

# Fruit Production Recommendations 2010-2011

Ontario Ministry of Agriculture, Food & Rural Affairs

## Chapter 7: Tender Fruit



### Peach 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 7-8. *Products Used on Peaches*, page 169.

Diseases and Insects	Products	Rate	Comments
<b>Dormant (in March or early April before buds swell)</b>			
Leaf curl	Ferbam 76 WDG	see label	A delay in application may result in poor control of leaf curl. Ferbam: If mixing with oil, follow mixing directions on the Superior 70 Oil label carefully or poor leaf curl control will result. Bravo: Do not apply within 10 days of an oil application because it will burn flower and leaf tissue.
	Bravo 500	7.0 L/ha	
	Copper Spray Guardman Copper Oxychloride	2.0 kg/1,000 L 2.0 kg/1,000 L	
San Jose scale	Superior 70 Oil	20 L/1,000 L water	Apply oil routinely every third year. If scale is a serious or continuing problem, apply oil for at least two consecutive years.
<b>Prebloom (half-inch green to first pink)</b>			
European red mite	Superior 70 Oil	20 L/1,000 L water	This is the preferred time to use oil for red mite control if overwintering populations are high. Red mite populations are more likely to be high if pyrethroid sprays were used the previous year for oriental fruit moth and tarnished plant bug control.
Oriental fruit moth	Isomate-M Rosso	500 dispensers/ha	Pheromone mating disruption products are not insecticides and will not control other pests that may be present. Initial OFM population must be low. Apply to square or rectangular orchard blocks at least 4 ha in size. Must be applied before moth flight begins. For more information on mating disruption refer to OMAFRA Factsheets <i>Mating Disruption for Management of Insect Pests</i> , Order No. 03-079 and <i>Mating Disruption for Management of Oriental Fruit Moth in Stone and Pome Fruit</i> , Order No. 04-029. Isomate-M 100: Make a second application 75–80 days after initial application. Isomate-M Rosso: Provides mating disruption for up to 120 days. If desired, use both an insecticide and mating disruption for managing first generation OFM (see <b>Shuck split</b> ).
	Isomate-M 100	250 dispensers/ha	
<b>Bloom</b>			

Diseases and Insects	Products	Rate	Comments
Blossom blight stage of brown rot	Topas 250 E or Mission 418 EC	500 mL/ha 300 mL/ha	Spray when first blossoms are opening. Repeat every 4–5 days if weather is wet. Do not use products from the same group in consecutive sprays. Alternate among fungicide groups. Nova, Funginex, Topas, Mission and Indar: Do not alternate among these products. Pristine and Lance: Do not alternate Pristine with Lance. Bravo, Captan or Maestro: Do not apply within 10 days of an oil application, because this causes burning of flower and leaf tissue. Sulphur: May encourage mite build-up.
	Nova 40 W	340 g/ha	
	Indar 75 WSP	140 g/ha	
	Funginex DC	2.5 L/ha	
	Rovral	1.5 kg/ha	
	Vanguard 75 WG	370 g/ha	
	Elevate 50 WDG	1.7 kg/ha	
	Lance WDG Pristine WG	370 g/ha 750 g/ha	
Bravo 500	7.0 L/ha		
Supra Captan 80 WDG or Maestro 80 DF	4.5 kg/ha 4.5 kg/ha		
Microscopic Sulphur	See label		
<b>Petal fall and shuck</b>			
Aphids	Movento 240 SC	365 mL/ha	<b>Movento:</b> Most effective on young stages of aphids. Has slow activity; control may not be apparent for 2–3 weeks. Under high aphid pressure a second application may be necessary 2 weeks later. See the Movento label for additional details. Do not tank-mix with sulfur.
Green peach aphid	Admire 240	230 mL/ha	Thresholds for application are 30% of terminals infested or 20 colonies per tree for peaches and 10% of terminals infested or 5–10 colonies per tree for nectarines.
<b>Shuck split</b>			
Oriental fruit moth (first generation)	Assail 70 WP	120–240 g/ha	Where mating disruption products for OFM have been placed in the orchard, a pesticide application is generally not required at this time. 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 suppress/control plum curculio. Lorsban: Use for the control of first generation only. Do not use pyrethroids for control of first generation OFM.
	Lorsban 50 W	3.5 kg/ha	
Plum curculio	Guthion 50 WSB or Sniper	see label see label	Plum curculio is a sporadic pest of peaches and nectarines. Scout edges of orchards near woodlots and wild hosts in spring. Check small fruit for crescent-shaped egg laying scars. A border spray of 4–6 rows may provide sufficient control. Check developing fruit for new damage 7–10 days later. Assail: Under high insect pressure, may provide suppression rather than control of plum curculio.
	Assail 70 WP	240 g/ha	

