

EXTENSION AND ADVISORY TEAM

# STONE FRUIT PEST MANAGEMENT GUIDE

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A guide to insect, mite and disease management in peach,  
plum, and sweet and sour cherry orchards in Nova Scotia



**Discard old editions of the pest management guide. Each year, the Perennia Tree Fruit Specialist updates the pesticides and information contained in this publication.**

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*Note: Perennia offers supplemental guides for pome fruit and organic production on our website at [www.perennia.ca](http://www.perennia.ca) > Agriculture > Commodity Information > Fruits > Tree Fruit*

## Emergency and First Aid Procedure for Pesticide Poisoning

- Become familiar with the chemicals you are using. Keep a list of common and active ingredient names in case of accidents or emergencies. This information can be found on product labels and cross-referenced in this publication.
- If poisoning from exposure to a pesticide by swallowing, inhalation or contact with skin or eyes is suspected, read the product label of the pesticide container and carry out first aid treatment as suggested.
- If a person is seriously injured, call **911** immediately.
- Emergency advice on pesticide poisoning is available 24 hours/day from the IWK Regional Poison Information Centre, Halifax, NS. Phone: 1-800-565-8161 (NS & PEI).

### Sources of Information on Pesticides

Information Service of the Pest Management Regulatory Agency

Phone: 1-800-267-6315

Web Site: <http://www.hc-sc.gc.ca/cps-spc/pest/index-eng.php>

Pest Management Regulatory Agency –Electronic Labels: Search Tool

Web Site: <http://pr-rp.hc-sc.gc.ca/lr-re/index-eng.php>

Ontario Pesticides Classification Database

Web Site: <https://www.lrcsde.lrc.gov.on.ca/PCDWeb/showSearch.action>

National Pesticide Information Centre

Web Site: <http://npic.orst.edu/>

Environmental Emergencies – Nova Scotia

Pesticide and Chemical spills

Phone: 1-800-565-1633

Organic Agriculture Centre of Canada

Web Site: <http://www.organicagcentre.ca/>

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# 1. Pesticide Handling and Application

## Registration of Pesticides

A pesticide that is used in Nova Scotia must be registered by the Pest Management Regulatory Agency (PMRA) of Health Canada, and be approved for use in the province of Nova Scotia. All registered pesticides may be re-evaluated and are subject to discontinuation if they do not meet current standards. The pesticide product label is a legal document, and all label directions must be followed.

- To search for product labels, visit the Health Canada website:  
<http://pr-rp.hc-sc.gc.ca/lr-re/index-eng.php>
- To download the smartphone application, search for the app “Pesticide Labels” by Health Canada.

## Applicator Pesticide Certification

Applicators must hold a valid applicator certificate of qualification to apply a commercial class pesticide in Nova Scotia. The regional offices for Nova Scotia Environment offer certificates, approvals, exams and exam study materials.

- Central Region: Halifax and Hants Counties, (902) 424-7773
- Western Region: Kings, Annapolis, Digby, Yarmouth, Shelburne, Queens and Lunenburg, (902) 679-6086

## Environmental Stewardship

Environmental stewardship and food safety programs are important components of best management practice for fruit production. Guidelines and fact sheets have been developed under the Nova Scotia Environmental Farm Program for the best means to store, handle, and apply pesticides. Factsheets on the NS Federation website (<http://www.nsfa-fane.ca/efp/resources/factsheets/>) include:

- On-farm Pesticide Use
- Pesticide Storage and Handling
- Air-Blast Sprayer Calibration for Orchard and Vineyards
- Tree-Row Volume: Concept, Calculations and Application

## Food Safety

The CHC CanadaGap on-farm food safety manual provides procedures and guidelines with regard to the safe handling, storage and record keeping for tree fruit pesticides and fertilizers:  
<http://www.canadagap.ca/manuals/downloads/>

## Buffer Zones

Most pesticide labels have a required distance between site of spray application and a buffer zone. A buffer zone is the distance between the point of direct pesticide application and the nearest downwind boundary of a sensitive habitat. A buffer zone is a no-spray area because the sensitive habitat contains organisms that are affected by the pesticide being applied. A sensitive area may be aquatic, terrestrial (shelterbelts and woodlots) or a combination (wetlands, marshes etc). It is the applicator's responsibility to identify the sensitive areas within and adjacent to treated fields.

## **Pesticide Formulation Abbreviations**

DF	dry flowable	SG	soluble granules
DP	dispersible powder	SN	solution
DU	dust	SP	soluble powder
EC	emulsifiable concentrate	SU	suspension
F or FLO	flowable solution	SURF	surfactant
GR or G	granular	W or WP	wettable powder
OD	oil dispersible	WSP	water soluble pouch
SC	spray concentrate	WDG or DG	water dispersible granules

## **Warning**

Please note that we make no warranty or guarantee of any kind, expressed or implied, concerning the use of products listed in this publication. The user assumes all risks, whether recommendations are followed or not. This publication is intended as a guide only.

For specific product information always refer to and follow directions on the label.

## 2. Pesticides Listed in this Guide

PESTICIDES LISTED IN THIS GUIDE										
This listing includes all the registered pesticides (excluding herbicides) detailed in the Stone Fruit Management Guide. Products registered for suppression only are not listed in this guide. Products are listed according to primary insects and diseases in Nova Scotia stone fruits. Secondary diseases and pests may be present on some labels. Consult product labels for additional information.										
Active Ingredient	Product	Group Name	Group	Peach	Plum	Sweet Cherry	Sour Cherry	Preharvest Interval (days)	Re-Entry Interval	Diseases/Insects Controlled/Suppressed
<b>FUNGICIDES</b>										
ferbam	Ferbam	Inorganic	M	✓				21	12 h	Peach leaf curl
copper hydroxide	Parasol Flowable	Inorganic	M1	✓		✓	✓	dormant only	48 h	Peach leaf curl, bacterial canker (cherry)
BLAD polypeptide	Fracture	Inorganic	M	✓	✓	✓	✓	0	12 h	Brown rot
sulphur	Kumulus	Inorganic	M1	✓	✓		✓	1	24 h	Brown rot, peach scab, powdery mildew
sulphur	Microthiol D./Microscopic Sulphur	Inorganic	M1	✓	✓		✓	1	24 h	Brown rot, peach scab, powdery mildew
basic copper sulphate	Copper	Inorganic	M2	✓				2	48 h	Peach leaf curl
copper octanoate	Cueva	Inorganic	M2	✓	✓	✓	✓	1	12h	Peach leaf curl, bacterial spot, brown rot, bacterial canker (cherry), cherry leaf spot
copper oxychloride	Copper Spray Fungicide	Inorganic	M2	✓		✓	✓	2	48 h	Peach leaf curl, bacterial canker (cherry)
copper oxychloride	Guardsman Copper Oxychloride	Inorganic	M2	✓		✓	✓	2	48 h	Peach leaf curl, bacterial canker (cherry)
copper oxychloride	Copper 53 W	Inorganic	M2	✓			✓	2	48 h	Peach leaf curl
thiram	Granuflo-T	EBDC	M3	✓				7	24 h	Brown rot, peach scab
thiram	Thiram	EBDC	M3	✓	✓			7	12 h	Brown rot, peach scab, plum pockets
captan	Supra Captan	Phthalimide	M4	✓	✓	✓	✓	2	48 h	Brown rot, peach scab, black knot, cherry leaf spot
captan	Maestro	Phthalimide	M4	✓	✓	✓	✓	2	48 h	Brown rot, peach scab, black knot, cherry leaf spot
chlorothalonil	Bravo	Chloronitrile	M5	✓			✓	40	48 h	Peach leaf curl, brown rot, cherry leaf spot, black knot
chlorothalonil	Bravo ZN	Chloronitrile	M5	✓		✓	✓	60	48 h	Peach leaf curl, brown rot, black knot, cherry leaf spot
chlorothalonil	Echo	Chloronitrile	M5	✓			✓	40	48 h	Peach leaf curl, brown rot, cherry leaf spot, black knot
thiophanate-methyl	Senator	MBC	1	✓	✓	✓	✓	1	12 h	Brown rot
iprodione	Rovral	Dicarboximide	2	✓	✓	✓	✓	1	12 h	Brown rot
triforine	Funginex	DMI	3	✓	✓	✓	✓		48 h	Brown rot (before petal fall only)
fenbucanazole	Indar	DMI	3	✓	✓	✓	✓	1	12 h	Brown rot, black knot
propiconazole	Jade	DMI	3	✓	✓	✓	✓	3	72 h	Brown rot, black knot
propiconazole	Mission	DMI	3	✓	✓	✓	✓	3	72 h	Brown rot
propiconazole	Tilt	DMI	3	✓	✓	✓	✓	3	72 h	Brown rot, black knot
myclobutanil	Nova	DMI	3	✓		✓	✓	1	12 h	Brown rot
metconazole	Quash	DMI	3	✓	✓	✓	✓	14	12 h	Brown rot, powdery mildew
boscalid	Cantus	SDHI	7	✓	✓	✓	✓	0	12 h	Brown rot
penthiopyrad	Fontelis	SDHI	7	✓	✓	✓	✓	0	12 h	Brown rot, peach scab, powdery mildew
fluxapyroxad	Sercadis	SDHI	7	✓	✓	✓	✓	0	12 h	Brown rot
boscalid + pyraclostrobin	Pristine	SDHI + QoI	7,11	✓	✓	✓	✓	1	24h	Brown rot, cherry leaf spot
fluopyram + trifloxystrobin	Luna Sensation	SDHI + QoI	7,11	✓	✓	✓	✓	1	12 h	Brown rot, peach scab, powdery mildew
cyprodinil	Vanguard	AP	9	✓	✓			2	72 h	Brown rot
trifloxystrobin	Flint	QoI	11	✓		✓	✓	1	12 h	Cherry leaf spot
fludioxonil	Scholar	Phenylpyroles	12	✓	✓	✓		NA	NA	Postharvest rots
metrafenone	Vivando	Benzophenone	U8	✓				7	12 h	Powdery mildew
dodine	Equal/Syllit	Guanidine	U12	✓		✓	✓	7	48 h	Peach leaf curl, cherry leaf spot
fenhexamid	Elevate	Hydroxynalane	17	✓		✓	✓	1	4 h	Brown rot



