

Stage of Development: Dormant to Silver Tip							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
Ambrosia Beetle	Notes: There are currently no registered products for controlling ambrosia beetle on apples. Good sanitation is the best management strategy. Remove large wood piles and prunings from the orchard. Cultural control by maintaining optimum tree vigour is important as ambrosia beetles are attracted to trees weakened by drought, transplanting, disease, etc. See description of ambrosia beetles for more information on the life cycle and methods to intercept female beetles flying into orchard.						
Fire Blight	hydrogen peroxide + peroxyacetic acid (Oxidate 2.0) 32907	NC	1 L/100 L of water (1% solution)	1 L/1000 L of water (1% solution)	4 h	0	Partial suppression. Start foliar/branch/stem applications before the disease occurs or at the first sign of disease and/or when weather conditions are favourable for disease development. Apply diluted spray to the point of run-off to achieve full and even coverage.
	bacillus mycoides isolate J (LifeGard WG) 32526	P 06	0.33 g per L of water	0.33 g per L of water	4 h	0	Do not apply less than 70 grams or more than 333 grams per hectare. Begin applications when green tissue is present, prior to infection period. For suppression of shoot blight, start applications after petal fall. Foliar applications only. Do not apply during the bloom period (from pink stage to petal fall). Do not apply to apple by chemigation.
	garlic powder (Buran) 30601	NC	1.4% (500 to 800 L of water)	1.4% (202 to 323 L of water)		0	Apply before wetting events when conditions are conducive to infection; reapply as needed. The addition of a registered non-ionic surfactant such as Agral 90 or AgSurf at a rate of 0.1% could help to improve the spreading.
	Copper hydroxide (Parasol) 25901	M1	4.7 L	1.9 L	48 hrs	2 days	Apply in sufficient water for complete coverage. Max. two applications per year.
	copper octanoate (Cueva Commercial) 31825	M1	Prepare 0.5-2% solution (5-20 L/1000 L water)		4 h	1	Apply 470-940 L of mixture/ha (190-380 L/acre) as a dormant spray as buds begin to swell, repeating at the bud burst stage, and weekly thereafter as needed, up to six sprays. Remove cankers by March 31. See fire blight description. The higher rate for dormant sprays is more likely to be effective.
	copper oxychloride (Copper Spray 19146)	M1	4kg	1.6kg	48 h	n/a	Remove cankers by March 31. See fire blight description.

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Stage of Development: Silver Tip to Green Tip

Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
Apple Scab	copper hydroxide (Kocide 2000-O) 33441	M	0.84-1.96 kg	0.34-0.79 kg	48 h	2 days	Apply as a full cover spray for early season disease suppression. Use the higher rate when conditions favour disease progression. Moderate to severe crop injury may occur from late application; discontinue use when green-tip reaches 1/2 inch. Requires pesticide applicator certificate.
Fire Blight	copper hydroxide (Kocide 2000-O) 33441	M	0.56-0.84 kg	0.23-0.34 kg	48 h	2 days	Apply as a full cover spray for early season disease suppression. Use the higher rate when conditions favour disease progression. Moderate to severe crop injury may occur from late application; discontinue use when green-tip reaches 1/2 inch. Requires pesticide applicator certificate.

Stage of Development: 15 mm Green to Tight Cluster

Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
Rosy Apple Aphid	afidopyropen (Versys) 33266	9D	0.1 L	0.04 L	12 hrs	7 days	Allow 7 days between applications. Do not apply more than 4 times per season. For resistance management, rotate with another insecticide group after 2 applications.
	sulfoxaflor (Closer) 30826	4C	100-200 mL	40-80 mL	12 h	7	Do not apply more than 2 times/season. Spray interval: minimum 7 days.
Apple Aphid	afidopyropen (Versys) 33266	9D	0.1 L	0.04 L	12 hrs	7 days	Allow 7 days between applications. Do not apply more than 4 times per season. For resistance management, rotate with another insecticide group after 2 applications.
	sulfoxaflor (Closer) 30826	4C	100-200 mL	40-80 mL	12 h	7	Do not apply more than 2 times/season. Spray interval: minimum 7 days.
Woolly Apple Aphid	sulfoxaflor (Closer) 30826	4C	400 mL	162 mL	12 h	7	Suppression only. Do not apply more than 2 times/season. Spray interval: minimum 7 days.
Apple Leaf Curling Midge	spinetoram (Delegate) 28778	5	420 g	170 g	12 h	7	Toxic to bees. Do not apply to flowering crops or weeds if bees are visiting the treatment area. Maximum 3 applications per year. Application interval: 17 days.
San Jose Scale	mineral oil (Superior 70) 14981	NC	60 L	24 L	12 h	n/a	Apply once at green tip to 1 cm green stage. Do not use prior to or during freezing temperatures or rain. May cause bark damage on Red Delicious.
	mineral oil (Guardsman) 23370	NC	90 L	36 L	12 h	n/a	Apply once at green tip to 1 cm green stage. Do not use prior to or during freezing temperatures or rain. May cause bark damage on Red Delicious.
	mineral oil (Purespray Green)	NC	20L/1000 L of Water	20L/1000 L of Water	12 h	0	Apply once at green tip to 1 cm green stage. Do not use prior to or during freezing temperatures or rain. May cause bark

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Stage of Development: 15 mm Green to Tight Cluster							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	27666						damage on Red Delicious.
European Red Mite	mineral oil (Superior 70) 14981	NC	60 L	24 L	12 h	n/a	Apply once at green tip to 1 cm green stage. Do not use prior to or during freezing temperatures or rain. May cause bark damage on Red Delicious.
	mineral oil (Guardsman) 23370	NC	90 L	36 L	12 h	n/a	Apply once at green tip to 1 cm green stage. Do not use prior to or during freezing temperatures or rain. May cause bark damage on Red Delicious.
	mineral oil (Purespray Green) 27666	NC	20L/1000 L of Water	20L/1000 L of Water	12 h	0	Apply once at green tip to 1 cm green stage. Do not use prior to or during freezing temperatures or rain. May cause bark damage on Red Delicious.
	Notes: Dormant oil is very important for integrated mite control program.						
Apple Scab	ipflufenquin (Migiwa 20 SC) 35443	52	165 - 220 ml	66.8 - 89 ml	12 h	7 days	Make first application at green tip stage. The retreatment interval is 7 to 10 days. Do not make more than two sequential applications.
	mancozeb (Dithane Rainshield) 20553	M3	2-6 kg	0.81 - 2.4 kg	12 h - 35 d	77	Do not apply more than 24 kg/ha/year (18 kg a.i./ha/year of Dithane Rainshield Fungicide (e.g., 4 applications per year at 6.0/kg/ha or 8 applications at 3.0 kg/ha OR 12 applications at 2.0 kg/ha).
	impyrfluxam (Excalia Fungicide)	7	146 - 219 ml/ha	59 - 88.6 ml/ac	12 h	Petal fall	Green tip to petal fall only.
	hydrogen peroxide + peroxyacetic acid (Oxidate 2.0) 32907	NC	1 L/100 L of water (1% solution)	1 L/1000 L of water (1% solution)	4 h	0	Partial suppression. Start foliar/branch/stem applications before the disease occurs or at the first sign of disease and/or when weather conditions are favourable for disease development. Apply diluted spray to the point of run-off to achieve full and even coverage.
	extract of Swinglea glutinosa (EcoSwing) 35206	BM 01	1.75 - 2.35 L	0.71 - 0.95 L	4 h	0	Repeat application if measurable rain occurs within 2 to 3 hours of spraying.
	garlic powder (Buran) 30601	NC	9 L/500 L of water	9 L/500 L of water		0	The maximum rate of product in a single application is 18 L/ha. This product does not have protectant activity. It should be used as a post-infection treatment, applied after rainfall or when conditions are conducive to disease development. Application interval: before 350 degree hours (base 0 degrees C) after the beginning of the infection.
	pyraziflumid (Parade) 34526	7	227-340 ml	92-138 ml	12 h	7 days	Do not apply more than 2 consecutive applications of Parade or other group 7 fungicides before switching to a non-group 7 fungicide.
	sulphur (Cosavet DF)	M2	7.0 kg	2.8 kg	24 h	1	Do not apply sulphur in combination with, immediately

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Stage of Development: 15 mm Green to Tight Cluster							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	Edge 31869, Kumulus 18836, Microthiol 29487						before, or closely following oil sprays.
	pyraclostrobin + fluxapyroxad (Merivon) 33951	7 + 11	0.3 - 0.4 L	0.12 - 0.16 L	12 h - 12 days	5 days (hand harvest)	Limit sprays of Group 11 fungicides to 2 sprays/season. REI's: hand thinning - 12 days, hand harvesting - 5 days, mechanical harvesting and all other activities - 12 hours.
	mefentrifluconazole (Cevya) 33405	3	0.25 - 0.375 L	0.1 - 0.15 L	12 hours	0	Do not make more than 2 sequential applications before alternating to a non-group 3 fungicide registered for the same use. Begin applications prior to disease development. Apply an additional applic. at an interval of 7 - 10 days if disease persists or weather conditions are favourable for disease development.
	Isofetamid (Kenja) 31758	7	913 ml	369 ml	12 hours	20	Do not apply more than 2 consecutive Group 7 applications. Application interval: 10 to 14 days.
	benzovindiflupyr + difenoconazole (Aprovia Top) 31526	3 + 7	386 - 643 mL	156 - 260 mL		30	Tank mix with protectant fungicide for improved fruit scab control. Use high rate for mildew. Rotate with other fungicide groups for resistance management. Do not apply more than 2.57 L/ha/season.
	copper octanoate (Cueva Commercial) 31825	M1	Prepare 0.5-2% solution (5-20 L/1000 L water)		4 h	1	Apply 470-940 L of mixture/ha (190-380 L/acre). Do not exceed 1% rate for varieties susceptible to russetting. Repeat every 7-10 days as long as weather conditions favour disease development.
	benzovindiflupyr (Aprovia) 31981	7	300-500 mL	121-202 mL	12 h	30	For improved fruit scab control, tank mix with a protectant fungicide (see label). Rotate with other non-Group 7 products. Do not apply in two consecutive sprays nor more than 2 L/ha (1.0 L/acre) per season.
	fluxapyroxad (Sercadis) 31697	7	167-333 mL	68-135 mL	12 h	0	The use of a non-ionic surfactant (0.125%) is recommended. Begin treatment when conditions favour disease development. Apply a second spray 7-14 days up to blossom if conditions for disease development persist. Maximum amount per season: 1.33 L/ha (538 mL/acre). Maximum 4 applications per season.
	fluazinam (Allegro) 27517	29	0.50-1.0 L	202-404 mL	24 h-3 days	28	Use highest rates and shortest intervals for high disease pressure. Will also suppress European red mite, apple rust mite and two spotted spider mites. 3 days REI for thinning.
	difenoconazole + cyprodinil (Inspire Super) 30827	3 + 9	560 - 836 mL	227 - 338 mL	12 h	14	Limit sprays of Group 3 fungicides (Nova, Inspire, Fullback) to 2 times/season. Tank mix with a protectant fungicide (Dithane, Manzate, Polyram, captan) for resistance

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Stage of Development: 15 mm Green to Tight Cluster							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
							management.
	pyrimethanil (Scala) 28011	9	0.75 - 1.0 L	304 - 405 mL	12 h-24 h	14	Do not use for apple scab after bloom. 24 hour REI for thinning.
	flutriafol (Fullback) 31679	3	950 mL	385 mL	12 h	14	Tank mix with the full rate of a protectant (e.g. Dithane. Manzate, Polyram, Captan, Maestro). Limit sprays of group 3 fungicides (Nova, Inspire, Fullback) to 2 times/season for resistance management.
	myclobutanil (Nova 40WP) 22399	3	340 g	140 g	12 h-12 days	14	Tank mix with the full rate of Dithane, Manzate, Polyram, Captan, or Maestro. Limit sprays of group 3 fungicides (Nova, Inspire, Fullback) to 2/season for resistance management. 12 days REI for thinning.
	kresoxim-methyl (Sovran) 26257	11	360 g	150 g	48 h	30	Caution: drift may injure cherries. Limit sprays of group 11 fungicides (Flint, Sovran, Pristine) to 2 per season.
	trifloxystrobin (Flint) 30619	11	140 - 175g	57 - 71 g	12 h - 4 days	14	Avoid more than 2 consecutive sprays. Limit sprays of Group 11 fungicides (Flint, Sovran, Pristine) to 2/season. 4 days REI for thinning.
	boscalid + pyraclostrobin (Pristine WG) 27985	7 + 11	1.0 - 1.2 kg	405 g - 485 g	dry - 12 days	5	Avoid more than 2 consecutive applications. Limit sprays of Group 11 fungicides (Flint, Sovran, Pristine) to 2 per season. 12 days REI for thinning.
	penthioopyrad (Fontelis) 30331	7	1.0-1.5 L	405-607 mL	12 h	28	Do not apply more than 3 times per season, or more than twice sequentially. Use high rate for high disease pressure.
	fluopyram pyrimethanil (Luna Tranquility) 30510	7 + 9	800 mL	323 mL	12 h	14	Do not apply more than 2 times per season.
	mancozeb (Manzate 28217, Penncozeb 30241 and 25397)	M3	6.0kg	2.4 kg	12 h - 35 d	77	Do not apply more than 4 applications per year. Apply at a minimum of the 7-day interval.
	copper oxychloride (Copper Spray 19146)	M1	300 - 500 g/ha	121 - 202 g/ha	48 h	2 days	Maximum number of applications: 6. Reapply if needed as indicated by monitoring.
	captan (Captan Supra 33641, Maestro 33488)	M4	3 kg	1.2 kg	2 - 24 d	7	Do not apply Captan in combination with, immediately before, or closely following oil sprays. Do not use it during bloom. Early-season sprays may cause necrotic spotting to foliage of sensitive varieties. Apply at a minimum of a 7-day interval.
	Notes: Eradicant sprays are best used in a protective program. However they can be used soon after an infection period and still provide control.						
	Notes: Foliage is susceptible to apple scab as early as green tip. Apply protective fungicides if wet weather is forecast. See apple scab description for more information.						