Diseases and Insects	Products	Rate	Comments
Peachtree borer	Isomate-P	250–625 dispensers/ha	<p><b>Isomate-P:</b> 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.</p> <p>Apply pheromone dispensers before peach tree borer flight 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 <i>Using mating disruption in fruit crops</i>, page 19.</p>
Brown rot	Topas 250 E or Mission 418 EC Indar 75 WSP  Vanguard 75 WG  Elevate 50 WDG  Lance WDG Pristine WG  Rovral  Supra Captan 80 WDG or Maestro 80 DF  Microscopic Sulphur	500 mL/ha 300 mL/ha 140 g/ha  740 g/ha  1.7 kg/ha  370 g/ha 750 g/ha  1.5 kg/ha  4.5 kg/ha 4.5 kg/ha  see label	<p>Alternate among fungicide groups and do not use products from the same group in consecutive sprays.</p> <p>Spray again in 7 days if wet weather persists.</p> <p>Topas, Mission and Indar: Do not alternate among these products.</p> <p>Pristine and Lance: Do not alternate Pristine with Lance.</p> <p>Pristine: Do not apply where spray drift may reach Concord grapes as it may cause crop injury.</p> <p>Sulphur: May induce mite problems.</p>
European red mite	Apollo SC	300 mL/ha	<p>If oil was applied in the spring, a miticide is likely not necessary at this time.</p> <p>Apollo: Most effective on eggs and newly hatched nymphs. Apply when leaf tissue is present, mites are mostly in the first summer generation egg stage and before there are three active mites per leaf. Use sufficient water volumes to obtain good coverage, but not less than 475 L/ha. Apply up to 14 days after petal fall.</p>
Lesser peachtree borer Peachtree borer	Thionex 50 W or Thiodan 4 EC  Sevin XLR	1.5 kg/1,000 L 1.75 L/1,000 L  6.25 L/ha	<p>Peachtree borers are sporadic pests. Spray in areas with high borer populations. Use pheromone traps to monitor adult activity and begin sprays one week after first flight. Make three applications at 5–10 day intervals. Direct these sprays with a handgun to cover trunk and scaffold limbs thoroughly; do not spray fruit. Do not apply second Thiodan spray to varieties in the Harrow Diamond and Garnet Beauty season; on these varieties use Sevin XLR. Do not use third Thiodan spray on varieties in the Sunhaven, Redhaven, Veecling and Vivid season; on these varieties use Sevin XLR. Sevin XLR is not registered for peachtree borer.</p>
<b>Special sprays (when monitoring indicates the need during early green fruit stage to pit hardening)</b>			
Tarnished plant bug	Ripcord 400 EC or Up-Cyde 2.5 EC Matador 120 EC or Silencer 120 EC Ambush 500 EC  Thionex 50 W	175 mL/ha 280 mL/ha 104 mL/ha 104 mL/ha 400 mL/ha  4.5 kg/ha	<p>General timing is mid-June if 2% or more fruit damage is observed. Where plant bug pressure is high and significant new damage is detected, repeat spray in 5–7 days.</p> <p>Plant bug pressure is lower in orchards with managed sod. Other cultural techniques can reduce damage from this pest.</p> <p>Ripcord: Also controls oak plant bug.</p> <p>Up-Cyde: Use in 550 L water/ha.</p>

