pruning, thinning, cane pruning</p> <p>Maximum # applications: 3</p>
Admire 240 (foliar application)	leafhoppers	<ul style="list-style-type: none"> immediate postbloom to early fruit set 	200 mL/ha	Do not rotate with Assail or Clutch.	<p>Common name: imidacloprid</p> <p>Group: 4</p> <p>Preharvest interval: 0 days</p> <p>Re-entry period: 24 hr</p> <p>Maximum # applications: 2</p>
Altacor	Japanese beetle (suppression)	<ul style="list-style-type: none"> immediate postbloom to early fruit set berries pea-sized 	285 g/ha	For optimum suppression of Japanese beetle, apply when feeding is first observed and repeat in 10–14 days if required.	<p>Common name: chlorantraniliprole</p> <p>Group: 28</p> <p>Preharvest interval: 14 days</p> <p>Re-entry period: 12 hr</p> <p>Maximum # applications: Apply no more than 645 g/ha per season.</p>
Kocide 2000	downy mildew	<ul style="list-style-type: none"> shoot length 20–25 cm trace bloom (first cap fall) immediate postbloom to early fruit set berries pea sized berry touch to cluster closure beginning of ripening (veraison) through harvest 	1.6 kg/ha	<p>Apply every 7–14 days, depending on disease severity.</p> <p>Foliage injury may occur on copper sensitive varieties such as Concord, Delaware, Niagara and Rosette.</p> <p>Always test for sensitivity. The addition of 454–1,360 g hydrated lime per 454 g of Kocide 2000 may reduce phytotoxicity.</p>	<p>Common name: copper hydroxide</p> <p>Group: M</p> <p>Preharvest interval: 1 day</p> <p>Re-entry period: 48 hr</p> <p>Maximum # applications: 7</p> <p>Contact your processor or winery regarding their preharvest interval policy.</p>

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 6: Grape Calendar, page 141					
Luna Tranquility	botrytis	<ul style="list-style-type: none"> • trace bloom (first cap fall) • immediate postbloom to early fruit set • berry touch to cluster closure • special sprays 	1.2 L/ha	<p>Begin applications at early bloom if needed then follow with applications from berry touch to bunch closure. An application can also be made from fruit ripening through to harvest during frequent wet conditions (conducive to infection) or when symptoms of infection are evident. Thorough coverage of bunches is essential. Do not rotate with Scala, Vanguard, Switch or Pristine.</p>	<p>Common name: fluopyram + pyrimethanil Group: 7 & 9 Preharvest interval: 7 days Re-entry period: 12 hr except 24 hr for hand labour Maximum # applications: 2 for botrytis or 3 for powdery mildew. Maximum 4 L/ha/season.</p>
	powdery mildew	<ul style="list-style-type: none"> • 3–5 leaves unfolded, shoot length 10–15 cm • shoot length 20–25 cm • trace bloom (first cap fall) • immediate postbloom to early fruit set • berries pea sized • berry touch to cluster closure • beginning of ripening (veraison) through harvest 	600 mL/ha	<p>Begin applications preventatively and continue as needed on a 7–14-day interval. Do not rotate with Pristine or Lance/Cantus.</p>	
Phostrol Fungicide	downy mildew	<ul style="list-style-type: none"> • shoot length 20–25 cm • trace bloom (first cap fall) • immediate postbloom to early fruit set • berries pea sized • berry touch to cluster closure • beginning of ripening (veraison) through harvest 	2.9–5.8 L/ha	<p>Use the 2.9 L/ha rate in 500 L of water and the 5.8 L rate in 1,000 L of water. Do not increase the concentration above the label rate because this has caused burning. Do not tank mix with a surfactant as this may also cause burning.</p>	<p>Common name: mono and dibasic sodium, potassium and ammonium phosphites Group: 33 Preharvest interval: 1 day Re-entry period: 12 hr Maximum # applications: 4</p>