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Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
Powdery Mildew (Apples)	ipflufenquin (Migiwa 20 SC) 35443	52	165 - 220 ml	66.8 - 89 ml	12 h	7 days	The 165 ml/ha rate provides suppression of powdery mildew. If disease pressure is moderate or high or if control is required, use the 220 ml/ha rate. The retreatment interval is 7 to 10 days. Do not make more than two sequential applications.
	impyrfluxam (Excalia Fungicide)	7	146 - 219 ml/ha	59 - 88.6 ml/ac	12 h	Petal fall	Green tip to petal fall only. Application must include a 100% organosilicone adjuvant, such as Xiameter, at 31.3 - 62.5 ml/100 L water.
	hydrogen peroxide + peroxyacetic acid (Oxidate 2.0) 32907	NC	1 L/100 L of water (1% solution)	1 L/100 L of water (1% solution)	4 h	0	Start foliar/branch/stem applications before the disease occurs or at the first sign of disease and/or when weather conditions are favourable for disease development. Apply diluted spray to the point of run-off to achieve full and even coverage.
	garlic powder (Buran) 30601	NC	9 L/500 to 800 L of water	9 L/500 to 800 L of water		0	Disease control can be achieved under low to moderate disease pressure. Begin applications when conditions are conducive to disease development. The addition of a registered non-ionic surfactant such as Agral 90 or AgSurf at a rate of 0.1% could help to improve the spreading.
	pyraziflumid (Parade) 34526	7	227-340 ml	92-138 ml	12 h	7 days	Do not apply more than 2 consecutive applications of Parade or other group 7 fungicides before switching to a non-group 7 fungicide.
	fenazaquin (Magister SC) 34544	21 + 39	1.75 - 2.63 L	0.7 - 1.1 L	12 h - 17 days	10 days	Toxic to bees. Avoid application during bloom. Maximum number of applications: 1
	sulphur (Cosavet DF Edge 31869, Kumulus 18836, Microthiol 29487)	M2	7.0 kg	2.8 kg	24 h	1	Do not apply sulphur in combination with, immediately before, or closely following oil sprays.
	flutianil (Gatten) 34297	U 13	440 - 590 ml	178 - 239 ml	24 hours	14 days	Use a higher rate and shorter spray interval under high disease pressure. Use water volumes of 280 - 935 litres per hectare for concentrate sprays and 936 - 1870 litres per hectare for dilute sprays. Max number of applications per year: 4. Apply to foliage during the fruiting stage.
	pyraclostrobin + fluxapyroxad (Merivon) 33951	7 + 11	0.3 - 0.4 L	0.12 - 0.16 L	12 h - 12 days	5 days (hand harvest)	Limit sprays of Group 11 fungicides to 2 sprays/season. REI's: hand thinning - 12 days, hand harvesting - 5 days, mechanical harvesting and all other activities - 12 hours.
	Mineral oil (Suffoil-X) 33099	NC	10 L/1000 L of water	10 L/1000 L of water	12 hours	0	Test for crop tolerance before widespread use. Apply at tight cluster and continue every 10-14 days. Avoid application

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Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
							during bloom. Do not use within 14 days before or after captan fungicide. Do not apply more than 8 applications per year.
	mefentrifluconazole (Cevya) 33405	3	0.25 - 0.375 L	0.1 - 0.15 L	12 hours	0	Do not make more than 2 sequential applications before alternating to a non-group 3 fungicide registered for the same use. Begin applications prior to disease development. Apply an additional applic. at an interval of 7 - 10 days if disease persists or weather conditions are favourable for disease development.
	Polyoxin D Zinc Salt (Diplomat 5SC) 32918	19	259 - 926 ml	104 - 374 ml		0 days	Suppression of powdery mildew. Begin as a preventative application when conditions favour disease development, 7 - 14 day spray interval. Number of applications: 3-10 depending on rate.
	benzovindiflupyr + difenoconazole (Aprovia Top) 31526	3 + 7	643 mL	260 mL	12 h	30	Rotate with other fungicides that do not contain Group 3 or Group 7 fungicides for resistance management. Do not apply more than 2 consecutive applications.
	benzovindiflupyr (Aprovia) 31981	7	500 mL	202 mL	12 h	30	Rotate with other non-Group 7 products. Do not apply in two consecutive sprays nor more than 2 L/ha (1.0 L/acre) per season.
	fluxapyroxad (Sercadis) 31697	7	167-333 mL	68-135 mL	12 h	0	The use of a non-ionic surfactant (0.125%) is recommended. Begin treatment when conditions favour disease development. Apply a second spray 7-14 days up to blossom if conditions for disease development persist. Maximum amount per season: 1.33 L/ha (538 mL/acre). Maximum 4 applications per season.
	difenoconazole + cyprodinil (Inspire Super) 30827	3 + 9	836 mL	338 mL	12 h	14	Suppression of powdery mildew. Limit use of group 3 fungicides (Nova, Inspire, Fullback) to 2 sprays/season.
	flutriafol (Fullback) 31679	3	585 - 877 mL	237 - 355 mL	12 h	14	Limit use of group 2 fungicides (Nova, Inspire, Fullback) to 2 sprays/season. Rotate with fungicides from other groups.
	myclobutanil (Nova 40WP) 22399	3	340 g	140 g	12 h-12 days	14	Limit use of Group 3 fungicides (nova, Inspire) to 2 sprays per season. Rotate with fungicides from other groups. 12 days REI for thinning.
	kresoxim-methyl (Sovran) 26257	11	240 - 450 g	100 - 182 g	48 h	30	Use high rate for high disease pressure. Limit sprays of group 11 fungicides to 2 per season. Caution: drift may injure cherries.
	trifloxystrobin (Flint) 30619	11	140 - 210 g	57 - 85 g	12 h-4	14	Use the higher rate during pink to bloom stages. Limit sprays of group 11 fungicides (Flint, Sovran, Pristine) to 2 per

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Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
					days		season. 4 days REI for thinning.
	thiophanate-methyl (Senator 50SC) 32096	1	3.15 L	1.27 L	24 h*	1	May harm predatory mites. Maximum 2 applications per season.
	mineral oil (Purespray Green) 27666	NC	10 L	4 L	12 h	0	For suppression of powdery mildew, apply in a minimum of 1000 L water/ha at tight cluster and repeat at 10-14 day intervals. Do not use in combination with or within 14 days of sulphur, Kumulus, Microthiol or captan. Do not apply during freezing temperatures.
	boscalid + pyraclostrobin (Pristine WG) 27985	7 + 11	1.0 - 1.2 kg	405 - 485 g	dry to 12 days	5	Avoid more than 2 consecutive applications. Limit sprays of Group 11 fungicides (Flint, Sovran, Pristine) to 2 per season. 12 days REI for thinning.
	penthioopyrad (Fontelis) 30331	7	1.0-1.5 L	405-607 mL		28	Do not apply more than 3 times per season, or more than twice sequentially. Use high rate for high disease pressure.
	fluopyram pyrimethanil (Luna Tranquility) 30510	7 + 9	600 mL	242 mL	12 h	14	Use as preventative treatment. Do not apply more than 2 times/season.
Notes: Early spring applications of fungicide (beginning no later than tight cluster) are necessary to prevent secondary spread of powdery mildew in susceptible apple varieties.							

Stage of Development: Pink							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
Eyespotted Bud Moth	Chlorantraniliprole (Altacor MaX) 34654	28	73 - 143 g	30 - 58 g	12 h	5	Apply at pink to petal fall when larvae are active. Do not apply more than 3 times per season. Spray interval - 10 to 14 days.
	cyantraniliprole (Exirel) 30895	28	500- 1000 mL	202- 404 mL	12 h	3	Apply when larvae are active. Do not apply more than 4 times per season. Do not tank mix with Flint, Sovran, Pristine, copper or captan. Toxic to bees. Spray interval: 10 to 14 days.
	spinetoram (Delegate) 28778	5	210-420 g	85-170 g	12 h	7	Apply when larvae are active. Use the higher rate under high pest pressure and/or larger larvae. Spray interval: 14 days.
	chlorantraniliprole (Altacor) 28981	28	145-285 g	59-115 g	12 h	5	Apply at pink to petal fall when larvae are active. Do not apply more than 3 times per season. Spray interval - 10 to 14 days.
Green Fruitworms	Chlorantraniliprole (Altacor MaX) 34654	28	73 - 108 g	30 - 44 g	12 h	5	Repeat if necessary at petal fall. Do not apply more than 3 times per season. Spray interval - 10 to 14 days.

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Obliquebanded and Threelined Leafrollers	Bacillus thuringiensis (Bioprotec PLUS) 32425	11	1.8-2.5 L	0.73-1.0 L	24 h*	0	Will also control other leaf-feeding larvae present. See Notes.
	chlorantraniliprole (Altacor) 28981	28	145-215 g	59-87 g	12 h	5	Repeat if necessary at petal fall. Do not apply more than 3 times per season. Spray interval - 10 to 14 days.
	cyclaniliprole (Harvanta 50SL) 32889	28	1.2 - 1.6 L	485 - 647 ml	12	7 days	Toxic to bees. Do not make more than 3 applications per crop year. Where possible, rotate the use of Harvanta or other Group 28 insecticides with different groups that control the same pests.
	Bacillus thuringiensis (Bioprotec PLUS) 32425	11	1.8-2.5 L	0.73-1.0 L	24 h*	0	Will also control other leaf-feeding larvae present. See Notes.
Codling Moth	Bacillus thuringiensis (Dipel 2X DF) 26508	11	1.125 - 1.675 kg	455 - 678 g	24 h*	0	Will also control other leaf-feeding larvae present.
	tebufenozide (Confirm) 24503	18	1.0 L	405 mL	dry - 12 h	14	Confirm should only be used if leafroller damage was low to moderate at harvest the previous season. Spray interval: 10 to 14 days.
	pheromone (Isomate CM Flex) 31589	NC	1000	400	n/a	0	Dispensers must be hung before expected first emergence of moths.
	pheromone (Isomate CM/LR TT) 28814	NC	750	300	n/a	0	Also controls leafrollers.
Apple Scab	pheromone (Isomate C+) 22899	NC	1000	400	n/a	0	Dispensers must be hung before expected first emergence of moths.
	Notes: Apply dispensers before moths begin to emerge in the spring following label instructions for dispenser rates and application to trees.						
	ipflufenquin (Migiwa 20 SC) 35443	52	165 - 220 ml	66.8 - 89 ml	12 h	7 days	Make first application at green tip stage. The retreatment interval is 7 to 10 days. Do not make more than two sequential applications.
	mancozeb (Dithane Rainshield) 20553	M3	2-6 kg	0.81 - 2.4 kg	12 h - 35 d	77	Do not apply more than 24 kg/ha/year (18 kg a.i./ha/year of Dithane Rainshield Fungicide (e.g., 4 applications per year at 6.0/kg/ha or 8 applications at 3.0 kg/ha OR 12 applications at 2.0 kg/ha).
	impyrfluxam (Excalia Fungicide)	7	146 - 219 ml/ha	59 - 88.6 ml/ac	12 h	Petal fall	Green tip to petal fall only.

¹Group number for resistance management. NC=not classified.

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³Pre-harvest interval (Pesticides Chapter). Note: always read and follow the directions on the pesticide label.

Stage of Development: Pink							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	hydrogen peroxide + peroxyacetic acid (Oximate 2.0) 32907	NC	1 L/100 L of water (1% solution)	1 L/1000 L of water (1% solution)	4 h	0	Partial suppression. Start foliar/branch/stem applications before the disease occurs or at the first sign of disease and/or when weather conditions are favourable for disease development. Apply diluted spray to the point of run-off to achieve full and even coverage.
	extract of Swinglea glutinosa (EcoSwing) 35206	BM 01	1.75 - 2.35 L	0.71 - 0.95 L	4 h	0	Repeat application if measurable rain occurs within 2 to 3 hours of spraying.
	garlic powder (Buran) 30601	NC	9 L/500 L of water	9 L/500 L of water		0	The maximum rate of product in a single application is 18 L/ha. This product does not have protectant activity. It should be used as a post-infection treatment, applied after rainfall or when conditions are conducive to disease development. Application interval: before 350 degree hours (base 0 degrees C) after the beginning of the infection.
	sulphur (Cosavet DF Edge 31869, Kumulus 18836, Microthiol 29487	M2	7.0 kg	2.8 kg	24 h	1	Do not apply sulphur in combination with, immediately before, or closely following oil sprays.
	pyraclostrobin + fluxapyroxad (Merivon) 33951	7 + 11	0.3 - 0.4 L	0.12 - 0.16 L	12 h - 12 days	5 days (hand harvest)	Limit sprays of Group 11 fungicides to 2 sprays/season. REI's: hand thinning - 12 days, hand harvesting - 5 days, mechanical harvesting and all other activities - 12 hours.
	mefentrifluconazole (Cevya) 33405	3	0.25 - 0.375 L	0.1 - 0.15 L	12 hours	0	Do not make more than 2 sequential applications before alternating to a non-group 3 fungicide registered for the same use. Begin applications prior to disease development. Apply an additional applic. at an interval of 7 - 10 days if disease persists or weather conditions are favourable for disease development.
	Isofetamid (Kenja) 31758	7	913 ml	369 ml	12 hours	20	Do not apply more than 2 consecutive Group 7 applications. Application interval: 10 to 14 days.
	benzovindiflupyr + difenoconazole (Aprovia Top) 31526	3 + 7	386 - 643 mL	156 - 260 mL	12 h	30	Tank mix with protectant fungicide for improved fruit scab control. Use high rate for mildew. Rotate with other fungicide groups for resistance management. Do not apply more than 2.57 L/ha/season.
	copper octanoate (Cueva Commercial) 31825	M1	Prepare 0.5-2% solution (5-20 L/1000 L water)		4 h	1	Apply 470-940 L of mixture/ha (190-380 L/acre). Do not exceed 1% rate for varieties susceptible to russetting. Repeat every 7-10 days as long as weather conditions favour disease development.
	benzovindiflupyr	7	300-500 mL	121-202 mL	12 h	30	For improved fruit scab control, tank mix with a protectant

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Stage of Development: Pink							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	(Aprovia) 31981						fungicide (see label). Rotate with other non-Group 7 products. Do not apply in two consecutive sprays nor more than 2 L/ha (1.0 L/acre) per season.
	fluxapyroxad (Sercadis) 31697	7	167-333 mL	68-135 mL	12 h	0	The use of a non-ionic surfactant (0.125%) is recommended. Begin treatment when conditions favour disease development. Apply a second spray 7-14 days up to blossom if conditions for disease development persist. Maximum amount per season: 1.33 L/ha (538 mL/acre). Maximum 4 applications per season.
	fluazinam (Allegro) 27517	29	0.50 - 1.0 L	202 - 404 mL	24 h-3 days	28	Use highest rates and lowest intervals for high disease pressure. Will also suppress European red mite, two-spotted spider mite, and apple rust mite. 3 days REI for thinning.
	difenoconazole + cyprodinil (Inspire Super) 30827	3 + 9	560 - 836 mL	227 - 338 mL	12 h	14	Limit sprays of group 3 fungicides (Nova, Inspire, Fullback) to 2/season. Tank mix with a protectant fungicide (e.g. Dithane, Manzate, Polyram, Captan, maestro) for resistance management.
	pyrimethanil (Scala) 28011	9	0.75-1.0 L	304-405 mL	12 h-24 h	14	Do not use after bloom for for apple scab. 24 hour REI for thinning.
	flutriafol (Fullback) 31679	3	950 mL	385 mL	12 h	14	Tank mix with full rate of a protectant (e.g. Dithane, Manzate, Polyram, Captan, Maestro). Limit sprays of group 3 fungicides (Nova, Inspire, Fullback) to 2 sprays/season for resistance management.
	myclobutanil (Nova 40WP) 22399	3	340 g	140 g	12 h-12 days	14	Tank mix with the full rate of Dithane, Manzate, Polyram, Captan or Maestro. Limit sprays of group 3 fungicides (Nova, Inspire) to 2/season for resistance management. 12 days REI for thinning.
	kresoxim-methyl (Sovran) 26257	11	360 g	150 g	48 h	30	CAUTION: Drift may injure cherries. Limit sprays of group 11 fungicides (Flint, Sovran, Pristine) to 2/season.
	trifloxystrobin (Flint) 30619	11	140 - 175 g	57 - 71 g	12 h – 4 days	14	Avoid more than 2 consecutive sprays. Limit sprays of Group 11 fungicides (Flint, Sovran, Pristine) to 2/season.
	boscalid + pyraclostrobin (Pristine WG) 27985	7 + 11	1.0 - 1.2 kg	405 g - 485 g	dry to 12 days	5	Avoid more than 2 consecutive applications. Limit sprays of Group 11 fungicides (Flint, Sovran, Pristine) to 2/season. 12 days REI for thinning.
	penthiopyrad (Fontelis) 30331	7	1.0-1.5 L	405-607 mL	12 h	28	Do not apply more than 3 times per season, or more than twice sequentially. Use high rate for high disease pressure.
	fluopyram pyrimethanil (Luna)	7 + 9	800 mL	323 mL	12 h	14	Do not apply more than 2 times per season.