Diseases and Insects	Products	Rate	Comments
<b>Second generation oriental fruit moth spray</b>			
Oriental fruit moth (Second generation)	Altacor	285 g/ha	<p>Spray all varieties. This generation may require two insecticide sprays applied about 14 days apart.</p> <p>If mating disruption for OFM is being used a pesticide application is not required for second generation OFM.</p> <p>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 the preharvest interval.</p> <p>Altacor: Do not exceed 645 g/ha per year.</p> <p>Assail: For optimum activity, use the 240 g/ha rate. Apply in a minimum spray volume of 1000 L/ha. Do not apply more than once every 12 days. Will also control plum curculio.</p> <p>Up-Cycle: Use in 550 L water/ha.</p> <p>Decis: Maximum one application per year.</p> <p>For resistance management, if more than one spray is required for this generation, use a product from the same chemical group. For subsequent generations rotate to another chemical group.</p>
	Delegate WG	420 g/ha	
	Assail 70 WP	120–240 g/ha	
	Ripcord 400 EC	175 mL/ha	
	or Up-Cycle 2.5 EC	280 mL/ha	
	Matador 120 EC	104 mL/ha	
	or Silencer 120 EC	104 mL/ha	
	Ambush 500 EC	200–400 mL/ha	
or Pounce	275 mL/ha		
or Perm-Up	275 mL/ha		
Decis 5 EC	200 mL/ha		
Brown rot (early varieties only – Harrow Diamond through Sunhaven)	Topas 250 E	500 mL/ha	<p>Alternate among fungicide groups; do not use products from the same group in consecutive sprays.</p> <p>Topas, Mission: Maximum two applications in the three weeks prior to harvest.</p> <p>Pristine and Lance: Do not alternate Pristine with Lance.</p> <p>Sulphur: May induce mite problems.</p>
	or Mission 418 EC	300 mL/ha	
	Indar 75 WSP	140 g/ha	
	Vanguard 75 WG	740 g/ha	
	Elevate 50 WDG	1.7 kg/ha	
	Lance WDG	370 g/ha	
	Pristine WG	750 g/ha	
	Rovral	1.5 kg/ha	
Supra Captan 80 WDG	4.5 kg/ha		
or Maestro 80 DF	4.5 kg/ha		
Microscopic Sulphur	see label		
<b>Special sprays (when monitoring indicates the need)</b>			
European red mite Two-spotted spider mite	Pyramite	300 g/ha	<p>Check product labels for preharvest intervals in Table 7-8. <i>Products Used on Peaches</i>, page 169. Apply this spray around the second oriental fruit moth spray (early July) if needed. On cultivars Harbrite and later, examine for mites again 3 weeks before harvest. Spray if 5–10 active pest mites per leaf are present in July and few beneficial mites are present. Monitor carefully because populations of pest mites can build rapidly.</p> <p>Pyramite, Nexter: Most effective when applied to mite nymphs. Use 600 g/ha for two-spotted spider mites.</p> <p>Envidor: Works slowly, especially in cool weather. Control may not be apparent for 2-3 weeks. Apply before mite populations build up.</p> <p>Miticides are best used alone. Use a minimum water volume of 1,000 L/ha for effective control.</p>
	or Nexter	300 g/ha	
	Envidor 240 SC	750 mL/ha	
	Carzol SP	1.1 kg/ha	
<b>Third generation oriental fruit moth spray (late varieties)</b>			
Oriental fruit moth	Altacor	285 g/ha	<p>This spray is usually required for all varieties from Vivid season and later. Check the preharvest intervals.</p> <p>If mating disruption for OFM is being used a pesticide application is not required for third generation OFM.</p> <p>Decis: Maximum one application per year.</p>
	Delegate WG	420 g/ha	
	Assail 70 WP	120-240 g/ha	