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 6: Grape Calendar, page 141					
Pyganic Crop Protection EC 1.4 II	leafhoppers	<ul style="list-style-type: none"> • immediate prebloom • immediate postbloom to early fruit set 	2.32–4.65 L/ha	<p>Use high rate for maximum efficacy. Adjust spray solution to pH of 5.5–7.0, if outside that range.</p> <p>If possible, apply in the early morning or evening hours.</p> <p>Apply promptly after mixing.</p> <p>Apply when pests are first observed; do not wait until plants are heavily infested.</p> <p>Repeat application if necessary, as indicated by monitoring, but do not reapply within 7 days.</p>	<p>Common name: pyrethrins Group: 3 Preharvest interval: not specified Re-entry period: 12 hr Maximum # applications: 8</p> <p>Before making widespread applications of Pyganic, treat a small area and observe for phytotoxicity over a 10-day period.</p>
Regalia Maxx	powdery mildew (suppression)	<ul style="list-style-type: none"> • 3–5 leaves unfolded, shoot length 10–15 cm • shoot length 20–25 cm • trace bloom (first cap fall) • immediate postbloom to early fruit set • berries pea sized • berry touch to cluster closure • beginning of ripening (veraison) through harvest 	0.125%–0.25% v/v in 500–1,500 L water/ha	<p>Provides suppression of powdery mildew. Apply before symptoms develop.</p> <p>Use 0.125% (1.25 L in 1,000 L water) in a tank mix with other powdery mildew fungicides or 0.25% (2.5 L in 1,000 L water) in rotation with other powdery mildew fungicides. Do not use as a solo product from prebloom through berries pea-sized growth stage.</p>	<p>Common name: extract of <i>Reynoutria sachalinensis</i> Group: plant extract Preharvest interval: 0 days Re-entry period: when residues are dry</p>
	botrytis bunch rot (suppression)	<ul style="list-style-type: none"> • trace bloom (first cap fall) • immediate postbloom to early fruit set • berry touch to cluster closure • special sprays 	0.25% v/v in 500 L water/ha	<p>Provides suppression of botrytis. Apply before symptoms develop. Use 1.25 L in 500 L water/ha in rotation with other fungicides.</p>	
Ripcord 400 EC	yellow jacket wasps	<ul style="list-style-type: none"> • special sprays (when monitoring indicates the need) 	150 mL/ha	Do not use on table grapes.	<p>Common name: cypermethrin Group: 3 Preharvest interval: 7 days (hand harvest) 2 days (mechanical harvest) Re-entry period: 12 hr Maximum # applications: 2 applications (hand harvest) 3 applications (mechanical harvest)</p>

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 6: Grape Calendar, page 141					
Switch 62.5 WG	botrytis	<ul style="list-style-type: none"> • trace bloom (first cap fall) • immediate postbloom to early fruit set • berry touch to cluster closure • special sprays 	775–975 g/ha	<p>Do not use more than twice per season and do not use in consecutive sprays.</p> <p>Do not rotate Switch with Scala, Vanguard or Luna Tranquility.</p>	<p>Common name: cyprodinil + fludioxonil</p> <p>Group: 9 & 12</p> <p>Preharvest interval: 7 days</p> <p>Re-entry period: 12 hr except 48 hr for hand labour</p> <p>Maximum # applications: 2</p>
Tivano	downy mildew (suppression)	<ul style="list-style-type: none"> • shoot length 20–25 cm • trace bloom (first cap fall) • immediate postbloom to early fruit set • berries pea sized • berry touch to cluster closure • beginning of ripening (veraison) through harvest 	16–24 L	<p>Tivano provides suppression rather than control of downy mildew, and there is little or no experience with this product in Ontario. Test on a small scale before using more broadly.</p> <p>Apply in 200 L water/ha.</p> <p>Use the higher rate and shorter application intervals with moderate to high disease pressure.</p> <p>Multiple applications at 7–10-day intervals are required for suppression.</p>	<p>Common name: citric acid + lactic acid</p> <p>Group: not classified</p> <p>Preharvest interval: not specified</p> <p>Re-entry period: when residues are dry</p>
Zampro Fungicide	downy mildew	<ul style="list-style-type: none"> • shoot length 20–25 cm • trace bloom (first cap fall) • immediate postbloom to early fruit set • berries pea sized • berry touch to cluster closure • beginning of ripening (veraison) through harvest 	0.8–1.0 L/ha	<p>Do not use less than 200 L water/ha.</p> <p>Do not apply to sporulating lesions.</p> <p>Do not rotate Zampro with Revus or Acrobat.</p>	<p>Common name: ametoctradin + dimethomorph</p> <p>Group: 40 + 45</p> <p>Preharvest interval: 14 days</p> <p>Re-entry period: 12 hr except 12 days for training, thinning, pruning</p> <p>Maximum # applications: 3</p>

