

Floriculture and Nursery FACTSHEET



March 2020

Pesticides Registered for use on Ornamental Crops

This publication provides information on the uses of commercial pesticides registered for greenhouse and outdoor-grown ornamentals, including Christmas tree, floriculture, nursery and forest seedling nurseries. Please refer to the Ministry’s Berry, Tree Fruit and Vegetable Production Guides for pesticide recommendations for bearing fruit crops and other edible crops.

The document is divided into five sections, including:

- 1) pesticides registered to manage bacterial diseases;
- 2) pesticides registered to manage fungal diseases;
- 3) pesticides registered to manage insects and mites;
- 4) plant growth regulators; and
- 5) pesticides registered to control weeds.

The disease and insect sections are further subdivided by pest, while the herbicide section is subdivided by the product’s mode of action (i.e., selective, non-selective). The pesticides are listed in alphabetical order by active ingredient. Refer to the “uses” column for specific information on the crops labelled for treatment.

It is not the purpose of this guide to list all formulations. And, some products listed may not be available from local suppliers. Efforts were made to ensure the pesticide tables are correct, however always refer to the label since it is the primary source for information on safety, rates and application methods.

1) Pesticides Registered to Manage Bacterial Diseases

Pest	Active Ingredient (Group ^a)	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Bacterial Blight / Canker	<i>Bacillus subtilis</i>	Rhapsody ASO	S ₄	-	▪ suppress <i>Xanthomonas</i> on <i>Aglaonema</i> and geranium, and <i>Pseudomonas</i> on <i>Delphinium</i> grown in greenhouses and outdoor nurseries
	<i>Bacillus subtilis</i>	Cease Biological	-	-	▪ <i>Xanthomonas</i> leaf spot of <i>Aglaonema</i> and geranium, and <i>Pseudomonas</i> leaf spot of <i>Delphinium</i> grown in a greenhouse and outdoor
	copper, elemental (M01)	Phyton 35	S ₁	24	▪ greenhouse-grown geranium (suppression)
	copper, elemental (M01)	Phyton 27	M ₁ V ₂	24	▪ greenhouse-grown geranium (suppression)
	copper octanoate (M1)	Cueva	-	4	▪ greenhouse and outdoor ornamental shrubs, flowering plants
	copper oxychloride (M)	Copper Spray	M ₁	48	▪ <i>Corylus</i> , <i>Forsythia</i> , <i>Juglans</i> , <i>Prunus</i> , <i>Rosa</i> , <i>Syringa</i>
	hydrogen peroxide	ZeroTol	M ₁ V ₄	dried	▪ suppression of <i>Pseudomonas</i> leaf spot on ornamentals and <i>Xanthomonas</i> leaf spot on bedding plants in a greenhouse, outdoor nursery, landscape
	kasugamycin (24)	Kasumin	-	12	▪ <i>Xanthomonas</i> on <i>Juglans</i> , and <i>Pseudomonas syringae</i> on <i>Prunus</i> (cherry)
<i>Reynoutria sachalinensis</i> extract (P5)	Regalia Maxx	M ₄	dried	▪ <i>Xanthomonas</i> and <i>Pseudomonas</i> in container and field-grown ornamentals in greenhouses and outdoors (suppression)	

Pesticides Registered to Manage Bacterial Diseases (Cont'd)

Pest	Active Ingredient (Group ^a)	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Crown Gall	<i>Agrobacterium radiobacter</i>	Dygal	S ₄	-	▪ preventive treatment for seeds, cuttings and seedlings of susceptible woody plants
	<i>Aureobasidium pullulans</i>	Blossom Protect	S ₄	-	▪ woody Rosaceae ornamentals and pome fruit (bearing and non-bearing)
Fire Blight	copper octanoate (M1)	Cueva	-	4	▪ greenhouse and outdoor ornamental shrubs, flowering plants
	copper oxychloride (M)	Copper Spray	M ₁	48	▪ <i>Cotoneaster</i> , crabapple, <i>Crataegus</i> , <i>Cydonia</i> , <i>Sorbus</i>
	hydrogen peroxide	OxiDate 2.0	M ₁ V ₄	4 or dried	▪ greenhouse and outdoor-grown <i>Malus</i> , <i>Pyrus</i> (partial suppression)
	kasugamycin (24)	Kasumin	-	12	▪ <i>Amelanchier</i> , pome fruit
	<i>Pantoea agglomerans</i>	BlightBan C9-1	S ₄ M ₅	4	▪ <i>Amelanchier</i> , non-bearing pome fruit (suppression)
	<i>Pantoea agglomerans</i>	Bloomtime Biol.	S ₄	4	▪ <i>Amelanchier</i> , non-bearing pome fruit (suppression)
	streptomycin sulphate (25)	Streptomycin 17	-	24	▪ apple, pear
Soft Rot	copper, elemental (M01)	Phyton 35	S ₁	24	▪ <i>Erwinia</i> on greenhouse-grown <i>Cyclamen</i> (suppression); and dip for <i>Poinsettia</i> cuttings
		Phyton 27	M ₁ V ₂	24	

^a Resistance management group

^b Toxicity of the pesticide: S = caution, slightly harmful; M = warning, moderately harmful; V = danger, very harmful. The subscript denotes the specific hazard, which includes: 1 = poisonous, 2 = corrosive, 3 = flammable, 4 = eye irritant/skin sensitizer, and 5 = contain allergens.

^c Pesticide labels prohibit re-entry into treated crops until after the minimum restricted entry interval (REI). The REI may vary for some crop activities (e.g. pruning, thinning). An REI of “dried” permits entry once the treated surfaces have dried.

2) Pesticides Registered to Manage Fungal Diseases

Pest	Active Ingredient (Group ^a)	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Botrytis Blight and Storage Moulds	azoxystrobin (11)	Heritage MAXX	M _{1, 4}	12	▪ greenhouse and outdoor ornamentals
	<i>Bacillus subtilis</i>	Rhapsody ASO	S ₄	-	▪ greenhouse and outdoor ornamentals (suppression)
	<i>Bacillus subtilis</i>	Cease Biological	-	-	▪ greenhouse and outdoor-grown geranium, <i>Poinsettia</i> , <i>Petunia</i>
	benzovindiflupyr (7)	A15457TO	M ₁ V ₄	12	▪ greenhouse and outdoor ornamentals (suppression)
	benzovindiflupyr (7) + azoxystrobin (11)	Mural	S ₁ M ₄	12	▪ greenhouse and outdoor ornamentals
	BLAD polypeptide	Fracture & PROBLAD Plus	S ₄	-	▪ greenhouse and outdoor ornamentals
	captan (M)	Captan & Maestro	V ₄	12	▪ <i>Aster</i> , <i>Chrysanthemum</i> , <i>Dahlia</i> , <i>Rosa</i> , <i>Syringa</i> , <i>Tulipa</i>
	chlorothalonil (M5)	Daconil 2787	M ₄	see label	▪ outdoor-grown (includes cut flowers) <i>Chrysanthemum</i> , <i>Dianthus</i> , geranium, <i>Gladiolus</i> , <i>Iris</i> , <i>Lilium</i> , <i>Petunia</i> , <i>Statice</i>
		Equus	M ₁	see label	
	chlorothalonil (M5)	Daconil 2787	M ₄	see label	▪ greenhouse and outdoor-grown <i>Rosa</i> not grown for cut flowers
		Equus	M ₁	see label	
	chlorothalonil (M5)	Daconil 2787	M ₄	see label	▪ conifers
		Equus	M ₁	see label	
	chlorothalonil (M5)	Echo 720	M _{1, 4}	see label	▪ greenhouse-grown conifers (nursery beds)
chlorothalonil (M5)	Echo 90DF	M ₁ V ₄	see label	▪ outdoor-grown conifers	
copper, elemental (M01)	Phyton 35	S ₁	24	▪ greenhouse-grown <i>Cyclamen</i> , <i>Fuchsia</i> , geranium, <i>Gerbera</i> , <i>Hibiscus</i> , <i>Kalanchoe</i> , New Guinea impatiens, <i>Poinsettia</i> , <i>Primula</i> , <i>Rosa</i> , <i>Spathiphyllum</i> (suppression); and cut flower dip for greenhouse-grown <i>Alstromeria</i> , <i>Freesia</i> , <i>Rosa</i> , sweet pea	
	Phyton 27	M ₁ V ₂	24		

Pesticides Registered to Manage Fungal Diseases (Cont'd)

Pest	Active Ingredient (Group ^a)	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Botrytis Blight and Storage Moulds	copper, elemental (M01)	Phyton 35	S ₁	24	▪ greenhouse-grown <i>Cyclamen</i> , <i>Fuchsia</i> , geranium, <i>Gerbera</i> , <i>Hibiscus</i> , <i>Kalanchoe</i> , New Guinea impatiens, <i>Poinsettia</i> , <i>Primula</i> , <i>Rosa</i> , <i>Spathiphyllum</i> (suppression); and cut flower dip for greenhouse-grown <i>Alstromeria</i> , <i>Freesia</i> , <i>Rosa</i> , sweet pea
		Phyton 27	M ₁ V ₂	24	
	cyprodinil (9) + fludioxonil (12)	Palladium	S ₄	12	▪ greenhouse and outdoor ornamentals (excluding cut flowers)
	fenhexamid (17)	Decree	S ₁	4	▪ outdoor and greenhouse ornamentals
	fludioxonil (12)	Medallion	-	12	▪ outdoor and greenhouse ornamentals
	<i>Gliocladium catenulatum</i>	LalStop G46	S ₄	4	▪ greenhouse-grown <i>Alyssum</i> , <i>Antirrhinum</i> , geranium, <i>Petunia</i> , <i>Poinsettia</i> , <i>Saintpaulia</i> , <i>Salvia</i> , <i>Tagetes</i> , <i>Viola</i>
		PreStop	S ₄ M ₅	4	
	iprodione (2)	Rovral	S ₁	12	▪ greenhouse and outdoor ornamentals (excluding cut flowers), and outdoor-grown container and bareroot conifer seedlings (<i>Abies</i> , cedar, <i>Picea</i> , <i>Tsuga</i>)
				24	▪ greenhouse conifer seedlings (<i>Abies</i> , cedar, <i>Picea</i> , <i>Tsuga</i>)
	polyoxin D zinc salt (19)	Affirm WDG	-	dried	▪ outdoor-grown ornamentals (suppression)
	polyoxin D zinc salt (19)	Diplomat 5SC	-	dried	▪ greenhouse ornamentals (suppression)
	pydiflumetofen (7)	Posterity	M ₅	12	▪ greenhouse and outdoor ornamentals (excluding conifers)
	thiophanate-methyl (1)	Senator	-	-	▪ greenhouse potted ornamentals
thiophanate-methyl (1)	Thiophanate-Methyl 500 SC	M _{1,5}	-	▪ greenhouse potted ornamentals	
<i>Trichoderma harzianum</i>	Rootshield HC	M ₅	4 or dried	▪ greenhouse and outdoor ornamentals (suppression)	
<i>Trichoderma harzianum</i>	Bora HC	M ₅	4 or dried	▪ outdoor ornamentals (suppression)	
trifloxystrobin (11)	Compass	S ₄	12	▪ greenhouse and outdoor ornamental bedding plants, including geranium and hosta (suppression)	
Damping-off, Stem and Bulb Rot	<i>Bacillus amyloliquefaciens</i> (44)	Biotak	-	-	▪ apply to media prior to planting to manage damping-off caused by <i>Fusarium</i> , <i>Pythium</i> , <i>Rhizoctonia</i>
	<i>Bacillus subtilis</i>	Rhapsody ASO	S ₄	-	▪ drench for <i>Rhizoctonia solani</i> , <i>Pythium ultimum</i> and <i>Phytophthora</i> on greenhouse and outdoor ornamentals
	<i>Bacillus subtilis</i> (44)	Taegro 2	S ₄	0	▪ drench for greenhouse and outdoor ornamentals (suppression)
	captan (M)	Captan & Maestro	V ₄	-	▪ storage dip for <i>Begonia</i> , <i>Dahlia</i> , <i>Gladiolus</i> , <i>Iris</i> , <i>Narcissus</i> , <i>Tulipa</i> ; do not use on greenhouse-grown cut flowers
	captan (M)	Captan & Maestro	V ₄	12	▪ soil treatment for roses, shrubs, trees, flowers
	copper, elemental (M01)	Phyton 35	S ₁	24	▪ suppression of <i>Cylindrocladium</i> on greenhouse azalea, <i>Rosa</i> (miniature), <i>Spathiphyllum</i>
		Phyton 27	M ₁ V ₂	24	
	etridiazole (14)	Truban	V ₁	12	▪ use at seeding and transplanting as a soil mix or drench on greenhouse ornamentals (see the label for registered bedding, foliage, herbaceous and woody plants)
	folpet (M)	Folpan	M _{1,4}	24	▪ azalea
	garlic powder	Influence WP	S ₄	dried	▪ drench to manage damping-off caused by <i>Pythium</i> , <i>Rhizoctonia</i>
<i>Gliocladium catenulatum</i>	LalStop G46	S ₄	4	▪ incorporate in the medium or drench to suppress <i>Pythium</i> and <i>Rhizoctonia</i> on greenhouse-grown <i>Alyssum</i> , <i>Antirrhinum</i> , geranium, <i>Petunia</i> , <i>Poinsettia</i> , <i>Saintpaulia</i> , <i>Salvia</i> , <i>Tagetes</i> , <i>Viola</i>	
	PresStop	S ₄ M ₅	4		
iprodione (2)	Rovral	S ₁	12	▪ soil drench to control <i>Rhizoctonia</i> on greenhouse and outdoor <i>Celosia</i> , <i>Salvia</i> (potted plants and cut flowers)	

Pesticides Registered to Manage Fungal Diseases (Cont'd)