Active Ingredient	Product	Group Name	Group	Peach	Plum	Sweet Cherry	Sour Cherry	Preharvest Interval (days)	Re-Entry Interval	Pests Controlled
<b>FUNGICIDES</b>										
<i>Bacillus subtilis</i>	Serenade OPTI	Microbial Disruptors	44	✓	✓	✓	✓	0	when dry	Brown rot
<i>Reynoutria sachalinensis</i>	Regalia Maxx	Biofungicide	P5	✓	✓	✓	✓	0	when dry	Brown rot, powdery mildew, cherry leaf spot
potassium bicarbonate	MiStop		NC	✓				0	4 h	Powdery mildew
potassium bicarbonate	Sirocco		NC	✓				0	4 h	Powdery mildew
mineral oil	Purespray Green	Mineral oil	NC	✓				0	12 h	Powdery mildew
<b>INSECTICIDES/MITICIDES</b>										
petroleum oil	Superior Oil	Mineral oil	NC	✓	✓			0	12 h	European red mite
mineral oil	Purespray Green	Mineral oil	NC	✓	✓			0	12 h	European red mite, aphids (green peach, plum), two-spotted spider mite
potassium salts of fatty acid	Kopa	Insecticidal soap	NC	✓	✓	✓		12 h	12 h	European red mite, aphids (green peach, plum, black cherry), two spotted spider mite
bifenazate	Acramite	Carbazate	UN	✓	✓			7	12 h	European red mite, two-spotted spider mite
phosmet	Imidan	Organophosphate	1B	✓	✓		✓	14	7 d	Plum curculio, feeding caterpillars, cherry fruit fly, spotted wing drosophila
malathion	Malathion	Organophosphate	1B	✓	✓	✓	✓	7, 3	3 d	Spotted wing drosophila
permethrin	Ambush	Pyrethroid	3	✓	✓			7	12 h	Tarnished plant bug, plum curculio
cypermethrin	Mako	Pyrethroid	3	✓				7	12 h	Tarnished plant bug
cypermethrin	Up-Cyde	Pyrethroid	3	✓	✓			7	12 h	Tarnished plant bug, plum curculio
deltamethrin	Decis	Pyrethroid	3					1	12 h	Tarnished plant bug
lambda-cyhalothrin	Matador/Warrior	Pyrethroid	3	✓	✓	✓	✓	7	24 h	Tarnished plant bug, plum curculio
lambda-cyhalothrin	Silencer	Pyrethroid	3	✓	✓	✓	✓	7	24 h	Tarnished plant bug, plum curculio, cherry fruit fly
permethrin	Pounce	Pyrethroid	3	✓	✓			7	12 h	Tarnished plant bug, plum curculio
permethrin	Perm-Up	Pyrethroid	3	✓	✓			7	12 h	Plum curculio
acetamiprid	Assail	Neonicotinoid	4	✓	✓	✓	✓	7	12 h	Plum curculio, cherry fruit fly
imidacloprid	Admire/Alias	Neonicotinoid	4A	✓	✓	✓	✓	7	24 h	Aphids (green peach, plum, black cherry), cherry fruit fly
clothianidin	Clutch	Neonicotinoid	4	✓	✓	✓	✓	7	12 h	Aphids (green peach, plum, black cherry), plum curculio
sulfoxaflor	Closer	Neonicotinoid	4C	✓	✓	✓		7	12 h	Aphids (green peach, plum, black cherry)
thiamethoxam	Actara	Neonicotinoid	4			✓		14	12 h	Black cherry aphid
sulfoxaflor + spinetoram	Twinguard	Neonicotinoid+Spinosyns	4C, 5	✓	✓			7	12 h	Aphids (green peach, plum)
spinosad	Entrust	Spinosyns	5			✓	✓	14	12 h	Cherry fruit fly
spinosad	GF-120	Spinosyns	5			✓	✓	0	12 h	Cherry fruit fly
spinetoram	Delegate	Spinosyns	5	✓	✓	✓	✓	5	12 h	Spotted wing drosophila, aphids (green peach), cherry fruit fly suppression
bacillus thuringiensis	Dipel 2XDF	Bt Microbial	11	✓				0	12 h	Feeding caterpillars
pyridaben	Nexter	Pyridazinone	21	✓				7	24 h	European red mite, two-spotted spider mite
spirotetramat	Movento	Tetronic Acid	23	✓	✓	✓		7	12 h	Aphids (green peach, plum, black cherry)
spirodiclofen	Envidor	Tetronic Acid	23	✓	✓			7	12 h	European red mite, two-spotted spider mite
cyclaniliprole	Harvanta	Pyrazolylphenyl	28	✓	✓	✓	✓	7	12 h	Spotted wing drosophila, plum curculio
cyantraniliprole	Exirel	Ryanodine receptors	28	✓	✓	✓	✓	3	12 h	Aphids (green peach, plum), plum curculio, feeding caterpillars, cherry fruit fly, spotted wing drosophila
flonicamid	Beleaf	Chordatanol Organ Modulators	29	✓	✓	✓		14	12 h	Aphids (green peach, plum, black cherry)

### 3. Peach Orchard Calendar

#### Peach Orchard Management Guide for Nova Scotia

A guide to insect, mite, and disease management in peach orchards.

All rates are based on label rates. In some cases, reduced rates can be used based on factors such as tree size. Please refer to the label, product specific notes or your agricultural advisor for details. Always read the label before using any pesticide. Where differences between the label and this schedule occur, label information prevails.

Disease & Insect	Products	Group	Formulation	Rate	Notes
<b>DORMANT</b>					
Peach Leaf Curl	If peach leaf curl was not severe in the previous season, a spring fungicide application may not be needed where a fall spray was applied at leaf drop. Spring fungicide applications need to be applied just prior to bud swell (early to mid-April). Delaying the treatment until after bud swell can result in poor control.				
	▶ Bravo	M5	500 SU	5.0-7.0 L/ha	Do not apply within 10 days of an oil application to prevent burning of flowers and leaf tissue. Apply with a minimum of 1,000 L of water per hectare. Do not make more than 1 application per year.
	▶ Echo	M5	90 DF	2.8-3.9 kg/ha	
	▶ Ferbam	M3	76 WDG	3.5 kg/1,000 L	Check label directions with regards to mixing with oil. Do not make more than 1 application per year.
	▶ Copper Spray	M2	50 WP	2.0 kg/1,000 L	
	▶ Copper 53W Guardsman	M2	53 WP	1.9 kg/1,000 L	Do not make more than 2 applications per year.
	▶ Copper Oxchloride 50	M2	50 WP	2.0 kg/1,000 L	
	▶ Cueva	M1	1.8 S	1% v/v	Do not exceed 5 applications per year. Reapply at 5-10 day intervals.
	▶ Parasol Flowable	M1	SU	4.5-6.7 L/ha	
	▶ Syllit	U12	400 FL	1.8-3.5 L/1,000 L	Do not make more than 2 applications per year.
<b>PREBLOOM (Half-inch Green to First Pink)</b>					
European Red Mite	Check compatibility with fungicides for peach leaf curl and brown rot.				
	▶ Superior Oil	NC	70 EC	20 L/1,000 L or 60 L/ha	Best results are obtained when applied with a high volume of water 1,500 to 3,370 L/ha. Do not apply oil during or just prior to expected freezing temperatures or immediately following a frost. Do not apply when temperatures are greater than 30°C.
	▶ Purespray Green Spray Oil	NC	13 E	20 L/1,000 L or 60 L/ha	
	▶ Kopa	NC		2% v/v	Begin applications when population are low and reapply every 1-3 weeks as needed. Test a small area for tolerance before spraying entire block. Applying soaps more than 3 times may cause plant injury. Avoid application in direct sunlight or to plants under stress. Do not exceed 1650 L/ha spray solution on peaches. Combining this product with sulfur or applying this product within 3 days of sulfur application may increase the plant damage caused by sulfur on sensitive plants.
<b>PINK</b>					
Brown Rot (blossom blight stage)	Blossom blight is favoured by wet weather (above 16°C), especially when large numbers of mummies (dried infected fruit) are present on the tree. Remove mummies when pruning. Apply first spray just before blossoms open, followed by two additional sprays during the bloom period if weather remains favorable for blossom blight. Fungicides in Groups other than M should be used in rotation with different Groups for resistance management.				
	▶ Fracture	M		1.5-3.3 L/ha	Use high rate under high disease pressure. Do not mix with foliar fertilizers.
	▶ Cueva	M2	1.8 S	0.5-2.0% solution	Apply in 470-940 L of water per hectare. Do not make more than 5 applications per year.
	▶ Granuflo-T	M3	75 WDG	1.5-2.25 kg/1,000 L	Use higher rate for greater disease pressure.
	▶ Thiram	M3	75 WP	1.5-2.25 kg/1,000 L	Use higher rate for greater disease pressure. Apply at intervals of 3 to 4 days during bloom.