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 7: Apricot Calendar, page 166					
Fontelis Fungicide	brown rot	<ul style="list-style-type: none"> • bloom • petal fall • shuck split (when 50% of shucks have split) • shuck fall (10–12 days after last spray) • first cover (10–12 days after shuck fall) • pre-pick to harvest 	1.0–1.75 L/ha	1.5 L/ha provided excellent control of brown rot in research trials. Do not rotate with Lance/Cantus or Pristine.	Common name: penthiopyrad Group: 7 Preharvest interval: 0 days Re-entry period: 12 hr Maximum # applications: Apply no more than 4.5 L/ha per season.
	scab	<ul style="list-style-type: none"> • petal fall • shuck split • shuck fall • first cover 	1.0–1.5 L/ha	1.5 L/ha provided excellent control of peach scab in research trials.	
Isomate-PTB Dual	lesser peach tree borer peach tree borer (reduces mating of these pests)	<ul style="list-style-type: none"> • shuck split (when 50% of shucks have split) 	350 dispensers/ha	Apply before moth emergence begins for the season, i.e., typically apply at or before shuck-split. Typically only one application per season is made but multiple applications can be made as long as the maximum labelled use rate is not exceeded in the course of the season. The dispensers are designed to last for the entire season. See also comments on mating disruption for peach (page 187 of Publication 360).	Common name: pheromone Group: pheromones Preharvest interval: na Re-entry period: na Maximum # applications: 675 dispensers/ha/season

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 7: Sour Cherry Calendar, page 172					
Admire 240 (foliar application)	aphids	<ul style="list-style-type: none"> special sprays (when monitoring indicates the need) 	230 mL/ha	Apply after pollination is complete and bees have been removed from the orchard. Do not apply before or during bloom.	Common name: imidacloprid Group: 4 Preharvest interval: 7 days Re-entry period: 24 hr Maximum # applications: 2
Altacor	cherry fruit fly (suppression)	<ul style="list-style-type: none"> second cover (12 days after first cover) 	285 g/ha	Use if needed for obliquebanded leafroller control and suppression of cherry fruit fly is also required.	Common name: chlorantraniliprole Group: 28 Preharvest interval: 1 day Re-entry period: 12 hr Maximum # applications: Apply no more than 645 g/ha per season.
Apogee	vegetative growth control	<ul style="list-style-type: none"> 5–20 cm shoot growth 	1.35 kg/ha	If required, make a second application 14–21 days later.	Common name: prohexadione calcium Group: plant growth regulator Preharvest interval: 20 days Re-entry period: 12 hr Maximum # applications: 2
Fontelis Fungicide	brown rot	<ul style="list-style-type: none"> bloom shuck split second cover (12 days after first cover) third cover preharvest 	1.0–1.75 L/ha	1.5 L/ha provided excellent control of brown rot in research trials. Do no rotate with Lance/Cantus or Pristine.	Common name: penthiopyrad Group: 7 Preharvest interval: 0 days Re-entry period: 12 hr Maximum # applications: Apply no more than 4.5 L/ha per season.
	cherry leaf spot (suppression)	<ul style="list-style-type: none"> bloom petal fall shuck split first cover (12 days after shuck) second cover (12 days after first cover) third cover 	1.5 L/ha		
	powdery mildew	<ul style="list-style-type: none"> first cover (12 days after shuck) second cover (12 days after first cover) 	1.0–1.75 L/ha		