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Stage of Development: Pink							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	Tranquility) 30510						
	mancozeb (Manzate 28217, Penncozeb 30241 and 25397)	M3	6.0 kg	2.4 kg	12 h - 35 d	77	Do not apply more than 4 applications per year. Apply at a minimum of the 7-day interval.
	copper oxychloride (Copper Spray 19146)	M1	300 - 500 g/ha	121 - 202 g/ha	48 h	2 days	Maximum number of applications: 6. Reapply if needed as indicated by monitoring.
	captan (Captan Supra 33641, Maestro 33488)	M4	3 kg	1.2 kg	2 - 24 days	7	Do not apply Captan in combination with, immediately before, or closely following oil sprays. Do not use it during bloom. Early-season sprays may cause necrotic spotting to foliage of sensitive varieties. Apply at a minimum of a 7-day interval.
	<p>Notes: Pink through petal fall is a high risk period for scab infection. Prevent infection by keeping trees covered with protectant fungicides during this period.</p> <p>Notes: Eradicant sprays are best used in a preventative program. However they can be used soon after an infection period and still provide control. See apple scab in Disease Section for more information.</p>						
Powdery Mildew (Apples)	ipflufenquin (Migiwa 20 SC) 35443	52	165 - 220 ml	66.8 - 89 ml	12 h	7 days	The 165 ml/ha rate provides suppression of powdery mildew. If disease pressure is moderate or high or if control is required, use the 220 ml/ha rate. The retreatment interval is 7 to 10 days. Do not make more than two sequential applications.
	impyrfluxam (Excalia Fungicide)	7	146 - 219 ml/ha	59 - 88.6 ml/ac	12 h	Petal fall	Green tip to petal fall only. Application must include a 100% organosilicone adjuvant, such as Xiameter, at 31.3 - 62.5 ml/100 L water.
	hydrogen peroxide + peroxyacetic acid (Oxidate 2.0) 32907	NC	1 L/100 L of water (1% solution)	1 L/100 L of water (1% solution)	4 h	0	Start foliar/branch/stem applications before the disease occurs or at the first sign of disease and/or when weather conditions are favourable for disease development. Apply diluted spray to the point of run-off to achieve full and even coverage.
	garlic powder (Buran) 30601	NC	9 L/500 to 800 L of water	9 L/500 to 800 L of water		0	Disease control can be achieved under low to moderate disease pressure. Begin applications when conditions are conducive to disease development. The addition of a registered non-ionic surfactant such as Agral 90 or AgSurf at a rate of 0.1% could help to improve the spreading.
	fenazaquin (Magister SC) 34544	21 + 39	1.75 - 2.63 L	0.7 - 1.1 L	12 h - 17 days	10 days	Toxic to bees. Avoid application during bloom. Maximum number of applications: 1
	sulphur (Cosavet DF)	M2	7.0 kg	2.8 kg	24 h	1	Do not apply sulphur in combination with, immediately

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Stage of Development: Pink							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	Edge 31869, Kumulus 18836, Microthiol 29487						before, or closely following oil sprays. See description of powdery mildew.
	flutianil (Gatten) 34297	U 13	440 - 590 ml	178 - 239 ml	24 hours	14 days	Use a higher rate and shorter spray interval under high disease pressure. Use water volumes of 280 - 935 litres per hectare for concentrate sprays and 936 - 1870 litres per hectare for dilute sprays. Max number of applications per year: 4. Apply to foliage during the fruiting stage.
	pyraclostrobin + fluxapyroxad (Merivon) 33951	7 + 11	0.3 - 0.4 L	0.12 - 0.16 L	12 h - 12 days	5 days (hand harvest)	Limit sprays of Group 11 fungicides to 2 sprays/season. REI's: hand thinning - 12 days, hand harvesting - 5 days, mechanical harvesting and all other activities - 12 hours.
	Mineral oil (Suffoil-X) 33099	NC	10 L/1000 L of water	10 L/1000 L of water	12 hours	0	Test for crop tolerance before widespread use. Apply at tight cluster and continue every 10-14 days. Avoid application during bloom. Do not use within 14 days before or after captan fungicide. Do not apply more than 8 applications per year.
	mefentrifluconazole (Cevya) 33405	3	0.25 - 0.375 L	0.1 - 0.15 L	12 hours	0	Do not make more than 2 sequential applications before alternating to a non-group 3 fungicide registered for the same use. Begin applications prior to disease development. Apply an additional applic. at an interval of 7 - 10 days if disease persists or weather conditions are favourable for disease development.
	Polyoxin D Zinc Salt (Diplomat 5SC) 32918	19	259 - 926 ml	104 - 374 ml		0 days	Suppression of powdery mildew. Begin as a preventative application when conditions favour disease development, 7 - 14 day spray interval. Number of applications: 3-10 depending on rate.
	benzovindiflupyr + difenoconazole (Aprovia Top) 31526	3 + 7	643 mL	260 mL	12 h	30	Rotate with other fungicides that do not contain Group 3 or Group 7 fungicides for resistance management. Do not apply more than 2 consecutive applications.
	benzovindiflupyr (Aprovia) 31981	7	500 mL	202 mL	12 h	30	Rotate with other non-Group 7 products. Do not apply in two consecutive sprays nor more than 2 L/ha (1.0 L/acre) per season.
	fluxapyroxad (Sercadis) 31697	7	167-333 mL	68-135 mL	12 h	0	The use of a non-ionic surfactant (0.125%) is recommended. Begin treatment when conditions favour disease development. Apply a second spray 7-14 days up to blossom if conditions for disease development persist. Maximum amount per season: 1.33 L/ha (538 mL/acre). Maximum 4 applications per season.

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Stage of Development: Pink							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	difenoconazole + cyprodinil (Inspire Super) 30827	3 + 9	836 mL	338 mL	12 h	14	Suppression of powdery mildew. Limit use of group 3 fungicides (Nova, Inspire, Fullback, Inspire Super) to 2 sprays/season.
	flutriafol (Fullback) 31679	3	585 - 877 mL	237 - 355 mL	12 h	14	Rotate with fungicides from other groups. Limit use of group 3 fungicides (Nova, Inspire, Fullback) to 2 sprays/season.
	Bacillus subtilis (Serenade Opti) 31666	44	1.7-3.3 kg	0.69-1.3 kg	24 h*	0	Suppression only. Apply preventatively at 7- to 10-day intervals.
	calcium polysulphide (Lime sulphur 30%) 16465	M2	9 L/1000 L	9 L/1000 L	48 h	n/a	Lime sulphur may injure "sulphur shy" varieties. May cause injury during hot temperatures. May harm predatory mites.
	myclobutanil (Nova 40WP) 22399	3	340 g	140 g	12 h - 12 days	14	Rotate with fungicides from other group. Limit use of group 3 fungicides (Nova, Inspire, Fullback) to 2 sprays/season.
	kresoxim-methyl (Sovran) 26257	11	240 - 450 g	100 - 182 g	48 h	30	CAUTION: Sovran drift may injure cherries. Use higher rate during pink stage. Limit sprays of group 11 fungicides (Flint, Sovran, Pristine) to 2/season.
	trifloxystrobin (Flint) 30619	11	140 - 210 g	57 - 85 g	12 h - 4 days	14	Use the higher rate from pink to Bloom stages. Limit sprays of group 11 fungicides (Flint, Sovran, pristine) to 2 sprays/season. 4 days REI for thinning.
	thiophanate-methyl (Senator 50SC) 32096	1	3.15 L	1.27 L	24 h*	1	May harm predatory mites. Maximum 2 applications per season.
	mineral oil (Purespray Green) 27666	NC	10L	4 L	12 h	0	For suppression of powdery mildew, apply in a minimum of 1000 L water/ha at tight cluster and repeat at 10-14 day intervals. Do not use in combination with or within 14 days of sprays containing sulphur or captan.
	boscalid + pyraclostrobin (Pristine WG) 27985	7 + 11	1.0 - 1.2 kg	405 g - 485 g	dry to 12 days	5	Avoid more than 2 consecutive applications. Limit sprays of Group 11 fungicides (Flint, Sovran, Pristine) to 2 per season. Caution: Sovran drift may injure cherries. 12 days REI for thinning.
	penthiopyrad (Fontelis) 30331	7	1.0-1.5 L	405-607 mL	12 h	28	Do not apply more than 3 times per season, or more than twice sequentially. Use high rate for high disease pressure.
	fluopyram pyrimethanil (Luna Tranquility) 30510	7 + 9	600 mL	242 mL	12 h	14	Use preventatively. Do not apply more than 2 times per season.
Notes: Rotate fungicides from different groups for resistance management.							

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Stage of Development: Blossom							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
Fruittree and European Leafrollers	Bacillus thuringiensis (Bioprotec PLUS) 32425	11	1.8-2.5 L	0.7-1.3 kg	24 h*	0	Will also control other leaf-feeding larvae present. See Notes. Spray interval: 7 days under optimal conditions.
	Bacillus thuringiensis (Bioprotec CAF) 26854	11	4.0 L	1.6 L	24 h*	0	See Notes. Will also control other leaf-feeding larvae present. Spray interval: 7 days under optimal conditions.
	Bacillus thuringiensis (Dipel 2X DF) 26508	11	1.125 - 1.675 kg	455 - 678 g	24 h*	0	Will also control other leaf-feeding larvae present.
	Bacillus thuringiensis (Foray) 24978	11	4.0 L	1.6 L	24 h*	0	Will also control bud moth.
	Notes: Apply Bacillus thuringiensis (Bt) products when bloom is 80% or more during late afternoon or on a cloudy day when no rain is forecast for 24 hours. If there is more than 2 mm rainfall within 24 h of application, re-apply product. Wait 7 days (in the absence of rain) before applying a second treatment of Bt or another product. Optimum solution pH for Bt products is 6.						
Green Fruitworms	Bacillus thuringiensis (Bioprotec PLUS) 32425	11	1.8-2.5 L	0.7-1.3 L	24 h*	0	Will also control other leaf-feeding larvae present. See Notes.
	Bacillus thuringiensis (Bioprotec CAF) 26854	11	4.0 L	1.6 L	24 h*	0	Will also control bud moth. Spray interval: 7 days under optimal conditions.
	Bacillus thuringiensis (Dipel 2X DF) 26508	11	1.125 - 1.675 kg	455 - 678 g	24 h*	0	Will also control bud moth.
	Bacillus thuringiensis (Foray) 24978	11	4.0 L	1.6 L	24 h*	0	Will also control bud moth.
Obliquebanded and Threelined Leafrollers	Bacillus thuringiensis (Bioprotec PLUS) 32425	11	1.8-2.5 L	0.73-1.0 L	24 h*	0	Will also control other leaf-feeding larvae present. See Notes.
	Bacillus thuringiensis (Bioprotec CAF)	11	4.0 L	1.6 L	24 h*	0	Will also control bud moth.

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Stage of Development: Blossom							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	26854						
	Bacillus thuringiensis (Dipel 2X DF) 26508	11	1.125 - 1.675 kg	455 - 678 g	24 h*	0	Will also control other leaf-feeding larvae present.
	Bacillus thuringiensis (Foray) 24978	11	4 L	1.6 L	24 h*	0	Will also control other leaf-feeding larvae present.
	Notes: Apply Bacillus thuringiensis (Bt) products when bloom is 80% or more during late afternoon or on a cloudy day when no rain is forecast for 24 hours. If there is more than 2 mm rainfall within 24 h of application, re-apply product. Wait 7 days (in the absence of rain) before applying a second treatment of Bt or another product. Optimum solution pH for Bt products is 6.						
Fire Blight	copper octanoate (Cueva Commercial) 31825	M1	Prepare 0.5-2% solution (5-20 L/1000 L water)		4 h	1	Apply 470-940 L of mixture/ha (190-380 L/acre). Repeat every 7-10 days as long as weather conditions favour disease development (maximum 6 sprays/season). See Fire blight description.
	Bacillus amyloliquefaciens (Double Nickel 55) 31888	44	1-1.5 kg	405-607 g		0	Suppression only. Apply at blossom to end of flowering at 3- to 7-day intervals. Can be mixed with copper sprays. Can be applied post-bloom for shoot blight management.
	prohexadione calcium (Apogee) 28042	n/a	1350 g	546 g	12 h	45	For suppression of shoot blight, apply at 2.5 to 7.5 cm of new shoot growth. Will also reduce shoot growth.
	Aureobasidium pullulans (Blossom Protect) 30552	NC	See Label	See Label	dry	n/a	Apply up to 4 times from 10-90% bloom if weather conditions favour blossom infection. Do not tank mix with other fungicides.
	streptomycin sulphate (Streptomycin 17) 10305	25	1.8 kg or 100 ppm (see notes)	729 g or 100 ppm (see notes)	24 h-14 days	50	Apply at blossom stage if weather conditions favour blossom infection. Maximum 3 applications (5.4 kg/ha/season). 100 ppm rate (600 g of Streptomycin per 1000 L of water) is based on high volume spray. Use sufficient water volume for thorough blossom wetting. 14 day REI for thinning.
	kasugamycin (Kasumin) 30591	24	5.0 L	2.0 L	12 h	90	Apply at 20-30% bloom or when conditions favour disease development. Do not apply after petal fall.
	Bacillus subtilis (Serenade Opti) 31666	44	1.1-1.7 kg	445-688 g	24 h*	0	Suppression only. Apply at 1-5% blossom and repeat as needed during the blossom period.
	Notes: Warm weather followed by rain favours blossom infection. See fire blight section of the Guide (page 7-13) for information on risk assessment based on temperature.						
Crown and Root Rot	fosetyl-al (Aliette) 27688	33	5.0 kg	2.0 kg	dry	30	See description of crown rot for more information.