Diseases and Insects	Products	Rate	Comments
	Ripcord 400 EC or Up-Cyde 2.5 EC Pounce or Perm-Up or Ambush 500 EC Decis 5 EC Silencer 120 EC	175 mL/ha 280 mL/ha 275 mL/ha 275 mL/ha 200–400 mL/ha 200 mL/ha 104 mL/ha	Altacor and 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. Do not spray within the preharvest interval of 10 days. 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. Up-Cyde: Use in 550 L water/ha. For resistance management, if more than one spray is required for this generation, use a product from the same chemical group. For subsequent generations, rotate to another chemical group.
Brown rot	Topas 250 E or Mission 418 EC Indar 75 WSP  Vanguard 75 WG  Elevate 50 WDG  Lance WDG Pristine WG  Rovral  Supra Captan 80 WDG or Maestro 80 DF  Microscopic Sulphur	500 mL/ha 300 mL/ha 140 g/ha  740 g/ha  1.7 kg/ha  370 g/ha 750 g/ha  1.5 kg/ha  4.5 kg/ha 4.5 kg/ha  see label	Alternate among fungicide groups; do not use products from the same group in consecutive sprays. Topas, Mission: Maximum two applications in the three weeks prior to harvest. Pristine and Lance: Do not alternate Pristine with Lance. Sulphur: May induce mite problems.
<b>Prepick spray</b>			
Oriental fruit moth	Decis 5 EC Ripcord 400 EC or Up-Cyde 2.5 EC Pounce or Perm-Up or Ambush 500 EC Silencer 120 EC  Altacor  Delegate WG  Assail	200 mL/ha 175 mL/ha 280 mL/ha 275 mL/ha 275 mL/ha 200–400 mL/ha 104 mL/ha  285 g/ha  420 g/ha  120–240g/ha	Spray each variety when first colour shows, 7–10 days before first harvest. If mating disruption is being used for OFM a prepick spray is not necessary unless local populations have historically been high or in cases where late season peaches are the only remaining fruit in an area. Decis: Maximum one application per year. Up-Cyde: Use in 550 L water/ha. 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. For resistance management, if more than one spray is required for this generation, use a product from the same chemical group. For subsequent generations rotate to another chemical group.
Brown rot	Topas 250 E or Mission 418 EC Indar 75 WSP  Vanguard 75 WG  Elevate 50 WDG  Lance WDG Pristine WG  Rovral  Supra Captan 80 WDG	500 mL/ha 300 mL/ha 140 g/ha  740 g/ha  1.7 kg/ha  370 g/ha 750 g/ha  1.5 kg/ha  4.5 kg/ha	Apply with OFM sprays 7–10 days before harvest. Alternate among fungicide groups; do not use products from the same group in consecutive sprays. Pristine and Lance: Do not alternate Pristine with Lance. Topas, Mission and Indar: Do not alternate Topas or Mission and Indar. Topas, Mission: Maximum two applications in the three weeks prior to harvest. Sulphur: Use may induce mite problems.

Diseases and Insects	Products	Rate	Comments
	or Maestro 80 DF Microscopic Sulphur	4.5 kg/ha see label	
<b>Postharvest fruit treatment</b>			
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.
<b>Fall spray (preferred time to spray for leaf curl)</b>			
Leaf curl	Bravo 500 Copper Spray Guardzman Copper Oxychloride	7.0 L/ha 2.0 kg/1,000 L 2.0 kg/1,000 L	Apply any time after leaves are off in fall or winter when temperature in shade is above freezing and conditions favour rapid drying.