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 7: Sweet Cherry Calendar, page 179					
Actara 25 WG	black cherry aphid	<ul style="list-style-type: none"> petal fall 	160 g/ha	Registered for all aphids on cherry.	Common name: thiamethoxam Group: 4 Preharvest interval: 14 days Re-entry period: 12 hr Maximum # applications: 2
Altacor	cherry fruit fly (suppression)	<ul style="list-style-type: none"> second cover (12 days after first cover) third cover 	285 g/ha	Use if needed for obliquebanded leafroller control and if suppression of cherry fruit fly is also required.	Common name: chlorantraniliprole Group: 28 Preharvest interval: 1 day Re-entry period: 12 hr Maximum # applications: Apply no more than 645 g/ha per season.
	Japanese beetle (suppression)	<ul style="list-style-type: none"> special sprays (when monitoring indicates the need) 	285 g/ha	For optimum suppression of Japanese beetle, apply when feeding is first observed and repeat in 10–14 days if required.	
Apogee	vegetative growth control	<ul style="list-style-type: none"> 5–20 cm shoot growth 	1.35 kg/ha	If required, make a second application 14–21 days later.	Common name: prohexadione calcium Group: plant growth regulator Preharvest interval: 20 days Re-entry period: 12 hr Maximum # applications: 2
Fontelis Fungicide	brown rot	<ul style="list-style-type: none"> white bud bloom shuck fall second cover (12 days after first cover) third cover prepick 	1.0–1.75 L/ha	1.5 L/ha provided excellent control of brown rot in research trials. Do not rotate with Lance/Cantus or Pristine.	Common name: penthiopyrad Group: 7 Preharvest interval: 0 days Re-entry period: 12 hr Maximum # applications: 4.5 L/ha per season

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 7: Peach Calendar, page 185					
Flint Fungicide	powdery mildew	<ul style="list-style-type: none"> shuck split to shuck fall second generation oriental fruit moth spay 	140–280 g/ha	Apply to prevent infection and continue at 14-day intervals.	Common name: trifloxystrobin Group: 11 Preharvest interval: 1 day Re-entry period: 12 hr except 7 days for hand thinning Maximum # applications: 4
Fontelis Fungicide	brown rot	<ul style="list-style-type: none"> pink bloom shuck split to shuck fall special sprays (when monitoring indicates the need during pit hardening) third generation oriental fruit moth spray) prepick spray 	1.0–1.75 L/ha	1.5 L/ha provided excellent control of brown rot in research trials. Do not rotate with Lance/Cantus or Pristine.	Common name: penthiopyrad Group: 7 Preharvest interval: 0 days Re-entry period: 12 hr Maximum # applications: Apply no more than 4.5 L/ha per season.
	powdery mildew	<ul style="list-style-type: none"> shuck split to shuck fall second generation oriental fruit moth spay 			
	scab	<ul style="list-style-type: none"> shuck split to shuck fall second generation oriental fruit moth spay 	1.5 L/ha		
Isomate-PTB Dual	lesser peach tree borer peach tree borer (reduces mating of these pests)	<ul style="list-style-type: none"> shuck split to shuck fall 	350 dispensers/ha	Apply before moth emergence begins for the season, i.e., typically apply at or before shuck-split. Typically only one application per season is made but multiple applications can be made as long as the maximum labelled use rate is not exceeded in the course of the season. The dispensers are designed to last for the entire season.	Common name: pheromone Group: pheromones Preharvest interval: na Re-entry period: na Maximum # applications: 675 dispensers/ha/season
Success 480 EC	western flower thrips (suppression)	<ul style="list-style-type: none"> petal fall to shuck shuck split to shuck fall 	182 mL/ha	Western flower thrips is a problem primarily in nectarine.	Common name: spinosad Group: 5 Preharvest interval: 14 days Re-entry period: when dry Maximum # applications: 3
Entrust 80 W	western flower thrips (suppression)	<ul style="list-style-type: none"> petal fall to shuck shuck split to shuck fall 	109 g/ha	Use sufficient water volume to ensure that spray washes down into the shuck where thrips hide. This product is highly toxic to bees so apply when they are not flying.	