Pest	Active Ingredient (Group ^a)	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Damping-off, Stem and Bulb Rot	metalaxyl (4)	Subdue MAXX	S ₄	24	▪ greenhouse and outdoor <i>Ageratum</i> , <i>Aglaonema</i> , Algerian ivy, <i>Antirrhinum</i> , <i>Aphelandra</i> , <i>Artemisia</i> , aster, <i>Begonia</i> , <i>Caladium</i> , <i>Chrysanthemum</i> , <i>Coleus</i> , <i>Dianthus</i> , <i>Dieffenbachia</i> , <i>Digitalis</i> , <i>Gaillardia</i> , geranium, <i>Gloxinia</i> , <i>Hedera</i> , <i>Impatiens</i> , <i>Peperomia</i> , <i>Petunia</i> , <i>Philodendron</i> , <i>Phlox</i> , <i>Pothos</i> , <i>Primula</i> , <i>Rosmarinus</i> , <i>Salvia</i> , <i>Schefflera</i> , <i>Sedum</i> , <i>Sempervivum</i> , <i>Tagetes</i> , <i>Verbena</i> , <i>Vinca</i> , <i>Viola</i> , <i>Zinnia</i> , <i>Zygocactus</i>
	metalaxyl (4)	Subdue MAXX	S ₄	24	▪ conifers grown in seedbeds and plug-plantings
	<i>Streptomyces</i> Strain K611	Mycostop	-	-	▪ greenhouse ornamentals (suppression)
	<i>Trichoderma harzianum</i>	BW240 WP Biological	S ₄ M ₅	4 or dried	▪ damping off caused by <i>Fusarium</i> , <i>Phytophthora</i> , <i>Pythium</i> , <i>Rhizoctonia</i> on greenhouse and outdoor ornamentals
	<i>Trichoderma harzianum</i>	Triatum	S ₄	-	▪ suppress <i>Pythium</i> on greenhouse ornamentals
Downy Mildew	azoxystrobin (11)	Heritage MAXX	M _{1, 4}	12	▪ greenhouse and outdoor ornamentals
	benzovindiflupyr (7) + azoxystrobin (11)	Mural	S ₁ M ₄	12	▪ greenhouse and outdoor ornamentals
	copper sulphate (M)	Bordo Copper Spray	M ₁	dried	▪ ornamental shrubs
	cyazofamid (21)	Torrent & Cyazofamid 400SC	-	12	▪ greenhouse and outdoor ornamentals (container and field-grown)
	dimethomorph (40)	Acrobat & Forum	M ₁	12	▪ greenhouse and outdoor ornamentals, excluding cut flowers
	fluopicolide (43)	Presidio & Fluopicolide	S _{1, 4}	12	▪ greenhouse and outdoor (field and container) bedding plants and cut flowers
	mandipropamid (40)	Micora	-	12	▪ greenhouse and outdoor ornamentals
	phosphorous acid (33)	Confine Extra	-	dried	▪ greenhouse and field ornamentals
	<i>Reynoutria sachalinensis</i> extract (P5)	Regalia Maxx	M ₄	dried	▪ greenhouse and outdoor ornamentals (container and field) (suppression)
Leaf Spots and Blights	azoxystrobin (11)	Heritage MAXX	M _{1, 4}	12	▪ <i>Alternaria</i> , anthracnose, <i>Cercospora</i> (suppression) on greenhouse and outdoor ornamentals
	<i>Bacillus subtilis</i>	Rhapsody ASO	S ₄	-	▪ Anthracnose on leatherleaf fern (suppression), black spot on roses, and <i>Xanthomonas spp.</i> on geranium and <i>Aglaonema</i> in greenhouses and outdoor nurseries
	<i>Bacillus subtilis</i>	Cease Biological	-	-	▪ Anthracnose of leatherleaf fern and black spot of <i>Rosa</i> grown in a greenhouse and outdoors
	benzovindiflupyr (7)	A15457TO	M ₁ V ₄	12	▪ <i>Alternaria</i> on greenhouse and outdoor ornamentals
	benzovindiflupyr (7) + azoxystrobin (11)	Mural	S ₁ M ₄	12	▪ <i>Alternaria</i> and <i>Cercospora</i> (suppression) leaf spots and Anthracnose of greenhouse and outdoor ornamentals
	boscalid (7) + pyraclostrobin (11)	Pristine	M	72	▪ scab on outdoor-grown crabapple
	calcium polysulphide (M)	Lime Sulphur	M ₁ V ₂	48	▪ scab on <i>Malus</i> , <i>Pyrus</i> , and peach leaf curl on <i>Prunus</i>
	captan (M4)	Captan & Maestro	V ₄	12	▪ <i>Septoria</i> on <i>Chrysanthemum</i> , <i>Alternaria</i> on <i>Dianthus</i> , petal blight on <i>Camellia</i> , and black spot on <i>Rosa</i> ; do not use on greenhouse-grown cut flowers
	chlorothalonil (M5)	Daconil 2787 Equus	M ₄ M ₁	see label	▪ control specific leaf spot diseases on outdoor-grown (including cut flowers) <i>Chrysanthemum</i> , <i>Dianthus</i> , <i>Dracaena</i> , geranium, <i>Gladiolus</i> , <i>Hydrangea</i> , <i>Iris</i> , leatherleaf fern, <i>Maranta</i> , parlor palm, <i>Petunia</i> , <i>Philodendron</i> , <i>Rhoeo</i> , <i>Statice</i> , <i>Syngonium</i>

Pesticides Registered to Manage Fungal Diseases (Cont'd)

Pest Active Ingredient (Group ^a)	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses	
Leaf Spots and Blights	chlorothalonil (M5)	Daconil 2787	M ₄	see label	▪ control specific leaf spot diseases on greenhouse and outdoor-grown (not grown for cut flowers) <i>Aesculus</i> , <i>Cornus</i> , crabapple, <i>Crataegus</i> , <i>Cydonia</i> , <i>Fraxinus</i> , <i>Ilex</i> (<i>Rhizoctonia</i> web blight), <i>Photinia</i> , <i>Populus</i> , <i>Quercus</i> , <i>Rhododendron</i>
		Equus	M ₁	see label	
	chlorothalonil (M5)	Daconil 2787	M ₄	see label	▪ Anthracnose on greenhouse and outdoor <i>Aesculus</i> , <i>Euonymus</i> , <i>Quercus</i> , <i>Sycamore</i>
		Equus	M ₁	see label	
	chlorothalonil (M5)	Daconil 2787	M ₄	see label	▪ <i>Cercospora</i> on greenhouse and outdoor cherry laurel, <i>Fraxinus</i> , <i>Kalmia</i> , <i>Ligustrum</i>
		Equus	M ₁	see label	
	chlorothalonil (M5)	Daconil 2787	M ₄	see label	▪ <i>Phytophthora</i> die-back on greenhouse and outdoor azalea, <i>Pieris</i>
		Equus	M ₁	see label	
	chlorothalonil (M5)	Daconil 2787	M ₄	see label	▪ Scab on greenhouse and outdoor (not grown for cut flowers) crabapple, <i>Pyracantha</i>
		Equus	M ₁	see label	
	chlorothalonil (M5)	Daconil 2787 & Bravo Ultrex	M ₄	see label	▪ Phoma twig blight on conifers, and <i>Scirrhia</i> brown spot and <i>Scleroterris</i> canker on <i>Pinus</i>
		Equus	M ₁	see label	
	chlorothalonil (M5)	Daconil 2787	M ₄	see label	▪ Black spot on greenhouse and outdoor <i>Rosa</i> , excluding cut flowers
		Equus	M ₁	see label	
	chlorothalonil (M5)	Daconil 2787	M ₄	see label	▪ <i>Volutella</i> leaf blight on outdoor-grown <i>Pachysandra</i>
		Equus	M ₁	see label	
	chlorothalonil (M5)	Echo 720	M _{1, 4}	see label	▪ Phoma twig blight on greenhouse-grown conifers (nursery beds), and <i>Scirrhia</i> brown spot and <i>Scleroterris</i> canker on outdoor <i>Pinus</i>
	chlorothalonil (M5)	Echo 90DF	M ₁ V ₄	see label	
	citric & lactic acids	Cyclone	V ₄	dried	▪ black spot on greenhouse <i>Rosa</i>
	<i>Coniothyrium minitans</i>	Contans	S ₄	-	▪ <i>Sclerotinia</i> control in greenhouse and outdoor-grown cut flowers
copper, elemental (M01)	Phyton 35	S ₁	24	▪ suppress <i>Heterosporium</i> on <i>Dianthus</i> , <i>Alternaria</i> on <i>Senecio</i> , scab on <i>Poinsettia</i> , black spot on <i>Rosa</i> (greenhouse-grown)	
	Phyton 27	M ₁ V ₂	24		
copper octanoate (M1)	Cueva	-	4	▪ black spot on <i>Rosa</i> ; and <i>Corynespora</i> and <i>Coryneum</i> on greenhouse and outdoor ornamental shrubs and flowering plants	
			4	▪ suppression of <i>Cercospora</i> on <i>Lagerstroemia</i>	
copper oxychloride (M)	Copper Spray	M ₁	48	▪ foliar blight on <i>Abies</i> , cedar, <i>Juniperus</i> , <i>Picea</i> , <i>Pinus</i> , <i>Thuja</i> , and <i>Coryneum</i> blight on <i>Prunus</i>	
copper sulphate (M)	Bordo Copper Spray	M ₁	dried	▪ ornamental shrubs	
cyazofamid (21)	Torrent & Cyazofamid 400SC	-	12	▪ <i>Phytophthora</i> foliar blight on greenhouse and outdoor ornamentals (container and field-grown)	
cyprodinil (9) + fludioxonil (12)	Palladium	S ₄	12	▪ blights caused by <i>Alternaria</i> , <i>Colletotrichum</i> , <i>Fusarium</i> , <i>Rhizoctonia</i> , <i>Sclerotinia</i> of greenhouse (except cut flowers) and outdoor ornamentals	
dimethomorph (40)	Acrobat & Forum	M ₁	12	▪ suppression of <i>Phytophthora ramorum</i> on outdoor, container and field-grown ornamentals; do not apply to cut flowers	
fludioxonil (12)	Medallion	-	12	▪ to manage <i>Alternaria</i> , Boxwood blight and <i>Rhizoctonia</i> on outdoor and greenhouse ornamentals	
folpet (M)	Folpan	M _{1, 4}	24	▪ to manage <i>Septoria</i> on <i>Chrysanthemum</i> ; <i>Alternaria</i> on <i>Dianthus</i> , <i>Tagetes</i> , <i>Zinnia</i> , <i>Malus</i> ; <i>Colletotrichum</i> on <i>Antirrhinum</i> ; and <i>Didymellina</i> on <i>Iris</i>	
fosetyl-al (P07)	Aliette Ornamental	S ₁ M ₄	12-96	▪ greenhouse and field-grown ornamentals deemed susceptible to <i>Phytophthora ramorum</i> by the Canadian Food Inspection Agency	

Pesticides Registered to Manage Fungal Diseases (Cont'd)

Pest	Active Ingredient (Group ^a)	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Leaf Spots and Blights	hydrogen peroxide	OxiDate 2.0	M ₁ V ₄	4 or dried	▪ partial suppression of black rot and scab on greenhouse and outdoor-grown <i>Malus</i>
	hydrogen peroxide	ZeroTol	M ₁ V ₄	dried dried	▪ Fusarium leaf spot on <i>Dracaena</i> and Rhizoctonia aerial blight on bedding plants in a greenhouse, outdoor nursery and landscape ▪ Alternaria leaf spot ornamentals (suppression)
	mancozeb (M3)	Dithane, Fortuna, Manzate & Penncozeb	M ₁ V ₄	24	▪ to manage <i>Phytophthora ilicis</i> on <i>Ilex</i>
	mancozeb (M3)	Dithane, Fortuna, Manzate & Penncozeb	M ₁ V ₄	24	▪ Coryneum and Keithia blights on arborvitae and <i>Juniperus</i> ; Anthracnose on <i>Fraxinus</i> , <i>Quercus</i> , sycamore; and leaf spots of <i>Crataegus</i> , <i>Hedera</i> , <i>Malus</i>
	mandipropamid (40)	Micora	-	12	▪ Phytophthora foliar blight on greenhouse and outdoor ornamentals
	metalaxyl (4)	Subdue MAXX	S ₄	24	▪ suppression of <i>Phytophthora ramorum</i> on greenhouse, field nursery and landscape-grown ornamentals deemed susceptible to the pathogen by the Canadian Food Inspection Agency
	myclobutanil (3)	Eagle	S ₁ M ₄	288	▪ black spot on outdoor-grown <i>Rosa</i>
	myclobutanil (3)	Nova	S ₁ M ₄	12 264 12	▪ anthracnose and <i>Septoria</i> on outdoor-grown <i>Cornus</i> ▪ black spot on outdoor-grown <i>Rosa</i> ▪ scab on outdoor-grown <i>Malus</i> , <i>Pyrus</i>
	phosphorous acid (33)	Confine Extra	-	dried	▪ Phytophthora foliar blight (except <i>P. ramorum</i> , <i>P. cryptogea</i>) on field and greenhouse ornamentals
	propiconazole (3)	Banner MAXX	S ₁ M ₄	12	▪ Anthracnose on <i>Acer</i> , <i>Cornus</i> ; Tar spot on <i>Acer</i> ; scab on crabapple, non-bearing <i>Malus</i> , <i>Pyracantha</i> ; and Black spot of <i>Rosa</i> ; do not use in greenhouses
	propiconazole (3)	IPCO Pivot	S ₄ M ₁	-	▪ Keithia blight on outdoor-grown <i>Thuja plicata</i>
	propiconazole (3)	Tilt 250E	S ₁ V ₄	-	▪ Keithia blight on <i>Thuja plicata</i>
	propiconazole (3)	Topas	S ₁ M ₄	12	▪ Keithia blight on <i>Thuja plicata</i>
	thiophanate-methyl (1)	Senator	-	-	▪ leaf spots on greenhouse potted ornamentals; <i>Marssonina</i> and <i>Septoria</i> on aspen and <i>Populus</i> ; and black spot on <i>Rosa</i>
	thiophanate-methyl (1)	Thiophanate-Methyl 500 SC	M _{1,5}	- -	▪ black spot of <i>Rosa</i> ▪ leaf spots caused by <i>Alternaria</i> and <i>Cercospora</i> on greenhouse potted ornamentals, and <i>Marssonina</i> on aspen and <i>Populus</i>
	trifloxystrobin (11)	Compass	S ₄	12	▪ scab on <i>Crataegus</i> , non-bearing <i>Malus</i> ; suppression of tar spot on outdoor <i>Acer</i> ; boxwood blight on outdoor <i>Buxus</i> ; and suppression of black spot on greenhouse and outdoor <i>Rosa</i>
	trifloxystrobin (11)	Flint	S ₄	12	▪ Delphinella shoot blight on fir Christmas trees
	triforine (3)	Funginex	V ₄	48	▪ black spot on outdoor-grown roses
Needlecast	chlorothalonil (M5)	Daconil 2787 & Bravo Ultrex	M ₄	see label	▪ conifers
	chlorothalonil (M5)	Equus	M ₁	see label	▪ conifers
	chlorothalonil (M5)	Echo 720	M _{1,4}	see label	▪ greenhouse (nursery beds) and outdoor-grown conifers
	chlorothalonil (M5)	Echo 90DF	M ₁ V ₄	see label	▪ outdoor-grown conifers
	copper oxychloride (M)	Copper Spray	M ₁	48	▪ <i>Abies</i> , <i>Picea</i> , <i>Pinus</i>
	mancozeb (M3)	Dithane, Fortuna, Manzate & Penncozeb	M ₁	24	▪ <i>Pinus</i> , <i>Pseudotsuga</i>
	propiconazole (3)	Banner MAXX	S ₁ M ₄	12	▪ fir, <i>Picea</i> ; do not use in greenhouse
trifloxystrobin (11)	Flint	S ₄	96	▪ fir, <i>Picea</i>	

Pesticides Registered to Manage Fungal Diseases (Cont'd)