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Stage of Development: Petal fall or Calyx							
Insect or Disease	Recommended Product Choices	Grp¹	Amount Per Ha	Amount Per Acre	REI²	PHI³ (days)	Precautions and Notes
European Red Mite	pyridaben (Nexter SC) 33433	21	500 ml	202 ml	24 h	25 days	Do not apply more than twice per year. Controls rust mite. Residual control: 7-10 days.
	fenazaquin (Magister SC) 34544	21 + 39	1.75 - 2.34 L	0.7 - 0.95 L	12 h - 17 days	10 days	Toxic to bees. Avoid application during bloom. Maximum number of applications: 1
	abamectin + cyantraniliprole (Minecto Pro) 33023	6 + 28	496 mL	201 mL	12 h	28	Apply before a threshold of five spider mites per leaf is reached. Add 0.25 - 1% spray oil/ spray mixture. Also controls leafroller and mites. Maximum 1 application per season.
	cyflumetofen (Nealta) 31284	25	1 L	405 mL	12 h	7	Do not apply more than 2 times per season. Spray interval: 14 days.
	acequinocyl (Kanemite) 28641	20B	2.1 L	850 mL	12 h	14	Do not apply more than twice/season. Controls all life stages. Does not control rust mite. Spray interval: 21 days.
	pyridaben (Nexter) 25135	21	300 g	120-240 g	24 h	25	Use higher rate. Do not apply more than twice per season. Controls rust mite. Residual control: 7-10 days.
	spirodiclofen (Envior) 28051	23	750 mL	300 mL	12 h	7	Only once per season. Controls rust mite. Spray interval: minimum 7 days.
	clofentezine (Apollo) 21035	10	300-600 mL	120-240 mL	4-12 h	21	Do not apply more than once per season or beyond 14 days after petal fall. Controls eggs and young mites. Does not control rust mite. Residual control: 45 days.
	bifenazate (Acramite) 27925	20D	851 g	344 g	12 h	7	Does not control rust mite. Residual control: 21 days.
Notes: It is important to rotate products with different group numbers to avoid development of pesticide resistance. Do not apply products from the same group more than once per season. The presence and number of predatory mites should first be determined using a mite counting service before spraying. Apply the products in sufficient water to ensure thorough and uniform coverage.							
McDaniel, Twospotted Spider Mites	pyridaben (Nexter SC) 33433	21	500 - 1000 ml	202 404 ml	24 h	25 days	Do not apply more than twice per year. Controls rust mite. Residual control: 7-10 days.
	fenazaquin (Magister SC) 34544	21 + 39	1.75 - 2.34 L	0.7 - 0.95 L	12 h - 17 days	10 days	Toxic to bees. Avoid application during bloom. Maximum number of applications: 1
	Mineral oil (Suffoil-X) 33099	NC	10 L/1000 L of water	10 L/1000 L of water	12 hours	0	Test for crop tolerance before widespread use. Apply every 10 - 14 days, depending on level of pest pressure. Do not use within 14 days before or after captan fungicide. Do not apply more than 8 applications per year.
	Mineral oil (Suffoil-X) 33099	NC	10 L/1000 L of water	10 L/1000 L of water	12 hours	0	Test for crop tolerance before widespread use. Apply every 10 - 14 days, depending on level of pest pressure. Do not use within 14 days before or after captan fungicide. Do not apply

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Stage of Development: Petal fall or Calyx							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
							more than 8 applications per year.
	abamectin + cyantraniliprole (Minecto Pro) 33023	6 + 28	496 mL	201 mL	12 h	28	Apply before a threshold of five spider mites per leaf is reached. Add 0.25 - 1% spray oil/ spray mixture. Also controls leafrollers. Maximum 1 application per season.
	cyflumetofen (Nealta) 31284	25	1 L	405 mL	12 h	7	Do not apply more than 2 times per season. Spray interval: 14 days.
	acequinocyl (Kanemite) 28641	20B	2.1 L	850 mL	12 h	14	Do not apply more than 2 times/season. Does not control rust mites. Spray interval: 21 days.
	pyridaben (Nexter) 25135	21	300 - 600 g	120 - 240 g	24 h	25	Use highest rate. Do not apply more than 2 times/season. Controls rust mite. Residual control: 7-10 days.
	spirodiclofen (Envidor) 28051	23	750 mL	300 mL	12 h	7	Apply only once/season. Controls rust mite. Spray interval: minimum 7 days.
	clofentezine (Apollo) 21035	10	300 - 600 mL	120 - 240 mL	4 - 12 h	21	Do not apply more than once/season or beyond more than 14 days after petal fall. Controls eggs and young mites. Does not control rust mite. Residual control: 45 days.
	bifenazate (Acrامة) 27925	20D	568 g	229 g	12 h	7	Does not control rust mite. Residual control: 21 days.
Rust Mites and Pearleaf Blister Mite	pyridaben (Nexter SC) 33433	21	500 ml	202 ml	24 h	25 days	Do not apply more than twice per year. Residual control: 7-10 days.
	fenazaquin (Magister SC) 34544	21 + 39	1.75 L	0.7 L	12 h - 17 days	10 days	Toxic to bees. Avoid application during bloom. Maximum number of applications: 1
	pyridaben (Nexter) 25135	21	300 g	120 g	24 h	25	Do not apply more than twice per season. Residual control: 7-10 days.
	spirodiclofen (Envidor) 28051	23	750 mL	300 mL	12 h	7	Apply only once per season. Spray interval: minimum 7 days.
Eyespotted Bud Moth	Chlorantraniliprole (Altacor MaX) 34654	28	73 - 143 g	30 - 58 g	12 h	5	Apply at pink to petal fall when larvae are active. Do not apply more than 3 times per season. Spray interval - 10 to 14 days.
	abamectin + cyantraniliprole (Minecto Pro) 33023	6 + 28	496 mL	201 mL	12 h	28	Add 0.25 - 1% spray oil/ spray mixture. Also controls leafroller and mites. Maximum 1 application per season.
	spinosad (Success) 26835	5	182 mL	74 mL	dry	7	Do not apply more than 3 times/season. Will reduce pansy spot. Spray interval: 7 to 10 days.
	cyantraniliprole (Exirel) 30895	28	500- 1000 mL	202- 404 mL	12 h	3	Apply when larvae are active. Do not apply more than 4 times per season. Do not tank mix with Sovran, Flint, Pristine, copper or captan fungicides. Toxic to bees. Spray interval: 10 to 14 days.

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³Pre-harvest interval (Pesticides Chapter). Note: always read and follow the directions on the pesticide label.

Stage of Development: Petal fall or Calyx							
Insect or Disease	Recommended Product Choices	Grp¹	Amount Per Ha	Amount Per Acre	REI²	PHI³ (days)	Precautions and Notes
Green Fruitworms	spinosad (Entrust) 30382	5	364 mL	147 mL	dry	7	Do not apply more than 3 times per season. Will reduce pansy spot. Will also control any leafroller present. Spray interval: 7 to 10 days.
	spinetoram (Delegate) 28778	5	210-420 g	85-170 g		7	Do not apply more than 3 times per season for all labeled uses. Spray interval: 14 days.
	chlorantraniliprole (Altacor) 28981	28	145-285 g	59-115 g	12 h	5	Apply when larvae are active. Do not apply more than 3 times per season.
	Chlorantraniliprole (Altacor MaX) 34654	28	73 - 108 g	30 - 44 g	12 h	5	Repeat if necessary at petal fall. Do not apply more than 3 times per season. Spray interval - 10 to 14 days.
	acetamiprid + novaluron (Cormoran) 33353	4 + 15	1050 ml	425 ml	12 hrs to 7 days	14 days	Do not apply more than 6.9 L/ha. Spray interval - 12 days. REIs: 7 days for thinning, 12 hours for all other activities.
	Bacillus thuringiensis (Bioprotec PLUS) 32425	11	1.8-2.5 L	0.73-1.0 L	24 h*	0	Will also control other leaf-feeding larvae present. See Notes. Spray interval: 7 days under optimal conditions.
	Bacillus thuringiensis (Bioprotec CAF) 26854	11	4.0 L	1.6 L	24 h*	0	Thorough coverage is very important. Will also control bud moth and leafroller larvae present. Spray interval: 7 days under optimal conditions.
	Bacillus thuringiensis (Dipel 2X DF) 26508	11	1.125 - 1.675 kg	455 - 678 g	24 h*	0	Thorough coverage is very important. Will also control bud moth and leafroller larvae present. Spray interval: 7 days under optimal conditions.
	Bacillus thuringiensis (Foray) 24978	11	4.0 L	1.6 L	24 h*	0	Thorough coverage is very important. Will also control bud moth and leafroller larvae present. Spray interval: 7 days under optimal conditions.
Obliquebanded and Threelined Leafrollers	chlorantraniliprole (Altacor) 28981	28	145-215 g	59-87 g	12 h	5	Do not apply more than 3 times/season. Spray interval - 10 to 14 days. Spray interval - 10 to 14 days.
	Chlorantraniliprole (Altacor MaX) 34654	28	73 - 143 g	30 - 58 g	12 h	5	Apply when larvae become active. Do not apply more than 3 times/ season. Spray interval: 10 to 14 days (see label).
	GS-omega/kappa-Htx-Hv1a (Spear Lep) 34678	32	1.2 - 2.3 L	486 - 931 mL	4 h	0	Tank mix with the low labelled rate of a Bacillus thuringiensis (Bt) product registered on the same crop for control of caterpillars such as Bioprotec, Dipel or Foray. Use a spreader/sticker or non-ionic surfactant (0.125%) to enhance the adhesion of Spear Lep.
	tetraniliprole (Vayego 200 SC) 33711	28	225 ml	91 ml	12 hours	7 days	Max 3 applications per year. Toxic to bees. Do not apply during pre-bloom or blooming period. Apply post-bloom only.

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Stage of Development: Petal fall or Calyx							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	abamectin + cyantraniliprole (Minecto Pro) 33023	6 + 28	496 mL	201 mL	12 h	28	Monitor larval population in the spring, and apply when overwintering larvae become active. Add 0.25 - 1% spray oil/ spray mixture. Also controls mites. Maximum 1 application per season.
	cyclaniliprole (Harvanta 50SL) 32889	28	1.2 - 1.6 L	485 - 647 ml	12	7 days	Toxic to bees. Do not make more than 3 applications per crop year. Where possible, rotate the use of Harvanta or other Group 28 insecticides with different groups that control the same pests.
	Bacillus thuringiensis (Bioprotec PLUS) 32425	11	1.8-2.5 L	0.73-1.0 L	24 h*	0	Will also control other leaf-feeding larvae present. See Notes. Spray interval: 7 days under optimal conditions.
	spinosad (Success) 26835	5	182 g	74 g	dry	7	Do not apply more than 3 times/season. Spray interval: 7 to 10 days.
	Bacillus thuringiensis (Bioprotec CAF) 26854	11	4.0 L	1.6 L	24 h*	0	Will also control bud moth. Spray interval: 7 days under optimal conditions.
	Bacillus thuringiensis (Dipel 2X DF) 26508	11	1.125 - 1.675 kg	455 - 678 g	24 h*	0	Will also control bud moth. Spray interval: 7 days under optimal conditions.
	cyantraniliprole (Exirel) 30895	28	500- 1000 mL	202- 404 mL	12 h	3	Apply when larvae are active. Do not apply more than 4 times/ season. Do not tank mix with Sovran, Flint, Pristine, copper or captan fungicides. Toxic to bees. Spray interval: 10 to 14 days.
	spinosad (Entrust) 30382	5	364 mL	147 mL	dry	7	Do not apply more than 3 times per season. Will reduce pansy spot. Spray interval: 7 to 10 days.
	spinetoram (Delegate) 28778	5	210-420 g	85-170 g	12 h	7	Apply when larvae are actively feeding but before they roll up in leaves. Do not apply more than 3 times per season. Use the higher rate under pest pressure and/or larger larvae. Spray interval: 14 days.
	methoxyfenozide (Intrepid) 27786	18	0.75 L	304 mL	12 h	14	Do not apply more than 2 times per season. Spray interval: 14 to 21 days.
	Bacillus thuringiensis (Foray) 24978	11	4.0 L	1.6 L	24 h*	0	Will also control bud moth. Spray interval: 7 days under optimal conditions.
	chlorantraniliprole (Altacor) 28981	28	145-285 g	59-115 g	12 h	5	Do not apply more than 3 times/season. For rates above 215 g/ha (87 g/ac), do not apply more than twice/season. Spray

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Stage of Development: Petal fall or Calyx							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
							interval - 10 to 14 days.
	tebufenozide (Confirm) 24503	18	1 L	405 mL	dry-12 h	14	Do not apply more than 4 times per season. Spray interval: 10 to 14 days.
	pheromone (Isomate CM/LR TT) 28814	NC	750	300	n/a	0	Install before first moth flight. Will also aid in control of second generation codling moth.
	Notes: Confirm, Intrepid, Delegate, Success, Entrust, Bt products, Exirel and Altacor are stomach poisons so complete coverage is important for satisfactory control. These products will also control any bud moth larvae present. Success, Entrust and Delegate will suppress thrips.						
Tentiform Leafminer	acetamiprid + novaluron (Cormoran) 33353	4 + 15	700 ml	283	12 hrs to 7 days	14 days	Do not apply more than 6.9 L/ha. Spray interval - 12 days. REIs: 7 days for thinning, 12 hours for all other activities.
	abamectin + cyantraniliprole (Minecto Pro) 33023	6 + 28	496 mL	201 mL	12 h	28	Apply against egg (to control new hatch) and early sap feeder stages of first and second generation tentiform leafminers when locally established thresholds have been reached. Add 0.25 - 1% spray oil/ spray mixture. Also controls leafroller and mites. Maximum 1 application per season.
	abamectin (Agri-Mek SC) 31607	6	170 mL	69 mL	dry	28	Apply with 0.25% superior oil. Do not apply more than once/season. Will also control rust mites and leafminer larvae. Residual control: 21 days.
	acetamiprid (Assail) 27128	4	80-120 g	32-48 g	12 h-6 days	7	Do not apply more than twice per season alone or alternately with Admire. Spray interval - 12 days. REIs of 2 days for scouting and 6 days is for thinning.
	spinetoram (Delegate) 28778	5	210-420 g	85-170 g	12 h	7	Apply at egg hatch or first sign of sap-feeder larvae. Do not apply more than 3 times per season. use higher rate under high pest pressure. Spray interval: 7 days.
	methoxyfenozide (Intrepid) 27786	18	500 mL	200 mL	12 h	14	Apply at first egg hatch of first generation. Spray interval: 14 to 21 days.
	Notes: Will also control aphids, leafhoppers and campyloomma. Do not apply more than 2 times/season alone or alternately with other Group 4 products. Spray interval: minimum 10 days. Admire and Alias will no longer be registered for use by growers as of April 11, 2021.						
Mullein Bug (Campyloomma)	Notes: Make the first application shortly after petal fall, before insect populations reach economic thresholds. Do not apply more than twice/season alone or alternately with other Group 4 products. TOXIC to bees. Spray interval: 10 to 14 days. Clutch will no longer be registered for use by growers as of April 11, 2021.						
	Notes: The leafminer parasite is an effective biological control agent. 30% parasitism of first generation tissue-feeder larvae in the spring will provide control of leafminers for the rest of the season. If chemical control is needed rotate products for resistance management. Avoid using Group 4 products more than twice/season for all registered uses to prevent mite problems.						
Mullein Bug (Campyloomma)	acetamiprid + novaluron	4 + 15	840 - 1260 ml	340 - 510 ml	12 hrs to 7	14 days	Do not apply more than 6.9 L/ha. Spray interval - 12 days. REIs: 7 days for thinning, 12 hours for all other activities.