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 7: Pear Calendar, page 196					
Blossom Protect	fire blight	<ul style="list-style-type: none"> • bloom 	See comments.	<p>Rate is dependent on tree height. For every 1 m of tree height, dilute 5.25 kg Component A in 500 L/ha water and add dilution to 0.75 kg Component B. See table, <i>Examples of Blossom Protect Rate Based on Tree Height</i>, below.</p> <p>If a forecast system (e.g. Maryblyt, Cougar Blight) is available, apply 1–2 days before an infection date. Repeat after 2 days and up to 5 times if infection continues. If no forecast system is available, apply at 10%, 40%, 70% and 90% open blossoms.</p>	<p>Common name: <i>Aureobasidium pullulans</i> Group: n/a Preharvest interval: n/a Re-entry period: when dry Maximum # applications: 5</p> <p>This product is sensitive to fungicides and may have reduced efficacy if tank mixed. Increased russetting of fruit from sensitive varieties is possible. This is a biopesticide and may not provide the same level of control as conventional products. There is limited-to-no experience with this product in Ontario.</p>
Fontelis Fungicide	pear scab	<ul style="list-style-type: none"> • green tip • white bud • bloom • petal fall • first cover • second cover 	1.0–1.5 L/ha	<p>Begin applications at green tip and continue as needed on a 7–10-day interval. Use higher rate and shorter interval when disease pressure is high. Do not rotate with Pristine. Maximum 2 applications/ season.</p>	<p>Common name: penthiopyrad Group: 7 Preharvest interval: 28 days Re-entry period: 12 hr Maximum # applications: Apply no more than 4.5 L/ha per season.</p>

EXAMPLES OF BLOSSOM PROTECT RATES BASED ON TREE HEIGHT

Tree Height (m)	Component A		Component B		Volume (L/ha)
	(kg)	(# of packages) ¹	(kg)	(# of packages)	
1	5.25	0.5	0.75	0.5	500
2	10.50	1	1.50	1	1,000
3	15.75	1.5	2.25	1.5	1,500
4	21.00	2	3.00	2	2,000

¹ Package contents are pre-measured for 1,000 L spray solution, or 2 m tree height.

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 7: Plum Calendar, page 208					
Admire 240 (foliar application)	aphids	<ul style="list-style-type: none"> special sprays (when monitoring indicates the need) 	230 mL/ha	Apply after pollination is complete and bees have been removed from the orchard. Do not apply before or during bloom.	Common name: imidacloprid Group: 4 Preharvest interval: 7 days Re-entry period: 24 hr Maximum # applications: 2
Fontelis Fungicide	brown rot	<ul style="list-style-type: none"> popcorn bloom shuck fall (when most of the shucks are off) first cover (12 days after shuck fall) second cover prepick 	1.0–1.75 L/ha	1.5 L/ha provided excellent control of brown rot in research trials. Do not rotate with Lance/Cantus or Pristine.	Common name: penthiopyrad Group: 7 Preharvest interval: 0 days Re-entry period: 12 hr Maximum # applications: 4.5 L/ha per season
Isomate-PTB Dual	lesser peach tree borer peach tree borer (reduces mating of these pests)	<ul style="list-style-type: none"> shuck (when most of the shucks are off) 	350 dispensers/ha	Apply before moth emergence begins for the season, i.e., typically apply at or before shuck-split. Typically only one application per season is made but multiple applications can be made as long as the maximum labelled use rate is not exceeded in the course of the season. The dispensers are designed to last for the entire season.	Common name: pheromone Group: pheromones Preharvest interval: na Re-entry period: na Maximum # applications: 675 dispensers/ha/season

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 8: Walnut Calendar, page 217					
Admire 240 F	aphids	• summer sprays	230 mL/ha	Post-bloom application only. Thorough uniform coverage of foliage is necessary for optimal control. Provides suppression only for leafhopper.	Common name: imidacloprid Group: 4 Preharvest interval: 7 days Re-entry period: 24 hours Maximum # application: 2
	leafhopper (suppression)	• summer sprays	200 mL/ha		
Delegate WG	codling moth	• prebloom	420 g/ha	Repeat application in 14 days depending on pest pressure. For codling moth, apply at first egg hatch based on pheromone catches and degree days after biofix, but before larvae penetrate nuts. Provides suppression only for butternut curculio and husk maggot.	Common name: spinetoram Group: 5 Preharvest interval: 14 days Re-entry period: 12 hours Maximum # applications: 3
	butternut curculio (suppression)	• 1st pistillate flower			
	husk maggot (suppression)	• summer sprays			
	leafroller	• prebloom • summer sprays	210–420 g/ha	For butternut curculio, apply at first sign of feeding damage after bloom. For huskfly, apply 7–10 days after first fly is caught on sticky traps. For spring generation leafrollers, apply when larvae have emerged but before they have rolled up in leaves. For summer generation, apply at first egg hatch as determined by adult flights.	
Entrust 80 W	leafroller codling moth (suppression)	• prebloom • summer sprays	109 g/ha	Repeat at 7–10-day intervals depending on pest pressure. For spring generation leafrollers, apply when larvae have emerged and are actively feeding, but before they roll up in leaves. For summer generation, determine timing by adult flight and larval densities. Provides suppression only for codling moth. Apply at first egg hatch based on pheromone trap catches and degree days after biofix, but before larvae penetrate nuts.	Common name: spinosad Group: 5 Preharvest interval: 14 days Re-entry period: when dry Maximum # applications: 3
Envidor 240 SC	European red mite two-spotted spider mite	• summer sprays	0.75 L/ha	Postbloom application only. Amount of carrier water will vary with tree size. Refer to product label for detailed instructions.	Common name: spiroticlofen Group: 23 Preharvest interval: 7 days Re-entry period: 12 hours Maximum # applications: 1