Pest	Active Ingredient (Group ^a)	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Nematodes	chlorfenapyr (13)	Pylon	M ₁	12	▪ foliar nematodes on greenhouse ornamentals
	oxamyl (1A)	Vydate L	V ₁	12-768	▪ root lesion nematodes in non-bearing <i>Malus</i>
	mustard seed meal	Mustgrow Crop Biofumigant	S ₄	24	▪ root lesion and root knot nematodes in outdoor ornamentals
Powdery Mildew	azoxystrobin (11)	Heritage MAXX	M _{1,4}	12	▪ greenhouse and outdoor ornamentals
	<i>Bacillus subtilis</i>	Rhapsody ASO	S ₄	-	▪ greenhouse and outdoor ornamentals (suppression)
	<i>Bacillus subtilis</i>	Cease Biological	-	-	▪ greenhouse and outdoor-grown <i>Monarda</i> , <i>Phlox</i> , <i>Poinsettia</i> , <i>Rosa</i>
	benzovindiflupyr (7)	A15457TO	M ₁ V ₄	12	▪ greenhouse and outdoor ornamentals
	benzovindiflupyr (7) + azoxystrobin (11)	Mural	S ₁ M ₄	12	▪ greenhouse and outdoor ornamentals
	boscalid (7) + pyraclostrobin (11)	Pristine	M ₅	12	▪ greenhouse-grown bedding plants
	calcium polysulphide (M)	Lime Sulphur	M ₁ V ₂	48	▪ <i>Malus</i> , peaches, <i>Pyrus</i>
	canola oil	Vegol Crop Oil	S ₄	-	▪ crabapple, <i>Crataegus</i> , <i>Prunus</i> , <i>Pyracantha</i> , <i>Rosa</i> (suppression)
	chlorothalonil (M5)	Daconil 2787	M ₄	see label	▪ outdoor-grown <i>Zinnia</i> ; greenhouse and outdoor
		Equus	M ₁	see label	<i>Viburnum</i> (excludes cut flowers)
	citric & lactic acids	Cyclone	V ₄	dried	▪ greenhouse ornamentals (includes cut flowers)
	copper, elemental (M01)	Phyton 35	S ₁	24	▪ greenhouse <i>Begonia</i> , <i>Hydrangea</i> , <i>Monarda</i> , <i>Impatiens</i> , <i>Phlox</i> , <i>Poinsettia</i> , <i>Rosa</i> , <i>Verbena</i> , and outdoor-grown <i>Cornus</i> (suppression)
		Phyton 27	M ₁ V ₂	24	
	copper octanoate (M1)	Cueva	-	4	▪ greenhouse and outdoor ornamental shrubs and flowering plants
	copper sulphate (M)	Bordo Copper Spray	M ₁	dried	▪ ornamental shrubs
	cyprodinil (9) + fludioxonil (12)	Palladium	S ₄	12	▪ greenhouse and outdoor ornamentals (excluding cut flowers) (suppression)
	hydrogen peroxide	OxiDate 2.0	M ₁ V ₄	4 or dried	▪ greenhouse and outdoor <i>Malus</i>
	myclobutanil (3)	Nova	S ₁ M ₄	12	▪ outdoor nursery-grown <i>Amelanchier</i> , crabapple, <i>Crataegus</i> , <i>Fraxinus</i> , <i>Juniperus</i> , <i>Prunus</i> , <i>Pyrus</i> ; and greenhouse and nursery potted aster, <i>Chrysanthemum</i> , geranium, <i>Gerbera</i> , <i>Poinsettia</i> , <i>Rosa</i>
				24	▪ greenhouse cut aster, <i>Chrysanthemum</i> , <i>Gerbera</i> , <i>Rosa</i>
				288	▪ outdoor-grown (includes cut flowers) <i>Alcea</i> , aster, <i>Chrysanthemum</i> , <i>Gerbera</i> , <i>Iris</i> , <i>Phlox</i> , <i>Rosa</i>
				408	▪ outdoor <i>Dianthus</i>
	myclobutanil (3)	Eagle	S ₁ M ₄	288	▪ outdoor-grown <i>Rosa</i>
	potassium bicarbonate	MilStop & Sirocco	M _{4,5}	4	▪ greenhouse-grown <i>Cornus</i> , <i>Hydrangea</i> , <i>Monarda</i> , <i>Osteospermum</i> , <i>Phlox</i> , <i>Poinsettia</i> ; and field-grown bedding plants (suppression)
	propiconazole (3)	Banner MAXX	S ₁ M ₄	12	▪ azalea, <i>Rhododendron</i> , <i>Rosa</i> ; do not use in greenhouse
	pydiflumetofen (7)	Posterity	M ₅	12	▪ greenhouse and outdoor ornamentals (excluding conifers)
	<i>Reynoutria sachalinensis</i> extract (P5)	Regalia Maxx	M ₄	dried	▪ container and field-grown ornamentals grown in greenhouses and outdoors (suppression)
<i>Streptomyces lydicus</i>	Actinovate SP	S ₄ M ₅	1 or dried	▪ greenhouse and outdoor <i>Gerbera</i> , and greenhouse <i>Verbena</i>	
sulphur	AgroTek Vaporized Sulphur	M ₄	2	▪ greenhouse-grown <i>Antirrhinum</i> , <i>Begonia</i> , <i>Chrysanthemum</i> , <i>Dahlia</i> , <i>Gerbera</i> , <i>Hydrangea</i> , <i>Kalanchoe</i> , <i>Phlox</i> , <i>Rosa</i> , <i>Saintpaulia</i>	

Pesticides Registered to Manage Fungal Diseases (Cont'd)

Pest	Active Ingredient (Group ^a)	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Powdery Mildew	thiophanate-methyl (1)	Senator	-	-	▪ greenhouse potted ornamentals
	thiophanate-methyl (1)	Thiophanate-Methyl 500 SC	M _{1,5}	-	▪ greenhouse potted ornamentals
	trifloxystrobin (11)	Compass	S ₄	12	▪ greenhouse and outdoor ornamental bedding plants, <i>Gerbera</i> , <i>Rosa</i> , shrubs
				12	▪ <i>Antirrhinum</i> , <i>Begonia</i> , <i>Cosmos</i> , geranium, non-bearing fruit trees (apple, cherry, crabapple, nectarine, plum), <i>Photinia</i> , <i>Poinsettia</i> , <i>Rosa</i> , <i>Salvia</i> , <i>Verbena</i>
triforine (3)	Funginex	S ₄	48	▪ outdoor-grown roses and ornamentals	
Root, Stem and Crown Rot Caused by <i>Fusarium</i> and <i>Rhizoctonia</i>	azoxystrobin (11)	Heritage MAXX	M _{1,4}	12	▪ <i>Rhizoctonia</i> on greenhouse and outdoor ornamentals
	<i>Bacillus amyloliquefaciens</i> (44)	Biotak	-	-	▪ apply to media prior to planting
	<i>Bacillus subtilis</i>	Rhapsody ASO	S ₄	-	▪ <i>Rhizoctonia solani</i> on greenhouse and outdoor ornamentals
	<i>Bacillus subtilis</i>	Cease Biological	-	-	▪ drench for <i>Rhizoctonia</i> on greenhouse and outdoor ornamentals
	<i>Bacillus subtilis</i> (44)	Taegro 2	S ₄	0	▪ drench to suppress <i>Fusarium</i> wilt on greenhouse-grown <i>Cyclamen</i>
	benzovindiflupyr (7) + azoxystrobin (11)	Mural	S ₁ M ₄	12	▪ greenhouse and outdoor ornamentals
	copper, elemental (M01)	Phyton 35	S ₁	24	▪ soil drench for <i>Rhizoctonia</i> on greenhouse <i>Poinsettia</i>
	copper, elemental (M01)	Phyton 27	M ₁ V ₂	24	▪ soil drench for <i>Rhizoctonia</i> on greenhouse <i>Poinsettia</i>
	fludioxonil (12)	Medallion	-	12	▪ drench for <i>Fusarium</i> , <i>Rhizoctonia</i> , <i>Thielaviopsis</i> on outdoor and greenhouse ornamentals
	garlic powder	Influence WP	S ₄	dried	▪ drench for root rot caused by <i>Rhizoctonia</i>
	<i>Streptomyces lydicus</i>	Actinovate SP	S ₄ M ₅	1 or dried	▪ suppression of <i>Fusarium</i> wilt on <i>Cyclamen</i> , and <i>Rhizoctonia</i> root/ crown rot on geranium (greenhouse-grown)
	<i>Streptomyces</i> Strain K611	Mycostop	-	-	▪ suppression of <i>Fusarium</i> on greenhouse ornamentals
	thiophanate-methyl (1)	Senator	-	-	▪ greenhouse potted ornamentals
	thiophanate-methyl (1)	Thiophanate-Methyl 500 SC	M _{1,5}	-	▪ greenhouse potted ornamentals
	<i>Trichoderma asperellum</i>	Asperello T34 Biocontrol	S ₄	-	▪ drench or root dip to suppress <i>Fusarium</i> wilt in greenhouse ornamentals
	<i>Trichoderma harzianum</i>	BW240 WP Biological	S ₄ M ₅	4 or dried	▪ greenhouse and outdoor ornamentals
	<i>Trichoderma harzianum</i>	Rootshield HC & Bora HC	M ₅	4 or dried	▪ greenhouse and outdoor ornamentals (suppression), including use as a bulb dip
	<i>Trichoderma harzianum</i>	Triatum	S ₄	-	▪ suppress <i>Fusarium</i> on ornamentals
	trifloxystrobin (11)	Compass	S ₄	12	▪ <i>Rhizoctonia solani</i> on aloe vera, <i>Alyssum</i> , <i>Aptenia</i> , azalea, bamboo, <i>Begonia</i> , <i>Brachycome</i> , <i>Caladium</i> , catnip, <i>Celosia</i> , <i>Chrysanthemum</i> , <i>Coleus</i> , Coontie palm, <i>Cosmos</i> , daisy, <i>Davallia fejeensis</i> , <i>Delphinium</i> , <i>Dianthus</i> , dusty miller, heather, <i>Hedera</i> , <i>Hemerocallis</i> , <i>Hosta</i> , <i>Hypoestes</i> , <i>Impatiens</i> , <i>Iris</i> , <i>Jasminum</i> , <i>Juniperus totruosum</i> , <i>Lantana</i> , <i>Ligustrum</i> , <i>Liriope</i> , <i>Nandina</i> , peach, <i>Petunia</i> , <i>Phlox</i> , <i>Pittosporum</i> , <i>Poinsettia</i> , <i>Rhaphiolepis indica</i> , <i>Rosa</i> , <i>Semperoivum</i> , <i>Syringa</i> , <i>Tagetes</i> , <i>Verbena</i> , <i>Viola</i>

Pesticides Registered to Manage Fungal Diseases (Cont'd)

Pest Group ^a	Active Ingredient	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Root Rot Caused by <i>Phytophthora</i> and <i>Pythium</i>	azoxystrobin (11)	Heritage MAXX	M _{1,4}	12	▪ <i>Pythium</i> on greenhouse and outdoor ornamentals
	<i>Bacillus amyloliquefaciens</i> (44)	Biotak	-	-	▪ apply to media prior to planting to manage root rot caused by <i>Pythium</i>
	<i>Bacillus subtilis</i>	Rhapsody ASO	S ₄	-	▪ greenhouse and outdoor ornamentals
	<i>Bacillus subtilis</i>	Cease Biological	-	-	▪ drench for greenhouse and outdoor ornamentals
	cyazofamid (21)	Torrent & Cyazofamid 400SC	-	12	▪ drench for greenhouse and outdoor ornamentals (container and field-grown)
				12	▪ <i>Phytophthora cinnamomi</i> on <i>Juniperus</i> , <i>Rhododendron</i>
	etridiazole (14)	Truban	V ₁	12	▪ use at seeding and transplanting as a soil mix or drench on greenhouse ornamentals (see the label for registered bedding, foliage, herbaceous and woody plants)
	fluopicolide (43)	Presidio & Fluopicolide	S _{1,4}	12	▪ <i>Phytophthora</i> on outdoor-grown (field and container) bedding plants and cut flowers (suppression)
	folpet (M)	Folpan	M _{1,4}	24	▪ greenhouse-grown <i>Poinsettia</i>
	fosetyl-al (P07)	Aliette Ornamental	S ₁ M ₄	12-96	▪ greenhouse and outdoor ornamentals (including cut flowers)
	garlic powder	Influence WP	S ₄	dried	▪ drench to manage root rot caused by <i>Pythium</i>
	<i>Gliocladium catenulatum</i>	LalStop G46	S ₄	4	▪ incorporate in the medium or drench to suppress <i>Phytophthora cryptogea</i> on greenhouse-grown <i>Alyssum</i> , <i>Antirrhinum</i> , geranium, <i>Petunia</i> , <i>Poinsettia</i> , <i>Saintpaulia</i> , <i>Salvia</i> , <i>Tagetes</i> , <i>Viola</i>
		PreStop	S ₄ M ₅	4	
	hydrogen peroxide	ZeroTol	M ₁ V ₄	dried	▪ <i>Phytophthora</i> root and stem rot of ornamentals in a greenhouse, outdoor nursery and landscape (suppression)
	metalaxyl (4)	Subdue MAXX	S ₄	24	▪ greenhouse and outdoor <i>Ageratum</i> , <i>Aglaonema</i> , Algerian ivy, <i>Antirrhinum</i> , <i>Aphelandra</i> , <i>Artemisia</i> , aster, <i>Begonia</i> , <i>Caladium</i> , <i>Chrysanthemum</i> , <i>Coleus</i> , <i>Dianthus</i> , <i>Dieffenbachia</i> , <i>Digitalis</i> , <i>Gaillardia</i> , geranium, <i>Gloxinia</i> , <i>Hedera</i> , <i>Impatiens</i> , <i>Peperomia</i> , <i>Petunia</i> , <i>Philodendron</i> , <i>Phlox</i> , <i>Pothos</i> , <i>Primula</i> , <i>Rosmarinus</i> , <i>Salvia</i> , <i>Schefflera</i> , <i>Sedum</i> , <i>Sempervivum</i> , <i>Tagetes</i> , <i>Verbena</i> , <i>Vinca</i> , <i>Viola</i> , <i>Zinnia</i> , <i>Zygocactus</i>
	metalaxyl (4)	Subdue MAXX	S ₄	24	▪ conifers grown in seedbeds and plug-plantings
	phosphate (33)	Phostrol	S ₄	12	▪ <i>Phytophthora</i> on greenhouse and outdoor-grown bedding and potted plants, and cut flowers (suppression)
	phosphorous acid (33)	Confine Extra	-	dried	▪ <i>Phytophthora</i> on field and greenhouse ornamentals, including bedding and potted plants, and cut flowers
	propamocarb hydrochloride (28)	Previcur	V ₄	24	▪ outdoor and greenhouse-grown <i>Antirrhinum</i> , azalea, <i>Cyclamen</i> , geranium, <i>Gerbera</i> , <i>Ilex</i> , <i>Poinsettia</i> , <i>Rhododendron</i> , <i>Saintpaulia</i>
	<i>Streptomyces lydicus</i>	Actinovate SP	S ₄ M ₅	1 or dried	▪ <i>Pythium</i> root rot of greenhouse-grown <i>Petunia</i> (suppression)
<i>Streptomyces</i> Strain K611	Mycostop	-	-	▪ greenhouse ornamentals (suppression)	
<i>Trichoderma harzianum</i>	BW240 WP Biological	S ₄ M ₅	4 or dried	▪ <i>Phytophthora</i> on greenhouse and outdoor ornamentals	
<i>Trichoderma harzianum</i>	Rootshield HC & Bora HC	M ₅	4 or dried	▪ <i>Pythium</i> in greenhouse and outdoor ornamentals (suppression), includes use as a bulb dip	
Rusts	azoxystrobin (11)	Heritage MAXX	M _{1,4}	12	▪ greenhouse and outdoor ornamentals
	benzovindiflupyr (7)	A15457IO	M ₁ V ₄	12	▪ greenhouse and outdoor ornamentals
	boscalid (7) + pyraclostrobin (11)	Pristine	M ₅	72	▪ ornamental pear, serviceberry

Pesticides Registered to Manage Fungal Diseases (Cont'd)

Pest	Active Ingredient (Group ^a)	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Rusts	chlorothalonil (M5)	Daconil 2787 Equus	M ₄ M ₁	see label see label	▪ outdoor-grown (including cut flowers) <i>Alcea</i> , <i>Hydrangea</i> ; greenhouse and outdoor (not grown for cut flowers) crabapple, <i>Crataegus</i> , <i>Mahonia</i>
	copper octanoate (M1)	Cueva	-	4	▪ greenhouse and outdoor ornamental shrubs, flowering plants
	mancozeb (M3)	Dithane, Manzate & Penncozeb	M ₁ V ₄	24	▪ Pear trellis rust of juniper, and Cedar apple and Quince rusts on <i>Malus</i>
	myclobutanil (3)	Nova	S ₁ M ₄	12	▪ nursery-grown <i>Amelanchier</i> , azalea, <i>Cornus</i> , crabapple, <i>Crataegus</i> , <i>Euonymus</i> , <i>Ligustrum</i> , <i>Lonicera</i> , <i>Pyrus</i> , <i>Rhododendron</i> , <i>Syringa</i> ; and greenhouse and nursery potted aster, <i>Chrysanthemum</i> , <i>Gerbera</i> , <i>Rosa</i>
				24	▪ greenhouse cut aster, <i>Chrysanthemum</i> , <i>Gerbera</i> , <i>Rosa</i>
				288	▪ outdoor-grown (including cut flowers) <i>Alcea</i> , <i>Chrysanthemum</i> , <i>Gerbera</i> , <i>Iris</i> , <i>Phlox</i> , <i>Rosa</i>
	myclobutanil (3)	Eagle	S ₁ M ₄	12	▪ outdoor-grown <i>Juniperus</i>
propiconazole (3)	Topas	S ₁ M ₄	12	▪ <i>Amelanchier</i>	
trifloxystrobin (11)	Compass	S ₄	12	▪ outdoor ornamental shrubs in the mallow family	
Sirococcus Blight	chlorothalonil (M5)	Daconil 2787 & Bravo Ultrex	M ₄	see label	▪ conifers
	chlorothalonil (M5)	Echo 720	M _{1,4}	see label	▪ outdoor-grown conifers
		Echo 90DF	M ₁ V ₄	see label	
	chlorothalonil (M5)	Equus	M ₁	see label	▪ conifers
copper oxychloride (M)	Copper Spray	M ₁	48	▪ <i>Abies</i> , cedar, <i>Juniperus</i> , <i>Picea</i> , <i>Pinus</i> , <i>Thuja</i>	

^a Resistance management group

^b Toxicity of the pesticide: S = caution, slightly harmful; M = warning, moderately harmful; V = danger, very harmful. The subscript denotes the specific hazard, which includes: 1 = poisonous, 2 = corrosive, 3 = flammable, 4 = eye irritant/skin sensitizer, and 5 = contain allergens.

