

Stone Fruit Fungicides Resistance Management

November, 2016

The following table lists fungicides registered for use on stone fruit in British Columbia for brown rot, botrytis and/or powdery mildew, categorized by resistance group.

Fungicides in the same group have similar or identical modes of action. Over-use of fungicides in the same chemical group will lead to resistance problems. See recommendations below for resistance management. Also check market requirements for each fungicide when considering which product to use.

Resistance Management information for stone fruit fungicides registered in Canada

Fungicide	Group*	Class	Crops	Disease Spectrum	Risk of Resistance
Nova (myclobutanil)	3	DMI Fungicides - Triazoles	cherry, peach, nectarine	brown rot, powdery mildew	Medium. Resistance detected in cherry powdery mildew.
Indar (fenbuconazole)	3	DMI Fungicides - Triazoles	all stone fruit	brown rot, powdery mildew	
Topas, Jade, Tilt (propiconazole)	3	DMI Fungicides - Triazoles	all stone fruit	brown rot, powdery mildew	
Funginex (triforine)	3	DMI Fungicides - Piperazines	peach, cherry, prune/plum	brown rot, powdery mildew	Medium
Flint (trifloxystrobin)	11	QoI Fungicides	all stone fruit	powdery mildew	High. Group 11 resistance to botrytis is present.
Cabrio (pyraclostrobin)	11	QoI Fungicides	all stone fruit	powdery mildew (cherry), brown rot (suppression)	
Pristine (pyraclostrobin + boscalid)	11 + 7	QoI Fungicides + Pyridine carboxamides	all stone fruit	brown rot, rhizopus rot, powdery mildew	High (pyraclostrobin); Medium to High (boscalid)
Fontelis (penthopyrad)	7	Pyrazole-carboxamides	all stone fruit	brown rot, powdery mildew, botrytis	Medium to High
Cantus (boscalid)	7	Pyridine carboxamides	all stone fruit	brown rot	Medium
Sercadis (fluxapyroxad)	7	Pyrazole-4-carboxamides	all stone fruit	brown rot	Medium to High
Quintec (quinoxifen)	13	quinolines	all stone fruit	powdery mildew	Medium
Vanguard (cyprodinil)	9	Anilinopyrimidine	apricot, peach, nectarine, prune/plum	brown rot	Medium
Elevate (fenhexamid)	17	Hydroxyanilide	cherry, peach, nectarine	brown rot	Low to Medium

Fungicide	Group*	Class	Crops	Disease Spectrum	Risk of Resistance
Rovral (iprodione)	2	Dicarboximide	apricot, cherry, peach, plum/prune	brown rot	Medium to High. Resistance to botrytis present.
Senator (thiophanate-methyl)	I	Benzimidazole	cherry, peach, nectarine, prune/plum	brown rot, powdery mildew	High. Resistance to Botrytis present.
Vivando (metrafenone)	U8	Benzophenone	cherry, peach, nectarine	powdery mildew	Medium
Granuflor-T (thiram)	M3	Dithiocarbamates	peach	brown rot	Low
Captan, Maestro (captan)	M4	Phthalimide	all stone fruit	brown rot	Low
Bravo (chlorothalonil)	M5	Chloronitrile	cherry, peach, nectarine	brown rot, peach leaf curl	Low
Kumulus or Microthiol (sulphur)	M1	Inorganic	cherry, peach, prune/plum	powdery mildew	Low
Cueva (copper octanoate)	M1	Inorganic	all stone fruit	brown rot, peach leaf curl	Low
Fracture (BLAD polypeptide)	M12	Polypeptide	all stone fruit	brown rot blossom blight	Low
MilStop (potassium bicarbonate)	NC	Diverse	apricot, peach, nectarine, prune/plum	powdery mildew (suppression)	Low
Petro Canada Spray Oil 13E (mineral oil)	NC	Diverse	all stone fruit	Suppression of powdery mildew	Low
Serenade Max (<i>Bacillus subtilis</i>)	NC	Biologicals	all stone fruit	brown rot blossom blight (suppression)	Low

*M = multi-site inhibitor; NC = not classified

Fungicide Resistance Management

Fungicide resistance management is important to prolong the effectiveness of "at risk" fungicides and to limit crop losses should resistance occur.

To help prevent resistance from developing:

- Alternate between different fungicide groups. Do not use more than 2 back-to-back sprays of fungicides with the same group number.
- Limit the number of applications of products with a medium to high risk. Products with a low risk of resistance can generally be used more often.
- Use recommended tank mixes.
- Use only recommended dose rates.
- Ensure sprayer is properly calibrated to deliver accurate and thorough coverage.
- Integrate with non-chemical control methods.
- Discontinue use of a product if resistance is suspected and consult your crop advisor.

[More Information on fungicide resistance and categories - Fungicide Resistance Action Committee \(FRAC\)](#)