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 8: Pecan and Sweet Chestnut Calendar, page 219					
Admire 240 F	aphids	• summer sprays	230 mL/ha	Postbloom application only. Thorough uniform coverage of foliage is necessary for optimal control. Provides suppression only for leafhopper.	Common name: imidacloprid Group: 4 Preharvest interval: 7 days Re-entry period: 24 hr Maximum # application: 2
	leafhopper (suppression)	• summer sprays	200 mL/ha		
Delegate WG	leafroller	• prebloom • summer sprays	210–420 g/ha	For spring generation, apply when larvae have emerged but before they have rolled up in leaves. For summer generation, apply at first egg hatch as determined by adult flights. Repeat application in 14 days depending on pest pressure.	Common name: spinetoram Group: 5 Preharvest interval: 14 days Re-entry period: 12 hr Maximum # applications: 3
Envidor 240 SC	European red mite two-spotted spider mite	• summer sprays	0.75 L/ha	Postbloom application only. Amount of carrier water will vary with tree size. Refer to product label for detailed instructions.	Common name: spiroticlofen Group: 23 Preharvest interval: 7 days Re-entry period: 12 hr Maximum # applications: 1

ADDITIONS AND NEW USES FOR 2013

Product to Add	Diseases and Insects	Timing	Rate	Comments	Other information
Chapter 8: Filbert/Hazelnut Calendar, page 220					
Admire 240 F	aphids	• summer	230 mL/ha	Postbloom application only.	Common name: imidacloprid Group: 4 Preharvest interval: 7 days Re-entry period: 24 hours Maximum # application: 2
	leafhopper (suppression)	• summer	200 mL/ha	Thorough uniform coverage of foliage is necessary for optimal control. Provides suppression only for leafhopper.	
Delegate WG	butternut curculio (suppression)	• early spring (more than ¼ in. vegetative growth)	420 g/ha	Repeat application in 14 days depending on pest pressure.	Common name: spinetoram Group: 5 Preharvest interval: 14 days Re-entry period: 12 hours Maximum # applications: 3
	leafroller	• early spring (more than ¼ in. vegetative growth) • summer	210–420 g/ha	Provides suppression only for butternut curculio. Apply at first sign of feeding damage after bloom. For spring generation leafrollers, apply when larvae have emerged but before they have rolled up in leaves. For summer generation, apply at first egg hatch as determined by adult flights.	
Envidor 240 SC	European red mite two-spotted spider mite	• early spring (more than ¼ in. vegetative growth) • summer	0.75 L/ha	Postbloom application only. Amount of carrier water will vary with tree size. Refer to product label for detailed instructions.	Common name: spiroticlofen Group: 23 Preharvest interval: 7 days Re-entry period: 12 hours Maximum # applications: 1
Warhawk 480 EC	filbert aphid	• early spring (more than ¼ in. vegetative growth) • summer	4.2–4.8 L/ha	Use in 100 L/ha. Aphids are generally controlled by natural predation. This product may negatively affect natural enemies, as well as pollinators. Avoid repeated use of this product or other products from Group 1B.	Common name: chlorpyrifos Group: 1B Preharvest interval: 14 days Re-entry period: 2 days/4 days (scouting) Maximum # applications: 3



Published by the Ministry of Agriculture and Food and the Ministry of Rural Affairs
© Queen's Printer for Ontario, Toronto, 2013
Toronto, Canada
ISSN 0701-533X
02-13-1M
Également disponible en français