^c Pesticide labels prohibit re-entry into treated crops until after the minimum restricted entry interval (REI). The REI may vary for some crop activities (e.g. pruning, thinning). An REI of “dried” permits entry once the treated surfaces have dried.

3) Pesticides Registered to Manage Insects and Mites

Pest	Active Ingredient (Group ^a)	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Aphids and Adelgids	acephate (1B)	Orthene 75% SP	S ₁	12-72	▪ <i>Acer</i> , <i>Antirrhinum</i> , arborvitae, <i>Aster</i> , azalea, <i>Berberis</i> , <i>Betula</i> , <i>Buxus</i> , <i>Calendula</i> , <i>Cotoneaster</i> , <i>Crataegus</i> , <i>Deutzia</i> , dusty miller, <i>Euonymus</i> , fir, <i>Fraxinus</i> , <i>Gazania</i> , <i>Hibiscus</i> , <i>Hydrangea</i> , ivy, <i>Ligustrum</i> , <i>Mahonia</i> , <i>Nandina</i> , <i>Philadelphus</i> , <i>Photinia</i> , <i>Pittosporum</i> , <i>Platanus</i> , plum, <i>Populus</i> , <i>Primula</i> , <i>Pyracantha</i> , <i>Quercus</i> , quince, <i>Rosa</i> , <i>Salix</i> , <i>Salvia</i> , <i>Spirea</i> , <i>Syringa</i> , <i>Tilia</i> , <i>Tulipa</i> , <i>Viburnum</i> , <i>Wisteria</i>
				72	▪ Christmas trees, greenhouse <i>Rosa</i> (cut flowers), tree nurseries, shelter belts
				-	▪ trunk injection for ornamental deciduous and coniferous trees in landscapes and farms
	acephate (1B)	ACECAP 97	V ₁	72	▪ <i>Betula</i> , <i>Picea</i> , <i>Pinus</i> , <i>Quercus</i> , <i>Ulmus</i>
	acetamiprid (4)	TriStar 70 WSP	M ₁	12	▪ Christmas trees, and outdoor and greenhouse ornamentals
	afidopyropen (9d)	Ventigra	S ₄ M ₁	12	▪ greenhouse and outdoor ornamentals (except conifers)
	<i>Beauveria bassiana</i>	Botanigard	M _{4,5}	4	▪ greenhouse ornamentals
<i>Beauveria bassiana</i>	Bio-ceres G WP	S ₄ M ₅	4 or dried	▪ ornamentals	
<i>Beauveria bassiana</i>	Velifer	-	4 or dried	▪ greenhouse ornamentals (suppression)	

Pesticides Registered to Manage Insects and Mites (Cont'd)

Pest	Active Ingredient (Group ^a)	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Aphids and Adelgids	canola oil	Vegol Crop Oil	S ₄	-	▪ greenhouse and outdoor ornamentals (flowering, foliage and bedding plants, shade trees, shrubs, <i>Rosa</i>)
	chlorpyrifos (3)	Dursban, Lorsban & Pyrate	M ₄ V ₁	48	▪ <i>Acer, Betula, Carya, cherry, Fagus, Liriodendron, Nasturtium, Picea, Pinus, plum, Quercus, Salix, Spirea, Tilia, Ulmus, Viburnum</i> grown in greenhouses and nurseries
	carbaryl (1A)	Sevin T&O	M ₁	672	▪ Rose, Elm leaf, Cooley spruce gall and Eastern spruce gall aphids on outdoor-grown <i>Acer, arborvitae, azalea, Betula, Buxus, Chrysanthemum, Cornus, Dianthus, Gladiolus, Hydrangea, Ilex, Juniperus, Pinus, Quercus, Rosa, Syringa, Ulmus, Zinnia</i>
	dichlorvos (1B)	DDVP 20%	V ₁	day after treated	▪ greenhouse ornamentals
	dimethoate (1B)	Cygon 480 Lagon 480 E	V ₁ M ₁	see label see label	▪ outdoor-grown arborvitae, <i>Betula, Camellia, Christmas trees (Abies balsamea, Picea, Pinus, Tsuga), Dianthus, Euonymus, Gladiolus, Hemerocallis, Iris, Juniperus, Pinus mugo, P. resinosa, P. sylvestris, Poinsettia, Rosa</i>
	flonicamid (29)	Beleaf 50SG	S ₄ M ₅	12 12	▪ greenhouse ornamentals (including cut flowers) ▪ outdoor ornamentals (excluding conifers)
	flupyradifurone (4D)	Altus & BCS 2960	S ₄	12	▪ greenhouse, outdoor and landscape ornamentals, including Christmas trees
	imidacloprid (4)	Admire 240	S ₁	24	▪ balsam twig aphid on Christmas trees (<i>Abies balsamea, A fraseri</i>)
	imidacloprid (4A)	Confidor 200 SL	-	-	▪ Hemlock woolly adelgid of <i>Tsuga</i> and Woolly apple aphid of <i>Malus</i> grown in a greenhouse, outdoor nursery and landscape
	imidacloprid (4)	Intercept 60 WP & Merit 60 WP	S ₁	12	▪ drench for greenhouse-grown conifers, ornamental grasses, cut flowers and plants grown for indoor use
	kinoprene (7)	Enstar	-	12	▪ greenhouse ornamentals
	malathion (1B)	Malathion 85E	M ₁	48	▪ greenhouse <i>Antirrhinum, Chrysanthemum, Dianthus, geranium, Rosa</i>
	malathion (1B)	Malathion 500 & 85E	M ₁	72	▪ outdoor ornamentals
	<i>Metarhizium anisopliae</i>	Met 52 EC	M ₄	0	▪ foliar spray or drench to reduce the number of aphids on greenhouse-grown ornamentals (excluding conifers)
	mineral oil	Landscape Oil	S ₄ V ₁	12 12	▪ dormant spray for Hemlock woolly adelgid nymphs on container and field-grown <i>Tsuga</i> ▪ summer spray for Hemlock woolly adelgid eggs, crawlers and adults on <i>Picea jezoensis, Picea polita, Tsuga</i>
	mineral oil	SuffOil-X	S ₅	12	▪ summer spray to deter aphid feeding on greenhouse and outdoor ornamentals (including Christmas trees)
	naled (1B)	Dibrom	V ₁	48 48	▪ fog or vapour treatment for greenhouse-grown roses and cut flowers ▪ ground spray for outdoor-grown arborvitae, <i>Aucuba, azalea, Campanula, Chrysanthemum, Dahlia, Magnolia (Chinese), Matthiola, Pittosporum, Privet, Rosa, Salix, Zinnia</i>
	permethrin (3)	Ambush 500 EC	-	dried	▪ deciduous trees and shrubs
	permethrin (3)	Perm-UP EC	M _{1,4}	dried	▪ deciduous trees and shrubs
	pymetrozine (9B)	Endeavor 50WG	S ₁ M ₅	12	▪ Green peach and Melon aphids on greenhouse and outdoor ornamentals, and Balsam twig aphid on outdoor ornamentals

Pesticides Registered to Manage Insects and Mites (Cont'd)

Pest	Active Ingredient (Group ^a)	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Aphids and Adelgids	pyrethrin (3)	Doktor Doom 6%	S ₁	dried	▪ ornamentals
	pyrethrin (3)	Pyganic Crop Protection	-	12	▪ <i>Rosa</i>
	salts of fatty acids	Insecticidal Soap	M ₄	-	▪ ornamental and shade trees; and greenhouse and outdoor-grown bedding, flowering, foliage and houseplants
	salts of fatty acids + pyrethrins (3)	Trounce	-	-	▪ greenhouse and interior plantings, shrubs and trees
	spirotetramat (23)	Kontos	-	12	▪ drench application for Green peach aphid on outdoor-grown ornamentals (field and container), except conifers
	sulfoxaflor (4C)	Closer	-	12	▪ outdoor ornamentals
	thiamethoxam (4)	Actara & Flagship	S ₄	12	▪ outdoor conifers and ornamental grasses
	thiamethoxam (4) + cyantraniliprole (28)	Mainspring X	-	12 12 12	▪ outdoor conifers and ornamental grasses ▪ greenhouse ornamentals (conifers, cut flowers, ornamental grasses, indoor plants) ▪ drench to control root aphids
Beetles, leaf	acephate (1B)	Orthene 75% SP	S ₁	72 -	▪ Christmas trees, <i>Salix</i> , <i>Ulmus</i> , tree nurseries, shelter belts ▪ trunk injection for ornamental deciduous and coniferous trees in landscapes and farms
	acephate (1B)	ACECAP 97	V ₁	72	▪ <i>Ulmus</i>
	<i>Bacillus thuringiensis</i> subsp. <i>galleriae</i> (11)	beetleGONE!	S ₄	4	▪ Rose chafer and Asiatic garden, Japanese and Oriental beetles on greenhouse, outdoor and landscape ornamentals
	carbaryl (1A)	Sevin T&O	M ₁	672	▪ Rose chafer, and Blister, Elm leaf, Flea, Japanese, June and Willow leaf beetles on outdoor-grown <i>Acer</i> , arborvitae, azalea, <i>Betula</i> , <i>Buxus</i> , <i>Chrysanthemum</i> , <i>Cornus</i> , <i>Dianthus</i> , <i>Gladiolus</i> , <i>Hydrangea</i> , <i>Ilex</i> , <i>Juniperus</i> , <i>Pinus</i> , <i>Quercus</i> , <i>Rosa</i> , <i>Syringa</i> , <i>Ulmus</i> , <i>Zinnia</i>
	chlorantraniliprole (28)	Acelepryn	-	dried dried	▪ Japanese beetle on outdoor-grown <i>Prunus</i> (container and field), and non-bearing pome and stone fruit trees (suppression) ▪ <i>Viburnum</i> leaf beetle on outdoor <i>Viburnum</i> (container and field)
	naled (1B)	Dibrom	V ₁	48	▪ ground spray for Willow leaf beetle on outdoor-grown <i>Salix</i>
	phosmet (1B)	Imidan WP	S ₄ V ₁	72	▪ Japanese beetle on deciduous trees, evergreens, shrubs, herbaceous plants (<i>Abies</i> , <i>Acer</i> , arborvitae, azalea, <i>Betula</i> , <i>Buxus</i> , <i>Camellia</i> , cedar, <i>Chrysanthemum</i> , <i>Cornus</i> , cosmos, <i>Crataegus</i> , <i>Fagus</i> , <i>Fraxinus</i> , geranium, <i>Hydrangea</i> , <i>Juniperus</i> , <i>Ligustrum</i> , <i>Petunia</i> , <i>Picea</i> , <i>Pinus</i> , <i>Portulaca</i> , <i>Quercus</i> , <i>Rosa</i> , <i>Salix</i> , <i>Syringa</i> , <i>Tagetes</i> , <i>Taxus</i> , <i>Tsuga</i> , <i>Ulmus</i> , <i>Zinnia</i>)
	spinosad (5)	Conserve, Entrust & Success	-	dried	▪ leaf beetles (such as Elm and Willow leaf beetles) on outdoor ornamentals
Bark Beetles and Borers	acephate (1B)	ACECAP 97	V ₁	72	▪ Emerald ash borer in <i>Fraxinus</i>
	azadirachtin	Treeazin	S _{3,4}	injected	▪ tree injection system to control Emerald ash borer in ornamental trees in urban landscapes
	chlorantraniliprole (28)	Acelepryn	-	dried	▪ Dogwood borer on outdoor-grown non-bearing pome fruit trees (container and field), and Peach twig borer on outdoor-grown non-bearing stone fruit trees (container and field)
	chlorpyrifos (3)	Dursban, Lorsban & Pyrate	M ₄ V ₁	48	▪ <i>Betula</i> , locust, <i>Salix</i> , <i>Sorbus</i> , <i>Syringa</i> in greenhouses and nurseries
	dimethoate (1B)	Cygon 480	V ₁	168	▪ outdoor-grown <i>Iris</i>
	dimethoate (1B)	Lagon 480 E	M ₁	168	▪ outdoor-grown <i>Iris</i>
	imidacloprid (4A)	Confidor 200 SL	-	-	▪ tree injection for borers of <i>Acer</i> , <i>Aesculus</i> , <i>Albizia</i> , <i>Betula</i> , <i>Celtis</i> , <i>Fraxinus</i> , <i>Picea</i> , <i>Platanus</i> , <i>Populus</i> , <i>Salix</i> , <i>Sorbus</i> , <i>Ulmus</i> grown in greenhouses, nurseries and landscapes

Pesticides Registered to Manage Insects and Mites (Cont'd)

