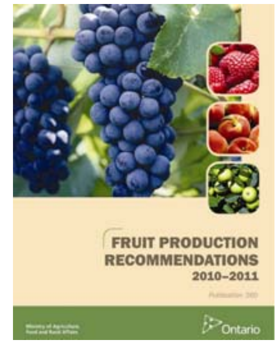
Ontario



Fruit Production Recommendations 2010-2011

Ontario Ministry of Agriculture, Food & Rural Affairs

Chapter 7: Tender Fruit

Plum Calendar

Read the product label and follow all safety precautions. Consult the product label for suggested water volumes. Otherwise, use enough water to ensure thorough spray coverage. Where the product rate is listed in amount per 1,000 L and if a water volume is not provided on the label, use enough water to wet the foliage to the near drip point.

Products are listed by fungicide and insecticide group. Use products from different groups to prevent pest resistance. For resistance management refer to *Pest Resistance to Insecticides, Fungicides, Miticides,* page 23.

For preharvest interval, re-entry period, maximum number of applications and chemical group, see Table 7-10. *Products Used on Plums,* page 183.

Diseases and Insects	**Products**	**Rate**	**Comments**
Dormant (before bud break)			
Black knot	Prune out all black knots from commercial orchards during the dormant period before bud break. Make the cut 15 cm below the swelling. Collect and burn all prunings with knots. Knots left lying on the ground are a source of spores that start new infections. Destroy affected wild and neglected plums near the orchard. See OMAFRA Factsheet *Black Knot of Plums,* Order No. 05-017, for more information.		
Green tip (just as buds are bursting)			
European red mite Scale insects	Superior 70 Oil	20 L/1,000 L water	Spray on a calm day to improve coverage.
Popcorn (when blossoms show white)			
Brown rot	Topas 250 E or Mission 418 EC Indar 75 WSP Funginex DC Rovral Vangard 75 WG Lance WDG Pristine WG Supra Captan 80 WDG or Maestro 80 DF Microscopic Sulphur	500 mL/ha 300 mL/ha 140 g/ha 2.5 L/ha 1.5 kg/ha 370 g/ha 370 g/ha 750 g/ha 4.5 kg/ha 4.5 kg/ha see label	To help control brown rot, knock off fruit mummies when pruning. Cultivate entire orchard before bloom. Make two to three fungicide applications from early to full bloom. To avoid resistance, alternate among fungicide groups and do not use more than two applications of Rovral or Vangard per year. Topas, Mission and Indar: Do not alternate Topas or Mission and Indar. Pristine and Lance: Both products include active ingredients in the same fungicide group. Do not alternate Pristine with Lance. Sulphur: Helps control rust mites on European plums and prunes. Captan or Maestro: May cause injury under some circumstances. Injury has occurred on Grand Prize, Early Golden, Shiro, Burbank and Ozark Premier.
Black knot	Supra Captan 80 WDG or Maestro 80 DF Indar 75 WSP Topas 250 E or Mission 400 EC	4.5 kg/ha 4.5 kg/ha 140 g/ha 500 mL/ha 300 mL/ha	Fungicides will not provide adequate control of black knot without proper orchard sanitation (pruning, removal, and burning of black knots). Inspect all plums in early summer for new knots and those missed. Cut these out and burn them. European plums, prunes and Damsons are most susceptible. Apply fungicide sprays to protect the developing shoots between the popcorn stage (prebloom) and first cover every 3–5 days in wet weather. Spore