Disease & Insect	Products	Group	Formulation	Rate	Notes
PEACH - PINK					
Brown Rot (blossom blight stage) cont'd	► Supra Captan	M4	80 WDG	3.75-4.50 kg/ha	Use higher rate for greater disease pressure. May cause injury under some circumstances. Do not apply within 14 days of an oil application.
	► Maestro	M4	80 DF	3.75-4.50 kg/ha	
	► Senator	1	50 SC	700 mL/1,000 L	Apply first application at early bloom. Repeat according to weather conditions
	► Rovral	2	50 WP	1.50-1.75 kg/ha	Use the higher rate for larger trees. <b>*Use discontinued as of June 2021</b>
	► Funginex	3	190 EC	2.50 L/ha	
	► Indar	3	75 WSP	140 g/ha	
	► Tilt	3	250 E	500 mL/ha	Apply first application at early bloom followed by a second at 50 to 75% bloom.
	► Jade	3	250 E	500 mL/ha	Apply first application at early bloom followed by a second at 50 to 75% bloom.
	► Mission	3	418 EC	300 mL/ha	Apply first application at early bloom followed by a second at 50 to 75% bloom.
	► Nova	3	40 WSP	340 g/ha	Apply when first blossoms are opening. Do not make more than 6 applications per year.
	► Quash	3	WDG	175-245 mL/ha	Begin application at early pink before infection, until petal fall. Use in rotation with other groups for brown rot.
	► Fontelis	7	SC	1.0-1.75 L/ha	Use higher rate and shorter spray intervals when disease pressure is high. Do not use more than 4.5 L/ha per year.
	► Cantus	7	WDG	370 g/ha	Contains mineral oil.
	► Sercadis	7	300 SU	333 mL/ha	Do not make more than 5 applications per year.
	► Pristine	7, 11	WG	0.75-1.0 kg/ha	Do not make more than 3 applications per year.
	► Luna Sensation	7, 11	SU	300-400 mL/ha	Do not make more than 5 applications per year.
	► Vanguard	9	75 WG	370 g/ha	Use no more than two consecutive applications before rotating to a different fungicide group.
	► Elevate	17	50 WDG	1.7 kg/ha	Do not make more than 2 applications per year. Applications must be made before petal fall.
	► Serenade OPTI	44	WP	1.1-1.7 kg/ha	Do not make more than 4 applications per year.
► Regalia Maxx	P5	LC	0.125-0.25% v/v	Suppression only but can be used with other products for resistance management.	
					Suppression only but can be used with other products for resistance management. Apply before symptoms develop.
					Use in 500-1000 L water. Use at low rate in a tank mix with other brown rot fungicides, or high rate in rotation with other brown rot fungicides.
BLOOM					
Brown Rot	Use one of the fungicides listed under Pink. If wet weather above 16°C persists during the bloom period, two applications may be required during this stage of development.				
Insects	Do not use any insecticides during bloom.				
PETAL FALL to SHUCK SPLIT					
Brown Rot	Use one of the fungicides listed under Pink. If wet weather above 16°C persists, additional applications may be required. Do not use Funginex after bloom.				
Green Peach Aphid	Use one of the following insecticides if treatment for green peach aphid is required.				
	► Admire	4A	240 F	230 mL/ha	Do not apply when bloom or flowering weeds are present. Do not make more than two applications per season.
	► Alias	4A	240 SC	230 mL/ha	Do not apply when bloom or flowering weeds are present. Do not make more than two applications per season.
	► Clutch	4A	50 WDG	140-210 g/ha	Do not apply when bloom or flowering weeds are present. Do not make more than two applications per year.
	► Closer	4C	SC	100-200 g/ha	Do not apply when bloom or flowering weeds are present. Do not make more than two applications per year.

Disease & Insect	Products	Group	Formulation	Rate	Notes
<b>PEACH - PETAL FALL TO SHUCK</b>					
Green Peach Aphid cont'd	▶ Twinguard	4C, 5	WDG	250 g/ha	Do not apply when bloom or flowering weeds are present. Do not make more than two applications per year.
	▶ Movento	23	240 SC	365 mL/ha	Do not apply when bloom or flowering weeds are present. Do not apply more than 1.83 L/ha per year. Control may not be visible for 2-3 weeks after treatment.
	▶ Exirel	28	100 SU	0.75-1.5 L/ha	Do not apply when bloom or flowering weeds are present. Do not make more than 4 applications per year.
	▶ Beleaf	29	50 SG	120-160 g/ha	Use higher rates for greater pest populations and/or dense foliage. Do not make more than three applications per year.
	▶ Kopa	NC	SC	2% v/v	Begin applications when population are low and reapply every 1-3 weeks as needed. Test a small area for tolerance before spraying entire block. Applying soaps more than 3 times may cause plant injury. Avoid application in direct sunlight or to plants under stress. Do not exceed 1650 L/ha spray solution on peaches. Combining this product with sulfur or applying this product within 3 days of sulfur application may increase the plant damage caused by sulfur on sensitive plants.
<b>SHUCK FALL</b>					
Brown Rot	Use one of the fungicides listed under Pink. If wet weather above 16°C persists, additional applications may be required. Do not use Sercadis after petal fall.				
Peach Scab	Peaches are susceptible to peach scab infections from shuck fall to 4-6 weeks before harvest. The shuck fall application is particularly important for disease control. Periods of wet weather will require additional applications until 4-6 weeks before harvest.				
	▶ Kumulus	M1	80 DF	22.5 kg/ha	Repeat if weather is wet. Will also control brown rot and powdery mildew.
	▶ Microthiol Disperss	M1	80 WP	7.5 kg/1,000 L	Repeat if weather is wet. Will also control brown rot and powdery mildew.
	▶ Microscopic Sulphur	M1	92 WP	6.5 kg/1,000 L	Repeat if weather is wet. Will also control brown rot.
	▶ Granuflo-T	M3	75 WDG	1.5-2.25 kg/1,000 L	Use higher rate for greater disease pressure. Will also control brown rot.
	▶ Thiram	M3	75 WP	1.5-2.25 kg/1,000 L	Use higher rate for greater disease pressure. Will also control brown rot.
	▶ Supra Captan	M4	80 WDG	3.75-4.50 kg/ha	Use higher rate for greater disease pressure. May cause injury under some circumstances. Will also control brown rot.
	▶ Maestro	M4	80 DF	3.75-4.50 kg/ha	
	▶ Fontelis	7	SC	1.0-1.5 L/ha	Use higher rate and shorter spray intervals when disease pressure is high. Do not use more than 4.5 L/ha per year. Will also control brown rot and powdery mildew.
	▶ Luna Sensation	7, 11	SU	300-400 mL/ha	Use no more than two consecutive applications before rotating to a different fungicide group.
Bacterial Spot	▶ Cueva	M2	1.8 S	0.5-2.0% solution	Use 470-940 L of water per hectare. Do not make more than 5 applications per year.
Powdery Mildew	Symptoms of powdery mildew can be seen on the terminal leaves of shoots where leaves will become white, misshapen and puckered.				
	▶ Kumulus	M1	80 DF	11.3-12.0 kg/ha	Repeat in 10-14 days.
	▶ Quash	3	WDG	280 g/ha	Suppression only.
	▶ Fontelis	7	SC	1.0-1.75 L/ha	Begin applications prior to disease development. Use higher rate and shorter interval when disease pressure is high. Will also control scab.
	▶ Luna Sensation	7, 11	SU	300-400 mL/ha	Use no more than two consecutive applications before rotating to a different fungicide group.

