

8. Eggplants

Products registered for greenhouse eggplant insect and mite pests are listed in Table 8–1.

Products registered for greenhouse eggplant diseases are listed in Table 8–2.

Table 8–1. Products registered for greenhouse eggplant insect and mite pests

For more information on pesticide application, visit www.sprayers101.com — search keywords “greenhouse” or “airblast 101.”

LEGEND: PHI = pre-harvest interval (in days) NS = no information was provided on the product label REI = re-entry interval N/A = not applicable
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IRAC Group ¹	Common Name/ Active Ingredient	Trade Name/ Formulation	Rate	PHI	Remarks
APHIDS					
1B	naled	Dibrom	Vapour: 9.6 mL/100 m ³ Fog: 6.7–13.4 mL/100 m ²	N/A	Do not exceed 1 application per crop cycle, only after the last harvest at the end of the cropping cycle. Vapour treatment: Apply to cold pipes using a plastic squeeze bottle when plants are dry. Do not apply using a paint brush or any other method. Do not apply to hot pipes. Fogging treatment: Apply with automated fogging equipment only. All workers must evacuate the premises during the fogging operations. REI: 48 hr (must be fully ventilated before re-entry)
4A	imidacloprid	Intercept 60 WP	16 g/70 L water/ 1,000 mature plants	3	For use as a soil drench using micro-irrigation, drip irrigation, overhead irrigation, or hand-held or motorized calibrated irrigation equipment. Do not apply as a foliar application. Irrigate moderately but thoroughly after application, allowing no leaching and runoff from container for at least 10 days after application. Do not exceed 1 application per season. Applications should be made when infestation pressure surpasses threshold and beneficials are not able to maintain pest populations below damage thresholds. May harm pollinators and certain beneficial insects. REI: NS
9B	pymetrozine	Endeavor 50 WG	100–200 g in a minimum of 1,000 L water/ha	3	Green peach aphid (<i>Myzus persicae</i>), melon aphid (<i>Aphis gossypii</i>) Do not exceed 200 g in 1,000 L per application. Do not exceed 2 applications per crop cycle or 3 applications per year in greenhouses with multiple crop cycles. Apply as a foliar spray. Minimum interval between applications is 7 days. On hard-to-wet plants, label recommends adding a non-ionic or organosilicone-based surfactant to improve coverage. REI: 12 hr
23	spirotetramat	Kontos	30–42 mL/100 L water Maximum use rate/ single application: 300 mL/ha (72 g a.i./ha)	3	Use appropriate spray volume for adequate crop foliage spray coverage. Spray crop to wet but not to the point of run-off. Do not exceed a spray volume of 712–1,000 L per hectare (42–30 mL concentration). Use the higher concentration for higher pest infestation levels. Minimum interval between applications is 7–14 days. Do not exceed 900 mL (216 g a.i.) per hectare per crop cycle. Do not exceed 3 applications per crop cycle. Not acutely toxic to adult bees. Residues in/on pollen and nectar may harm bee brood. This product is toxic to certain beneficial insects. REI: 12 hr