Table 7-8. Products Used on Peaches

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 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
<b>Products used for control or suppression of insects and mites</b>						
Admire 240	24094	imidacloprid	4	7 days	24 hours	2
Altacor	28981	chlorantraniliprole	28	10 days	12 hours	3 (max 645g/ha)
Ambush 500 EC	14882	permethrin	3	7 days		
Apollo SC	21035	clofentezine	10	21 days	12 hours	1
Assail 70 WP	27128	acetamiprid	4	7 days	12 hours/6 days <sup>1</sup>	4
Carzol SP	11144	formetanate hydrochloride	1A	21 days		1
Decis 5 EC	22478	deltamethrin	3	1 day		1

Product name	Registration number	Common name	Group	Preharvest interval	Minimum re-entry	Maximum number of applications per season
Delegate WG	28778	spinetoram	5	14 days	12 hours	3
Envidor 240 SC	28051	spirodiclofen	23	7 days	12 hours	1
Guthion 50 WSB	21374	azinphosmethyl	1B	21 days	14 days/30 days <sup>2</sup>	2
Lorsban 50 W	20944	chlorpyrifos	1B	21 days	4 days	2
Matador 120 EC	24984	lambda-cyhalothrin	3	7 days	24 hours	3
Movento 240 SC	28593	spirotetramat	23	7 days	12 hours	
Nexter	25135	pyridaben	21	14 days	24 hours	1
Perm-Up	28877	permethrin	3	7 days	12 hours	
Pounce	16565	permethrin	3	7 days		
Pyramite	25135	pyridaben	21	14 days	24 hours	1
Ripcord 400 EC	15738	cypermethrin	3	7 days		2
Sevin XLR	27876	carbaryl	1A	1 day		
Silencer 120 EC	29052	lambda-cyhalothrin	3	7 days	24 hours	3
Sniper	23323	azinphosmethyl	1B	21 days	14 days/30 days <sup>2</sup>	2
Superior 70 Oil	9542 14981	mineral oil		apply 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
Up-Cyde 2.5 EC	28795	cypermethrin	3	7 days	12 hours	2
<b>Products used for control or suppression of diseases</b>						
Bravo 500	15723	chlorothalonil	M	60 days	48 hours	4
Copper Spray	19146	copper oxychloride	M			
Elevate 50 WDG	25900	fenhexamid	17	1 day	4 hours	4
Ferbam 76 WDG	20136	ferbam	M	21 days		
Funginex DC	27686	triforine	3	do not apply after bloom	48 hours	3
Guardman Copper Oxychloride	13245	copper oxychloride	M			
Indar 75 WSP	27294	fenbuconazole	3	1 day	12 hours	7

Product name	Registration number	Common name	Group	Preharvest interval	Minimum re-entry	Maximum number of applications per season
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 <sup>3</sup>
Nova 40 W	22399	myclobutanil	3	1 day		6
Pristine WG	27985	boscalid + pyraclostrobin	7+11	0 days	10 days/24 hours <sup>4</sup>	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 <sup>3</sup>
Vanguard 75 WG	25509	cyprodinil	9	2 days	72 hours	4

A blank cell indicates the information is not specified on the product label.

<sup>1</sup> 6 days for hand thinning.

<sup>2</sup> 30 days for pick-your-own harvest.

<sup>3</sup> No more than two applications in the 3 weeks prior to harvest.

<sup>4</sup> 10 days for hand thinning, 24 hours for hand harvest, otherwise, when dry.

## Thinning Peaches

Peach thinning is an essential orchard management practice. Thinning is necessary to obtain good-sized, quality fruit and to reduce limb breakage, reduced fruit size and quality, loss of tree vigour, shortened orchard life and increased pest management problems.

When thinning, consider fruit load as well as fruit spacing. Optimum fruit load depends on cultivar, tree vigour, tree age and health, and orchard management practices such as tree spacing, irrigation and pruning. Peach growers tend to space the fruit 15–20 cm apart. However, distance between fruit is less critical as long as clusters are broken up and fruit is separated. Tree crop load (kg per tree or number of fruit per tree) is a more important consideration. As an example, a yield of 18–27 tonnes/ha (8–12 tons/acre) in an orchard with a tree density of 490 trees per ha (200 trees per acre) requires about 200–300 fruit per tree, if you assume an average fruit size of 4–7 fruit per kg (2–3 fruit per lb). With current emphasis on increased fruit size for better marketability and trends towards higher tree densities, fruit loads of 175–200 fruit per tree may be more ideal, at least for cultivars that normally produce large fruit.

