



## 2019 SUPPLEMENT

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## 2019 Changes to Pest Management Guides

### [Pome Fruit Management Guide](#)

Apple:

- Diplomat 5SC – new group for powdery mildew suppression
- Harvanta 50SL – obliquebanded leafroller, codling moth, plum curculio suppression
- Minecto Pro – codling moth, obliquebanded leafroller, two-spotted spider mite, European red mite
- OxiDate 2.0 – powdery mildew suppression
- XenTari WG – obliquebanded leafroller, codling moth, winter moth
- Folpan now listed in the guide but note for use on apple only - Alternaria leaf spot, black rot, Brooks spot, fly-speck, apple scab, sooty blotch
- Serenade OPTI – apple and pear scab suppression, powdery mildew suppression (will also provide suppression of fire blight with unique mode of action but should not be relied on)
- Buran – powdery mildew (apple and pear scab suppression but higher risk with only post-infection treatment)

Pear:

- Harvanta 50SL – plum curculio, codling moth
- Kopa – European red mite, two-spotted spider mite
- Minecto Pro – European red mite, two-spotted spider mite, plum curculio, pear psylla

### Stone Fruit Management Guide

Peach:

- Parasol Flowable – peach leaf curl at dormant and fall
- Kopa – (insecticidal soap), mites, aphids
- Serenade OPTI – brown rot suppression only but new group for resistance management
- Regalia Maxx – brown rot and powdery mildew suppression only but new group for resistance management
- Malathion – label expanded for spotted wing drosophila pending label release

Plum:

- Kopa – aphids, European red mite
- Serenade OPTI – brown rot suppression but new group for resistance management
- Regalia Maxx – brown rot suppression only but new group for resistance management
- Malathion – label expanded for spotted wing drosophila pending label release

Sweet Cherry:

- Kopa – black cherry aphids
- Parasol Flowable – bacterial canker at dormant and fall
- Serenade OPTI – brown rot suppression but new group for resistance management
- Regalia Maxx – brown rot and leaf spot suppression only but new group for resistance management
- Malathion – label expanded for spotted wing drosophila pending label release

Sour Cherry

- Parasol Flowable – bacterial canker at dormant and fall
- Serenade OPTI – brown rot suppression but new group for resistance management
- Regalia Maxx – brown rot and leaf spot suppression only but new group for resistance management
- Malathion – label expanded for spotted wing drosophila pending label release

### Organic Management Guide

Apple

- Kopa – two-spotted spider mite
- OxiDate 2.0 – apple scab suppression, powdery mildew suppression, partial suppression of fire blight
- Double nickel – suppression of fire blight
- Serenade OPTI – suppression of fire blight, suppression of powdery mildew

### **Fungicide groups for apple scab and powdery mildew in Nova Scotia (updated 2019)**

- <https://www.perennia.ca/wp-content/uploads/2018/03/Fungicide-Groups-in-Nova-Scotia.pdf>
- Serenade OPTI was added as a new fungicide group and table style was updated.

### **Sprayer Tips**

Consider how you can save money on sprays this year by improving coverage and reducing waste. Is it time to change your nozzels? There are more recommendations in the article, “Six smart tips for better spray management.” I also recommend videos by Exploding Sprayer Myths including [Episode 9: Airblast Air](#).

## Thinning and Growth Regulation

Stay tuned for a new management guide.

## Resistance Management

Over time the efficacy of a fungicide or class of fungicides can diminish to the point where it no longer provides effective control of scab. Naturally within a given population of scab spores there will be a small number of spores that have the capability of resisting the killing action of the fungicide. The surviving spores pass on the resistance by means of reproduction and over time this population of resistant spores increases with additional applications of the fungicide. Resistance Management Steps that growers can take to prevent or delay the development of fungicide resistance are:

1. Obtain early season scab control which means starting a fungicide program at green tip.
2. Make sure that your sprayer is calibrated at the beginning of the spray season so that good coverage is obtained and spray material is applied at the recommended rate.
3. Spray according to stage of tree development/ weather conditions and not by the calendar.
4. When possible use a fungicide with multi-site activity, those in the M group.
5. When using a fungicide with a single site activity apply it with a half-rate or even full-rate of a multi-site fungicide.
6. Do not apply more than two back to back sprays of a fungicide class with a single site activity and try to limit application of that class to no more than four per growing season.
7. When possible avoid applying fungicides for post infection or curative activity.
8. Do not apply reduced rates of fungicides with single site activity.
9. Avoid every other row application of fungicides with single site activity.
10. Make use of sanitation methods to reduce overwintering inoculum.

## Maryblyt as a Tool to Manage Fire Blight

### Answers to Common Questions

Periods with high fire blight bacterial populations are defined by Maryblyt as having an Epiphytic Infection Potential (EIP) greater than 100. A notification will be sent to the Orchard Outlook contact list when the EIP approaches 100 for apples and pears based on data from all publicly accessible weather stations in the Valley.

Want to learn more about fire blight? [An article by the Plant Management Network](#) was recommended by a local grower because it offers clear answers to common questions.

### Using Maryblyt™

Maryblyt™ is a computer program for predicting infection events and symptom development for most phases of fire blight epidemics in apples and pears. Daily information on temperature, rainfall and other weather events along with key observations on apple or pear bud development are needed. The Maryblyt software can be downloaded at the following address: <http://grapepathology.org/maryblyt>. Weather data must be input manually.