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IRAC Group ¹	Common Name/ Active Ingredient	Trade Name/ Formulation	Rate	PHI	Remarks
APHIDS (cont'd)					
UNF	<i>Beauveria bassiana</i> strain GHA	BotaniGard 22WP	250–500 g/400 L water	0	Foliar application method: Spray to wet but not to the point of run-off. Repeat application every 5–10 days. High populations may require 2–5-day intervals. Repeat applications for as long as pest pressure persists. Product use, especially at higher rates, may result in commercially unacceptable visible residues. Fungicides, some insecticide formulations, and some wetting agents and spreaders may kill the spores. Pollinator application method: For suppression. Uses a microbial inoculum dispenser that is attached to the front of the bumble bee hive. When used as directed, the impact on bees is minimal and is compatible with the release of some biological control agents, including <i>Aphidius colemani</i> , <i>Amblyseius swirskii</i> , <i>Encarsia formosa</i> and <i>Eretmocerus eremicus</i> . Do not release <i>Orius insidiosus</i> in the presence of bee-vectored BotaniGard 22WP. See label for more details. REI: Foliar: 4 hr; Bee-vectored: 0
	<i>Beauveria bassiana</i> PPRI 5339	Velifer	450–900 mL/ 1,000 L water	0	Apply in sufficient water volume for uniform coverage, but not to the point of runoff. Repeat application every 3–10 days. Use the higher concentration and shorter application intervals when pest population densities are high. May be harmful to beneficial insects and bees. REI: 4 hr
NC	canola oil	Vegol Crop Oil*	1 part concentrate: 50 parts water (2% solution)	0	Apply at first sign of insect presence. Thoroughly spray plants until the plant parts are wet, including underside of leaves. Insects, including eggs, must be contacted with spray. Do not exceed 4 applications per year. Minimum interval between applications is 7 days. Toxic to beneficial insects. REI: NS
	mineral oil	Purespray Green Spray Oil 13E*	10 L/1,000 L water (1% solution)/ha	NS	Deters feeding. Apply when pest first appears. Repeat application every 7–14 days. For effective control, thorough coverage is essential. Do not exceed label rate, otherwise phytotoxicity may result. REI: 12 hr
	potassium salts of fatty acids	Kopa Insecticidal Soap*	8 L/400 L water	0	Spray early in morning or evening or when overcast. Combining this product with sulphur or applying this product within 3 days of sulphur application may increase the plant damage caused by sulphur on sensitive plants. Do not tank mix with sulphur when temperatures are higher than 32°C. REI: NS
		Neudosan Commercial*			
	Opal Insecticidal Soap	1 part concentrate: 50 parts water	0	Insects must be sprayed directly to achieve proper control. Repeat applications as needed. REI: NS	
	Opal2 Insecticidal Soap				
	Safer's Insecticidal SoapConcentrate				

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BEET ARMYWORM (<i>Spodoptera exigu</i>)					
11A	<i>Bacillus thuringiensis</i> subsp. <i>aizawai</i> strain ABTS-1857	XenTari WG*	500–1,000 g/ha	0	Treat when larvae are young (early instars) before the crop is damaged. Use sufficient spray volume to ensure thorough coverage but not to the point of run-off. Best results are obtained if applications are made in the evening or on a cloudy day. Repeat applications every 3–14 days as needed. This product is toxic to bees and certain beneficial insects. REI: Re-enter treated areas only after spray has dried.
CORN EARWORM (TOMATO FRUITWORM) (<i>Helicoverpa (=Heliopsis) zea</i>)					
11A	<i>Bacillus thuringiensis</i> subsp. <i>aizawai</i> strain ABTS-1857	XenTari WG*	500–1,000 g/ha	0	Treat when larvae are young (early instars) before the crop is damaged. Use sufficient spray volume to ensure thorough coverage but not to the point of run-off. Best results are obtained if applications are made in the evening or on a cloudy day. Repeat applications every 3–14 days as needed. This product is toxic to bees and certain beneficial insects. REI: Re-enter treated areas only after spray has dried.
DUPONCHELIA FOVEALIS					
11A	<i>Bacillus thuringiensis</i> subsp. <i>kurstaki</i> strain ABTS-351	DiPel 2X DF*	625 g/1,000 L water	0	Make applications when egg hatch is essentially complete, when larvae are small but before crop damage occurs. Apply the product such that it flows along the stem, coating it well. Thorough coverage of foliage and stem is necessary. Repeat applications every 7 days as needed. REI: NS
EARWIGS					
NC	potassium salts of fatty acids	Opal2 Insecticidal Soap* Safer's Insecticidal Soap Concentrate*	1 part concentrate: 50 parts water	0	Insects must be sprayed directly to achieve proper control. REI: NS
EUROPEAN CORN BORER (<i>Ostrinia nubilalis</i>)					
5	spinetoram	Delegate WG	92–132 g/1,000 L water	2	Use the higher rate when insect populations are high and/or insects are large. Apply when eggs hatch and first instar larvae are present. Do not exceed 3 applications per crop cycle. Minimum interval between applications is 7 days. Do not apply by a fogger or mister. REI: 12 hr
	spinosad	Entrust 80 WG*	30 g/1,000 L water	2	Maximum application volume that can be used is 2,000 L per hectare. Apply when eggs hatch and first instar larvae are present. Do not apply by a fogger or mister. Do not exceed 3 applications per crop cycle. Minimum interval between applications is 7 days. REI: 12 hr
		Entrust SC*	100 mL/1,000 L water		
		Success	50 mL/1,000 L water		