Diseases and Insects	Products	Rate	Comments
			release may be delayed in dry springs. Under these conditions extend fungicide coverage to **Second cover**. See OMAFRA Factsheet *Black Knot of Plums,* Order No. 05-017. Topas, Mission: Provide only suppression of black knot, see label.
Consider both European and Japanese plums as self-unfruitful. Mixed plantings and insect pollinators are essential. Honeybees readily work plum blossoms.			
Bloom			
DO NOT APPLY INSECTICIDES WHILE PLUM TREES ARE IN BLOOM. SEE *BEE POISONING* ON PAGE 214.			
Brown rot (Blossom blight)	Use one of the fungicides listed under **Prebloom.**		
Shuck fall (when most of the shucks are off)			
Brown rot	Topas 250 E or Mission 418 EC Indar 75 WSP Rovral Vangard 75 WG Lance WDG Pristine WG Microscopic Sulphur Supra Captan 80 WDG or Maestro 80 DF	500 mL/ha 300 mL/ha 140 g/ha 1.5 kg/ha 740 g/ha 370 g/ha 750 g/ha see label 4.5 kg/ha 4.5 kg/ha	To avoid resistance, alternate among fungicide groups and do not use more than two applications of Vangard or Rovral per season. Captan or Maestro: May cause leaf injury and spotting of the fruit on Stanley and Japanese plums under some circumstances. Pristine and Lance: Do not alternate Pristine with Lance.
Black knot	Supra Captan 80 WDG or Maestro 80 DF Indar 75 WSP	4.5 kg/ha 4.5 kg/ha 140 g/ha	**Captan or Maestro:** May cause leaf injury and spotting of the fruit on Stanley and Japanese plums under some circumstances. Fungicides will not provide adequate control of black knot without proper orchard sanitation (pruning, removal, and burning of black knots).
Oriental fruit moth	Altacor Delegate WG Assail	285 g/ha 420 g/ha 120–240 g/ha	**Altacor, Delegate:** Apply at first egg hatch, 50–100 degree days C (base 7.2°C) after biofix (first sustained moth catch). Monitor populations and reapply 10–14 days later if required. Check the harvest dates of early varieties and do not spray within 10 days of harvest. Altacor: Do not exceed 645 g/ha per year. Assail: For optimum activity, use the 240 g/ha rate. Apply in a minimum spray volume of 1,000 L/ha. Do not apply more than once every 12 days. Will also control plum curculio.
Plum curculio	Assail 70 WP Guthion 50 WSB or Sniper Imidan 50 WP	240 g/ha see label see label 3.75 kg/ha	If temperatures are high, spray when the shucks split. Assail: Under high insect pressure, may provide suppression rather than control of plum curculio.
Peachtree borer	Isomate-P	250–625 dispensers/ha	**Isomate-P:** Reduces mating of peachtree borer adults. Not effective on lesser peachtree borer. Initial population must be low for good results. Use in square or rectangular orchard blocks at least 4 ha in size; larger blocks are preferred. Apply pheromone dispensers before peach tree borer flight