### Using Maryblyt on AgWeather Atlantic

At the time of publication, funding was secured to re-instate AgWeather Atlantic but the website is not yet available. If AgWeather Atlantic becomes available, find the maryblyt model and choose your nearest weather station on the AgWeather Atlantic website: <http://atl.agrometeo.org/indices/category/pommes>

Maryblyt in AgWeather Atlantic allows producers to view infection conditions real time via the nearest weather station to their farm. This should improve fire blight control by allowing infection conditions to be updated on a constant basis as quickly as new weather data becomes available. A fire blight risk rating for your farming operation is generated after you input information into the model. Results will help determine when and if to spray, helping to optimize spray applications.

**Quick Tips**

- Fill in green tip and first bloom dates but leave petal fall blank. Click apply.
- Scroll down to first bloom where the model output will begin.
- Temperature and rain values are editable. Always click 'apply' to accept changes.

Real time	2018-04-01	First bloom	0.1	7.3	3.7	3	<input type="checkbox"/>	<input type="checkbox"/>	-	++-M	0	-
	2018-04-02		-3.6	3	-0.3	0	<input type="checkbox"/>	<input type="checkbox"/>	-	++-M	0	-
	2018-04-03		-5.1	7.3	1.1	0	<input type="checkbox"/>	<input type="checkbox"/>	-	+-L	0	-
	2018-04-04		0.9	15.1	8	14	<input type="checkbox"/>	<input type="checkbox"/>	-	++-M	1	-
	2018-04-05		-4.6	5.7	0.6	0	<input type="checkbox"/>	<input type="checkbox"/>	-	++-M	1	-
	2018-04-06		-5.9	3.4	-1.3	2	<input type="checkbox"/>	<input type="checkbox"/>	-	++-M	1	-
	2018-04-07		-0.3	4.8	2.3	3	<input type="checkbox"/>	<input type="checkbox"/>	-	++-M	1	-
Predictions shown in red rows	2018-04-08		-1	3.06	1	0	<input type="checkbox"/>	<input type="checkbox"/>	-	++-M	1	-
	2018-04-09		-5	-1	-3	0	<input type="checkbox"/>	<input type="checkbox"/>	-	+-L	1	-
	2018-04-10		-8	5	-1.5	0	<input type="checkbox"/>	<input type="checkbox"/>	-	+-L	1	-
	2018-04-11		-4.67	7	1.2	0	<input type="checkbox"/>	<input type="checkbox"/>	-	+-L	1	-
	2018-04-12		-5	9	2	0	<input type="checkbox"/>	<input type="checkbox"/>	-	+-L	1	-
	2018-04-13		-1	6	2.5	0	<input type="checkbox"/>	<input type="checkbox"/>	-	+-L	1	-
	2018-04-14		-3	6	1.5	0	<input type="checkbox"/>	<input type="checkbox"/>	-	+-L	1	-

**Weather Stations**

The weather stations in the Valley are currently in Greenwood DND, Kentville AAFC, Port Williams, Grafton, and Morristown.

**Titles Given in the Maryblyt Model Output**

**Dew:** Choose if dew is present on tree leaves

**Spray:** Choose if a streptomycin spray is applied

**B =** Bloom

**H =** Cumulative heat units > 18.3°C, only significant when EIP > 100

**W =** Wetting event

**T =** Average temp > 15.6 °C

**R =** Risk (low, moderate, high, infection)

**BBS =** Blossom blight symptoms predictions

**CBS =** Canker blight symptoms predictions

**SBS =** Shoot blight symptoms predictions

("a" corresponds with infection #1, "b" with infection #2 etc)

**Note:** Trauma blight entries are not an option in AgWeather Atlantic

## Modified Mills Table for Apple Scab Infection Periods

The environmental conditions needed for infection are wet leaves (rainfall) which remain wet for a duration specified by the Modified Mills table. If rainfall occurs and leaves become completely dry before the required wetting period dictated by the Modified Mills Table, and remain dry for a period of 8-12 hours, there is no infection from that rainfall event.

Average Temperature		Wetting Period (hours)			
(°F)	(°C)	Light Infection	Moderate Infection	Heavy Infection	Appearance of Lesions (days)
33-36	0.5-2.2	48	72	96	---
37	2.7	41	55	68	---
38	3.3	37	50	64	---
39	3.9	33	45	60	---
40	4.4	29	41	56	---
41	5.0	26	37	53	---
42	5.5	23	33	50	---
43	6.1	21	30	47	---
44	6.6	19	28	43	---
45	7.2	17	26	40	---
46	7.8	16	24	37	---
47	8.3	15	23	35	---
48	8.9	15	20	30	17
49	9.4	14.5	20	30	17
50	10.0	14	19	29	16
51	10.6	13	18	27	16
52	11.1	12	18	26	15
53	11.7	12	17	25	15
54	12.2	11.5	16	24	14
55	12.8	11	16	24	14
56	13.3	11	15	22	13
57	13.9	10	14	22	13
58	14.4	10	14	21	12
59	15.0	10	13	21	12

### More Resources

#### Tree Fruit Newsletters and Magazines

New York Fruit Quarterly: <http://nyshs.org/fruit-quarterly/past-issues/>

Scaffolds: <http://www.scaffolds.entomology.cornell.edu/>

Good Fruit Grower: <https://www.goodfruit.com/>

Fruit Growers News: <https://fruitgrowersnews.com/>

#### Organizations/Federations/Associations

Nova Scotia Fruit Growers' Association: <http://www.nsfga.com/>

Nova Scotia Federation of Agriculture: <https://nsfa-fane.ca/news/news-views-archive/>

Farm Safety Nova Scotia: <https://farmsafetyns.ca/connection-newsletter/>

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