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FUNGUS GNATS					
11A	<i>Bacillus thuringiensis</i> subsp. <i>israelensis</i> , serotype H-14, strain AM 65-52	VectoBac 600L	Light to moderate infestation: 2–4 L/1,000 L Heavy infestation: 4–8 L/1,000 L water	NS	Apply weekly as a soil drench or when pest monitoring indicates the need. This product is a larvicide and will not control adult gnats. REI: NS
LEAFROLLERS					
1B	naled	Dibrom	Vapour: 9.6 mL/100 m ³ Fog: 6.7–13.4 mL/100 m ²	N/A	Do not exceed 1 application per crop cycle, after the last harvest at the end of the cropping cycle. Vapour treatment: Apply to cold pipes using a plastic squeeze bottle when plants are dry. Do not apply using a paint brush or any other method. Do not apply to hot pipes. Fogging treatment: Apply with automated fogging equipment only. All workers must evacuate the premises during the fogging operations. REI: 48 hr (must be fully ventilated before re-entry)
LEAFMINERS					
11A	<i>Bacillus thuringiensis</i> subsp. <i>aizawai</i> strain ABTS-1857	XenTari WG*	500–1,000 g/ha	0	Tomato leafminer (<i>Tuta absoluta</i>) Treat when larvae are young (early instars) before the crop is damaged. Use sufficient spray volume to ensure thorough coverage but not to the point of run-off. Best results are obtained if applications are made in the evening or on a cloudy day. Repeat applications every 3–14 days as needed. This product is toxic to bees and certain beneficial insects. REI: Re-enter treated areas only after spray has dried.
	<i>Bacillus thuringiensis</i> subsp. <i>kurstaki</i> strain ABTS-351	DiPel 2X DF*	500–1,000 g/ 1,000 L water	0	Lepidopteran leafminers Apply at egg hatch. Thorough coverage of foliage and stems is necessary. Repeat application every 7–10 days as needed. REI: NS
18	tebufenozide	Confirm 240F	0.6 L/ha	3	Lepidopteran leafminers For suppression. Foliar application only. Use a high-volume sprayer. Apply at first egg hatch. Do not exceed 4 applications per crop cycle. Minimum interval between applications is 10 days. Effective against larval Lepidoptera, however, it is essentially non-toxic to adult bees and does not adversely affect beneficial insects such as predatory mites, beetles, wasps and spiders. REI: 12 hr
28	chlorantraniliprole	Coragen	200 mL/1,000 L water	1	Lepidopteran leafminers Apply at egg hatch. Thorough coverage is important to obtain optimum control. Do not exceed 3 applications per crop cycle. Minimum interval between applications is 7 days. Do not exceed 750 mL product per hectare per crop cycle. Apply in a maximum finished spray volume of 1,250 L per hectare. REI: 12 hr