Diseases and Insects	Products	Rate	Comments
			begins in the spring. The dispenser is designed to last an entire season, so early placement (shuck-split or earlier) will not reduce effectiveness. Attach the dispensers onto branches about the mid-point of the tree. Apply at least 250 dispensers per ha for low pressure sites and up to 625 dispensers per ha for high pressure sites. In addition to mating disruption, an insecticide for peachtree borer may be needed in high pressure sites. Populations are generally reduced over time where mating disruption is used for several seasons. For more information, see *Using mating disruption in fruit crops,* page 19.
First cover (12 days after Shuck fall)			
Brown rot Leaf spot Black knot	Use one of the fungicides listed under **Shuck fall.**		**Captan or Maestro:** May cause leaf injury and spotting on the fruit of Stanley and Japanese plums under some circumstances.
Plum curculio	Use one of the insecticides listed under **Shuck fall.**		
Second cover			
Brown rot	Topas 250 E or Mission 418 EC Indar 75 WSP Rovral Vangard 75 WG Lance WDG Pristine WG Microscopic Sulphur Supra Captan 80 WDG or Maestro 80 DF	500 mL/ha 300 mL/ha 140 g/ha 1.5 kg/ha 740 g/ha 370 g/ha 750 g/ha see label 4.5 kg/ha 4.5 kg/ha	During wet weather repeat applications between pickings. Comply with preharvest intervals in Table 7-10. *Products Used on Plums,* page 183. Topas, Mission: No more than two applications in the three weeks prior to harvest. Pristine and Lance: Both products include active ingredients in the same fungicide group. Do not alternate Pristine with Lance.
Oriental fruit moth	Altacor Delegate WG Assail 70 WP	215–285 g/ha 420 g/ha 120–240 g/ha	**Altacor, Delegate:** Apply at first egg hatch, 50–100 degree days C (base 7.2°C) after biofix (first sustained moth catch). Monitor populations and reapply 10–14 days later if required. Check the harvest dates of early varieties and do not spray within 10 days of harvest. Altacor: Do not exceed 645 g/ha per year. Assail: For optimum activity, use the 240 g/ha rate. Apply in a minimum spray volume of 1,000 L/ha. Do not apply more than once every 12 days.
Prepick			
Brown rot	Use one of the fungicides listed under **Second cover.**		
Oriental fruit moth	Use one of the insecticides listed under **Second cover.**		
Special sprays (when monitoring indicates the need)			
Aphids	Movento 240 SC Thionex 50 W Diazinon 50 W	365 mL/ha 3.25 kg/ha 3.0 kg/ha	Apply only if aphids are a problem. Very thorough coverage and calm warm conditions are needed for good control. Movento: Most effective on young stages of aphids. Has slow activity; control may not be apparent for 2–3 weeks. Under high pressure a second application may be necessary 2 weeks later. See

Diseases and Insects	Products	Rate	Comments
			the Movento label for additional details. Do not tank-mix with sulfur.
Apple maggot	Diazinon 50 W Imidan 50 WP	3.0 kg/ha 3.75 kg/ha	If apple maggot has been a problem on blue plums and prunes, apply 2–3 sprays during July and August.
Peachtree borer Lesser peachtree borer	Thiodan 4EC Sevin XLR	1.75 L/1,000 L 6.25 L/ha	Apply 3 sprays, three weeks apart. Apply first spray 10 days after first adult catch in pheromone traps. Direct these sprays with a handgun to cover trunk and scaffold limbs thoroughly. Check preharvest intervals and do not spray if fruit is to be harvested during this period.
Obliquebanded leafroller	Success 480 SC or Entrust 80 W Delegate WG Altacor	182 mL/ha 109 g/ha 420 g/ha 285 g/ha	For OBLR summer generations, apply at 240–280 degree days C (base 6.1°C) after biofix (first sustained moth catch). Comply with the 14 days to harvest interval. **Altacor:** Do not exceed 645 g/ha per year.
Postharvest fruit treatment			
Blue mould Grey mould Brown rot Rhizopus rot	Scholar 50 WP	227 g/378 L water	Postharvest treatment may be necessary during wet harvest seasons. These treatments will prolong storage time while providing control of postharvest diseases. See label for dip and drench instructions. Scholar: Should not be used on plums intended for processing into prunes.

Table 7-10. Products Used on Plums

Use this table as a guide but refer to product label for specific information.

The **preharvest interval** is the number of days between the last spray and first harvest.

The **re-entry period** is the minimum interval that must be observed between the application of the pesticide and work in the treated crop without protective equipment. If no re-entry period is stated on the label, assume the spray solution must be dry before re-entry can occur.

The **maximum number of applications** is the labelled maximum number for the growing season and may be higher than what is recommended for resistance management or for the preservation of beneficial insects.