Pest	Active Ingredient (Group ^a)	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Bark Beetles and Borers	novaluron (15)	Rimon	-	12	▪ <i>Synanthedon</i> spp. of non-bearing <i>Malus</i> and <i>Prunus</i> , and <i>Viburnum</i> grown as outdoor ornamental and nursery stock
	octadecadien acetate	Isomate DWB	S ₄	-	▪ Dogwood borer on woody ornamental nursery crops
	spinetoram (5)	Delegate	-	12	▪ Dogwood borer, Apple clearwing moth, Peachtree borer on non-bearing <i>Malus</i> , <i>Prunus</i> nursery stock
	<i>Steinernema carpocapsae</i>	Millenium	-	-	▪ Dogwood, Peachtree and Clearwing borers in container-grown ornamentals
Caterpillars and Moths	acephate (1B)	ACECAP 97	V ₁	72	▪ Spruce budworm and coneworm on fir, <i>Picea</i> ; Elm spanworm on <i>Acer</i> , <i>Carya</i> , <i>Castanea</i> , <i>Fagus</i> , <i>Juglans</i> , <i>Quercus</i> , <i>Tilia</i> , <i>Ulmus</i> ; Tent caterpillar on cherry; Gypsy moth on <i>Acer</i> , <i>Quercus</i> ▪ Leafshredder on <i>Quercus</i> ; Western spruce budworm on fir, <i>Picea</i>
	acephate (1B)	Orthene 75% SP <i>*check the label for the specific Lepidopteran pests controlled for each crop listed</i>	S ₁	12-72 72 -	▪ <i>Acer</i> , <i>Alnus</i> , <i>Antirrhinum</i> , arborvitae, <i>Aster</i> , <i>Betula</i> , <i>Calendula</i> , cedar, cherry, <i>Crataegus</i> , cypress, <i>Dahlia</i> , fir, <i>Fraxinus</i> , geranium, <i>Ilex</i> , <i>Juniperus</i> , <i>Liquidambar</i> , <i>Petunia</i> , <i>Picea</i> , <i>Pinus</i> , <i>Platanus</i> , plum, <i>Populus</i> , <i>Pyracantha</i> , <i>Quercus</i> , <i>Rhus</i> , <i>Rosa</i> , <i>Salix</i> , <i>Spirea</i> , <i>Tagetes</i> , <i>Tilia</i> , <i>Tsuga</i> , <i>Ulmus</i> ▪ Christmas trees, greenhouse <i>Rosa</i> (cut flower), tree nursery, shelter belts ▪ trunk injection for ornamental deciduous and coniferous trees in landscapes and farms
	azadirachtin	Treeazin	S _{3,4}	injected	▪ tree injection to control Budworm, Gypsy moth, Tent caterpillar, Webworm in ornamental trees in urban landscapes
	<i>Bacillus thuringiensis</i> (11)	BioProtec CAF	S ₄	-	▪ Tussock moth on ornamental urban trees; Cabbage looper on greenhouse-grown <i>Chrysanthemum</i> ; Omnivorous leafroller on greenhouse-grown <i>Rosa</i> ; and <i>Duponchelia</i> and <i>Opogona</i> on greenhouse-grown ornamentals
	<i>Bacillus thuringiensis</i> (11)	BTK Biological Insecticide	S ₄	-	▪ Cabbage looper, Gypsy moth, Leafrollers and Tent caterpillar on shade trees and ornamentals; Jack pine and Spruce budworms, and Hemlock looper on evergreens
	carbaryl (1A)	Sevin T&O	M ₁	672	▪ Bagworm, Cankerworm, Elm spanworm, Gypsy moth, Leafroller, Tent caterpillar and Webworms on outdoor-grown <i>Acer</i> , arborvitae, azalea, <i>Betula</i> , <i>Buxus</i> , <i>Chrysanthemum</i> , <i>Cornus</i> , <i>Dianthus</i> , <i>Gladiolus</i> , <i>Hydrangea</i> , <i>Ilex</i> , <i>Juniperus</i> , <i>Pinus</i> , <i>Quercus</i> , <i>Rosa</i> , <i>Syringa</i> , <i>Ulmus</i> , <i>Zinnia</i>
	chlorantraniliprole (28)	Acelepryn	-	dried	▪ Leafrollers and Budmoths on outdoor-grown <i>Prunus</i> , and non-bearing pome and stone fruit trees; Cabbageworm, Cabbage looper, Diamondback moth on outdoor-grown ornamental <i>Brassica</i> (container and field)
	chlorfenapyr (13)	Pylon	M ₁	12	▪ Cabbage and Soybean loopers on greenhouse ornamentals
	chlorpyrifos (3)	Dursban, Lorsban & Pyrate	M ₄ V ₁	48	▪ Tent caterpillars on <i>Betula</i> and <i>Fraxinus</i> grown in greenhouses and nurseries
	dimethoate (1B)	Cygon 480 Lagon 480 E	V ₁ M ₁	see label see label see label	▪ European pine shoot, Pine tip and Zimmerman pine moths on outdoor-grown Christmas trees (<i>Abies balsamea</i> , <i>Picea</i> , <i>Pinus</i> , <i>Tsuga</i>), <i>Pinus mugo</i> , <i>P. resinosa</i> , <i>P. sylvestris</i> ▪ Bagworms on outdoor arborvitae, Christmas trees (<i>Abies balsamea</i> , <i>Picea</i> , <i>Pinus</i> , <i>Tsuga</i>), <i>Juniperus</i> , <i>Pinus mugo</i> , <i>P. resinosa</i> , <i>P. sylvestris</i> ▪ Spruce budworm on outdoor-grown Christmas trees (<i>Abies balsamea</i> , <i>Picea</i> , <i>Pinus</i>), <i>Tsuga</i>
	malathion (1B)	Malathion 85E	M ₁	72	▪ Bagworm, European pine shoot moth, Spruce budworm and Tent caterpillars on outdoor ornamentals
	malathion (1B)	Malathion 500	M ₁	72	▪ Bagworm, Shoot moth and Tent caterpillar on outdoor ornamentals

Pesticides Registered to Manage Insects and Mites (Cont'd)

Pest Group ^a	Active Ingredient	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Caterpillars and Moths	methomyl (1A)	Lannate	V ₁	12	▪ Spruce budworm on outdoor-grown Christmas trees (<i>Abies, Picea</i>)
	naled (1B)	Dibrom	V ₁	48	▪ fog or vapour treatment for leafrollers on greenhouse-grown <i>Rosa</i> and cut flowers
				48	▪ ground spray for outdoor-grown arborvitae, <i>Aucuba</i> , azalea, <i>Campanula, Chrysanthemum, Dahlia, Magnolia</i> (Chinese), <i>Matthiola, Pittosporum, Privet, Rosa, Salix, Zinnia</i>
	novaluron (15)	Rimon	-	12	▪ Clearwing moth on non-bearing <i>Malus</i> (outdoor ornamental and nursery stock)
	permethrin (3)	Ambush 500 EC	-	dried	▪ Spruce budworm, Tussock moth and Coneworm on conifers; Tent caterpillars, Webworms on deciduous trees and shrubs; and Cutworms on seedling tree nurseries
		Perm-UP EC	M _{1,4}		
	permethrin (3)	Pounce 384 EC	S ₁	dried	▪ <i>Duponchelia fovealis</i> adults on greenhouse ornamentals (<i>Anthurium, Aspidistra, Begonia</i> , Boston fern, <i>Chrysanthemum, Cordyline, Dieffenbachia, Draceana, Ficus, Fuchsia</i> , geranium, <i>Gerbera, Impatiens, Jasminum, Petunia, Philodendron, Poinsettia, Rosa, Sanseveria</i> , spider plants)
	phosmet (1B)	Imidan WP	S ₄ V ₁	72	▪ Gypsy moth, Spanworm, Tent caterpillar on deciduous trees, evergreens, shrubs and herbaceous plants (<i>Abies, Acer</i> , arborvitae, azalea, <i>Betula, Buxus, Camellia</i> , cedar, <i>Chrysanthemum, Cornus</i> , cosmos, <i>Crataegus, Fagus, Fraxinus</i> , geranium, <i>Hydrangea, Juniperus, Ligustrum, Petunia, Picea, Pinus, Portulaca, Quercus, Rosa, Salix, Syringa, Tagetes, Taxus, Tsuga, Ulmus, Zinnia</i>)
	pyrethrin (3)	Doktor Doom 6%	S ₁	dried	▪ ornamentals
	spinosad (5)	Conserve, Entrust & Success	-	dried	▪ Gypsy moth and Tent caterpillars on outdoor ornamentals
tebufenozide (18)	Confirm 240F	-	12	▪ Codling moth on crabapple trees	
tebufenozide (18)	Confirm 240F	-	12	▪ Armyworm, Cutworm, Looper, Budworm and Leafroller on greenhouse ornamentals	
Fungus Gnats	cyromazine (17)	Citation 75WP	M ₄	12	▪ greenhouse ornamentals
	diflubenzuron (15)	Dimilin 25% WP	-	12	▪ container-grown ornamentals
	<i>Steinernema feltiae</i>	Nemasys	-	-	▪ growing media drench for ornamentals
	thiamethoxam (4) + cyantraniliprole (28)	Mainspring X	-	12	▪ drench for greenhouse ornamentals (conifers, cut flowers, ornamental grasses, indoor plants)
Leafhoppers	acephate (1B)	Orthene 75% SP	S ₁	12-72	▪ <i>Acer</i> , Boston ivy, <i>Calendula, Dahlia</i>
				72	▪ Christmas trees, tree nurseries, shelter belts
	acetamiprid (4)	TriStar70 WSP	M ₁	12	▪ outdoor and greenhouse ornamentals
	carbaryl (1A)	Sevin T&O	M ₁	672	▪ outdoor-grown <i>Acer</i> , arborvitae, azalea, <i>Betula, Buxus, Chrysanthemum, Cornus, Dianthus, Gladiolus, Hydrangea, Ilex, Juniperus, Pinus, Quercus, Rosa, Syringa, Ulmus, Zinnia</i>
	chlorantraniliprole (28)	Acelepryn	-	dried	▪ outdoor-grown non-bearing pome fruit trees (container and field) (suppression)
	chlorpyrifos (3)	Dursban, Lorsban & Pyrate	M ₄ V ₁	48	▪ ornamentals grown in greenhouses and nurseries
	dimethoate (1B)	Cygon 480	V ₁	48	▪ outdoor-grown <i>Rosa</i>
	dimethoate (1B)	Lagon 480 E	M ₁	48	▪ outdoor-grown <i>Rosa</i>
	flupyradifurone (4D)	Altus & BCS 2960	S ₄	12	▪ greenhouse, outdoor and landscape ornamentals
malathion (1B)	Malathion 500 & 85E	M ₁	72	▪ outdoor ornamentals	

Pesticides Registered to Manage Insects and Mites (Cont'd)

Pest Group ^a	Active Ingredient	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Leafhoppers	naled (1B)	Dibrom	V ₁	48	▪ ground spray for outdoor-grown arborvitae, <i>Aucuba</i> , azalea, <i>Campanula</i> , <i>Chrysanthemum</i> , <i>Dahlia</i> , <i>Magnolia</i> (Chinese), <i>Matthiola</i> , <i>Pittosporum</i> , <i>Privet</i> , <i>Rosa</i> , <i>Salix</i> , <i>Zinnia</i>
	pymetrozine (9B)	Endeavor 50WG	S ₁ M ₅	12	▪ greenhouse ornamentals
	pyrethrin (3)	Doktor Doom 6%	S ₁	dried	▪ ornamentals
	thiamethoxam (4)	Actara 25WG & Flagship	S ₄	12	▪ outdoor conifers and ornamental grasses
	thiamethoxam (4) + cyantraniliprole (28)	Mainspring X	-	12	▪ outdoor conifers and ornamental grasses
Leafminers and Needle Miners	abamectin (6)	Avid 1.9% EC	M ₁	dried	▪ greenhouse-grown ornamentals
	acephate (1B)	Orthene 75% SP	S ₁	12-72 72	▪ <i>Alnus</i> , <i>Aster</i> , <i>Betula</i> , <i>Deutzia</i> , <i>Ilex</i> , locust, <i>Picea</i> , <i>Quercus</i> , <i>Syringa</i> , <i>Tagetes</i> , <i>Zinnia</i> ▪ Christmas trees, tree nurseries, shelter belts
	acephate (1B)	ACECAP 97	V ₁	72	▪ <i>Betula</i> , <i>Pinus</i>
	acetamiprid (4)	TriStar 70 WSP	M ₁	12	▪ greenhouse and outdoor ornamentals
	azadirachtin	Treeazin	S _{3,4}	injected	▪ tree injection system for ornamental trees in urban landscapes
	carbaryl (1A)	Sevin T&O	M ₁	672	▪ <i>Betula</i> , <i>Buxus</i>
	chlorantraniliprole (28)	Acelepryn	-	dried dried	▪ Spotted and Western tentiform leafminers on outdoor non-bearing pome fruit trees ▪ outdoor ornamentals (container and field)
	cyromazine (17)	Citation 75WP	M ₄	12	▪ greenhouse ornamentals
	dimethoate (1B)	Cygon 480 Lagon 480 E	V ₁ M ₁	see label see label	▪ outdoor-grown azalea, <i>Betula</i> , <i>Buxus</i> , cedar, Christmas trees (<i>Abies balsamea</i> , <i>Picea</i> , <i>Pinus</i>), <i>Ilex</i> , <i>Juniperus</i> , <i>Syringa</i> , <i>Tsuga</i>
	imidacloprid (4A)	Confidor 200 SL	-	-	▪ greenhouse, outdoor nursery and landscape-grown <i>Robinia</i> , <i>Ulmus</i>
	malathion (1B)	Malathion 500 & 85E	M ₁	72	▪ outdoor ornamentals
	naled (1B)	Dibrom	V ₁	48	▪ ground spray for Birch and Holly leafminer on outdoor-grown arborvitae, <i>Aucuba</i> , azalea, <i>Campanula</i> , <i>Chrysanthemum</i> , <i>Dahlia</i> , <i>Magnolia</i> (Chinese), <i>Matthiola</i> , <i>Pittosporum</i> , <i>Privet</i> , <i>Rosa</i> , <i>Salix</i> , <i>Zinnia</i>
	permethrin (3)	Ambush 50 EC Perm-UP EC Pounce 384 EC	- M _{1,4} S ₁	- dried dried	▪ <i>Chrysanthemum</i> leafminer on greenhouse ornamentals
	phosmet (1B)	Imidan WP	S ₄ V ₁	72	▪ <i>Betula</i>
	spinetoram (5)	Delegate	-	12	▪ Serpentine leafminer on aspen (<i>Populus</i> spp.)
	thiamethoxam (4) + cyantraniliprole (28)	Mainspring X	-	12	▪ Dipteran leafminers on greenhouse ornamentals (conifers, cut flowers, ornamental grasses, indoor plants) and outdoor-grown conifers and ornamental grasses
	Mealybugs	acephate (1B)	Orthene 75% SP	S ₁	12 72
canola oil		Vegol Crop Oil	S ₄	-	▪ greenhouse and outdoor ornamentals (flowering, foliage and bedding plants, shade trees, shrubs, <i>Rosa</i>)
carbaryl (1A)		Sevin T&O	M ₁	672	▪ outdoor-grown <i>Acer</i> , arborvitae, azalea, <i>Betula</i> , <i>Buxus</i> , <i>Chrysanthemum</i> , <i>Cornus</i> , <i>Dianthus</i> , <i>Gladiolus</i> , <i>Hydrangea</i> , <i>Ilex</i> , <i>Juniperus</i> , <i>Pinus</i> , <i>Quercus</i> , <i>Rosa</i> , <i>Syringa</i> , <i>Ulmus</i> , <i>Zinnia</i>
chlorpyrifos (3)		Dursban, Lorsban & Pyrate	M ₄ V ₁	48	▪ ornamentals grown in greenhouses and nurseries
dimethoate (1B)	Cygon 480 Lagon 480 E	V ₁ M ₁	see label see label	▪ outdoor-grown <i>Buxus</i> , <i>Poinsettia</i> , <i>Taxus</i>	

Pesticides Registered to Manage Insects and Mites (Cont'd)