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LOOPERS					
5	spinetoram	Delegate WG	92–132 g/1,000 L water	2	Cabbage looper (<i>Trichoplusia ni</i>) Use the higher rate when insect populations are high and/or insects are large. Apply when eggs hatch and first instar larvae are present. Do not exceed 3 applications per crop cycle. Minimum interval between applications is 7 days. Do not apply by a fogger or mister. REI: 12 hr
	spinosad	Entrust 80 WG*	72 g/1,000 L water	2	Cabbage looper (<i>Trichoplusia ni</i>) Maximum application volume that can be used is 1,000 L per hectare. Apply when eggs hatch and first instar larvae are present. Do not apply by a fogger or mister. Do not exceed 3 applications per crop cycle. Minimum interval between applications is 7 days. REI: 12 hr
		Entrust SC*	240 mL/1,000 L water		
		Success	120 mL/1,000 L water		
11A	<i>Bacillus thuringiensis</i> subsp. <i>kurstaki</i> strain ABTS-351	DiPel 2X DF*	75–150 g/250 L water	0	Cabbage looper (<i>Trichoplusia ni</i>) Apply at egg hatch to target young larvae (early instars). For best control, thorough coverage is required. Under heavy population pressure, or for larger larvae, shorten the spray interval or use the higher rate range. Repeat applications every 3–14 days as needed. Do not exceed 4 applications per season. REI: NS
	<i>Bacillus thuringiensis</i> subsp. <i>aizawai</i> strain ABTS-1857	XenTari WG*	500–1,000 g/ha	0	Cabbage looper (<i>Trichoplusia ni</i>), tomato looper (<i>Chrysodeixis chalcites</i>) Treat when larvae are young (early instars), before the crop is damaged. Use sufficient spray volume to ensure thorough coverage but not to the point of run-off. Best results are obtained if applications are made in the evening or on a cloudy day. Repeat applications every 3–14 days as needed. This product is toxic to bees and certain beneficial insects. REI: Re-enter treated areas only after spray has dried.
13	chlorfenapyr	Pylon	30 mL/100 L water	0	Alfalfa looper (<i>Autographa californica</i>), Cabbage looper (<i>Trichoplusia ni</i>) For suppression. Do not exceed 1 application per crop cycle. Do not apply using a spray volume greater than 1,000 L per hectare. Do not apply as an ultra-low-volume (ULV) spray. Do not apply through any type of irrigation equipment. This product is toxic to bees and certain beneficial insects. REI: 12 hr
28	chlorantraniliprole	Coragen	125 mL/1,000 L water	1	Cabbage looper (<i>Trichoplusia ni</i>) Begin applications when treatment thresholds have been reached. Thorough coverage is required to obtain optimum control. Do not exceed 3 applications per crop cycle. Minimum interval between applications is 7 days. Do not exceed 750 mL product per hectare per crop cycle. The maximum finished spray volume is 2,000 L per hectare. REI: 12 hr

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LOOPERS (cont'd)					
28	cyantraniliprole	Exirel	250 mL/ha	1	Cabbage looper (<i>Trichoplusia ni</i>) Thorough coverage is required to obtain optimum control. Select a spray volume appropriate for the size of plants and density of foliage. Do not apply in irrigation water. Use of mist blowers, thermal foggers, ultra-low volume (ULV) and electrostatic sprayers is not permitted. Do not exceed 4 applications per crop cycle. Minimum interval between applications is 7 days. Toxic to bees and certain beneficial insects. REI: 12 hr
NC	<i>Autographa californica</i> <i>Nucleopolyhedrovirus</i> FV11	Loopex*	50–200 mL/400 L water	0	Cabbage looper (<i>Trichoplusia ni</i>) Application timing should target small larvae and be applied using high-volume spray systems (minimum 400 L/ha). Uniform spray deposit coverage of the foliage is essential for optimum control. Repeat applications every 7–14 days as needed. REI: Re-enter treated areas only after mists has have settled.
MEALYBUGS					
1B	naled	Dibrom	Vapour: 9.6 mL/100 m ³ Fog: 6.7–13.4 mL/100 m ²	N/A	Do not exceed 1 application per crop cycle, after the last harvest at the end of the cropping cycle. Vapour treatment: Apply to cold pipes using a plastic squeeze bottle when plants are dry. Do not apply using a paint brush or any other method. Do not apply to hot pipes. Fogging treatment: Apply with automated fogging equipment only. All workers must evacuate the premises during the fogging operations. REI: 48 hr (must be fully ventilated before re-entry)
NC	canola oil	Vegol Crop Oil*	1 part concentrate: 50 parts water (2% solution)	0	Apply at first sign of insect presence. Thoroughly spray plants until the plant parts are wet, including underside of leaves. Insects, including eggs, must be contacted with spray. Do not exceed 4 applications per year. Minimum interval between applications is 7 days. Toxic to beneficial insects. REI: NS
	potassium salts of fatty acids	Opal2 Insecticidal Soap* Safer's Insecticidal Soap Concentrate*	1 part concentrate: 50 parts water	0	Insects must be sprayed directly to achieve proper control. Repeat applications as needed. REI: NS