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³Pre-harvest interval (Pesticides Chapter). Note: always read and follow the directions on the pesticide label.

Stage of Development: Petal fall or Calyx							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	(Cormoran) 33353				days		
	tetraniliprole (Vayego 200 SC) 33711	28	300 ml	121 ml	12 hours	7 days	Suppression only. Max 3 applications per year. Toxic to bees. Do not apply during pre-bloom or blooming period. Apply post-bloom only.
	sulfoxaflor (Closer) 30826	4C	400 mL	162 mL	12 h	7	Do not apply during bloom or when flowering weeds are present. Do not apply more than 2 times per season. Spray interval: minimum 7 days.
	acetamiprid (Assail) 27128	4	80-160 g	32-64 g	12 h-6 days	7	Will also control aphids. Do not apply more than once/season. See note below regarding repeated use. Do not apply during bloom. Spray interval - 12 days. REIs of 2 days for scouting and 6 days is for thinning.
	thiacloprid (Calypso) 28429	4	145-290 mL	59-117 mL	12 h	30	Do not apply more than once/season. See note below regarding repeated use. Spray interval: 14 to 21 days.
Notes: Will also control aphids and leafhoppers. Do not apply more than once/season. See note below regarding repeated use. Spray interval: minimum 10 days. Admire and Alias will no longer be registered for use by growers as of April 11, 2021.							
Notes: Avoid using Group 4 products more than once/season for Campylomma and more than twice/season for all other registered uses to prevent mite problems. Ensure thorough coverage. Fruit greater than 12 mm diameter are not affected by campylomma feeding. Apply as early in petal fall as possible without risk of harming pollinating insects foraging in the trees or flowering ground cover.							
Fruittree and European Leafrollers	abamectin + cyantraniliprole (Minecto Pro) 33023	6 + 28	496 mL	201 mL	12 h	28	Add 0.25 - 1% spray oil/ spray mixture. Also controls mites. Maximum 1 application per season.
	Bacillus thuringiensis (Bioprotec PLUS) 32425	11	1.8-2.5 L	0.73-1.0 L	24 h*	0	Will also control other leaf-feeding larvae present. See Notes.
	spinosad (Success) 26835	5	182 mL	74 mL	dry	7	Do not use more than 3 times/season. Will reduce pansy spot. Spray interval: 7 to 10 days.
	Bacillus thuringiensis (Bioprotec CAF) 26854	11	4.0 L	1.6 L	24 h*	0	Will also control other leaf-feeding larvae present. Spray interval: 7 days under optimal conditions.
	Bacillus thuringiensis (Dipel 2X DF) 26508	11	1.125 - 1.675 kg	455 - 678 g	24 h*	0	Will also control other leaf-feeding larvae present. Spray interval: 7 days under optimal conditions.
	cyantraniliprole (Exirel) 30895	28	500 - 1000 mL	202 - 404 mL	12 h	3	Apply when larvae are active. Do not apply more than 4 times/season. Do not tank mix with Sovran, Flint, Pristine, copper or captan fungicides. TOXIC to bees. Spray interval: 10 to 14 days.

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Stage of Development: Petal fall or Calyx							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	spinosad (Entrust) 30382	5	364 mL	147 mL	dry	7	Do not apply more than 3 times/season. Will reduce pansy spot. Spray interval: 7 to 10 days.
	spinetoram (Delegate) 28778	5	210-420 g	85-170 g		7	Do not apply more than 3 times per year for all labeled uses. Spray interval: 14 days.
	Bacillus thuringiensis (Foray) 24978	11	4.0 L	1.6 L	24 h*	0	Will also control other leaf-feeding larvae present. Spray interval: 7 days under optimal conditions.
Western Flower Thrips	cyclaniliprole (Harvanta 50SL) 32889	28	1.2 - 1.6 L	485 - 647 ml	12	7 days	Toxic to bees. For suppression only. Do not make more than 3 applications per crop year. Where possible, rotate the use of Harvanta or other Group 28 insecticides with different groups that control the same pests.
San Jose Scale	spirotetramat (Movento 240 SC) 28953	23	365-585 mL	148-237 mL	12 h	7	Toxic to bees. Apply Movento with an adjuvant such as Agral 90 after petal fall. Do not exceed 1120 mL/ha/season. Also controls apple leaf curling midge. Spray interval: minimum 14 days.
Apple Leaf Curling Midge	spirotetramat (Movento 240 SC) 28953	23	365-585 mL	148-237 mL	12 h	7	Toxic to bees. Apply Movento with an adjuvant such as Agral 90 after petal fall. Do not exceed 1120 mL/ha/season. Spray interval: minimum 14 days. Do not apply until after petal fall. Apple leaf curling midge is not a problem in healthy bearing trees but control is essential in nursery and young plantings.
	spinetoram (Delegate) 28778	5	420 g	170 g	12 h	7	Toxic to bees. Do not apply to flowering crops or weeds if bees are visiting the treatment area. Maximum 3 applications per year. Application interval: 17 days.
White Apple Leafhopper	acetamiprid (Assail) 27128	4	80-120 g	32-48 g	12 h-6 days	7	Will also suppress aphids and leafminers. Do not apply this products alone or alternately with other Group 4 products more than twice/season (see additional notes). Spray interval - 12 days. REI of 2 days for scouting and 6 days is for thinning.
	thiacloprid (Calypso) 28429	4	145 mL	59 mL	12 h	30	Spray interval: 14 to 21 days.
	Notes: Will also suppress aphids and leafminers. Do not apply these products alone or alternately with other Group 4 products more than twice/season (see additional notes). Spray interval: minimum 7 days. Admire will no longer be registered for use by growers as of April 11, 2021. Admire & Alias will no longer be registered for use by growers as of April 11, 2021.						
	Notes: TOXIC to bees. See notes above regarding number of applications of Group 4 products/season. Spray interval: 10 to 14 days. Clutch will no longer be registered for use by growers as of April 11, 2021.						
	Notes: To prevent mite problems, avoid using Group 4 products (Calypso, Assail, Admire, Alias, Clutch) more than twice/season for all registered uses.						
Apple Clearwing Moth	novaluron (Rimon) 28515	15	1.4 L/1000 L of water	1.4 L/1000 L of water	12	14	Target larvae in the spring, apply when there is a lot of frass development. Direct spray on tree trunk with a hand gun or

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Stage of Development: Petal fall or Calyx							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
							backpack sprayer. Do not apply more than 2 times/season. Not recommended for summer applications as it may disrupt biological control of mites. Spray interval: 14 days.
Apple Scab	ipflufenquin (Migiwa 20 SC) 35443	52	165 - 220 ml	66.8 - 89 ml	12 h	7 days	Make first application at green tip stage. The retreatment interval is 7 to 10 days. Do not make more than two sequential applications.
	mancozeb (Dithane Rainshield) 20553	M3	2-6 kg	0.81 - 2.4 kg	12 h - 35 d	77	Do not apply more than 24 kg/ha/year (18 kg a.i./ha/year of Dithane Rainshield Fungicide (e.g., 4 applications per year at 6.0/kg/ha or 8 applications at 3.0 kg/ha OR 12 applications at 2.0 kg/ha).
	impyrfluxam (Excalia Fungicide)	7	146 - 219 ml/ha	59 - 88.6 ml/ac	12 h	Petal fall	Green tip to petal fall only.
	hydrogen peroxide + peroxyacetic acid (Oxidate 2.0) 32907	NC	1 L/100 L of water (1% solution)	1 L/1000 L of water (1% solution)	4 h	0	Partial suppression. Start foliar/branch/stem applications before the disease occurs or at the first sign of disease and/or when weather conditions are favourable for disease development. Apply diluted spray to the point of run-off to achieve full and even coverage.
	extract of Swinglea glutinosa (EcoSwing) 35206	BM 01	1.75 - 2.35 L	0.71 - 0.95 L	4 h	0	Repeat application if measurable rain occurs within 2 to 3 hours of spraying.
	garlic powder (Buran) 30601	NC	9 L/500 L of water	9 L/500 L of water		0	The maximum rate of product in a single application is 18 L/ha. This product does not have protectant activity. It should be used as a post-infection treatment, applied after rainfall or when conditions are conducive to disease development. Application interval: before 350 degree hours (base 0 degrees C) after the beginning of the infection.
	sulphur (Cosavet DF Edge 31869, Kumulus 18836, Microthiol 29487	M2	7.0 kg	2.8 kg	24 h	1	Do not apply sulphur in combination with, immediately before, or closely following oil sprays.
	pyraclostrobin + fluxapyroxad (Merivon) 33951	7 + 11	0.3 - 0.4 L	0.12 - 0.16 L	12 h - 12 days	5 days (hand harvest)	Limit sprays of Group 11 fungicides to 2 sprays/season. REI's: hand thinning - 12 days, hand harvesting - 5 days, mechanical harvesting and all other activities - 12 hours.
	mefentrifluconazole (Cevya) 33405	3	0.25 - 0.375 L	0.1 - 0.15 L	12 hours	0	Do not make more than 2 sequential applications before alternating to a non-group 3 fungicide registered for the same use. Begin applications prior to disease development. Apply an additional applic. at an interval of 7 - 10 days if disease persists or weather conditions are favourable for

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Stage of Development: Petal fall or Calyx							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
							disease development.
	Isofetamid (Kenja) 31758	7	913 ml	369 ml	12 hours	20	Do not apply more than 2 consecutive Group 7 applications. Application interval: 10 to 14 days.
	benzovindiflupyr + difenoconazole (Aprovia Top) 31526	3 + 7	386 - 643 mL	156 - 260 mL	12 h	30	Tank mix with protectant fungicide for improved fruit scab control. Use high rate for mildew. Rotate with other fungicide groups for resistance management. Do not apply more than 2.57 L/ha/season.
	copper octanoate (Cueva Commercial) 31825	M1	Prepare 0.5-2% solution (5-20 L/1000 L water)		4 h	1	Apply 470-940 L of mixture/ha (190-380 L/acre). Do not exceed 1% rate for varieties susceptible to russetting. Repeat every 7-10 days as long as weather conditions favour disease development.
	benzovindiflupyr (Aprovia) 31981	7	300-500 mL	121-202 mL	12 h	30	For improved fruit scab control, tank mix with a protectant fungicide (see label). Rotate with other non-Group 7 products. Do not apply in two consecutive sprays nor more than 2 L/ha (1.0 L/acre) per season.
	fluazinam (Allegro) 27517	29	0.50 - 1.0 L	202 - 404 mL	25 h-3 days	28	Use highest rate and shortest interval for high disease pressure. Will also suppress mites. 3 days REI for thinning.
	difenoconazole + cyprodinil (Inspire Super) 30827	3 + 9	560 - 836 mL	227 - 338 mL	12 h	14	Limit sprays of group 3 fungicides (Nova, Inspire, Fullback) to 2 per season. Tank mix with a protectant fungicide (Dithane, Manzate, Polyram, Captan, Maestro)) for resistance management.
	flutriafol (Fullback) 31679	3	950 mL	385 mL	12 h	14	Tank mix with a full rate of a protectant such as Dithane, Manzate, Polyram, Captan or Maestro. Note that Dithane, Manzate and Polyram have a 45-day PHI. Limit sprays of group 3 fungicides (Nova, Inspire, Fullback) to 2/season for resistance management.
	myclobutanil (Nova 40WP) 22399	3	340 g	140 g	12 h - 12 days	14	Do not use as an eradicant treatment after bloom. Tank mix with the full rate of a protectant such as Dithane, Manzate, Polyram, Captan or Maestro. Note that Dithane, Manzate and Polyram have a 45-day PHI. Limit sprays of group 3 fungicides (Nova, Inspire, Fullback) to 2/season for resistance management. 12 days REI for thinning.
	kresoxim-methyl (Sovran) 26257	11	360 g	150 g	48 h	30	CAUTION: Sovran drift may injure cherries. Limit sprays of group 11 fungicides (Flint, Sovran, Pristine) to 2/season.
	trifloxystrobin (Flint) 30619	11	140 - 175 g	57 - 71 g	12 h - 4 days	14	Limit sprays of group 11 fungicides (Flint, Sovran, Pristine) to 2/season. 4 days REI for thinning.
	boscalid +	7 + 11	1.0 - 1.2 kg	405 g - 485 g	dry to	5	Avoid more than 2 consecutive applications. Limit sprays of