Pest Group ^a	Active Ingredient	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Mealybugs	flupyradifurone (4D)	Altus	S ₄	12	▪ greenhouse ornamentals
	kinoprene (7)	Enstar	-	12	▪ greenhouse ornamentals (suppression)
	malathion (1B)	Malathion 85E	M ₁	48	▪ greenhouse <i>Antirrhinum, Chrysanthemum, Dianthus, geranium, Rosa</i>
	malathion (1B)	Malathion 500 & 85E	M ₁	72	▪ outdoor ornamentals
	mineral oil	Landscape Oil	S ₄ V ₁	12	▪ foliar spray on greenhouse ornamentals
				12	▪ summer spray for ornamental trees, evergreens, and hardy shrubs
	mineral oil	Purespray Green	S ₄	12	▪ summer spray for ornamental trees, evergreens, hardy shrubs
	mineral oil	SuffOil-X	S ₅	12	▪ greenhouse ornamentals
	naled (1B)	Dibrom	V ₁	48	▪ fog or vapour treatment for greenhouse roses and cut flowers
	salts of fatty acids	Insecticidal Soap	M ₄	-	▪ ornamental and shade trees
	salts of fatty acids + pyrethrins (3)	Trounce	-	-	▪ greenhouse and interior plantings, shrubs and trees
	spirotetramat (23)	Kontos	-	12	▪ Citrus mealybug on outdoor ornamentals (container and field-grown), except conifers
thiamethoxam (4) + cyantraniliprole (28)	Mainspring X	-	12	▪ greenhouse ornamentals (conifers, cut flowers, ornamental grasses, indoor plants), and outdoor conifers and ornamental grasses	
acephate (1B)	Orthene 75% SP	S ₁	12 24	▪ field-grown <i>Rosa</i> ▪ greenhouse <i>Rosa</i> (cut flower)	
Midges	chlorantraniliprole (28)	Acelepryn	-	dried	▪ Swede midge on outdoor-grown ornamental <i>Brassica</i> (container and field)
	dimethoate (1B)	Cygon 480	V ₁	12	▪ outdoor-grown <i>Juniperus</i>
	dimethoate (1B)	Lagon 480 E	M ₁	12	▪ outdoor-grown <i>Juniperus</i>
	spirotetramat (23)	Movento 240 SC	-	12	▪ Balsam gall midge on field-grown <i>Abies balsamea, A. fraseri</i> , including Christmas trees
	abamectin (6)	Avid 1.9% EC	M ₁	dried	▪ Spider mites on greenhouse ornamentals
Mites	acephate (1B)	Orthene 75% SP	S ₁	12-72 72 -	▪ Spider mites on arborvitae, azalea, <i>Callistemon, Camellia</i> , cypress, <i>Dahlia</i> , fir, <i>Gleditsia, Hemerocallis, Hydrangea, Ilex, Juniperus, Pachysandra, Phlox, Picea, Pinus, Primula, Quercus, Rosa, Tagetes, Tsuga, Viburnum</i> ▪ Christmas trees, tree nurseries, shelter belts ▪ trunk injection for ornamental deciduous and coniferous trees in landscapes and farms
	acephate (1B)	ACECAP 97	V ₁	72	▪ Bladdergall mite on <i>Acer</i>
	acequinocyl (20B)	Kanemite 15 SC	-	12	▪ 2-spot and Spruce spider mites on field-grown ornamentals
	acequinocyl (20B)	Shuttle 15 SC	-	12	▪ 2-spot and Spruce spider mites on greenhouse ornamentals
	<i>Beauveria bassiana</i>	Velifer	-	4 or dried	▪ 2-spot mites on greenhouse ornamentals (suppression)
	bifenazate (20D)	Floramite SC	S ₄	12	▪ 2-spot spider and Lewis mites on greenhouse ornamentals; 2-spot spider mites on outdoor-grown ornamentals; and Spruce spider mites on outdoor-grown conifers
	calcium polysulphide (M)	Lime Sulphur	M ₁ V ₂	48	▪ Blister and Rust mites on <i>Malus, Pyrus</i>
	canola oil	Vegol Crop Oil	S ₄	-	▪ greenhouse and outdoor ornamentals (flowering, foliage and bedding plants, shade trees, shrubs, <i>Rosa</i>)
	carbaryl (1A)	Sevin T&O	M ₁	672	▪ Eriophyid mites on outdoor-grown <i>Acer</i> , arborvitae, azalea, <i>Betula, Buxus, Chrysanthemum, Cornus, Dianthus, Gladiolus, Hydrangea, Ilex, Juniperus, Pinus, Quercus, Rosa, Syringa, Ulmus, Zinnia</i>
	chlorfenapyr (13)	Pylon	M ₁	12	▪ 2-spot spider mites on greenhouse ornamentals
chlorpyrifos (3)	Dursban, Lorsban & Pyrate	M ₄ V ₁	48	▪ arborvitae, <i>Juniperus</i> grown in greenhouses and nurseries	

Pesticides Registered to Manage Insects and Mites (Cont'd)

Pest Group ^a	Active Ingredient	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Mites	clofentezine (10)	Apollo SC	S ₁	12	▪ 2-spot spider mites on outdoor deciduous nursery stock (including <i>Caragana</i> , <i>Clematis</i> , <i>Crataegus</i> , <i>Euonymus</i> , <i>Hedera</i> , <i>Malus</i> , <i>Potentilla</i> , <i>Prunus</i> , <i>Pyrus</i> , <i>Ribes</i> , <i>Rosa</i> , <i>Salix</i> , <i>Ulmus</i>) and herbaceous perennials
	cyflumetofen (25)	Nealta	M ₅	12	▪ spruce spider mite on field, bed and container-grown conifers, including Christmas trees
	dimethoate (1B)	Cygon 480 Lagon 480 E	V ₁ M ₁	see label see label	▪ outdoor-grown azalea, arborvitae, <i>Buxus</i> , <i>Camellia</i> , cedar, Christmas trees (<i>Abies balsamea</i> , <i>Picea</i> , <i>Pinus</i>), <i>Dianthus</i> , <i>Ilex</i> , <i>Poinsettia</i> , <i>Rosa</i> , <i>Taxus</i> , <i>Tsuga</i>
	etoxazole (10B)	TetraSan 5WDG	-	12	▪ Spider mites on greenhouse ornamentals and cut flowers
	fenbutatin-oxide (12)	Vendex 50W	S ₁	12	▪ 2-spot and Spruce spider mites on greenhouse ornamentals and outdoor nursery stock
	fenpyroximate (21)	Fenpyroximate 5SC & FujiMite	S ₁ M ₄	12	▪ Broad, Spider and Cyclamen mites on ornamentals grown in greenhouse
	malathion (1B)	Malathion 85E	M ₁	48	▪ greenhouse <i>Antirrhinum</i> , <i>Chrysanthemum</i> , <i>Dianthus</i> , geranium, <i>Rosa</i>
	malathion (1B)	Malathion 500 & 85E	M ₁	72	▪ outdoor ornamentals
	<i>Metarhizium anisopliae</i>	Met 52 EC	M ₄	0	▪ foliar spray or drench to reduce the number of Spider mites on greenhouse-grown ornamentals (excluding conifers)
	mineral oil	Landscape Oil	S ₄ V ₁	12 12 12	▪ greenhouse ornamentals ▪ dormant spray to manage European red, Spruce spider and Pear blister mites on ornamental plants, shade trees and shrubs ▪ summer spray for ornamental trees, evergreens, and hardy shrubs
	mineral oil	Purespray Green	S ₄	12 12	▪ summer spray to manage Red spider mites on ornamental shade trees, evergreens, hardy shrubs ▪ dormant spray to manage European red and Spruce spider mites on <i>Berberis</i> , <i>Crataegus</i> , <i>Malus</i> , <i>Picea</i> , <i>Pinus</i> , <i>Prunus</i> , <i>Sorbus</i> , <i>Ulmus</i>
	mineral oil	SuffOil-X	S ₅	12	▪ summer spray for greenhouse and outdoor ornamentals, including Christmas trees
	mineral oil	Superior 70 Oil	S ₄ V ₁	12	▪ dormant spray for crabapple, <i>Berberis</i> , <i>Crataegus</i> , <i>Malus</i> , <i>Picea</i> , <i>Pinus</i> , <i>Prunus</i> , <i>Sorbus</i> , <i>Ulmus</i> ; see label for use precautions
	naled (1B)	Dibrom	V ₁	48 48	▪ fog or vapour treatment for greenhouse roses and cut flowers ▪ ground spray for outdoor-grown arborvitae, <i>Aucuba</i> , azalea, <i>Campanula</i> , <i>Chrysanthemum</i> , <i>Dahlia</i> , <i>Magnolia</i> (Chinese), <i>Matthiola</i> , <i>Pittosporum</i> , <i>Privet</i> , <i>Rosa</i> , <i>Salix</i> , <i>Zinnia</i>
	pyridaben (21)	DYNO-Mite & Sanmite	M _{1, 4, 5}	12-144	▪ greenhouse and outdoor-grown ornamentals
	salts of fatty acids	Insecticidal Soap	M ₄	-	▪ ornamental and shade trees; and greenhouse and outdoor-grown bedding, flowering, foliage and houseplants
	salts of fatty acids + pyrethrins (3)	Trounce	-	-	▪ greenhouse and interior plantings, shrubs and trees
	spiromesifen (23)	Forbid 240 SC	S _{1, 4}	12	▪ greenhouse and outdoor ornamentals
	spirotetramat (23)	Kontos	-	12	▪ outdoor field and container ornamentals, except conifers
	acephate (1B)	Orthene 75% SP	S ₁	12-72 72	▪ Lace bugs on azalea, <i>Cotoneaster</i> , <i>Fraxinus</i> , <i>Platanus</i> , <i>Pyracantha</i> , <i>Quercus</i> , <i>Rhododendron</i> , <i>Zinnia</i> ▪ Lace bugs on Christmas trees, tree nurseries, shelter belts
carbaryl (1A)	Sevin T&O	M ₁	672	▪ Lace bugs on outdoor-grown <i>Acer</i> , arborvitae, azalea, <i>Betula</i> , <i>Buxus</i> , <i>Chrysanthemum</i> , <i>Cornus</i> , <i>Dianthus</i> , <i>Gladiolus</i> , <i>Hydrangea</i> , <i>Ilex</i> , <i>Juniperus</i> , <i>Pinus</i> , <i>Quercus</i> , <i>Rosa</i> , <i>Syringa</i> , <i>Ulmus</i> , <i>Zinnia</i>	

Pesticides Registered to Manage Insects and Mites (Cont'd)

Pest Group ^a	Active Ingredient	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Plant Bugs	cypermethrin (3)	Ripcord & Mako EC	S ₁	12	▪ <i>Lygus</i> on conifer seedlings in outdoor nurseries
	cypermethrin (3)	UP-Cyde 2.5 EC	S ₄ V ₁	12	▪ <i>Lygus</i> on conifer seedlings in outdoor nurseries
	dimethoate (1B)	Cygon 480	V ₁	48	▪ Lace bugs on outdoor-grown azalea
	dimethoate (1B)	Lagon 480 E	M ₁	48	▪ Lace bugs on outdoor-grown azalea
	flonicamid (29)	Beleaf 50SG	S ₄ M ₅	12	▪ drench for <i>Lygus</i> on greenhouse herbaceous ornamentals (includes cut flowers)
	malathion (1B)	Malathion 85E	M ₁	72	▪ Four-lined plant bug, Lace bug and <i>Lygus</i> on outdoor ornamentals
	malathion (1B)	Malathion 500	M ₁	72	▪ Lace bugs and <i>Lygus</i> on outdoor ornamentals
	thiamethoxam (4)	Actara 25WG & Flagship	S ₄	12	▪ suppression of <i>Lygus</i> and Brown marmorated stink bug on outdoor conifers and ornamental grasses
	thiamethoxam (4) + cyantraniliprole (28)	Mainspring X	-	12	▪ Lace bugs on outdoor-grown conifers and ornamental grasses
Psyllids	acephate (1B)	Orthene 75% SP	S ₁	12-72 72 -	▪ <i>Alnus, Celtis, Ilex, Rhus, Salix</i> ▪ Christmas trees, tree nurseries, shelter belts ▪ trunk injection for ornamental deciduous and coniferous trees in landscapes and farms
	carbaryl (1A)	Sevin T&O	M ₁	672	▪ outdoor-grown <i>Acer, arborvitae, azalea, Betula, Buxus, Chrysanthemum, Cornus, Dianthus, Gladiolus, Hydrangea, Ilex, Juniperus, Pinus, Quercus, Rosa, Syringa, Ulmus, Zinnia</i>
	imidacloprid (4A)	Confidor 200 SL	-	-	▪ Cottony ash psyllid of <i>Fraxinus</i> grown in a greenhouse, outdoor nursery and landscape
	mineral oil	Landscape Oil	S ₄ V ₁	12	▪ dormant spray to manage Pear psylla on <i>Pyrus</i>
	pyrethrin (3)	Doktor Doom 6%	S ₁	dried	▪ ornamentals
	salts of fatty acids	Insecticidal Soap	M ₄	-	▪ ornamental and shade trees
	thiamethoxam (4) + cyantraniliprole (28)	Mainspring X	-	12	▪ outdoor conifers and ornamental grasses
Sawflies	acephate (1B)	Orthene 75% SP	S ₁	12-72 -	▪ Christmas trees, shade trees, ornamentals, tree nurseries, shelter belts ▪ trunk injection for ornamental deciduous and coniferous trees in landscapes and farms
	acetamiprid (4)	TriStar 70 WSP	M ₁	12	▪ European pine sawfly on greenhouse and outdoor ornamentals
	azadirachtin	Treeazin	S _{3,4}	injected	▪ tree injection system for ornamental trees in urban landscapes
	carbaryl (1A)	Sevin T&O	M ₁	672	▪ <i>Pinus, Rosa</i>
	chlorantraniliprole (28)	Acelepryn	-	dried	▪ European apple sawfly on outdoor-grown non-bearing pome fruit trees (container and field)
	chlorpyrifos (3)	Dursban, Lorsban & Pyrate	M ₄ V ₁	48	▪ European and Red-headed pine sawflies on conifers, <i>Sorbus</i>
	dimethoate (1B)	Cygon 480 Lagon 480 E	V ₁ M ₁	12-432 12-432	▪ Red and Black-headed pine sawfly larvae on outdoor-grown <i>Pinus mugo, P. resinosa, P. sylvestris</i>
	malathion (1B)	Malathion 85E	M ₁	72	▪ outdoor ornamentals
	<i>Neodiprion abietis</i> nucleopolyhedro-virus	ABIETIV	S ₄	-	▪ reduce population of Balsam fir sawfly larvae in field-grown conifers, including Christmas trees
	permethrin (3)	Ambush 500 EC Perm-UP EC	- M _{1,4}	dried dried	▪ coniferous trees and shrubs
	salts of fatty acids	Insecticidal Soap	M ₄	- -	▪ ornamental and shade trees ▪ greenhouse and outdoor-grown bedding, flowering, foliage and houseplants

Pesticides Registered to Manage Insects and Mites (Cont'd)

Pest	Active Ingredient (Group ^a)	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Sawflies	salts of fatty acids + pyrethrins (3)	Trounce	-	-	▪ Rose and Pear slugs on shrubs and trees
	spinosad (5)	Conserve, Entrust & Success	-	dried	▪ Conifer sawfly larvae on outdoor ornamentals
Scales	acephate (1B)	Orthene 75% SP	S ₁	12-72 72 -	▪ <i>Abelia, Acer, azalea, Buxus, Camellia, Celtis, Cotoneaster, cypress, Euonymus, fir, Forsythia, geranium, Hibiscus, Ilex, laurel, Magnolia, Morus, Nandina, Pinus, Pyracantha, Quercus, Rosa, Salix, Syringa, Tsuga, Ulmus, Wisteria, Yucca</i> ▪ Christmas trees, farm woodlots, tree nurseries, shelter belts ▪ trunk injection for ornamental deciduous and coniferous trees in landscapes and farms
	calcium polysulphide (M)	Lime Sulphur	M ₁ V ₂	48	▪ <i>Malus, Prunus, Pyrus</i>
	canola oil	Vegol Crop Oil	S ₄	-	▪ greenhouse and outdoor ornamentals (flowering, foliage and bedding plants, shade trees, shrubs, <i>Rosa</i>)
	carbaryl (1A)	Sevin T&O	M ₁	672	▪ outdoor-grown <i>Acer, arborvitae, azalea, Betula, Buxus, Chrysanthemum, Cornus, Dianthus, Gladiolus, Hydrangea, Ilex, Juniperus, Pinus, Quercus, Rosa, Syringa, Ulmus, Zinnia</i>
	chlorpyrifos (3)	Dursban, Lorsban & Pyrate	M ₄ V ₁	48	▪ ornamentals grown in greenhouses and nurseries
	dimethoate (1B)	Cygon 480 Lagon 480 E	V ₁ M ₁	see label see label	▪ outdoor-grown <i>Camellia, Christmas trees (Abies balsamea, Picea, Pinus, Tsuga), Euonymus, Ilex, Quercus, Taxus</i>
	imidacloprid (4A)	Confidor 200 SL	-	-	▪ European elm scale of <i>Ulmus</i> grown in a greenhouse, outdoor nursery and landscape
	malathion (1B)	Malathion 85E	M ₁	72	▪ Oyster shell and Pine needle scale crawlers on outdoor ornamentals
	malathion (1B)	Malathion 500	M ₁	72	▪ scale crawlers on outdoor ornamentals
	mineral oil	Landscape Oil	S ₄ V ₁	12 12 12	▪ foliar spray on greenhouse ornamentals ▪ dormant spray for ornamental plants, shade trees and shrubs ▪ summer spray for ornamental trees, evergreens, and hardy shrubs
	mineral oil	Purespray Green	S ₄	12 12	▪ summer spray for ornamental trees, evergreens, hardy shrubs ▪ dormant spray for <i>Acer, Berberis, Betula, Cornus, Crataegus, Fraxinus, Gleditsia, Ligustrum, Liriodendron, Malus, Pachysandra, Picea, Pinus, Platanus, Prunus, Quercus, Salix, Syringa, Ulmus</i> ; see label for use precautions
	mineral oil	SuffOil-X	S ₅	12	▪ summer spray for greenhouse and outdoor ornamentals, including Christmas trees
	mineral oil	SunSpray Ultra-Fine	V ₁	12	▪ dormant spray for ornamental plants (<i>Acer, Betula, cherry, conifers, Cornus, Crataegus, Ilex, Ligustrum, Quercus, Platanus, Ulmus</i>), shade trees and shrubs
	mineral oil	Superior 70 Oil	S ₄ V ₁	12	▪ dormant spray for <i>Acer, crabapple, Berberis, Crataegus, Fraxinus, Gleditsia, Liriodendron, Malus, Pachysandra, Picea, Pinus, Prunus, Quercus, Salix, Syringa, Ulmus</i> ; see label for use precautions
	salts of fatty acids	Insecticidal Soap	M ₄	-	▪ greenhouse and outdoor bedding, flowering, foliage and houseplants
	salts of fatty acids + pyrethrins (3)	Trounce	-	-	▪ soft scale crawlers on greenhouse and interior plantings, shrubs and trees
	spirotetramat (23)	Kontos	-	12	▪ drench application for <i>Euonymus</i> scale on outdoor-grown ornamentals (container and field), except conifers
thiamethoxam (4) + cyantraniliprole (28)	Mainspring X	-	12	▪ soft scales on outdoor-grown conifers and ornamental grasses, and greenhouse ornamentals (conifers, cut flowers, ornamental grasses, indoor plants)	