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MITES					
1B	naled	Dibrom	Vapour: 9.6 mL/100 m ³ Fog: 6.7–13.4 mL/100 m ²	N/A	Do not exceed 1 application per crop cycle, after the last harvest at the end of the cropping cycle. Vapour treatment: Apply to cold pipes using a plastic squeeze bottle when plants are dry. Do not apply using a paint brush or any other method. Do not apply to hot pipes. Fogging treatment: Apply with automated fogging equipment only. All workers must evacuate the premises during the fogging operations. REI: 48 hr (must be fully ventilated before re-entry)
13	chlorfenapyr	Pylon	20–30 mL/100 L	0	Two-spotted spider mite (<i>Tetranychus urticae</i>) For suppression. Do not exceed 1 application per crop cycle. Do not apply using a spray volume greater than 1,000 L per hectare. Do not apply as an ultra-low-volume (ULV) spray. Do not apply through any type of irrigation equipment. This product is toxic to bees and certain beneficial insects. REI: 12 hr
20B	acequinocyl	Shuttle 15 SC	0.21–0.46 L/500 L water (0.07–0.15 g a.i./L of solution)	1	Two-spotted spider mite (<i>Tetranychus urticae</i>) Apply as a full coverage spray to the foliage to drip. Actual spray volume will vary depending on the size of the plants being sprayed. Application should be made as soon as the mite population reaches economic infestation levels. Apply the higher concentration for heavy pest infestations. Minimum interval between applications is 21 days. Do not use product in successive miticide applications. Do not exceed 2 applications per crop (0.69 kg a.i./ha). REI: 12 hr
20D	bifenazate	Floramite SC	125 mL (30 g a.i.)/ 400 L water	1	Two-spotted spider mite (<i>Tetranychus urticae</i>) Apply as a full coverage spray to the foliage to obtain uniform coverage. Actual spray volume will vary depending on the size of the plants being treated. Do not exceed a maximum finished spray volume of 2,000 L per hectare per application. Application should be made as soon as mites appear and will provide residual control for up to 28 days. Do not exceed 2 applications per crop cycle. Make only 1 application of this product before rotating to products of an alternate chemical class. This product is primarily active on the motile stages of mites. It is not effective against rust mites, broad mites and flat mites. REI: 12 hr
21A	fenpyroximate	FujiMite	2.5 L/ha	1	Two-spotted spider mite (<i>Tetranychus urticae</i>) Apply when pests are in immature stages or when populations reach economic thresholds. Apply in a minimum spray volume of 1000 L per hectare to ensure thorough coverage of the foliage. Do not exceed 1 application per crop cycle. Toxic to certain beneficial insects. REI: 12 hr
23	spiromesifen	Forbid 240 SC	30–50 mL/100 L water (0.03%–0.05% solution)	3	Two-spotted spider mite (<i>Tetranychus urticae</i>) Under high pest population pressure. Repeat application every 10–14 days as needed. Do not exceed 2 applications per crop cycle. The maximum application volume is 2,000 L water per hectare. Avoid applying during the warmest part of the day. Mite juvenile stages are often more susceptible than adults. Toxic to certain beneficial insects. Residues on pollen and nectar may harm bee brood. REI: 12 hr