Product name	Registration number	Common name	Group	Preharvest interval	Minimum re-entry	Maximum number of applications per season (on label)
Products used for control or suppression of insects and mites						
Altacor	28981	chlorantraniprole	28	10 days	12 hours	3
Assail 70 WP	27128	acetamiprid	4	7 days	12 hours/6 days[1]	4
Delegate WG	28778	spinetoram	5	7 days	12 hours	3
Diazinon 50 W	19576	diazinon	1B	10 days		
Entrust 80 W	27825	spinosad	5	7 days		3
Guthion 50 WSB	21374	azinphosmethyl	1B	15 days	14 days/30 days[2]	2
Imidan 50 WP	23006	phosmet	1B	14 days	7 days/14 days[3]	3
Movento 240 SC	28593	spirotetramat	23	7 days	12 hours	
Sevin XLR	27876	carbaryl	1A	2 days		
Sniper	23323	azinphosmethyl	1B	15 days	14 days/30 days[2]	2
Success 480 SC	26835	spinosad	5	7 days		3
Superior 70 Oil	9542 14981	mineral oil		use prebloom	12 hours	
Thiodan 4 EC	15747	endosulfan	2A	15 days	48 hours	3
Thionex 50 W	14617	endosulfan	2A	15 days	4 days	3
Products used for control or suppression of diseases						
Funginex DC	27686	triforine	3	do not apply after bloom	48 hours	3
Indar 75 WSP	27294	fenbuconazole	3	1 day	12 hours	7
Lance WDG	27495	boscalid	7	0 days	4 hours	5
Maestro 80 DF	26408	captan	M	2 days	48 hours	
Microscopic Sulphur	14653	sulphur	M	1 day	24 hours	
Mission 418 EC	28016	propiconazole	3	3 days	72 hours	5[4]

Product name	Registration number	Common name	Group	Preharvest interval	Minimum re-entry	Maximum number of applications per season (on label)
Pristine WG	27985	boscalid + pyraclostrobin	7+11	0 days	10 days/24 hours[5]	5
Rovral	15213	iprodione	2	1 day	12 hours	
Scholar 50 WP	28568	fludioxonil	12	postharvest		
Supra Captan 80 WDG	24613	captan	M	2 days	48 hours	
Topas 250 E	24030	propiconazole	3	3 days	72 hours	5[4]
Vangard 75 WG	25509	cyprodinil	9	2 days	72 hours	4

A blank cell indicates the information is not specified on the product label.
1 6 days for hand thinning.
2 30 days for pick-your-own harvest. See label.
3 14 days for pick-your-own harvest.
4 No more than two applications in the 3 weeks prior to harvest.
5 10 days for hand thinning , 24 hours for hand harvest, otherwise when dry.

Notes on Plums

Heat spot

High temperatures may cause purplish spots on plum and prune fruits that exude clear gum. These spots develop about 5–8 days after a period of hot weather. Summer cover crops and mulch help to reduce this physiological condition.

To reduce this disorder on prunes, spray with 4 kg of calcium chloride in 1,000 L of water during the period from early July to mid-August. Apply three sprays, 10–12 days apart. See notes on *Calcium (Ca)* for plums, page 148.

Thinning Plums

In recent years, the market demand for larger fruit has placed more importance on fruit thinning, pruning and irrigation. Japanese plums require systematic fruit thinning; otherwise fruit size will be small and biennial cropping will ensue. European plums grown for fresh market also require thinning in the years of heavy fruit set. Inadequate fruit thinning results in production of under-sized plums and, at times, fruit ripening on overloaded trees will be delayed. Irrigation is important to obtain large-sized fruit. See notes on irrigation under *Thinning Peaches,* page 170. Start thinning near the end of June drop in early to mid-June when it can be determined which fruit will abort and fall on their own. Thinning at early fruit development has more benefits than late thinning.

Fruit size thinning is preferred to conventional space thinning. Size thinning selectively removes small, weak, blemished or diseased fruit regardless of spacing of the fruits on the branches. The end result should be proper sizing of the fruit remaining on the tree.

To order copies of Publication 360, Price $20.00 + tax

- Visit ServiceOntario Publications website at http://www.ServiceOntario.ca/publications
- Contact ServiceOntario Publications Contact Centre at:
  1-800-668-9938
  416-326-5300
  TTY 1-800-268-7095