Pesticides Registered to Manage Insects and Mites (Cont'd)

Pest	Active Ingredient (Group ^a)	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Shore Flies	cyromazine (17)	Citation 75WP	M ₄	12	▪ greenhouse ornamentals
	diflubenzuron (15)	Dimilin 25% WP	-	12	▪ container-grown ornamentals
	<i>Steinernema carpocapsae</i>	Millenium	-	-	▪ container-grown ornamentals
Spittlebugs	acephate (1B)	Orthene 75% SP	S ₁	12 72	▪ <i>Juniperus, Rosa</i> ▪ Christmas trees, tree nurseries, shelter belts
	chlorpyrifos (3)	Dursban, Lorsban & Pyrate	M ₄ V ₁	48	▪ ornamentals grown in greenhouses and nurseries
Thrips	acephate (1B)	Orthene 75% SP	S ₁	12 72 72	▪ <i>Alyssum, Antirrhinum, Aster, Calendula</i> , daisy, <i>Gladiolus, Hemerocallis, Petunia, Rosa, Salvia, Tagetes, Yucca, Zinnia</i> ▪ greenhouse <i>Rosa</i> (cut flower) ▪ Christmas trees, farm woodlots, tree nurseries, shelter belts
	<i>Beauveria bassiana</i>	Botanigard	M _{4,5}	4	▪ greenhouse ornamentals
	<i>Beauveria bassiana</i>	Bio-ceres G WP	S ₄ M ₅	4 or dried	▪ ornamentals
	<i>Beauveria bassiana</i>	Velifer	-	4 or dried	▪ greenhouse ornamentals (suppression)
	carbaryl (1A)	Sevin T&O	M ₁	672	▪ outdoor-grown <i>Acer</i> , arborvitae, azalea, <i>Betula, Buxus, Chrysanthemum, Cornus, Dianthus, Gladiolus, Hydrangea, Ilex, Juniperus, Pinus, Quercus, Rosa, Syringa, Ulmus, Zinnia</i>
	chlorfenapyr (13)	Pylon	M ₁	12	▪ Western flower thrips on greenhouse ornamentals
	chlorpyrifos (3)	Dursban, Lorsban & Pyrate	M ₄ V ₁	48	▪ greenhouse and nursery-grown ornamentals
	deltamethrin (3)	DeltaGard SC & Decis 5 EC	M ₄ V ₁	12	▪ Western flower thrips on greenhouse ornamentals (<i>Chrysanthemum, Cineraria, Easter lilies, geranium</i>)
	dimethoate (1B)	Cygon 480 Lagon 480 E	V ₁ M ₁	12 48 168	▪ outdoor-grown <i>Dianthus</i> ▪ outdoor-grown <i>Gerbera, Gladiolus, Rosa</i> ▪ outdoor-grown <i>Hemerocallis, Iris</i>
	flonicamid (29)	Beleaf 50SG	S ₄ M ₅	12	▪ greenhouse ornamentals (including cut flowers)
	malathion (1B)	Malathion 85E	M ₁	48	▪ greenhouse <i>Antirrhinum, Chrysanthemum, Dianthus, geranium, Rosa</i>
	malathion (1B)	Malathion 500 & 85E	M ₁	72	▪ outdoor ornamentals
	<i>Metarhizium anisopliae</i>	Met 52 G	M ₄	-	▪ container-grown ornamentals (includes forest seedlings) in greenhouses and outdoor nurseries (suppression)
	<i>Metarhizium anisopliae</i>	Met 52 EC	M ₄	0	▪ foliar spray or drench to reduce the number of thrips on greenhouse-grown ornamentals (excluding conifers)
	mineral oil	Landscape Oil	S ₄ V ₁	12	▪ foliar spray or cutting/ plant dip for greenhouse ornamentals
	mineral oil	SuffOil-X	S ₅	12	▪ greenhouse ornamentals; and cutting or potted plug foliar dip for greenhouse ornamentals (suppression)
	<i>Paecilomyces fumosoroseus</i>	NOFLY WP	-	4	▪ greenhouse ornamentals
	pyrethrin (3)	Doktor Doom 6%	S ₁	dried	▪ ornamentals
	spinosad (5)	Conserve, Entrust & Success	-	dried	▪ Western flower thrips on outdoor ornamentals
	spirotetramat (23)	Kontos	-	12	▪ suppress Western flower thrips on outdoor-grown ornamentals (container and field), except conifers
thiamethoxam (4) + cyantraniliprole (28)	Mainspring X	-	12	▪ outdoor-grown conifers and ornamental grasses, and greenhouse ornamentals (conifers, cut flowers, ornamental grasses, indoor plants) (suppression)	

Pesticides Registered to Manage Insects and Mites (Cont'd)

Pest Group ^a	Active Ingredient	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Weevils	azadirachtin	Treeazin	S _{3,4}	injected	▪ tree injection to control Red elm bark weevil in ornamental trees in urban landscapes
	carbaryl (1A)	Sevin T&O	M ₁	672	▪ Black vine and Taxus weevils on outdoor-grown <i>Acer</i> , <i>arborvitae</i> , <i>azalea</i> , <i>Betula</i> , <i>Buxus</i> , <i>Chrysanthemum</i> , <i>Cornus</i> , <i>Dianthus</i> , <i>Gladiolus</i> , <i>Hydrangea</i> , <i>Ilex</i> , <i>Juniperus</i> , <i>Pinus</i> , <i>Quercus</i> , <i>Rosa</i> , <i>Syringa</i> , <i>Ulmus</i> , <i>Zinnia</i>
	dimethoate (1B)	Cygon 480	V ₁	see label	▪ Sitka spruce weevil on outdoor-grown <i>Picea</i> (seed tree)
	dimethoate (1B)	Lagon 480 E	M ₁	see label	▪ Sitka spruce weevil on outdoor-grown <i>Picea</i> (seed tree)
	<i>Heterorhabditis bacteriophora</i>	beneficial nematode	-	-	▪ ornamentals
	lambda-cyhalothrin (3)	Demand CS & Lambda-cyhalothrin	S ₄	see label	▪ Black vine weevil adults on outdoor ornamentals
	lambda-cyhalothrin (3)	Silencer 120 EC	S ₄ V ₁	see label	▪ Black vine weevil adults on outdoor ornamentals
	<i>Metarhizium anisopliae</i>	Met 52 G	M ₄	-	▪ Black vine and Strawberry root weevils in potted ornamentals and forest seedlings in greenhouses and outdoor nurseries
	permethrin (3)	Ambush 500 EC Perm-UP EC	- M _{1,4}	dried dried	▪ Strawberry root weevil in conifer seedlings (<i>cedar</i> , <i>Juniperus</i> , <i>Picea</i> , <i>Pinus</i> , <i>Taxus</i>) grown in forest nursery greenhouses
	<i>Steinernema carpocapsae</i>	Millenium	-	-	▪ Black vine and Strawberry root weevils in container-grown ornamentals
thiamethoxam (4)	Flagship	S ₄	12	▪ Black vine weevil on outdoor ornamental conifers and grasses	
thiamethoxam (4) + cyantraniliprole (28)	Mainspring X	-	12	▪ Black vine weevil on outdoor-grown conifers and ornamental grasses	
Whiteflies	acephate (1B)	Orthene 75% SP	S ₁	12 72	▪ <i>azalea</i> , <i>Camellia</i> , <i>Berberis</i> , <i>Lantana</i> , <i>Ligustrum</i> , <i>Mahonia</i> , <i>Salvia</i> , <i>Viburnum</i> , <i>Zinnia</i> ▪ Christmas trees, greenhouse <i>Rosa</i> (cut flower), tree nursery, shelter belts
	acetamiprid (4)	TriStar 70 WSP	M ₁	12	▪ greenhouse and outdoor ornamentals
	afidopyropen (9D)	Ventigra	S ₄ M ₁	12	▪ greenhouse and outdoor ornamentals (except conifers)
	<i>Beauveria bassiana</i>	Botanigard	M _{4,5}	4	▪ foliar spray for greenhouse ornamentals; and pre-plant cutting dip
	<i>Beauveria bassiana</i>	Bio-ceres G WP	S ₄ M ₅	4 or dried	▪ ornamentals
	<i>Beauveria bassiana</i>	Velifer	-	4 or dried	▪ greenhouse ornamentals (suppression)
	buprofezin (16)	Talus & Applaud	S _{4,5}	12	▪ greenhouse ornamentals (excludes cut flowers)
	canola oil	Vegol Crop Oil	S ₄	-	▪ greenhouse and outdoor ornamentals (flowering, foliage and bedding plants, shade trees, shrubs, <i>Rosa</i>)
	chlorpyrifos (3)	Dursban, Lorsban & Pyrate	M ₄ V ₁	48	▪ ornamentals grown in greenhouses and nurseries
	dichlorvos (1B)	DDVP 20%	V ₁	day after treated	▪ greenhouse ornamentals
	dimethoate (1B)	Cygon 480 Lagon 480 E	V ₁ M ₁	12 48	▪ outdoor-grown <i>Gardenia</i> ▪ outdoor-grown <i>azalea</i> , <i>Poinsettia</i>
	fenpyroximate (21)	Fenpyroximate 5SC & FujiMite	S ₁ M ₄	12	▪ ornamentals grown in greenhouse (suppression)
	flonicamid (29)	Beleaf 50SG	S ₄ M ₅	12	▪ greenhouse ornamentals (including cut flowers)
	flupyradifurone (4D)	Altus & BCS 2960	S ₄	12	▪ greenhouse, outdoor and landscape ornamentals
	imidacloprid (4)	Intercept 60 WP & Merit 60 WP	S ₁	12	▪ drench for greenhouse-grown conifers, ornamental grasses, cut flowers and plants grown for indoor use
kinoprene (7)	Enstar	-	12	▪ greenhouse ornamentals	

Pesticides Registered to Manage Insects and Mites (Cont'd)

Pest	Active Ingredient (Group ^a)	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses
Whiteflies	malathion (1B)	Malathion 85E	M ₁	48	▪ greenhouse-grown <i>Antirrhinum</i> , <i>Chrysanthemum</i> , <i>Dianthus</i> , geranium, <i>Rosa</i>
	<i>Metarhizium anisopliae</i>	Met 52 EC	M ₄	0	▪ foliar spray or drench to reduce the number of whiteflies on greenhouse-grown ornamentals (excluding conifers)
	mineral oil	Landscape Oil	S ₄ V ₁	12	▪ foliar spray or cutting/plant dip on greenhouse ornamentals
				12	▪ summer spray for ornamental trees, evergreens, hardy shrubs
	mineral oil	Purespray Green	S ₄	12	▪ summer spray for ornamental trees, evergreens, hardy shrubs
	mineral oil	SuffOil-X	S ₅	12	▪ summer spray to control nymphs on greenhouse and outdoor ornamentals (including Christmas trees)
				12	▪ cutting or potted plug foliar dip for greenhouse ornamentals
	naled (1B)	Dibrom	V ₁	48	▪ fog or vapour treatment for greenhouse roses and cut flowers
	<i>Paecilomyces fumosoroseus</i>	NOFLY WP	-	4	▪ greenhouse ornamentals
	permethrin (3)	Ambush 50 EC	-	-	▪ greenhouse ornamentals (<i>Aspidistra</i> , <i>Begonia</i> , Boston fern, <i>Chrysanthemum</i> , <i>Cordyline</i> , <i>Dieffenbachia</i> , <i>Draceana</i> , <i>Ficus</i> , <i>Fuchsia</i> , geranium, <i>Gerbera</i> , <i>Impatiens</i> , <i>Petunia</i> , <i>Philodendron</i> , <i>Poinsettia</i> , <i>Rosa</i> , <i>Sanseveria</i> , spider plants)
		Perm-UP EC	M _{1,4}	dried	
		Pounce 384 EC	S ₁	dried	
	pymetrozine (9B)	Endeavor 50WG	S ₁ M ₅	12	▪ greenhouse ornamentals
	pyriproxyfen (7)	Distance	S ₄	12	▪ greenhouse ornamentals
	pyrethrin (3)	Doktor Doom 6%	S ₁	dried	▪ ornamentals
	pyridaben (21)	DYNO-Mite & Sanmite	M _{1,4,5}	12-144	▪ greenhouse ornamentals
salts of fatty acids	Insecticidal Soap	M ₄	-	▪ ornamental and shade trees; and greenhouse and outdoor-grown bedding, flowering, foliage and houseplants	
salts of fatty acids + pyrethrins (3)	Trounce	-	-	▪ greenhouse and interior plantings	
spiromesifen (23)	Forbid 240 SC	S _{1,4}	12	▪ greenhouse and outdoor ornamentals	
spirotetramat (23)	Kontos	-	12	▪ outdoor-grown ornamentals (container and field), except conifers	
thiamethoxam (4) + cyantraniliprole (28)	Mainspring X	-	12	▪ greenhouse ornamentals (conifers, cut flowers, ornamental grasses, indoor plants)	
<i>Bacillus thuringiensis</i> subsp. <i>galleriae</i> (11)	grubGONE! G beetleGONE! WDP	S ₄ S ₄	4 4	▪ greenhouse, outdoor and landscape-grown ornamentals	
White Grubs	chlorantraniliprole (28)	Acelepryn	-	dried	▪ Japanese beetle larvae on greenhouse and outdoor-grown ornamentals (container and field)
	chlorpyrifos (3)	Lorsban	M ₄ V ₁	48	▪ Japanese beetle larvae in outdoor container nursery stock
	<i>Heterorhabditis</i> spp.	beneficial nematode	-	-	▪ European chafer grubs in ornamentals
	imidacloprid (4)	Intercept 60 WP & Merit 60 WP	S ₁	12	▪ drench to control European chafer and Japanese beetle larvae in container and field-grown nursery ornamentals

^a Resistance management group

^b Toxicity of the pesticide: S = caution, slightly harmful; M = warning, moderately harmful; V = danger, very harmful. The subscript denotes the specific hazard, which includes: 1 = poisonous, 2 = corrosive, 3 = flammable, 4 = eye irritant/skin sensitizer, and 5 = contain allergens.