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MITES (cont'd)					
UNF	<i>Beauveria bassiana</i> PPRI 5339	Velifer	450–900 mL/ 1,000 L water	0	Two-spotted spider mite (<i>Tetranychus urticae</i>) Apply in sufficient water volume for uniform coverage, but not to the point of runoff. Repeat application every 3–10-day intervals. Use the higher concentration and shorter application intervals when pest population densities are high. May be harmful to beneficial insects and bees. REI: 4 hr
	<i>Metarhizium anisopliae</i> strain F52	Met52 EC	Foliar: 0.5–5 L/1,000 L water	0	Foliar application method: Reduces pest numbers. Use the higher application concentration when pest pressure is high. Repeat application every 5–10 days as needed. Spray to wet all foliage but not to the point of run-off. Do not apply through a thermal pulse fogger. REI: Re-enter treated areas only after spray has dried.
NC	canola oil	Vegol Crop Oil*	1 part concentrate: 50 parts water (2% solution)	0	Apply at first sign of mite presence. Thoroughly spray plants until the plant parts are wet, including underside of leaves. Mites, including eggs, must be contacted with spray. Do not exceed 4 applications per year. Minimum interval between applications is 7 days. Toxic to beneficial insects. REI: NS
	mineral oil	Purespray Green Spray Oil 13E*	10 L/1,000 L water (1% solution)/ha	NS	For suppression. Apply when pest first appears. Repeat application every 7–14 days. For effective control, thorough coverage is essential. Do not exceed label rate, otherwise phytotoxicity may result. REI: 12 hr
	potassium salts of fatty acids	Kopa Insecticidal Soap*	8 L/400 L water	0	Spray early in morning or evening or when overcast. Combining this product with sulphur or applying this product within 3 days of sulphur application may increase the plant damage caused by sulphur on sensitive plants. Do not tank mix with sulphur when temperatures are higher than 32°C. REI: NS
		Neudosan Commercial*			
		Opal Insecticidal Soap*			
		Opal2 Insecticidal Soap*			
		Safer's Insecticidal Soap Concentrate*	1 part concentrate: 50 parts water		Two-spotted spider mite (<i>Tetranychus urticae</i>) Insects must be sprayed directly to achieve proper control. Repeat application every week for 2–3 weeks. REI: NS
NC + 3A	potassium salts of fatty acids + pyrethrins	Safer's Trounce Insecticidal Soap*	5 L/100 L water	1	Two-spotted spider mite (<i>Tetranychus urticae</i>) Spray all plant parts once weekly for 2–3 weeks, and thereafter as required. If possible, foliage should be misted daily with water until mite control is achieved. REI: NS