## **Factors to consider when thinning peaches**

**Timing** – Start thinning near the end of June drop (about mid-June) when it can be determined which fruits will abort and fall on their own. Thinning at early fruit development or even blossom time is more beneficial than late thinning. However, it is difficult to get a true assessment of crop load before June drop occurs. Thin cultivars that ripen early in order to obtain good fruit size. In some years, a follow-up hand thinning may be necessary.

**Pruning** – Pruning is an essential part of the fruit-thinning procedure. Pruning selectively removes fruit-bearing surface, as well as some of the excess crop. Normal fruit thinning must follow to avoid over-cropping.

**Cultivars** – Cultivar selection over the years has tended towards larger fruit. Earlier ripening cultivars have a high percentage of fruit with split pits. Some growers thin early cultivars twice; thinning lightly to remove some crop load, then a second time to selectively remove split-pit fruit. Harrow Diamond is the earliest-ripening commercial cultivar that has few split-pit fruits under normal conditions. This cultivar must be well thinned to obtain suitable size. There is little likelihood of over-thinning early cultivars when the set is heavy. Heavy-setting, hard-to-size cultivars such as Redhaven require heavier thinning than easier-to-size types like Vivid and Loring. As a rule of thumb, however, late maturing cultivars with a good, uniform set are thinned 10–13 cm apart in order to produce good-sized fruit. Thin each cultivar according to its individual requirements.

**Irrigation** – Irrigation is recommended to enhance fruit size, especially in long periods of dry conditions. There are two key periods to irrigate peaches; during cell division (from bloom to 30 days after bloom) and during cell expansion (approximately 2–4 weeks before harvest). Start irrigation early in the season and continue a regular schedule based on the amount of rainfall, rate of evapotranspiration and soil holding capacity. Permanent orchard sod is very competitive and increases moisture requirements. Adjust the irrigation schedule based on additional factors such as crop load, winter injury, insect, disease or other stress factors. New technology is being developed for commercial growers to closely monitor soil moisture. Orchards without irrigation may, in some years, need a second thinning during July to attain marketable fruit size.

**Thinning methods** – Thinning is most commonly accomplished by hand. Large quantities of fruit can be removed quickly with physical aids such as a child's plastic bat, a rubber hose mounted on a bamboo pole or broom handle, or a plastic rake manufactured for this purpose. Follow this initial thinning with "touch-up" thinning a few days later to assure that fruit numbers per tree produce good-sized fruit for the cultivar and orchard condition. Ensure clusters are broken up and fruit separated. If the set is spotty on the tree, more fruit may be left on the heavy-set branches.

*Other methods that have been investigated are:*

**Mechanical blossom thinning** – Mechanical trunk shakers used in the past have resulted in over-thinning and had long-term negative effects on the root system of the tree. A relatively new device using nylon cords fixed to a rotating shaft mounted on a front-end loader is showing promise for blossom removal. Tractor speed, the rpm of the nylon cords, the number of cords used, tree shape and the timing during blossom can affect the number of blossoms removed. Follow-up hand thinning is necessary to ensure good fruit size. Mechanical blossom thinning helps to reduce labour costs, and results in larger average fruit size per tree and earlier ripening. This new technology may work best in high density, vertically trained spindle orchards.

**Rope thinning during bloom and 4–6 weeks after bloom** – Tree training systems need to be properly developed to adapt rope thinning. Moderate success has been achieved in some research and grower trials in the United States.

**Chemical thinning** – No chemicals are registered for thinning peaches in Ontario.

Any of the above methods must be supplemented by touch-up hand thinning.

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