^c Pesticide labels prohibit re-entry into treated crops until after the minimum restricted entry interval (REI). A longer REI may be required for some crop activities (e.g. pruning, thinning). An REI of "dried" permits entry once the treated surfaces have dried.

4) Plant Growth Regulators

Plant Growth Regulators Labelled for Specific Crops

Crop	A-Rest	B-Nine & Dazide	Bonzi & Piccolo	Configure	Cycocel Extra	Fascination	Florel	Concise & Sumagic
<i>Antirrhinum</i>								✓
Asters		✓						
Azalea		✓						
<i>Begonia</i>			✓				✓	
<i>Calibrachoa</i>			Piccolo					
<i>Celosia</i>			✓					✓
<i>Chrysanthemum</i>	✓	✓					✓	✓
<i>Coleus</i>			✓					✓
<i>Cosmos</i>		✓						
<i>Echinacea purpurea</i>				✓				
<i>Fuchsia</i>							✓	
Geraniums (Ivy, Zonal)			✓		✓		✓	✓
<i>Hosta</i>				✓				
<i>Hydrangea</i>		✓						
<i>Impatiens</i>			✓				✓	✓
<i>Ipomea</i>							✓	
<i>Lantana</i>							✓	
<i>Lilium</i> , Easter	✓					✓		✓
<i>Lilium</i>						✓		
<i>Penstemon</i>			Piccolo					
<i>Petunia</i>		✓	✓					✓
<i>Poinsettia</i>	✓	✓			✓		✓	✓
<i>Rhipsalidopsis</i>				✓				
<i>Salvia</i>		✓	✓					✓
<i>Schlumbergera</i>				✓				
<i>Tagetes</i>		✓						✓
<i>Vinca</i>							✓	✓
<i>Viola</i>								✓
<i>Zinnia</i>		✓						

Active Ingredient	Trade Name	Toxicity ^a	REI ^b (hrs)	Uses
ancymidol	A-Rest	S	12	▪ drench to control height of greenhouse potted <i>Chrysanthemum</i> , <i>Lilium</i> , <i>Poinsettia</i>
benzyladenine	Configure	S ₂	12	▪ foliar spray to increase vegetative branching and promote flowering in certain potted greenhouse-grown ornamentals; may reduce plant height
benzyladenine + gibberellins 4+7	Fascination	M ₂	12	▪ spray foliage of lilies at bud stage and prior to cold storage to reduce leaf yellowing and delay flower senescence following the cold storage
chlomequatchloride	Cycocel Extra	S ₁	12	▪ soil drench to control height in greenhouse-grown geraniums, <i>Poinsettia</i>
daminozide	B-Nine & Dazide	S ₂	24	▪ foliar spray to control height and enhance flowering of certain potted ornamentals and cut <i>Chrysanthemum</i> grown in a greenhouse or shade house
ethephon	Florel	V ₃	12	▪ foliar spray to increase lateral branching of potted greenhouse ornamentals
paclobutrazol	Bonzi & Piccolo	S ₁	12	▪ soil drench/foliar spray to control height of greenhouse potted bedding plants
uniconazole-P	Concise & Sumagic	S ₁	12	▪ foliar spray for height control of greenhouse-grown bedding plants, <i>Chrysanthemum</i> , Easter lily, geranium, <i>Poinsettia</i>

^a Toxicity of the pesticide: S = caution, slightly harmful; M = warning, moderately harmful; V = danger, very harmful. The subscript denotes the specific hazard, which includes: poisonous (1), corrosive (2) and flammable (3).

^b Pesticide labels prohibit re-entry into treated crops until after the minimum restricted entry interval (REI).

5) Pesticides Registered to Control Weeds

	Active Ingredient (Group ^a)	Trade Name	Toxicity ^b	Activity	REI ^c (hrs)	Uses ^d
Non-selective, Post-emergent Herbicides	acetic acid	Munger Hort. Vinegar & Serene	S ₄ V ₂	contact	12	▪ annual weeds and top growth suppression of perennial weeds in non-crop areas, including greenhouses (e.g. under planting benches, in walkways, and in beds after harvest)
	amitrole (11)	Amitrol 240	S ₁ M ₄	systemic	96	▪ broadleaf weeds and grasses in spruce bareroot seedbeds
	fatty acids	Safer's De-Moss	-	contact	-	▪ moss, algae, lichens, liverwort in greenhouses
	fatty acids	Moss-Aside	M ₄	contact	dried	▪ moss, algae, lichen, liverwort in and around nurseries and greenhouses
	fatty acids	Topgun	M _{2,4}	contact	dried	▪ annual and suppress perennial weeds in plant nurseries and greenhouses
	fatty acids	Fireworxx & Axxe	M ₄	contact	dried	▪ weeds in non-crop areas or as a directed spray around outdoor ornamentals
	glyphosate (9)	Credit Xtreme, VisionSilviculture & VP480	S ₄	systemic	12	▪ non-cropland treatment
	glyphosate (9)	Polaris Max, Roundup & Timberline	S ₁ M ₄	systemic	12	▪ apply before planting and crop emergence, or as directed spray to established plantings of <i>Abies</i> , <i>Acer</i> , <i>Caragana</i> , <i>Elaeagnus</i> , <i>Fraxinus</i> , <i>Juniperus</i> , <i>Picea</i> , <i>Pinus</i> , <i>Populus</i> , <i>Prunus</i> , <i>Salix</i> , <i>Sorbus</i> , <i>Syringa</i> , <i>Taxus</i> , <i>Ulmus</i>
	glyphosate (9)	Polaris Max, Roundup & Timberline	S ₁ M ₄	systemic	12	▪ apply before planting and crop emergence, or as directed spray to established plantings of <i>Abies</i> , <i>Acer</i> , <i>Caragana</i> , <i>Elaeagnus</i> , <i>Fraxinus</i> , <i>Juniperus</i> , <i>Picea</i> , <i>Pinus</i> , <i>Populus</i> , <i>Prunus</i> , <i>Salix</i> , <i>Sorbus</i> , <i>Syringa</i> , <i>Taxus</i> , <i>Ulmus</i>
paraquat (22)	Gramoxone 200SL	V _{1,2}	contact	24	▪ apply as a directed spray to control weeds between rows of established field-grown nursery stock	
Selective, Post-emergent Herbicides	carfentrazone-ethyl (14)	Aim EC	S ₄	contact	12	▪ directed spray to manage sucker growth or root sprouts from the base of field-grown woody ornamental nursery stock, such as <i>Malus</i> , <i>Prunus</i> , <i>Sorbus</i>
	clopyralid (4)	Bariloche, Lontrel 360 & Pyralid	S ₁ V ₄	systemic	12	▪ weeds in non-cropland areas; do not use in greenhouses
	clopyralid (4)	Bariloche, Lontrel 360 & Pyralid	S ₁ V ₄	systemic	12	▪ directed spray for labeled weeds in established field-grown conifers
	clopyralid (4)	Bariloche, Lontrel 360 & Pyralid	S ₁ V ₄	systemic	12	▪ vetch control in <i>Abies balsamea</i> Christmas tree plantations
	flazasulfuron (2)	Katana 25WG	-	systemic	12	▪ broadleaf weeds and grasses in container and field-grown conifer trees, including Christmas trees
	fluazifop-p-butyl (1)	Venture	S ₁ V ₄	systemic	12	▪ annual and perennial grasses in newly transplanted or established non-grassy plants in forest and ornamental nurseries; do not use in greenhouses. <i>The label lists plants that can be safely sprayed over-the-top; a directed spray is advised for all other crops.</i>
	halosulfuron (2)	Sedgehammer Turf Herbicide	S _{1,4}	systemic	dried	▪ directed spray for yellow nutsedge and listed broadleaf weeds in field-grown ornamentals in nurseries and landscapes
	halosulfuron (2)	Sedgehammer Turf Herbicide	S _{1,4}	systemic	dried	▪ weeds growing around but not in containers in a production nursery; do not apply in greenhouses
	hexazinone (5)	Velpar L VU	S ₁ V ₄	root absorbed & contact activity	48	▪ broadcast spray for selective weed control in <i>Abies balsamea</i> , <i>Picea</i> (black, white and Colorado blue) and <i>Pinus</i> (red and scotch) Christmas tree plantations
	oxyfluorfen (14)	Goal 2XL	V _{1,4}	contact	12	▪ young broadleaf weeds (up to 4-leaf stage) in outdoor-grown conifers (small containers and field)
<i>Phoma macrostoma</i>	Wilson Lawn Weedout Bio-Phoma	S ₄	contact	-	▪ pre- and post-emergent control of broadleaf weeds in field and container ornamentals, and landscape ornamentals	
sethoxydim (1)	Poast Ultra	S _{1,4}	contact & systemic	12	▪ annual grasses and quackgrass (suppression) in outdoor-grown trees and shrubs (<i>Acer</i> , <i>Amelanchier</i> , <i>Caragana</i> , cedar, <i>Fraxinus pennsylvanica</i> , <i>Hippophae</i> , <i>Juglans</i> , <i>Juniperus</i> , <i>Malus</i> (non-bearing), <i>Picea glauca</i> , <i>P. pungens</i> , <i>Pinus sylvestris</i> , <i>Populus</i> , <i>Potentilla</i> , <i>Prunus</i> (non-bearing), <i>Pseudotsuga menziesii</i> , <i>Shepherdia</i> , <i>Spiraea</i> , <i>Syringa</i>)	
triclopyr (4)	Garlon XRT	M ₄	systemic	12	▪ directed spray for woody and broadleaved weeds in Christmas tree plantations	

Pesticides Registered to Control Weeds (Cont'd)

	Active Ingredient (Group ^a)	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses ^d
Selective, Pre-emergent Herbicides	chlorthal (3)	Dacthal W75	S	12	▪ grassy and broadleaf weeds on recently transplanted and established field-grown nursery stock
	dichlobenil (20)	Casoron G-4	-	12	▪ grasses and broadleaf weeds in established field plantings of woody nursery stock, and container-grown <i>Juniperus chinensis</i> , <i>J. horizontalis</i> , <i>Thuja occidentalis</i> ; do not use in or near greenhouses
	dimethenamid-P (15)	Frontier Max	S ₄ M ₁	24	▪ directed spray for annual grasses and certain broadleaf weeds in container and field-grown <i>Abies</i> , <i>Acer</i> , <i>Buxus</i> , <i>Fraxinus</i> , <i>Hydrangea</i> , <i>Ilex</i> , <i>Juniperus</i> , <i>Lagerstroemia</i> , <i>Magnolia</i> , <i>Pseudotsuga</i> , <i>Rhododendron</i> , <i>Rosa</i> , <i>Spiraea</i> , <i>Taxus</i> , <i>Thuja</i>
	flazasulfuron (2)	Katana 25WG	-	12	▪ certain broadleaf weeds and grasses in container and field-grown conifer trees, including Christmas trees
	flumioxazin (14)	BroadStar G	S ₁	dried-24	▪ outdoor-grown containerized woody ornamentals; do not apply to recently transplanted liners
	flumioxazin (14)	SureGuard	S ₁	12	▪ established outdoor-grown deciduous and coniferous trees (container and field), including Christmas trees and trees produced for reforestation
				dried	▪ non-crop areas in and around ornamental nurseries
	hexazinone (5)	Velpar L VU	S ₁ V ₄	48	▪ broadcast spray for selective weed control in <i>Abies balsamea</i> , <i>Picea</i> (black, white and Colorado blue) and <i>Pinus</i> (red and scotch) Christmas tree plantations
	indaziflam (29)	Specticle FLO	-	12	▪ residual control of annual broadleaf and grassy weeds in outdoor field-grown and pot-in-pot ornamentals; see label for list of tolerant species
	indaziflam (29)	Specticle G	-	dried	▪ residual control of annual broadleaf and grassy weeds in outdoor-grown containerized ornamental trees, shrubs and herbaceous perennials (before emergence); see label for list of tolerant species
	isoxaben (21)	Gallery 75 DF	S ₁	12	▪ select broadleaf weeds in bareroot and containerized conifers (<i>Picea abies</i> , <i>P. glauca</i> , <i>P. mariana</i> , <i>Pinus banksiana</i> , <i>P. contorta</i> , <i>P. resinosa</i> , <i>P. strobus</i>) grown in outdoor nurseries, and in tolerant containerized ornamentals (see label) grown in outdoor nurseries; not for use on cut flowers
		Gallery SC	S ₄	12	
		Devrinol 50-DF	-	12	
	napropamide (15)	Devrinol 2-XI	-	12	▪ annual grasses and broadleaf weeds in select container and field-grown nursery stock (ornamental and forestry); see the label for the list of tolerant plant species
		Devrinol G	M ₄	12	
		Devrinol 50-DF	-	12	
oxadiazon (14)	Ronstar	S ₁	-	▪ select annual broadleaf and grassy weeds in woody ornamentals grown in containers	
pendimethalin (3)	Prowl H ₂ O	-	24	▪ specific annual grasses and broadleaf weeds in field, liner and container-grown outdoor ornamentals, and conifers for field production, including Christmas trees	
propyzamide (3)	Kerb SC	-	24	▪ certain perennial and most annual grasses, and chickweed on specific ornamentals (established) and container-grown nursery stock; also provides early postemergence control of winter annuals and perennial grasses	
	Kerb 50 WSP	S ₁	24		
simazine (5)	Princep Nine-T	-	12	▪ grass and broadleaf seedlings in outdoor field-grown woody nursery stock and Christmas trees, and container-grown cedar, <i>Juniperus</i> and <i>Taxus</i>	
simazine (5)	Simadex Simazine	-	12	▪ grass and broadleaf seedlings in outdoor field-grown woody nursery stock and conifers	
simazine (5)	Simazine 480	S ₁	12	▪ grass and broadleaf seedlings in outdoor field-grown woody nursery stock and conifers	

Pesticides Registered to Control Weeds (Cont'd)

	Active Ingredient (Group ^a)	Trade Name	Toxicity ^b	REI ^c (hrs)	Uses ^d
Selective, Pre-emergent Herbicides	s-metolachlor (15)	Dual II Magnum	M ₄	12	▪ annual broadleaf and grassy weeds in outdoor ornamentals (woody, coniferous and herbaceous), including container, field and liner-grown plants; and second-year or older white spruce, Norway spruce, black spruce, white pine, Jack pine and red pine transplant or seedling stock and poplar stoolbeds
	trifluralin (3)	Bonanza 480	M _{1,4}	12	▪ incorporate prior to transplanting woody nursery stock and perennials, or use in established woody nursery stock
	trifluralin (3)	Rival EC	-	12	▪ incorporate prior to transplanting woody nursery stock and perennials, or use in established woody nursery stock
	trifluralin (3)	Treflan G Treflan EC	S ₄ S ₄	12 12	▪ field and container-grown ornamentals (woody and perennial), and in woody ornamental beds

^a Resistance management group

^b Toxicity of the pesticide: S = caution, slightly harmful; M = warning, moderately harmful; V = danger, very harmful. The subscript denotes the specific hazard, which includes: 1 = poisonous, 2 = corrosive, 3 = flammable, 4 = eye irritant/skin sensitizer, and 5 = contain allergens.

^c Pesticide labels prohibit re-entry into treated crops until after the minimum restricted entry interval (REI). A longer REI may be required for some crop activities (e.g. pruning, thinning). An REI of “dried” permits entry once the treated surfaces have dried.

^d Some herbicides are labeled for use on a select group of ornamental plants. Refer to the label for information on which ornamental plants may be treated with a specific herbicide. Most herbicides are not labeled for use in a greenhouse; check the label before applying an herbicide in a greenhouse.