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Stage of Development: Petal fall or Calyx							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	pyraclostrobin (Pristine WG) 27985				12 days		group 11 fungicides (Flint, Sovran, Pristine) to 2 per season. 12 days REI for thinning.
	penthiopyrad (Fontelis) 30331	7	1.0-1.5 L	405-607 mL	12 h	28	Do not apply more than 3 times per season, or more than twice sequentially. Use high rate for high disease pressure.
	fluopyram pyrimethanil (Luna Tranquility) 30510	7 + 9	800 mL	323 mL	12 h	14	Do not apply more than 2 times per season.
	mancozeb (Manzate 28217, Penncozeb 30241 and 25397)	M3	6.0 kg	2.4 kg	12 h - 35 d	77	Do not apply more than 4 applications per year. Apply at a minimum of the 7-day interval.
	copper oxychloride (Copper Spray 19146)	M1	300 - 500 g/ha	121 - 202 g/ha	48 h	2 days	Maximum number of applications: 6. Reapply if needed as indicated by monitoring.
	captan (Captan Supra 33641, Maestro 33488)	M4	3 kg	1.2 kg	2 - 24 days	7	Do not apply Captan in combination with, immediately before, or closely following oil sprays. Do not use it during bloom. Early-season sprays may cause necrotic spotting to foliage of sensitive varieties. Apply at a minimum of a 7-day interval.
Notes: Pink through petal fall is a high risk period for apple scab infection. Prevent infection by keeping trees covered with protectant fungicides during this period.							
Notes: Eradicant sprays are best used in a protective program. However they can be used soon after an infection period and still provide control.							
Powdery Mildew (Apples)	ipflufenquin (Migiwa 20 SC) 35443	52	165 - 220 ml	66.8 - 89 ml	12 h	7 days	The 165 ml/ha rate provides suppression of powdery mildew. If disease pressure is moderate or high or if control is required, use the 220 ml/ha rate. The retreatment interval is 7 to 10 days. Do not make more than two sequential applications.
	impyrfluxam (Excalia Fungicide)	7	146 - 219 ml/ha	59 - 88.6 ml/ac	12 h	Petal fall	Green tip to petal fall only. Application must include a 100% organosilicone adjuvant, such as Xiameter, at 31.3 - 62.5 ml/100 L water.
	hydrogen peroxide + peroxyacetic acid (Oximate 2.0) 32907	NC	1 L/100 L of water	1 L/1000 L of water	4 h	0	Start foliar/branch/stem applications before the disease occurs or at the first sign of disease and/or when weather conditions are favourable for disease development. Apply diluted spray to the point of run-off to achieve full and even coverage.
	garlic powder (Buran) 30601	NC	9 L/500 to 800 L of water	9 L/500 to 800 L of water		0	Disease control can be achieved under low to moderate disease pressure. Begin applications when conditions are conducive to disease development. The addition of a registered non-ionic surfactant such as Agral 90 or AgSurf at

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Stage of Development: Petal fall or Calyx							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
							a rate of 0.1% could help to improve the spreading.
	fenazaquin (Magister SC) 34544	21 + 39	1.75 - 2.63 L	0.7 - 1.1 L	12 h - 17 days	10 days	Toxic to bees. Avoid application during bloom. Maximum number of applications: 1
	sulphur (Cosavet DF Edge 31869, Kumulus 18836, Microthiol 29487)	M2	7.0 kg	2.8 kg	24 h	1	
	pyraclostrobin + fluxapyroxad (Merivon) 33951	7 + 11	0.3 - 0.4 L	0.12 - 0.16 L	12 h - 12 days	5 days (hand harvest)	Limit sprays of Group 11 fungicides to 2 sprays/season. REI's: hand thinning - 12 days, hand harvesting - 5 days, mechanical harvesting and all other activities - 12 hours.
	Mineral oil (Suffoil-X) 33099	NC	10 L/1000 L of water	10 L/1000 L of water	12 hours	0	Test for crop tolerance before widespread use. Apply at tight cluster and continue every 10-14 days. Avoid application during bloom. Do not use within 14 days before or after captan fungicide. Do not apply more than 8 applications per year.
	mefentrifluconazole (Cevya) 33405	3	0.25 - 0.375 L	0.1 - 0.15 L	12 hours	0	Do not make more than 2 sequential applications before alternating to a non-group 3 fungicide registered for the same use. Begin applications prior to disease development. Apply an additional applic. at an interval of 7 - 10 days if disease persists or weather conditions are favourable for disease development.
	Polyoxin D Zinc Salt (Diplomat 5SC) 32918	19	259 - 926 ml	104 - 374 ml		0 days	Suppression of powdery mildew. Begin as a preventative application when conditions favour disease development, 7 - 14 day spray interval. Number of applications: 3-10 depending on rate.
	benzovindiflupyr + difenoconazole (Aprovia Top) 31526	3 + 7	643 mL	260 mL	12 h	30	Rotate with other fungicides that do not contain Group 3 or Group 7 fungicides for resistance management. Do not apply more than 2 consecutive applications.
	benzovindiflupyr (Aprovia) 31981	7	500 mL	202 mL	12 h	30	Rotate with other non-Group 7 products. Do not apply in two consecutive sprays nor more than 2 L/ha (1.0 L/acre) per season.
	difenoconazole + cyprodinil (Inspire Super) 30827	3 + 9	836 mL	338 mL	12 h	14	Suppression of powdery mildew. Limit use of Group 3 fungicides (Nova, Inspire, Fullback) to 2 sprays/season.
	flutriafol (Fullback) 31679	3	585 - 877 mL	237 - 355 mL	12 h	14	Limit use of Group 3 fungicides (Nova, Inspire, Fullback) to 2 sprays/season. Rotate with fungicides from other groups.
	Bacillus subtilis	44	1.7-3.3 kg	0.69-1.3 kg	24 h*	0	Suppression only. Apply preventatively at 7- to 10-day

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Stage of Development: Petal fall or Calyx							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	(Serenade Opti) 31666						intervals.
	calcium polysulphide (Lime sulphur 30%) 16465	M2	9 L/1000 L	9 L/1000 L	48 h	n/a	Lime sulphur may injure "sulphur shy" varieties or may cause injury during hot temperatures. May harm predatory mites.
	myclobutanil (Nova 40WP) 22399	3	340 g	140 g	12 h - 12 days	14	Limit use of Group 3 fungicides (Nova, Inspire, Fullback) to 2 sprays/season. Rotate with fungicides from other groups. 12 days REI for thinning.
	kresoxim-methyl (Sovran) 26257	11	240 - 450 g	100 - 182 g	48 h	30	CAUTION: Sovran drift may injure cherries. Limit sprays of Group 11 fungicides (Flint, Sovran, Pristine) to 2/season for resistance management. Rotate with fungicides from other groups.
	trifloxystrobin (Flint) 30619	11	140 - 210 g	57 - 85 g	12 h - 4 days	14	Limit sprays of Group 11 fungicides (Flint, Sovran, Pristine) to 2/season for resistance management. Rotate with fungicides from other groups. CAUTION: Sovran may injure cherries. 4 days REI for thinning.
	thiophanate-methyl (Senator 50SC) 32096	1	3.15 L	1.27 L	24 h*	1	May harm predatory mites. Maximum 2 applications per season.
	mineral oil (Purespray Green) 27666	NC	10 L	4 L	12 h	0	For suppression of powdery mildew, apply in a minimum of 1000 L water/ha at tight cluster and repeat at 10-14 day intervals. Do not use in combination with or within 14 days of sprays containing sulphur or captan.
	boscalid + pyraclostrobin (Pristine WG) 27985	7 + 11	1.0 - 1.2 kg	405 g - 485 g	dry to 12 days	5	Limit sprays of Group 11 fungicides (Flint, Sovran, Pristine) to 2/season for resistance management. Rotate with other fungicides. Use the higher rate during pink to bloom stages. Caution: Sovran drift may injure cherries. 12 days REI for thinning.
	penthiopyrad (Fontelis) 30331	7	1.0-1.5 L	405-607 mL	12 h	28	Do not apply more than 3 times per season, or more than twice sequentially. Use high rate for high disease pressure.
	fluopyram pyrimethanil (Luna Tranquility) 30510	7 + 9	600 mL	242 mL	12 h	14	Use preventatively. Do not apply more than 2 times per season.
	Notes: Additional notes: Rotate fungicides from different groups for resistance management.						
Fire Blight	copper octanoate (Cueva Commercial) 31825	M1	Prepare 0.5-2% solution (5-20 L/1000 L water)		4 h	1	Apply 470-940 L of mixture/ha. Repeat every 7-10 days as long as weather conditions favour disease development (maximum 6 applications per season). See Fire blight description.

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Stage of Development: Petal fall or Calyx

Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	prohexadione calcium (Apogee) 28042	n/a	1350 g	546 g	12 h	45	For suppression of shoot blight, apply at 2.5 to 7.5 cm of new shoot growth with subsequent applications at 14-21 day intervals. Max. 4 sprays/yr. Will also reduce shoot growth.

Stage of Development: Summer

Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
European Red Mite	pyridaben (Nexter SC) 33433	21	500 ml	202 ml	24 h	25 days	Do not apply more than twice per year. Controls rust mite. Residual control: 7-10 days.
	fenazaquin (Magister SC) 34544	21 + 39	1.75 - 2.34 L	0.7 - 0.95 L	12 h - 17 days	10 days	Toxic to bees. Avoid application during bloom. Maximum number of applications: 1
	abamectin + cyantraniliprole (Minecto Pro) 33023	6 + 28	496 mL	201 mL	12 h	28	Apply before a threshold of five spider mites per leaf is reached. Add 0.25 - 1% spray oil/ spray mixture. Also controls leafroller and mites. Maximum 1 application per season.
	cyflumetofen (Nealta) 31284	25	1 L	405 mL	12 h	7	For control of all life stages. Do not apply more than 2 times/season. Not for rust mite control. Spray interval: 14 days.
	abamectin (Agri-Mek SC) 31607	6	170 mL	69 mL	dry	28	Apply with 0.25% superior oil. Do not apply more than once/season. Will also control rust mites and leafminer larvae. Residual control: 21 days.
	acequinocyl (Kanemite) 28641	20B	2.1 L	850 mL	12 h	14	Do not apply more than twice per season. For control of all life stages. Spray interval: 21 days.
	pyridaben (Nexter) 25135	21	300 g	120-240 g	24 h	25	Maximum 2 applications per season. Residual control: 7-10 days.
	spirodiclofen (Envidor) 28051	23	750 mL	300 mL	12 h	7	Use Envidor only once per season. Spray interval: minimum 7 days.
	mineral oil (Purespray Green) 27666	NC	10 L	4 L	12 h	0	For suppression only. Begin applications when mites first appear, allow 10-14 days between applications. Do not use within 14 days of captan or sulphur. Post harvest sprays may be made to reduce over-wintering pressure.
	bifenazate (Acramite) 27925	20D	851 g	344 g	12 h	7	Not for rust mite control. Residual control: 21 days.
Notes: Rotate products with different group numbers to avoid development of pesticide resistance. Do not apply products from the same group more than once per season. The presence and number of predatory mites should first be determined using a mite counting service before spraying. Apply the products in sufficient water to ensure thorough and uniform coverage.							

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Stage of Development: Summer							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
McDaniel, Twospotted Spider Mites	pyridaben (Nexter SC) 33433	21	500 - 1000 ml	202 404 ml	24 h	25 days	Do not apply more than twice per year. Controls rust mite. Residual control: 7-10 days.
	fenazaquin (Magister SC) 34544	21 + 39	1.75 - 2.34 L	0.7 - 0.95 L	12 h - 17 days	10 days	Toxic to bees. Avoid application during bloom. Maximum number of applications: 1
	Mineral oil (Suffoil-X) 33099	NC	10 L/1000 L of water	10 L/1000 L of water	12 hours	0	Test for crop tolerance before widespread use. Apply every 10 - 14 days, depending on level of pest pressure. Do not use within 14 days before or after captan fungicide. Do not apply more than 8 applications per year.
	abamectin + cyantraniliprole (Minecto Pro) 33023	6 + 28	496 mL	201 mL	12 h	28	Apply before a threshold of five spider mites per leaf is reached. Add 0.25 - 1% spray oil/ spray mixture. Also controls leafrollers. Maximum 1 application per season.
	cyflumetofen (Nealta) 31284	25	1 L	405 mL	12 h	7	For control of all life stages. Do not apply more than 2 times/season. Not for rust mite control. Spray interval: 14 days.
	abamectin (Agri-Mek SC) 31607	6	170 mL	69 mL	dry	28	Apply with 0.25% superior oil. Do not apply more than once/season. Will also control rust mites and leafminer larvae. Residual control: 21 days.
	acequinocyl (Kanemite) 28641	20B	2.1 L	850 mL	12 h	14	Do not apply more than 2 times/season. Spray interval: 21 days.
	pyridaben (Nexter) 25135	21	300 - 600 g	120 - 240 g	24 h	25	Maximum two applications per season. Residual control: 7-10 days.
	spirodiclofen (Envidor) 28051	23	750 mL	300 mL	12 h	7	Use only once/season. Spray interval: minimum 7 days.
	bifenazate (Acramite) 27925	20D	851 g	344 g	12 h	7	Does not control rust mites. Residual control: 21 days.
	Notes: Rotate products with different Group numbers to avoid development of pesticide resistance. Do not apply products from the same group more than once/season. The prevalence of predatory mites should first be determined using mite counting services before spraying. Apply the products in sufficient water volume to ensure thorough and uniform coverage.						
Rust Mites and Pearleaf Blister Mite	pyridaben (Nexter SC) 33433	21	500 ml	202 ml	24 h	25 days	Do not apply more than twice per year. Residual control: 7-10 days.
	fenazaquin (Magister SC) 34544	21 + 39	1.75 L	0.7 L	12 h - 17 days	10 days	Toxic to bees. Avoid application during bloom. Maximum number of applications: 1
	abamectin (Agri-Mek SC) 31607	6	170 mL	69 mL	dry	28	Apply with 0.25% superior oil. Do not apply more than once/season. Will also control leaf mites and leafminer larvae. Residual control: 21 days.
	pyridaben (Nexter)	21	300 g	120 - 240 g	24 h	25	Maximum 2 applications per season. Residual control: 7-10

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Stage of Development: Summer							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	25135						days.
	spirodiclofen (Envidor) 28051	23	750 mL	300 mL	12 h	7	Apply only once per season. Spray interval: minimum 7 days.
Apple Clearwing Moth	Chlorantraniliprole (Altacor MaX) 34654	28	143 g	58 g	12 h	5	Apply specified amount as a spray to wet application to the bottom 60 cm of tree trunk, at the first sign of apple clearwing moth feeding. Apply at first egg hatch based on pheromone trap catches and degree days after biofix. Apply to eggs or first instar larvae to control each generation. Do not exceed 322 g/ha (130 g/ac) per season. Do not apply more than 3 times per season for all labeled uses. Spray interval: 10 - 14 days.
	spinosad (Success) 26835	5	125 mL	50 mL	dry	7	Thoroughly spray lower trunk using a hand-gun sprayer. Apply within 10 days of first moth emergence, and repeat at 7 - 10 day intervals up to a maximum of 7 applications/season.
	spinosad (Entrust) 30382	5	364 mL	147 mL	dry	7	Thoroughly spray lower trunk using a hand gun sprayer. Apply within 10 days of first adult emergence, and repeat at 7-10 day intervals up to a maximum of 7 applications.
	spinetoram (Delegate) 28778	5	420 g	170 g	12 h	7	For suppression only. Apply 1-2 applications 14 days apart targeting young larvae. Direct spray on trunk particularly on graft unions and pruning cuts using a handgun or backpack sprayer. Use spray volume of 1500-2000 L/ha to ensure thorough coverage. Do not apply more than 3 times per season for all labeled uses. Spray interval: 14 days.
	chlorantraniliprole (Altacor) 28981	28	285 g	115 g	12 h	5	Apply specified amount as a spray to wet application to the bottom 60 cm of tree trunk, at the first sign of apple clearwing moth feeding. Apply at first egg hatch based on pheromone trap catches and degree days after biofix. Apply to eggs or first instar larvae to control each generation. Do not exceed 645 g/ha (261 g/ac) per season. Do not apply more than 3 times per season for all labeled uses. Spray interval: 10 - 14 days.
	Notes: Use pheromone traps to determine the timing of adult emergence. Adult activity may occur from early June to mid August, but monitoring is required to ensure proper timing.						
Codling Moth	Chlorantraniliprole (Altacor MaX) 34654	28	73 - 108 g	30 - 44 g	12 h	5	Apply at first egg hatch based on pheromone trap catches and degree days after biofix. Controls eggs and larvae. Also controls leafroller. Do not exceed 322 g/ha (130 g/ac) per season. Will provide control of apple clearwing moth.