Disease & Insect	Products	Group	Formulation	Rate	Notes
PEACH - SHUCK FALL					
Powdery mildew cont'd	► Regalia Maxx	P5	LC	0.125-0.25% v/v	Suppression only but can be used with other products for resistance management. Apply before symptoms develop. Use low rate in 1,000 L water in a tank mix with other powdery mildew fungicides, or high rate in 1,000 L water in rotation with other powdery mildew fungicides. Begin applications prior to disease development. Do not make more than 2 applications per year. Use higher rate and shorter interval when disease pressure is high.
	► Vivando SC	U8	SC	0.75-1.12 L/ha	
Tarnished Plant Bug	Treatment period is from early green fruit stage to pit hardening. Use one of the following insecticides if tarnished plant bug pressure is high. Repeat treatment in 5-7 days if additional stings are detected.				
	► Ambush	3	500 EC	400 mL/ha	Do not make more than three applications per year. Avoid applying synthetic pyrethroids when temperatures rise above 20°C because they are much less effective under these conditions. Synthetic pyrethroid treatments for tarnished plant bug will also control plum curculio. Ambush may provide suppression only under high disease pressure.
	► Matador	3	120 EC	104 mL/ha	
	► Pounce	3	384 EC	520 mL/ha	
	► Mako	3	400 EC	175 mL/ha	
	► Silencer	3	120 EC	104 mL/ha	
	► Up-Cyde	3	2.5 EC	280 mL/ha	
Plum Curculio	Plum curculio is a sporadic pest of peaches which may not require control. Scout orchard rows bordering woodlands. Check fruit for new damage 7-10 days after treatment and apply a second application if new damage is found.				
	► Pounce	3	384 EC	275-520 mL/ha	Under high insect pressure may only provide suppression.
	► Perm-Up	3	EC	520 mL/ha	Under high insect pressure may only provide suppression. Do not make more than 4 applications per year. Do not make more than 2 applications per year. Use the higher rate under greater insect pressure. Do not make more than four applications per year. See label for incompatible products.
	► Assail	4	70 WP	240 g/ha	
	► Clutch	4	50 WDG	210 g/ha	
	► Exirel	28	100 SU	1.0-1.5 L/ha	
FIRST COVER (12 Days After Shuck Fall)					
Brown Rot	Use one of the fungicides listed under Pink. If wet weather above 16°C persists, additional applications may be required.				
Peach Scab	Use one of the fungicides listed under Pink. If wet weather persists, additional applications may be required.				
Bacterial Spot	Use one of the fungicides listed under Shuck Fall if bacterial spot has been a problem.				
Tarnished Plant Bug	Use of the insecticides listed under Shuck Fall if additional plant bug damage is observed after the first application.				
Plum Curculio	Use of the insecticides listed under Shuck Fall if additional plum curculio damage is observed after the first application.				
SECOND COVER (12 Days After First Cover)					
Brown Rot	Use one of the fungicides listed under Pink. If wet weather above 16°C persists, additional applications may be required.				
Peach Scab	Use one of the fungicides listed under Pink. If wet weather persists, additional applications may be required.				
Bacterial Spot	Use one of the fungicides listed under Shuck Fall if bacterial spot has been a problem.				

Disease & Insect	Products	Group	Formulation	Rate	Notes
SUMMER SPRAYS (If Needed)					
European Red Mite & Two-spotted Spider Mite	If monitoring indicates treatment is required use one of the following miticides.				
	► Acramite	UN	50 WS	851 g/ha	Do not make more than 1 application per year.
	► Nexter	21	75 WP	300-600 g/ha	Do not make more than 1 application per year. Most effective on nymphs. Use 600 g/ha for two-spotted spider mite. Do not make more than 1 application per year. Effective on all life stages including eggs, nymphal stages and adult females.
	► Envidor	23	240 SC	0.75 L/ha	
	► Kopa	NC		2% v/v	
	Begin applications when population are low and reapply every 1-3 weeks as needed. Test a small area for tolerance before spraying entire block. Applying soaps more than 3 times may cause plant injury. Avoid application in direct sunlight or to plants under stress. Do not exceed 1650 L/ha spray solution on peaches. Combining this product with sulfur or applying this product within 3 days of sulfur application may increase the plant damage caused by sulfur on sensitive plants				
Spotted Wing Drosophila	Spotted wing drosophila lay eggs in ripening fruit, and larvae may be present at harvest. If monitoring indicates treatment is required, use insecticides weekly. These products rely on contact with spotted wing drosophila adults.				
	► Malathion	1B	85E	610-855mL/1,000L	Recently registered through the minor use label expansion - pending label release. Will work more effectively if the temperature is 20° C or more or when temperatures will reach or exceed this minimum. Do not make more than 1 application per year.
	► Imidan	1B	WP	2.68 kg/ha	Do not make more than 4 applications per year.
	► Delegate	5	WDG	420 g/ha	Do not make more than 3 applications per year.
	► Exirel	28	SC	1.0-1.5 L/ha	Begin applications when populations are low. Do not make more than 4 applications per season.
	► Harvanta	28	50 SL	1.2-1.6 L/ha	Thorough coverage is essential. Do not apply a Group 28 insecticide consecutively more than 2 times within a 30 day period or within a single generation of insect pest.
PREHARVEST					
Brown Rot	Use one of the fungicides listed under Pink. Check labels for pre-harvest intervals (PHI).				
Spotted Wing Drosophila	Use one of the insecticides listed under Summer Sprays.				
POSTHARVEST - FRUIT					
Fruit Rots	Postharvest treatment of fruit will prolong storage life and provide control of post harvest diseases.				
	► Scholar	12	230 SC	496 mL/378 L	Apply as dip or drench. Reduces storage rots during wet harvest seasons.
FALL SPRAY					
Peach Leaf Curl	Apply at 75-100% leaf drop in the fall when temperature is above freezing.				
	► Cueva	M1	1.8 S	470-940 mL/ha	Apply as a late fall dormant spray during a period of dry weather.
	► Bravo	M5	500 SU	5.0-7.0 L/ha	Do not apply within 10 days of an oil application to prevent burning of flowers and leaf tissue. Apply with a minimum of 1,000 L of water per hectare. Do not make more than 1 application per year. Apply as a fall dormant spray at 75-100% leaf drop.
	► Echo	M5	90 DF	2.8-3.9 kg/ha	
	► Ferbam	M3	76 WDG	3.5 kg/1,000 L	
	► Copper Spray	M2	50 WP	2.0 kg/1,000 L	Check label directions with regards to mixing with oil. Do not make more than 1 application per year.
	► Copper 53W	M2	53 WP	1.9 kg/1,000 L	Apply in 1,000 L of water per hectare. Do not make more than 2 applications per year.
	Guardzman				Do not make more than 2 applications per year. Apply in fall after leaves have fallen.
	► Copper	M2	50 WP	2.0 kg/1,000 L	Apply in 1,000 L of water per hectare. Do not make more than 2 applications per year.
	Oxychloride 50				
	► Parasol	M1	SU	4.5-8.6 L/ha	Use higher rate when rainfall is very heavy and disease pressure is high.
	Flowable				
Peach Canker	The following practices can aid in the prevention and control of peach canker. Delay canker and dead wood removal until June or July when re-growth and healing of the tree can take place rapidly. Conduct surgery to remove cankers when 3-5 days of dry weather are forecast. Surgery involves the removal of all diseased bark from around the canker, removing at least 1.25 cm of healthy tissue from around the ends and side of the canker. The resulting wound when finished should have a smooth margin and be slightly rounded above and below to favour rapid wound closure. It is felt these wounds will heal better if left uncovered. Some pruning paints actually seal in moisture, providing an environment for re-infection.				

## 4. Plum Orchard Calendar

### Plum Orchard Management Guide for Nova Scotia

A guide to insect, mite, and disease management in plum orchards.

All rates are based on label rates. In some cases, reduced rates can be used based on factors such as tree size. Please refer to the label, product specific notes or your agricultural advisor for details.

Always read the label before using any pesticide. Where differences between the label and this schedule occur, label information prevails.

Disease & Insect	Products	Group	Formulation	Rate	Notes
<b>DORMANT</b>					
Plum Pockets	Only Japanese cultivars (such as Burbank, Shiro, Early Golden, etc.) are infected by this fungus. Treatment should be based on history of infection.				
	▶ Thiram	M4	75 WP	6.72 kg/ha	Apply as a dormant spray just prior to bud swell in 1,100 to 1,700 L of water per hectare.
<b>GREEN TIP (Bud Burst)</b>					
European Red Mite	Check compatibility with fungicides for brown rot.				
	▶ Superior Oil	NC	70 EC	20 L/1,000 L or 60 L/ha	Best results are obtained when applied with a high volume of water 1,500 to 3,370 L/ha. Do not apply oil during or just prior to expected freezing temperatures or immediately following a frost. Check compatibility with fungicides.
	▶ Purespray Green Spray Oil	NC	13 E	20 L/1,000 L or 60 L/ha	
	▶ Kopa	NC	SC	2% v/v	Begin applications when populations are low. Reapply every 1-3 weeks as needed. Test a small area of each variety for tolerance before spraying entire orchard. Applying soaps more than three times may cause plant injury. Avoid application in direct sunlight or to plants under stress. Do not apply more than 950 L/ha spray solution up to fruit formation.
<b>PREBLOOM (When Blossoms Show White)</b>					
Brown Rot (stem rot and blossom blight stages)	Blossom blight is favoured by wet weather (above 16°C), especially when large numbers of mummies (dried infected fruit) are present in the tree. Apply first spray just before blossoms open, followed by two additional sprays during the bloom period if weather remains favorable for blossom blight. Fungicides in Groups other than M should be used in rotation with different Groups for resistance management.				
	▶ Fracture	M		1.5-3.3 L/ha	Use high rate under high disease pressure. Do not mix with foliar fertilizers.
	▶ Cueva	M2	1.8 S	0.5-2.0% solution	Apply in 470-940 L of water per hectare. Do not make more than 5 applications per year.
	▶ Supra Captan	M4	80 WDG	3.75-4.50 kg/ha	Use higher rate for greater disease pressure. May cause injury under some circumstances. Do not apply within 14 days of an oil application. Will also suppress black knot.
	▶ Maestro	M4	80 DF	3.75-4.50 kg/ha	
	▶ Senator	1	50 SC	700 mL/1,000 L	Apply first application at early bloom. Repeat according to weather conditions
	▶ Rovral	2	50 WP	1.50-1.75 kg/ha	Use the higher rate for larger trees.
	▶ Indar	3	75 WSP	140 g/ha	
	▶ Tilt	3	250 E	500 mL/ha	
	▶ Jade	3	250 E	500 mL/ha	
	▶ Mission	3	418 EC	300 mL/ha	Use higher rate under high disease pressure. Do not make more than 1 application per season.
	▶ Quash	3	WDG	175-245 g/ha	
	▶ Fontelis	7	SC	1.0-1.75 L/ha	Use higher rate and shorter spray intervals when disease pressure is high. Do not use more than 4.5 L/ha per year.
	▶ Cantus	7	WDG	370 g/ha	Do not make more than 5 applications per year.

Disease & Insect	Products	Group	Formulation	Rate	Notes
PLUM - PREBLOOM (When Blossoms Show White)					
Brown Rot (stem rot and blossom blight stages) cont'd	► Sercadis	7	300 SU	333 mL/ha	Do not make more than 3 applications per year.
	► Pristine	7, 11	WG	0.75-1.0 kg/ha	Will also control leaf spot and suppress powdery mildew. Do not make more than 5 applications per year.
	► Luna Sensation	7, 11	SU	300-400 mL/ha	Do not make more than 2 applications before rotating to another fungicide group.
	► Vangard	9	75 WG	370 g/ha	Do not make more than 2 applications per year.
	► Serenade OPTI	44	WP	1.1-1.7 kg/ha	Suppression only but can be used with other products for resistance management.
	► Regalia Maxx	P5		0.125-0.25% v/v in 500-1,000 L/ha water	Suppression only but can be used with other products for resistance management. Apply before symptoms develop. Use low rate in tank-mix with other brown rot fungicides or high rate in rotation with other brown rot fungicides.
Black Knot	Prune out all knots from orchards during the dormant period and burn all knots to destroy inoculum sources for black knot. Use one of the following fungicides.				
	► Supra Captan	M4	80 WDG	3.75-4.50 kg/ha	Use higher rate for greater disease pressure. May cause injury under some circumstances. Do not apply within 14 days of an oil application. Will also control brown rot.
	► Maestro	M4	80 DF	3.75-4.50 kg/ha	
	► Indar	3	75 WSP	140 g/ha	
	► Tilt	3	250 E	500 mL/ha	
	► Jade	3	250 E	500 mL/ha	
BLOOM					
Brown Rot & Black Knot	Use one of the fungicides listed under Prebloom. If wet weather above 16°C persists during the bloom period, two applications may be required during this stage of development.				
Insects	Do not use any insecticides during bloom.				
PETAL FALL/SHUCK SPLIT					
Feeding Caterpillars	Use one of the following insecticides if caterpillar feeding damage is present.				
	► Imidan	1B	70 WP	2.68 kg/ha	Do not make more than 3 applications per year.
	► Dipel	11	2X DF	1.13-1.68 kg/ha	Best results if applications made in evening or on cloudy day.
	► Exirel	28	100 SU	0.5-1.0 L/ha	Do not make more than four applications per year. See label for incompatible products.
Brown Rot	Use one of the fungicides listed under Prebloom. Do not use Sercadis after petal fall.				
Plum Curculio	Use one of the following insecticides. Treat when shucks are off and temperatures are above 16°C.				
	► Imidan	1B	70 WP	2.68 kg/ha	Do not make more than 3 applications per year.
	► Matador	3	120 EC	104 mL/ha	Pyrethroids (Group 3) are disruptive to IPM programs leading to mite flare ups and therefore should be avoided if alternatives are available. Do not make more than three applications per year. Avoid applying synthetic pyrethroids when temperatures rise above 20°C because they are much less effective under these conditions. Under high insect pressure may only provide suppression.
	► Pounce	3	384 EC	520 mL/ha	
	► Warrior	3	120 EC	104 mL/ha	
	► Silencer	3	120 EC	104 mL/ha	
	► Perm-Up	3	EC	520 mL/ha	
	► Up-Cyde	3	2.5 EC	400 mL/ha	May provide suppression only under high pressure. Under high insect pressure may only provide suppression. Do not make more than 4 applications per year.
	► Ambush	3	500 EC	425 mL/ha	
	► Assail	4	70 WP	240 g/ha	



Disease & Insect	Products	Group	Formulation	Rate	Notes
PLUM - PETAL FALL/SHUCK SPLIT					
Plum Curculio cont'd	► Clutch	4	50 WDG	210 g/ha	Do not make more than 2 applications per year.
	► Exirel	28	100 SU	1.0-1.5 L/ha	Use the higher rate under greater insect pressure. Do not make more than four applications per year. See label for incompatible products.
Black Knot	Use one of the fungicides listed under Prebloom.				
FIRST COVER (12 Days After Shuck Fall)					
Brown Rot	Use one of the fungicides listed under Shuck Fall.				
Plum Curculio	Use one of the insecticides listed under Shuck Fall.				
Black Knot	Use one of the fungicides listed under Shuck Fall.				
SECOND COVER (12 Days After First Cover)					
Brown Rot	Use one of the fungicides listed under Shuck Fall.				
Plum Curculio	Use one of the insecticides listed under Shuck Fall.				
SUMMER SPRAYS (If Needed)					
European Red Mite	If monitoring indicates treatment is required use one of the following miticides.				
	► Acramite	UN	50 WS	851 g/ha	Do not make more than 1 application per year.
	► Envidor	23	240 SC	0.75 L/ha	Do not make more than 1 application per year. Effective on all life stages including eggs, nymphal stages and adult females.
Aphids	If monitoring indicates treatment is required use one of the following insecticides.				
	► Admire	4A	240 F	230 mL/ha	Do not apply when bloom or flowering weeds are present. Do not make more than two applications per season.
	► Clutch	4A	50 WDG	140-210 g/ha	Do not apply when bloom or flowering weeds are present. Do not make more than two applications per year.
	► Closer	4C	SC	100-200 mL/ha	Do not apply when bloom or flowering weeds are present. Do not make more than two applications per year.
	► Twinguard	4C, 5	WDG	250 g/ha	Do not apply when bloom or flowering weeds are present. Do not make more than two applications per year.
	► Movento	23	240 SC	365 mL/ha	Do not apply when bloom or flowering weeds are present. Do not apply more than 1.83 L/ha per year. Control may not be visible for 2-3 weeks after treatment.
	► Exirel	28	100 SU	0.75-1.5 L/ha	Use the higher rate under high pressure. Do not apply when bloom or flowering weeds are present. Do not make more than four applications per year. See label for incompatible products.
	► Beleaf	29	50 SG	120-160 g/ha	Use higher rates for greater pest populations and/or dense foliage. Do not make more than three applications per year.
	► Kopa	NC	SC	2% v/v	Begin applications when populations are low. Reapply every 1-3 weeks as needed. Test a small area of each variety for tolerance before spraying entire orchard. Applying soaps more than three times may cause plant injury. Avoid application in direct sunlight or to plants under stress. Combining this product with sulfur or applying this product within 3 days of sulfur application may increase the plant damage caused by sulfur on sensitive plants.
Spotted Wing Drosophila	Spotted wing drosophila lay eggs in ripening fruit, and larvae may be present at harvest. If monitoring indicates treatment is required, use insecticides weekly. These products rely on contact with spotted wing drosophila adults.				
	► Malathion	1B	85E	610-855mL/1,000L	Recently registered through the minor use label expansion - pending label release. Will work more effectively if the temperature is 20° C or more or when temperatures will reach or exceed this minimum. Do not make more than 1 application per year.
	► Imidan	1B	WP	2.68 kg/ha	Do not make more than 3 applications per year.
	► Delegate	5	WDG	420 g/ha	Do not make more than 3 applications per year.
	► Exirel	28	SC	1.0-1.5 L/ha	Begin applications when populations are low. Do not make more than 4 applications per season.
	► Harvanta	28	50 SL	1.2-1.6 L/ha	Thorough coverage is essential. Do not apply a Group 28 insecticide consecutively more than 2 times within a 30 day period or within a single generation of insect pest.
PREHARVEST					
Brown Rot	Use one of the fungicides listed under Shuck Fall. Check labels for pre-harvest intervals (PHI).				
POSTHARVEST - FRUIT					
Fruit Rots	Postharvest treatment of fruit will prolong storage life and provide control of post harvest diseases.				
	► Scholar	12	230 SC	496 mL/378 L	Apply as dip or drench. Reduces storage rots during wet harvest seasons.