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Stage of Development: Summer							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	GS-omega/kappa-Htx-Hv1a (Spear Lep) 34678	32	1.2 - 2.3 L	486 - 931 mL	4 h	0	Tank mix with the low labelled rate of a <i>Bacillus thuringiensis</i> (Bt) product registered on the same crop for control of caterpillars such as Bioprotec, Dipel or Foray. Use a spreader/sticker or non-ionic surfactant (0.125%) to enhance the adhesion of Spear Lep.
	Cydia pomonella granulovirus (CpGV) isolate V-22 (Madex HP) 34116	NC	50 - 100 ml	20 - 40 ml	4 hours	0	The pH of tank solution should range between 5 and 8.5. Use the high rate under high pest pressure or when reapplication interval is longer than 6 days. Max 5 applications per year.
	acetamiprid + novaluron (Cormoran) 33353	4 + 15	1050 - 1260 ml	425 - 510 ml	12 hrs to 7 days	14 days	Do not apply more than 6.9 L/ha. Spray interval - 12 days. REIs: 7 days for thinning, 12 hours for all other activities.
	tetraniliprole (Vayego 200 SC) 33711	28	225 ml	91 ml	12 hours	7 days	Max 3 applications per year. Toxic to bees. Do not apply during pre-bloom or blooming period. Apply post-bloom only. Apply before egg hatch for first and second generation codling moth based on pheromone trap captures and degree days after biofix. Also controls leafroller.
	abamectin + cyantraniliprole (Minecto Pro) 33023	6 + 28	496 mL	201 mL	12 h	28	Apply before egg hatch for first generation and at first egg hatch for second generation codling moth based on pheromone trap catches and degree days after biofix. Add 0.25 - 1% spray oil/ spray mixture. Also controls leafroller and mites. Maximum 1 application per season.
	cyclaniliprole (Harvanta 50SL) 32889	28	1.2 - 1.6 L	485 - 647 ml	12	7 days	Toxic to bees. Do not make more than 3 applications per crop year. Where possible, rotate the use of Harvanta or other Group 28 insecticides with different groups that control the same pests.
	cyantraniliprole (Exirel) 30895	28	500- 750 mL	202- 304 mL	12 h	3	Apply before egg hatch for first generation and at first egg hatch for second generation codling moth based on pheromone trap catches and degree days after biofix. Also controls leafroller. Do not tank mix with Sovran, Flint, Pristine, copper or captan fungicides. Toxic to bees. Spray interval: 10 to 14 days.
	phosmet (Imidan 70% WP) 29064	1B	2.68 kg	1.08 kg	12 h - 9 days	22	Controls larvae. Highly toxic to bees. Minimum interval between sprays: 14 days. Max applications per season: 2. All hand thinning must occur prior to application.
	granulovirus (Virosoft) 26533	NC	250 mL	100 mL	24 h*	0	Slow acting, with no leafroller control. Virus must be ingested to be effective. Apply product in late afternoon or on a cloudy day to avoid direct exposure to sunlight. Spray interval: 14

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Stage of Development: Summer							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
							days.
	acetamiprid (Assail) 27128	4	240 g	97 g	12 h-6 days	7	Do not apply more than twice per season. Will also control aphids, leafminer & leafhoppers. Toxic to bees. Spray interval - 12 days. REI of 6 days is for thinning.
	thiacloprid (Calypso) 28429	4	290-440 mL	117-178 mL	12 h	30	Controls larvae, will also control aphids. Does not control leafrollers. Low toxicity to bees, but high toxicity to lacewings. Use low rate for first brood if low to moderate pressure. Do not exceed a total of 870 mL/ha (352 mL/ac) per season. Spray interval: 14 to 21 days.
	novaluron (Rimon) 28515	15	0.93 - 1.4 L / 1000 L water	0.376 - 0.566 L / 1000 L water	12 h	14	Controls eggs and larvae. Will also control leafroller eggs. Do not apply more than 4 times or 11 L/ha/season. May disrupt biological control of mites. Spray interval: 10 to 14 days.
	spinosad (Entrust) 30382	5	364 mL	147 mL	4 h	7	Suppression only. Approved for organic fruit production. Spray interval: 7 to 10 days.
	spinetoram (Delegate) 28778	5	420 g	170 g	12 h	7	Apply at first egg hatch based on pheromone trap catches and degree days after biofix. Control larvae before they enter fruit. Do not apply more than 3 times per season. Use higher rate under high pest pressure. Also controls leafroller. Spray interval: 14 days.
	methoxyfenozide (Intrepid) 27786	18	1 L	405 mL	12 h	14	Controls eggs and larvae. Do not apply more than 2 times per season. Spray interval: 14 to 21 days.
	chlorantraniliprole (Altacor) 28981	28	145-215 g	58-86 g	12 h	5	Apply at first egg hatch based on pheromone trap catches and degree days after biofix. Controls eggs and larvae. Also controls leafroller. Do not exceed 645 g/ha (261 g/ac) per season. Will provide control of apple clearwing moth.
	tebufenozide (Confirm) 24503	18	1 L	405 mL	dry-12 h	14	Do not use if there is resistance to Group 1 insecticides or if pest pressure is moderate to high. Do not apply more than 4 times/season. Spray interval: 10 to 14 days.
	mineral oil (Purespray Green) 27666	NC	10 L	4 L	12 h	0	Apply at or just before egg laying. Apply in a minimum of 1000L water/ha. Do not use in combination with or within 14 days of sulphur or captan. Also provides control of aphids and suppression of mites and powdery mildew.
Notes: For suppression only. Do not apply more than a total of 420 g/ha/ (170 g/ac)/season. Spray interval: 14 days. Clutch will no longer be registered for use by growers as of April 11, 2021.							
Notes: Thorough and timely spray coverage is essential for good control. All products except in Groups 1B and 4-4A will also control any leafroller and bud moth larvae present. Avoid using Group 4 products more than twice/season for all registered uses to prevent mite problems. Group 4 products will also control aphids and leafhoppers present. To minimize the development of resistance, if a product was used in the spring, do not use again in the summer.							

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Stage of Development: Summer							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
Eyespotted Bud Moth	Chlorantraniliprole (Altacor MaX) 34654	28	73 - 143 g	30 - 58 g	12 h	5	Apply at pink to petal fall when larvae are active. Do not apply more than 3 times per season. Spray interval - 10 to 14 days.
	abamectin + cyantraniliprole (Minecto Pro) 33023	6 + 28	496 mL	201 mL	12 h	28	Add 0.25 - 1% spray oil/ spray mixture. Also controls leafroller and mites. Maximum 1 application per season.
	spinosad (Success) 26835	5	182 mL	74 mL	dry	7	Do not apply more than 3 times/season. Spray interval: 7 to 10 days.
	cyantraniliprole (Exirel) 30895	28	500- 1000 mL	202- 404 mL	12 h	3	Do not apply more than 4 times per season. Do not tank mix with Sovran, Flint, Pristine, copper or captan fungicides. Toxic to bees. Spray interval: 10 to 14 days.
	spinosad (Entrust) 30382	5	364 mL	147 mL	dry	7	Do not apply more than 3 times per season. Spray interval: 7 to 10 days.
	spinetoram (Delegate) 28778	5	210-420 g	85-170 g	12 h	7	Apply at first egg hatch. Use the higher rate under high pest pressure and/or larger larvae. Spray interval: 14 days.
	chlorantraniliprole (Altacor) 28981	28	145-285 g	59-115 g	12 h	5	Apply when larvae are active. Do not apply more than 3 times per season.
	Notes: Blocks with high populations the previous summer should be sprayed at pink followed by a petal fall spray. Blossom sprays applied against leafroller will also control bud moth larvae present. An effective spring control program will reduce the need to control the summer generation.						
Obliquebanded and Threelined Leafrollers	Chlorantraniliprole (Altacor MaX) 34654	28	73 - 143 g	30 - 58 g	12 h	5	Apply when larvae become active. Do not apply more than 3 times/ season. Spray interval: 10 to 14 days (see label).
	GS-omega/kappa-Htx-Hv1a (Spear Lep) 34678	32	1.2 - 2.3 L	486 - 931 mL	4 h	0	Tank mix with the low labelled rate of a Bacillus thuringiensis (Bt) product registered on the same crop for control of caterpillars such as Bioprotec, Dipel or Foray. Use a spreader/sticker or non-ionic surfactant (0.125%) to enhance the adhesion of Spear Lep.
	tetraniliprole (Vayego 200 SC) 33711	28	225 ml	91 ml	12 hours	7 days	Max 3 applications per year. Toxic to bees. Do not apply during pre-bloom or blooming period. Apply post-bloom only.
	abamectin + cyantraniliprole (Minecto Pro) 33023	6 + 28	496 mL	201 mL	12 h	28	Add 0.25 - 1% spray oil/ spray mixture. Also controls mites. Maximum 1 application per season.
	cyclaniliprole (Harvanta 50SL) 32889	28	1.2 - 1.6 L	485 - 647 ml	12	7 days	Toxic to bees. Do not make more than 3 applications per crop year. Where possible, rotate the use of Harvanta or other Group 28 insecticides with different groups that control the same pests.
	spinosad (Success) 26835	5	182 mL	74 mL	dry	7	Do not apply Group 5 products (Success, Entrust, Delegate) more than 3 times/season. Will also control eyespotted bud

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Stage of Development: Summer							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
							moth larvae present. Spray interval: 7 to 10 days.
	cyantraniliprole (Exirel) 30895	28	500- 1000 mL	202- 404 mL	12 h	3	Monitor adult moth flight and apply at first egg hatch. Do not tank mix with Sovran, Flint, Pristine, copper or captan fungicides. Toxic to bees. Spray interval: 10 to 14 days.
	spinosad (Entrust) 30382	5	364 mL	147 mL	dry	7	Do not apply more than 3 times per season. Will also control eyespotted bud moth. Will reduce pansy spot. Spray interval: 7 to 10 days.
	spinetoram (Delegate) 28778	5	210-420 g	85-170 g	12 h	7	Do not apply more than 3 times per season. Use the higher rate under high pest pressure and/or larger larvae. Will also control eyespotted bud moth present. Spray interval: 14 days.
	methoxyfenozide (Intrepid) 27786	18	0.75 L	304 mL	12 h	14	Do not apply more than 2 time/season. Will also control eyespotted bud moth. Spray interval: 14 to 21 days.
	chlorantraniliprole (Altacor) 28981	28	145-285 g	59-115 g	12 h	5	Monitor adult moth flight and apply at first egg hatch. Do not apply more than 3 times/season, for rates above 215 g/ha (87 g/ac), do not apply more than twice/season.
	tebufenozide (Confirm) 24503	18	1 L	405 mL	dry- 12 h		Do not apply more than 4 times/season. Will also control eyespotted bud moth.
	pheromone (Isomate CM/LR TT) 28814	NC	750	300	n/a	0	Install before first moth flight. Will also aid in control of summer generation of codling moth.
	Notes: Altacor, Confirm, Intrepid, Delegate, Exirel, Success, Bt products and TwinGuard are stomach poisons so complete coverage is important for satisfactory control.						
Tentiform Leafminer	acetamiprid + novaluron (Cormoran) 33353	4 + 15	700 ml	283	12 hrs to 7 days	14 days	Do not apply more than 6.9 L/ha. Spray interval - 12 days. REIs: 7 days for thinning, 12 hours for all other activities.
	abamectin + cyantraniliprole (Minecto Pro) 33023	6 + 28	496 mL	201 mL	12 h	28	Apply against egg (to control new hatch) and early sap feeder stages of first and second generation tentiform leafminers when locally established thresholds have been reached. Add 0.25 - 1% spray oil/ spray mixture. Also controls leafroller and mites. Maximum 1 application per season.
	abamectin (Agri-Mek SC) 31607	6	170 mL	69 mL	dry	28	Apply with 0.25% superior oil. Do not apply more than once/season. Will also control leaf and rust mites. Residual control: 21 days.
	acetamiprid (Assail) 27128	4	80-120 g	32-48 g	12 h-6 days	7	Will also control aphids and leafhoppers. Do not apply more than twice per season alone or alternately. Spray interval - 12 days. REIs of 2 days for scouting and 6 days is for