## 5. Sweet Cherry Orchard Calendar

### Sweet Cherry Orchard Management Guide for Nova Scotia

A guide to insect, mite, and disease management in sweet cherry orchards.

All rates are based on label rates. In some cases, reduced rates can be used based on factors such as tree size. Please refer to the label, product specific notes or your agricultural advisor for details. Always read the label before using any pesticide. Where differences between the label and this schedule occur, label information prevails.

Disease & Insect	Products	Group	Formulation	Rate	Notes
<b>DORMANT</b>					
Bacterial Canker	Copper application may help to reduce the incidence of bacterial canker.				
	▶ Copper Spray	M2	50 WP	6-9 kg/1,000 L	Apply in early spring before bud break. Later applications may cause injury. Use the lower rate on small trees and higher rate on large trees. Do not make more than two applications per year.
	▶ Guardsman Copper Oxychloride	M2	50 WP	6-9 kg/1,000 L	Apply in early spring before bud break. Later applications may cause injury. Use the lower rate on small trees and higher rate on large trees. Do not make more than two applications per year.
	▶ Cueva	M1	1.8 S	1% v/v in 470-940 L water/ha	Apply as a dormant spray as buds begin to swell. Repeat at bud burst and weekly up to 6 sprays.
	▶ Parasol Flowable	M1	SU	8.8-13.1 L/ha	Use low rate for small trees and high rate for large trees.
<b>PREBLOOM (When Blossoms Show White)</b>					
Brown Rot (stem rot and blossom blight stages)	Blossom blight is favoured by wet weather (above 16°C), especially when large numbers of mummies (dried infected fruit) are present in the tree. Apply first spray just before blossoms open, followed by two additional sprays during the bloom period if weather remains favorable for blossom blight. Fungicides in Groups other than M should be used in rotation with different Groups for resistance management.				
	▶ Cueva	M1	1.8 S	0.5-2.0% solution	Apply in 470-940 L of water per hectare. Do not make more than 5 applications per year. During wet weather additional bloom sprays may be necessary.
	▶ Supra Captan/ Maestro	M4	80 WDG	3.75-4.50 kg/ha	Use higher rate for greater disease pressure. May cause injury under some circumstances. Do not apply within 14 days of an oil application.
	▶ Bravo ZN	M5	80 DF	3.75-4.50 kg/ha	Do not apply after shuck fall to avoid injury. Do not make more than 2 pre-harvest applications per year. Do not apply within 10 days of an oil application.
	▶ Fracture	M		7 L/ha	Use high rate under high disease pressure. Do not mix with foliar fertilizers.
	▶ Senator	1	50 SC	1.5-3.3 L/ha	Apply first application at early bloom. Repeat according to weather conditions
	▶ Rovral	2	50 WP	700 mL/1,000 L	Use the higher rate for larger trees.
	▶ Funginex	3	190 EC	1.50-1.75 kg/ha	
	▶ Indar	3	75 WSP	2.50 L/ha	
	▶ Tilt	3	250 E	140 g/ha	
	▶ Jade	3	250 E	500 mL/ha	
	▶ Mission	3	418 EC	500 mL/ha	
	▶ Nova	3	40 WSP	300 mL/ha	Apply when first blossoms are opening. Do not make more than 6 applications per year.
	▶ Quash	3	WDG	340 g/ha	Use high rate under high disease pressure. Do not make more than 1 application per season.
	▶ Fontelis	7	SC	175-245 g/ha	Use higher rate and shorter spray intervals when disease pressure is high. Do not use more than 4.5 L/ha per year.
	▶ Cantus	7	WDG	1.0-1.75 L/ha	Do not make more than 5 applications per year.
	▶ Sercadis	7	300 SU	370 g/ha	Do not make more than 3 applications per year.
	▶ Pristine	7, 11	WG	333 mL/ha	Will also control leaf spot and suppress powdery mildew. Do not make more than 5 applications per year.
	▶ Luna Sensation	7, 11	SU	0.75-1.0 kg/ha	Do not make more than 2 consecutive applications before rotating to a different fungicide group.
	▶ Elevate	17	50 WDG	300-400 mL/ha	Do not make more than 4 applications per year.
	▶ Serenade OPTI	44	WP	1.1-1.7 kg/ha	Suppression only but can be used with other products for resistance management.
	▶ Regalia Maxx	P5	LC	0.125-0.25% v/v in 500-1,000 L water/ha	Suppression only but can be used with other products for resistance management. Apply before symptoms develop. Use low rate in tank mix with other brown rot fungicides, or use high rate in rotation with other brown rot fungicides.
<b>BLOOM</b>					
Brown Rot (stem rot and blossom blight stages)	Use one of the fungicides listed under Prebloom. If wet weather above 16°C persists during the bloom period, two applications may be required during this stage of development.				
Insects	<b>Do not use any insecticides during bloom.</b>				

Disease & Insect	Products	Group	Formulation	Rate	Notes
PETAL FALL					
Black Cherry Aphid	Use one of the following insecticides if treatment for black cherry aphid is required.				
	► Admire	4	240 F	230 mL/ha	Do not apply when bloom or flowering weeds are present. Do not make more than two applications per season.
	► Actara	4A	25 WG	160 mL/ha	Do not apply when bloom or flowering weeds are present. Do not make more than two applications per season.
	► Clutch	4A	50 WDG	210 g/ha	Do not apply when bloom or flowering weeds are present. Do not make more than two applications per year.
	► Closer	4C		100-200 mL/ha	Apply before populations reach threshold. Where possible, rotate with products outside of group 4. Do not make more than two applications per year.
	► Movento	23	240 SC	365 mL/ha	Do not apply when bloom or flowering weeds are present. Do not apply more than 1.83 L/ha per year. Control may not be visible for 2-3 weeks after treatment.
	► Beleaf	29	50 SG	120-160 g/ha	Use higher rates for greater pest populations and/or dense foliage. Do not make more than three applications per year.
	► Kopa	NC	SC	2% v/v	Begin applications when populations are low and reapply every 1-3 weeks as needed. Test a small area of each variety for tolerance before spraying entire orchard. Application of soaps more than three times may cause plant injury. Avoid application in direct sunlight or to plants under stress. Do not exceed 950 L/ha up to fruit formation.
SHUCK FALL					
Brown Rot	Use one of the fungicides listed under Prebloom.				
Plum Curculio	Use one of the following insecticides. Treat when shucks are off and temperatures are above 16°C.				
	► Matador	3	120 EC	104 mL/ha	Pyrethroids (Group 3) are disruptive to IPM programs leading to mite flare ups and therefore should be avoided if alternatives are available. Do not make more than three applications per year. Avoid applying synthetic pyrethroids when temperatures rise above 20°C because they are much less effective under these conditions. Under high insect pressure may only provide suppression.
	► Warrior	3	120 EC	104 mL/ha	
	► Silencer	3	120 EC	104 mL/ha	
	► Assail	4A	70 WP	240 g/ha	Under high insect pressure may only provide suppression. Do not make more than 4 applications per year.
	► Clutch	4A	50 WDG	210 g/ha	Do not make more than 2 applications per year.
	► Exirel	28	100 SU	1.0-1.5 L/ha	Use the higher rate under greater insect pressure. Do not make more than four applications per year. See label for incompatible products.
FIRST COVER (12 Days After Shuck Split)					
Brown Rot	Use one of the fungicides listed under Prebloom.				
Plum Curculio	Use one of the insecticides listed under Shuck Fall.				
SECOND COVER (12 Days After First Cover)					
Brown Rot	Use one of the fungicides listed under Prebloom.				
Plum Curculio	Use one of the insecticides listed under Shuck Fall if new oviposition scars are found. Some treatments for Cherry Fruit Fly may also control plum curculio.				
Cherry Fruit Fly	Use one of the following insecticides when monitoring indicates cherry fruit fly activity is present.				
	► Silencer	3	120 EC	104 mL/ha	Pyrethroids (Group 3) are disruptive to IPM programs leading to mite flare ups and therefore should be avoided if alternatives are available. Do not make more than three applications per year. Avoid applying synthetic pyrethroids when temperatures rise above 20°C because they are much less effective under these conditions. Will also control plum curculio.
	► Admire	4A	240 F	230 mL/ha	Do not make more than 5 applications per year.
	► Delegate	5	WG	420 g/ha	Suppression only. Do not make more than 3 applications per year.
	► Entrust	5	240 SC	364 mL/ha	Do not make more than 5 applications per year.
	► GF-120	5	S	1.0-1.5 L/ha	Apply at 7 day intervals as fruit ripens, shortening the interval during rainy periods. Do not make more than 10 applications per year.
	► Exirel	28	100 SU	1.0-1.5 L/ha	Use the higher rate under greater insect pressure. Do not make more than four applications per year. See label for incompatible products. Will also control plum curculio.

Disease & Insect	Products	Group	Formulation	Rate	Notes
SWEET CHERRY - SECOND COVER					
Spotted Wing Drosophila	Spotted wing drosophila lay eggs in ripening fruit, and larvae may be present at harvest. If monitoring indicates treatment is required, use insecticides weekly. These products rely on contact with spotted wing drosophila adults.				
	► Malathion	1B	85E	610-855mL/1,000L	Recently registered through the minor use label expansion - pending label release. Will work more effectively if the temperature is 20° C or more or when temperatures will reach or exceed this minimum. Do not make more than 1 application per year.
	► Delegate	5	WDG	420 g/ha	Do not make more than 3 applications per year.
	► Exirel	28	SC	1.0-1.5 L/ha	Begin applications when populations are low. Do not make more than 4 applications per season.
	► Harvanta	28	50 SL	1.2-1.6 L/ha	Thorough coverage is essential. Do not apply a Group 28 insecticide consecutively more than 2 times within a 30 day period or within a single generation of insect pest.
THIRD COVER					
Brown Rot	Use one of the fungicides listed under Prebloom.				
Cherry Fruit Fly	Use one of the insecticides listed under Second Cover.				
Spotted Wing Drosophila	Use one of the insecticides listed under Second Cover.				
PREHARVEST					
Brown Rot	Use one of the fungicides listed under Prebloom. Check labels for pre-harvest intervals (PHI).				
Spotted Wing Drosophila	Use one of the insecticides listed under Second Cover.				
POSTHARVEST - FRUIT					
Fruit Rots	Postharvest treatment of fruit will prolong storage life and provide control of post harvest diseases.				
	► Scholar	12	230 SC	496 mL/378 L	Apply as dip or drench. Reduces storage rots during wet harvest seasons.
POSTHARVEST - ORCHARD					
Leaf Spot	Only necessary where leaf spot has been a problem in the past.				
	► Cueva	M1	1.8 S	1% v/v in 470-940 L water/ha	No product specific comments.
	► Supra Captan/	M4	80 WDG	3.75-4.50 kg/ha	Use higher rate for greater disease pressure. May cause injury under some circumstances.
	Maestro	M4	80 DF	3.75-4.50 kg/ha	
	► Pristine	7, 11	WG	0.75-1.0 kg/ha	Will also suppress powdery mildew. Do not make more than 5 applications per year.
	► Flint	11	50 WG	175-210 g/ha	Do not make more than 5 applications per year.
	► Equal	U12	65 WP	2.25 kg/ha	Do not make more than 4 applications per year.
	► Syllit	U12	400 FL	2.0 L/1,000 L	
	► Regalia Maxx	P5	LC	0.125-0.5% v/v in 500-1,000 L water/ha	Suppression only but can be used with other products for resistance management. Apply before symptoms develop. Use low rate in a tank-mix with other leaf spot fungicides, or high rate in rotation with other leaf spot fungicides.
FALL SPRAY					
Bacterial Canker	Apply when 75% of leaves have fallen, and where bacterial canker is expected to be a problem.				
	► Cueva	M1	1.8 S	1% v/v in 470-940 L water/ha	Apply as dormant spray as buds begin to break in the spring. Apply in the fall at 10-80% leaf fall.
	► Copper Spray	M2	50 WP	6-9 kg/1,000 L	Apply in early spring before bud break. Later applications may cause injury. Use the lower rate on small trees and higher rate on large trees. Do not make more than two applications per year.
	► Guardsman	M2	50 WP	6-9 kg/1,000 L	Apply in early spring before bud break. Later applications may cause injury. Use the lower rate on small trees and higher rate on large trees. Do not make more than two applications per year.
	Copper				
	Oxychloride	M1	SU	8.8-13.1 L/ha	Use low rate for small trees and high rate for large trees.
	Parasol				
	Flowable				

## 6. Sour Cherry Orchard Calendar

### Sour Cherry Orchard Management Guide for Nova Scotia

A guide to insect, mite, and disease management in sour cherry orchards.

All rates are based on label rates. In some cases, reduced rates can be used based on factors such as tree size. Please refer to the label, product specific notes or your agricultural advisor for details.

Always read the label before using any pesticide. Where differences between the label and this schedule occur, label information prevails.

Disease & Insect	Products	Group	Formulation	Rate	Notes
<b>DORMANT</b>					
Bacterial Canker	Copper application may help to reduce the incidence of bacterial canker.				
	► Copper Spray	M2	50 WP	6-9 kg/1,000 L	Apply in early spring before bud break. Later applications may cause injury. Use the lower rate on small trees and higher rate on large trees. Do not make more than two applications per year.
	► Guardsman Copper Oxychloride	M2	50 WP	6-9 kg/1,000 L	Apply in early spring before bud break. Later applications may cause injury. Use the lower rate on small trees and higher rate on large trees. Do not make more than two applications per year.
	► Cueva	M1	1.8 S	1% v/v in 470-940 L water/ha	Apply as buds begin to swell in spring repeating at bud burst, continuing weekly as needed, up to six sprays.
	► Parasol Flowable	M1	SU	8.8-13.1 L/ha	Apply in early spring before bud break. Use low rate on small trees and high rate for large trees.
<b>PREBLOOM (When Blossoms Show White)</b>					
Brown Rot (stem rot and blossom blight stages)	Blossom blight is favoured by wet weather (above 16°C), especially when large numbers of mummies (dried infected fruit) are present in the tree. Apply first spray just before blossoms open, followed by two additional sprays during the bloom period if weather remains favorable for blossom blight. Fungicides in Groups other than M should be used in rotation with different Groups for resistance management.				
	► Fracture	M		1.5-3.3 L/ha	Use high rate under high disease pressure. Do not mix with foliar fertilizers.
	► Kumulus	M1	80 DF	7.5 kg/1,000 L	Repeat if weather is wet.
	► Microthiol Disperss	M1	80 WP	7.5 kg/1,000 L	Repeat if weather is wet.
	► Microscopic Sulphur	M1	92 WP	6.5 kg/1,000 L	Repeat if weather is wet. Do not apply if high temperatures above 26°C and high humidity prevail or are expected during the three days following application. Do not use sulphur within 30 days of an oil spray.
	► Cueva	M1	1.8 S	0.5-2.0% solution	Apply in 470-940 L of water per hectare. Do not make more than 5 applications per year.
	► Supra Captan/ Maestro	M4	80 WDG	3.75-4.50 kg/ha	Use higher rate for greater disease pressure. May cause injury under some circumstances. Do not apply within 14 days of an oil application.
	► Bravo ZN	M5	SU	7 L/ha	Make 1-3 applications through prebloom to shuck split. See label for compatability restrictions. DO NOT apply after shuck split to avoid fruit injury.
	► Echo	M5	90 DF	2.8-5.0 kg/ha	Make 1-3 applications through prebloom to shuck split. See label for compatability restrictions. Use higher rate for trees over 6m in height, or if weather is warm (above 16°C).
	► Senator	1	50 SC	700 mL/1,000 L	Apply first application at early bloom. Repeat according to weather conditions
	► Rovral	2	50 WP	1.50-1.75 kg/ha	Use the higher rate for larger trees.
	► Funginex	3	190 EC	2.50 L/ha	
	► Indar	3	75 WSP	140 g/ha	
	► Tilt	3	250 E	500 mL/ha	
	► Jade	3	250 E	500 mL/ha	Apply first application at early bloom followed by a second at 50 to 75% bloom. Will also suppress black knot.
	► Mission	3	418 EC	300 mL/ha	
	► Nova	3	40 WSP	340 g/ha	Apply when first blossoms are opening. Do not make more than 6 applications per year.
	► Quash	3	WDG	175-245 g/ha	Use high rate under high disease pressure. Do not make more than 1 application per season.
	► Fontelis	7	SC	1.0-1.75 L/ha	Use higher rate and shorter spray intervals when disease pressure is high. Do not use more than 4.5 L/ha per year.
	► Cantus	7	WDG	370 g/ha	Do not make more than 5 applications per year.
	► Sercadis	7	300 SU	333 mL/ha	Do not make more than 3 applications per year.
	► Pristine	7, 11	WG	0.75-1.0 kg/ha	Will also control leaf spot and suppress powdery mildew. Do not make more than 5 applications per year.
	► Luna Sensation	7, 11	SU	300-400 mL/ha	Do not make more than 2 consecutive applications before switching to a different fungicide group.
	► Elevate	17	50 WDG	1.7 kg/ha	Do not make more than 4 applications per year.
	► Serenade OPTI	44	WP	1.1-1.7 kg/ha	Suppression only but can be used with other products for resistance management.
	► Regalia Maxx	P5	LC	0.125-0.25% v/v in 500-1,000 L water/ha	Suppression only but can be used with other products for resistance management. Apply before symptoms develop. Use low rate in tank mix with other brown rot fungicides, or high rate in rotation with other brown rot fungicides.