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Stage of Development: Summer							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
							thinning.
	spinetoram (Delegate) 28778	5	210-420 g	85-170 g	12 h	7	Apply at egg hatch or first sign of sap-feeder larvae. Do not apply more than 3 times per season. Use higher rate under high pest pressure. Spray interval: 14 days.
	Notes: Will also control aphids and leafhoppers. Do not apply more than twice per season alone or alternately. Spray interval: minimum 10 days. Admire and Alias will no longer be registered for use by growers as of April 11, 2021.						
	Notes: The leafminer parasite is an effective biological control agent. 30% parasitism of first generation tissue-feeder larvae in the spring will provide control of leafminers for the rest of the season. If chemical control is needed rotate products for resistance management.						
Apple Grain Aphid	acetamiprid + novaluron (Cormoran) 33353	4 + 15	700 - 1050 ml	283 - 425 ml	12 hrs to 7 days	14 days	Do not apply more than 6.9 L/ha. Spray interval - 12 days. REIs: 7 days for thinning, 12 hours for all other activities.
	tetraniliprole (Vayego 200 SC) 33711	28	150 ml	61 ml	12 hours	7 days	Suppression only. Max 3 applications per year. Toxic to bees. Do not apply during pre-bloom or blooming period. Apply post-bloom only.
	Mineral oil (Suffoil-X) 33099	NC	10 L/1000 L of water	10 L/1000 L of water	12 hours	0	Test for crop tolerance before widespread use. Apply every 10 - 14 days, depending on level of pest pressure. Do not use within 14 days before or after captan fungicide. Do not apply more than 8 applications per year.
	flupyradifurone (Sivanto Prime) 31452	4D	500-750 mL	202-304 mL	12 h	14	Minimum interval between applications: 10 days. Maximum amount per season: 2000 mL/ha (810 mL/acre). Chemical control is rarely needed.
Apple Aphid	acetamiprid + novaluron (Cormoran) 33353	4 + 15	700 - 1050 ml	283 - 425 ml	12 hrs to 7 days	14 days	Do not apply more than 6.9 L/ha. Spray interval - 12 days. REIs: 7 days for thinning, 12 hours for all other activities.
	tetraniliprole (Vayego 200 SC) 33711	28	150 ml	61 ml	12 hours	7 days	Suppression only. Max 3 applications per year. Toxic to bees. Do not apply during pre-bloom or blooming period. Apply post-bloom only.
	Mineral oil (Suffoil-X) 33099	NC	10 L/1000 L of water	10 L/1000 L of water	12 hours	0	Test for crop tolerance before widespread use. Apply every 10 - 14 days, depending on level of pest pressure. Do not use within 14 days before or after captan fungicide. Do not apply more than 8 applications per year.
	afidopyropen (Versys) 33266	9D	0.1 L	0.04 L	12 hrs	7 days	Allow 7 days between applications. Do not apply more than 4 times per season. For resistance management, rotate with another insecticide group after 2 applications.
	flupyradifurone (Sivanto Prime) 31452	4D	500-750 mL	202-304 mL	12 h	14	Minimum interval between applications: 10 days. Maximum amount per season: 2000 mL/ha (810 mL/acre)
	malathion	1B	610 - 880 mL/1000		12 h -	3	Harmful to beneficial insects that attack aphids. Apply the

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Stage of Development: Summer							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	(Malathion 85E) 8372		L water		3 days		spray mixture in sufficient volume to ensure thorough coverage. Only two applications per year. Spray interval: 10 days.
	flonicamid (Beleaf) 29796	29	160 g	65 g	12 h-2 days	21	Field reports indicate the rates may not provide satisfactory level of control. 2 days REI for thinning.
	sulfoxaflor (Closer) 30826	4C	100 - 200 mL	40 - 80 mL	12 h	7	Do not apply more than 2 times/season. Spray interval: minimum 7 days.
	spirotetramat (Movento 240 SC) 28953	23	365-435 mL	148-176 mL	12 h	7	Apply Movento with an adjuvant such as Agral 90. Do not exceed 1830 mL Movento/ha (741 mL/acre) per season. Also controls woolly apple aphid and apple leaf curling midge. Toxic to bees. Spray interval: minimum 14 days.
	acetamiprid (Assail) 27128	4	80-120 g	32-48 g	12 h-6 days	7	Do not apply Group 4 insecticides more than 2 times/season to avoid possible mite problems. Spray interval - 12 days. REIs of 2 days for scouting and 6 days is for thinning.
	Notes: Will also control leafhopper and leafminer. Do not apply Group 4 products more than 2 times/season to avoid possible mite problems. Spray interval: minimum 7 days. Admire and Alias will no longer be registered for use by growers as of April 11, 2021. Notes: Do not apply group 4 insecticides more than 2 time/season to avoid possible mite problems. Spray interval: 10 to 14 days. Clutch will no longer be registered for use by growers as of April 11, 2021.						
Rosy Apple Aphid	acetamiprid + novaluron (Cormoran) 33353	4 + 15	700 - 1050 ml	283 - 425 ml	12 hrs to 7 days	14 days	Do not apply more than 6.9 L/ha. Spray interval - 12 days. REIs: 7 days for thinning, 12 hours for all other activities.
	tetraniliprole (Vayego 200 SC) 33711	28	150 ml	61 ml	12 hours	7 days	Suppression only. Max 3 applications per year. Toxic to bees. Do not apply during pre-bloom or blooming period. Apply post-bloom only.
	Mineral oil (Suffoil-X) 33099	NC	10 L/1000 L of water	10 L/1000 L of water	12 hours	0	Test for crop tolerance before widespread use. Apply every 10 - 14 days, depending on level of pest pressure. Do not use within 14 days before or after captan fungicide. Do not apply more than 8 applications per year.
	afidopyropen (Versys) 33266	9D	0.1 L	0.04 L	12 hrs	7 days	Allow 7 days between applications. Do not apply more than 4 times per season. For resistance management, rotate with another insecticide group after 2 applications.
	flupyradifurone (Sivanto Prime) 31452	4D	500-750 mL	202-304 mL	12 h	14	Minimum interval between applications: 10 days. Maximum amount per season: 2000 mL/ha (810 mL/acre).
	cyantraniliprole (Exirel) 30895	28	750- 1500 mL	304- 607 mL	12 h	3	Do not apply more than 4 times/season. Do not tank mix with Sovran, Flint, Pristine, copper or captan fungicides. Toxic to bees. Spray interval: 10 to 14 days.
	malathion	1B	610 - 880 mL/1000		12 hr -	3	This product is harmful to beneficial insects that attack

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Stage of Development: Summer							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	(Malathion 85E) 8372		L		3 days		aphids. Apply the spray mixture in sufficient volume to ensure thorough coverage. Only two applications per year. Spray interval: 10 days.
	flonicamid (Beleaf) 29796	29	160 g	65 g	12 h-2 days	21	Experience in the field indicates there may be issues with current label rate. 2 days REI for thinning.
	sulfoxaflor (Closer) 30826	4C	100-200 mL	40-80 mL	12 h	7	Do not apply more than 2 times/season. Spray interval: minimum 7 days.
	spirotetramat (Movento 240 SC) 28953	23	365- 435 mL	148- 176 mL	12 h	7	Apply Movento with an adjuvant such as Agral 90. Do not exceed 1830 mL Movento/ha (741 mL/acre) per season. Also controls woolly apple aphid. Toxic to bees. Spray interval: minimum 14 days.
	acetamiprid (Assail) 27128	4	80-120 g	32-48 g	12 h-6 days	7	Do not apply this products alone or alternately with other Group 4 products more than twice/season (see additional notes). Will also control white apple leafhopper. Spray interval - 12 days. REIs of 2 days for scouting and 6 days is for thinning.
	mineral oil (Purespray Green) 27666	NC	10 L/1000 L water	10 L/1000 L water	12 h	n/a	Do not use within 14 days before or after captan or sulphur.
Notes: Will also control leafminer and leafhopper. Because use of these products has resulted in mite problems, do not apply more than twice per season alone or alternately or against any other pests the remainder of the season. Spray interval: minimum 7 days. Admire and Alias will no longer be registered for use by growers as of April 11, 2021.							
Notes: Do not apply more than twice/season. Spray interval: 10 to 14 days. Clutch will no longer be registered for use by growers as of April 11, 2021.							
Woolly Apple Aphid	acetamiprid + novaluron (Cormoran) 33353	4 + 15	700 - 1050 ml	283 - 425 ml	12 hrs to 7 days	14 days	Do not apply more than 6.9 L/ha. Spray interval - 12 days. REIs: 7 days for thinning, 12 hours for all other activities.
	tetraniliprole (Vayego 200 SC) 33711	28	150 ml	61 ml	12 hours	7 days	Suppression only. Max 3 applications per year. Toxic to bees. Do not apply during pre-bloom or blooming period. Apply post-bloom only.
	Mineral oil (Suffoil-X) 33099	NC	10 L/1000 L of water	10 L/1000 L of water	12 hours	0	Test for crop tolerance before widespread use. Apply every 10 - 14 days, depending on level of pest pressure. Do not use within 14 days before or after captan fungicide. Do not apply more than 8 applications per year.
	malathion (Malathion 85E) 8372	1B	610 mL /1000 L		24 h*	3	This product is harmful to beneficial insects that attack aphids. Apply the spray mixture in sufficient volume to ensure thorough coverage. Only two applications per year. Spray interval: 10 days.
	flonicamid (Beleaf)	29	160 g	65 g	12 h-2	21	Experience in the field indicates there may be issues with

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Stage of Development: Summer							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	29796				days		current label rate. 2 days REI for thinning.
	sulfoxaflor (Closer) 30826	4C	400 mL	162 mL	12 h	7	For suppression only. Do not apply more than twice/season. Spray interval: minimum 7 days.
	Notes: Do not apply more than twice/season. Spray interval: 10 to 14 days. Clutch will no longer be registered for use by growers as of April 11, 2021.						
Stink Bugs	fenprothrin (Danitol) 33817	3	779 - 1559 ml	315 - 631 ml	24 h - 23 days	16 days	Toxic to bees. Do not apply during bloom. REI/PHI's: 23 days (thinning), 16 days (hand harvesting), 7 days (scouting, hand pruning), 14 days (mechanical harvesting), 24 hours (all other activities). Pests controlled: exclude Brown marmorated stink bug
	Notes: There are no registered products. Contact field advisor. Products registered for brown marmorated stink bugs (Actara and Clutch) will provide some control. Check product labels.						
White Apple Leafhopper	flupyradifurone (Sivanto Prime) 31452	4D	500-750 mL	202-304 mL	12 h	14	Minimum interval between applications: 10 days. Maximum amount per season: 2000 mL/ha (810 mL/acre).
	acetamiprid (Assail) 27128	4	80-120 g	32-48 g	12 h-6 days	7	Will also suppress aphids and leafminers. Do not apply this products alone or alternately with other Group 4 products more than twice/season (see additional notes). Spray interval - 12 days. REIs of 2 days for scouting and 6 days is for thinning.
	thiacloprid (Calypso) 28429	4	145 mL	59 mL	12 h	30	Do not apply more than twice/season. Spray interval: 14 to 21 days.
	Notes: Will also control aphid and leafminer. Do not apply more than twice per season. See note below. Spray interval: minimum 7 days. Admire and Alias will no longer be registered for use by growers as of April 11, 2021.						
	Notes: Do not apply more than twice/season. Spray interval: 10 to 14 days. Clutch will no longer be registered for use by growers as of April 11, 2021.						
San Jose Scale	Notes: Avoid using Group 4 products more than twice/season for all registered uses to prevent mite problems.						
	flupyradifurone (Sivanto Prime) 31452	4D	750-1000 mL + 0.25% oil	304-405 mL + 0.25% oil	12 h	14	Minimum interval between applications: 10 days. Maximum amount per season: 2000 mL/ha (810 mL/acre).
	sulfoxaflor (Closer) 30826	4C	200-400 mL	80-160 mL	12 h	7	Do not apply more than twice/season. Spray interval: minimum 7 days.
	spirotetramat (Movento 240 SC) 28953	23	365-585 mL	148-237 mL	12 h	7	Apply Movento with an adjuvant such as Agral 90. Do not exceed 1830 mL Movento/ha (741 mL/acre) per season. Also controls woolly apple aphid. Toxic to bees. Spray interval: minimum 14 days.
	Notes: Use sufficient water volume to ensure thorough and uniform coverage of the tree limbs and trunks. Leave lower nozzles on when spraying high density trees in order to control scales on the trunks.						
Mealybugs	spirotetramat (Movento 240 SC)	23	365-585 mL	148-237 mL	12 h		Apply Movento with an adjuvant such as Agral 90 after. Minimum interval between applications: 14 days. Maximum

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Stage of Development: Summer							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	28953						1.83 L/ha (741 mL/acre) per season.
Apple Leaf Curling Midge	spirotetramat (Movento 240 SC) 28953	23	365-585 mL	148-237 mL	12 h	7	Suppression only. Maximum of 2 applications per season. Minimum interval between sprays: 14 days.
	spinetoram (Delegate) 28778	5	420 g	170 g	12 h	7	Toxic to bees. Do not apply to flowering crops or weeds if bees are visiting the treatment area. Maximum 3 applications per year. Application interval: 17 days.
	Notes: Apple leaf curling midge is not a problem in healthy bearing trees, but it is essential to protect nursery and new plantings. Movento and Cygon/Lagon applied against other pests of non-bearing trees will provide control.						
Fire Blight	copper octanoate (Cueva Commercial) 31825	M1	Prepare 0.5-2% solution (5-20 L/1000 L water)		4 h	1	Apply 470-940 L of mixture/ha. Repeat every 7-10 days as long as weather conditions favour disease development (maximum 6 applications per season). See Fire blight description.
	Notes: There are no products that can be applied to cure fire blight following infection. Preventative copper sprays may help to protect against new infections. Scout susceptible orchards for symptoms and prune out infected shoots, being careful to disinfect tools between cuts.						
Post-Harvest Rots Initiated in the Orchard	pyrimethanil (Scala) 28011	9	1.5-2.0L	607-810 mL	12 h-24 h	14	Apply 2 weeks before harvest to help control storage rots caused by Botrytis and Penicillium. 24 hour REI for thinning.
Crown and Root Rot	fosetyl-al (Aliette) 27688	33	5.0 kg	2.0 kg	dry	30	See description of crown rot for more information.
Powdery Mildew (Apples)	Notes: See petal fall for available fungicides. Use caution with sulphur or oil sprays during hot weather. Jonagold is sensitive to sulphur.						
Apple Scab	Notes: If no scab is present on apple leaves or fruit by the end of June, scab sprays are not needed for the remainder of the season. If scab symptoms are present, continue protectant fungicide coverage until harvest, with particular consideration to rainy weather. See Petal fall section for available fungicides. Check pre-harvest intervals before any late-season sprays.						

Stage of Development: Post-Harvest							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
Apple Clearwing Moth	novaluron (Rimon) 28515	15	1.4 L/1000 L	1.4 L/1000 L	12 h	14	Apply in September. Direct spray on tree trunk with a hand gun or backpack sprayer. Inspect trunk and limbs for signs of apple clearwing moth damage and spray if present. Do not apply more than 2 times/season.
Apple Leaf Curling Midge	spinetoram (Delegate) 28778	5	420 g	170 g	12 h	7	Toxic to bees. Do not apply to flowering crops or weeds if bees are visiting the treatment area. Maximum 3 applications per year. Application interval: 17 days.
Fire Blight	Copper hydroxide	M1	4.7 L	1.9 L	48 hrs	2 days	Apply after harvest with 50% leaf drop. Max. two applications

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³Pre-harvest interval (Pesticides Chapter). Note: always read and follow the directions on the pesticide label.

Stage of Development: Post-Harvest							
Insect or Disease	Recommended Product Choices	Grp ¹	Amount Per Ha	Amount Per Acre	REI ²	PHI ³ (days)	Precautions and Notes
	(Parasol) 25901						per year.

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³Pre-harvest interval (Pesticides Chapter). Note: always read and follow the directions on the pesticide label.

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