Disease & Insect	Products	Group	Formulation	Rate	Notes
BLOOM					
Brown Rot (stem rot and blossom blight stages)	Use one of the fungicides listed under Prebloom. If wet weather above 16°C persists during the bloom period, two applications may be required during this stage of development.				
Insects	Do not use any insecticides during bloom.				
PETAL FALL					
Black Knot	Only apply a fungicide where there is a history of black knot infections. Black knot should be pruned out prior to bud break. Burn pruned out black knots.				
	► Bravo	M5	500 SU	5.0-9.0 L/ha	Do not apply after shuck split to avoid fruit injury. Do not make more than 3 pre-harvest applicatons. Will also control brown rot.
	► Bravo ZN	M5	SU	7 L/ha	See label for compatibility restrictions. Will also control brown rot.
	► Echo	M5	720 SU	4.2-6.3 L/ha	
	► Tilt	3	250 E	500 mL/ha	
	► Jade	3	250 E	500 mL/ha	
	► Indar	3	75 WSP	140 g/ha	
SHUCK SPLIT					
Brown Rot	Use one of the following fungicides listed under Prebloom.				
Plum Curculio	Use one of the following insecticides.				
	► Imidan	1B	70 WP	2.68 kg/ha	Do not make more than 5 applications per year.
	► Matador	3	120 EC	104 mL/ha	Pyrethroids (Group 3) are disruptive to IPM programs leading to mite flare ups and therefore should be avoided if alternatives are available. Do not make more than three applications per year. Avoid applying synthetic pyrethroids when temperatures rise above 20°C because they are much less effective under these conditions. Under high insect pressure may only provide suppression.
	► Warrior	3	120 EC	104 mL/ha	
	► Silencer	3	120 EC	104 mL/ha	
	► Assail	4	70 WP	240 g/ha	Under high insect pressure may only provide suppression. Do not make more than 4 applications per year.
	► Clutch	4	50 WDG	210 g/ha	Do not make more than 2 applications per year.
	► Exirel	28	100 SU	1.0-1.5 L/ha	Use the higher rate under greater insect pressure. Do not make more than four applications per year. See label for incompatible products.
FIRST COVER (12 Days After Shuck Split)					
Brown Rot	Use one of the fungicides listed under Shuck Split if conditions for disease development (warm, wet weather) are prevalent.				
Plum Curculio	Use one of the insecticides listed under Shuck Split.				
SECOND COVER (12 Days After First Cover)					
Brown Rot	Use one of the fungicides listed under Shuck Split if conditions for disease development (warm, wet weather) are prevalent.				
Plum Curculio	Use one of the insecticides listed under Shuck Fall if new oviposition scars are found. Some treatments for Cherry Fruit Fly may also control plum curculio.				
Cherry Fruit Fly	Use one of the following insecticides when monitoring indicates cherry fruit fly activity is present.				
	► Imidan	1B	70 WP	2.68 kg/ha	Do not make more than 5 applications per year. Will also control plum curculio.
	► Silencer	3	120 EC	104 mL/ha	Pyrethroids (Group 3) are disruptive to IPM programs leading to mite flare ups and therefore should be avoided if alternatives are available. Do not make more than three applications per year. Avoid applying synthetic pyrethroids when temperatures rise above 20°C because they are much less effective under these conditions. Will also control plum curculio.
	► Admire	4A	240 F	230 mL/ha	
	► Entrust	5	240 SC	364 mL/ha	
	► GF-120	5	S	1.0-1.5 L/ha	Do not make more than 5 applications per year.
	► GF-120	5	S	1.0-1.5 L/ha	Apply at 7 day intervals as fruit ripens, shortening the interval during rainy periods. Do not make more than 10 applications per year.
	► Exirel	28	100 SU	1.0-1.5 L/ha	Use the higher rate under greater insect pressure. Do not make more than four applications per year. See label for incompatible products. Will also control plum curculio.

Disease & Insect	Products	Group	Formulation	Rate	Notes
SOUR CHERRY - SECOND COVER					
Spotted Wing Drosophila	Spotted wing drosophila lay eggs in ripening fruit, and larvae may be present at harvest. If monitoring indicates treatment is required, use insecticides weekly. These products rely on contact with				
	► Malathion	1B	85E	610-855mL/1,000L	Recently registered through the minor use label expansion - pending label release. Will work more effectively if the temperature is 20° C or more or when temperatures will reach or exceed this minimum. Do not make more than 1 application per year.
	► Imidan	1B	WP	2.68 kg/ha	Do not make more than 4 applications per year.
	► Delegate	5	WDG	420 g/ha	Do not make more than 3 applications per year.
	► Exirel	28	SC	1.0-1.5 L/ha	Begin applications when populations are low. Do not make more than 4 applications per season.
	► Harvanta	28	50 SL	1.2-1.6 L/ha	Thorough coverage is essential. Do not apply a Group 28 insecticide consecutively more than 2 times within a 30 day period or within a single generation of insect pest.
THIRD COVER					
Brown Rot	Use one of the fungicides listed under Shuck Split if conditions for disease development (warm, wet weather) are prevalent.				
Cherry Fruit Fly	Use one of the insecticides listed under Shuck Split.				
Spotted Wing Drosophila	Use one of the insecticides listed under Second Cover.				
PREHARVEST					
Brown Rot	Use one of the fungicides listed under Shuck Split. Check labels for pre-harvest intervals (PHI).				
Spotted Wing Drosophila	Use one of the insecticides listed under Second Cover.				
POSTHARVEST					
Leaf Spot	Only necessary where leaf spot has been a problem in the past.				
	► Bravo ZN	M5	SU	5.0-7.2 L/ha	Do not make more than 1 post harvest application per season.
	► Bravo	M5	500 SU	5.0-9.0 L/ha	
	► Echo	M5	720 SU	3.5-6.3 L/ha	Use higher rate for larger trees greater than 6 m in height.
	► Supra Captan	M4	80 WDG	3.75-4.50 kg/ha	
	► Maestro	M4	80 DF	3.75-4.50 kg/ha	Use higher rate for greater disease pressure. May cause injury under some circumstances.
	► Cueva	M1	1.8 S	1% v/v in 470-940 L water	Apple as a dormant spray in late fall during a period of dry weather.
	► Pristine	7, 11	WG	0.75-1.0 kg/ha	Will also suppress powdery mildew. Do not make more than 5 applications per year.
	► Flint	11	50 WG	175-210 g/ha	Do not make more than 5 applications per year.
	► Equal	U12	65 WP	2.25 kg/ha	
	► Syllit	U12	400 FL	2.0 L/1,000 L	Do not make more than 4 applications per year.
	► Regalia Maxx	P5	LC	0.125-0.25% v/v in 500-1,000 L water/ha	Suppression only but can be used with other products for resistance management. Apply before symptoms develop. Use low rate in tank-mix with other leaf spot fungicides or high rate in rotation with other leaf spot fungicides.
FALL SPRAY					
Bacterial Canker	Apply where bacterial canker is expected to be a problem.				
	► Copper Spray	M2	50 WP	6-9 kg/1,000 L	Apply in early spring before bud break. Later applications may cause injury. Use the lower rate on small trees and higher rate on large trees. Do not make more than two applications per year.
	► Guardsman Copper Oxychloride	M2	50 WP	6-9 kg/1,000 L	Apply in early spring before bud break. Later applications may cause injury. Use the lower rate on small trees and higher rate on large trees. Do not make more than two applications per year.
	► Cueva	M1	1.8 S	1% v/v in 470-940 L water	Apply as dormant spray as buds begin to break in the spring. Apply in the fall at 10-80% leaf fall.
	► Parasol Flowable	M1	SU	8.8-13.1 L/ha	Spray at 75% leaf fall.