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PSYLLIDS					
NC	canola oil	Vegol Crop Oil*	1 part concentrate: 50 parts water (2% solution)	0	Apply at first sign of insect presence. Thoroughly spray plants until the plant parts are wet, including underside of leaves. Insects, including eggs, must be contacted with spray. Do not exceed 4 applications per year. Minimum interval between applications is 7 days. Toxic to beneficial insects. REI: NS
	potassium salts of fatty acids	Opal2 Insecticidal Soap*	1 part concentrate: 50 parts water	0	Insects must be sprayed directly to achieve proper control. REI: NS
Safer's Insecticidal Soap Concentrate*					
SCALES					
NC	canola oil	Vegol Crop Oil*	1 part concentrate: 50 parts water (2% solution)	0	Apply at first sign of insect presence. Thoroughly spray plants until the plant parts are wet, including underside of leaves. Insects, including eggs, must be contacted with spray. Do not exceed 4 applications per year. Minimum interval between applications is 7 days. Toxic to beneficial insects. REI: NS
THRIPS					
5	spinetoram	Delegate WG	92–132 g/1,000 L water	2	Western flower thrips (<i>Frankliniella occidentalis</i>) For suppression. Use the higher rate when insect populations are high and/or insects are large. Apply when western flower thrips first appear. Do not exceed 3 applications per crop cycle. Minimum interval between applications is 7 days. Do not apply by a fogger or mister. REI: 12 hr
	spinosad	Entrust 80 WG*	30 g/1,000 L water	2	Western flower thrips (<i>Frankliniella occidentalis</i>) For suppression. Maximum application volume that can be used is 2,000 L per hectare. Apply when western flower thrips first appears. Do not apply by a fogger or mister. Do not exceed 3 applications per crop cycle. Minimum interval between applications is 7 days. REI: 12 hr
		Entrust SC*	100 mL/1,000 L water		
		Success	50 mL/1,000 L water		
28	cyantraniliprole	Exirel	500–1,000 mL/ha	1	For suppression. Thorough coverage is required to obtain optimum control. Use the higher listed rate and higher spray volumes for large plants or dense foliage. If thrips populations are above thresholds, use a registered knockdown product before application. Do not apply in irrigation water. Use of mist blowers, thermal foggers, ultra-low volume (ULV) and electrostatic sprayers is not permitted. Do not exceed 4 applications per crop cycle. Minimum interval between applications is 7 days. Toxic to bees and certain beneficial insects. REI: 12 hr

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IRAC Group¹	Common Name/ Active Ingredient	Trade Name/ Formulation	Rate	PHI	Remarks
THRIPS (cont'd)					
UNF	<i>Beauveria bassiana</i> strain GHA	BotaniGard 22WP	500–1,000 g/400 L water	0	Foliar application method: Spray to wet but not to the point of run-off. Repeat application every 5–10 day. High populations may require 2–5-day intervals. Repeat applications for as long as pest pressure persists. Product use, especially at higher rates, may result in commercially unacceptable visible residues. Fungicides, some insecticide formulations, and some wetting agents and spreaders may kill the spores. Pollinator application method: For suppression. Uses a microbial inoculum dispenser that is attached to the front of the bumble bee hive. When used as directed, the impact on bees is minimal and is compatible with the release of some biological control agents, including <i>Aphidius colemani</i> , <i>Amblyseius swirskii</i> , <i>Encarsia formosa</i> and <i>Eretmocerus eremicus</i> . Do not release <i>Orius insidiosus</i> in the presence of bee-vectored BotaniGard 22WP. See label for more details. REI: Foliar: 4 hr; Bee-vectored: 0
	<i>Beauveria bassiana</i> PPRI 5339	Velifer	450–900 mL/ 1,000 L water	0	Apply in sufficient water volume for uniform coverage, but not to the point of runoff. Repeat applications every 3–10 days. Use the higher concentration and shorter application intervals when pest population densities are high. May be harmful to beneficial insects and bees. REI: 4 hr
	<i>Metarhizium anisopliae</i> strain F52	Met52 EC	Foliar: 0.5–5 L/1,000 L water Drench: 108 mL/10 L water	0	Foliar application method: Reduces pest numbers. Use the higher application concentration when pest pressure is high. Re-apply as required. Repeat application every 5–10 days. Spray to wet all foliage, but not to the point of run-off. Do not apply through a thermal pulse fogger. Drench application method: May reduce pest numbers. Drench application should be thoroughly watered-in without causing water to come out of the bottom of the pots/grow bags. Depending on the growing media type and moisture, this will be around 250 mL/4-L pot or grow bag. Re-apply as required. The need for and timing of re-application should be determined by monitoring. Do not apply via drip irrigation. REI: Re-enter treated areas only after spray has dried.
NC	mineral oil	Purespray Green Spray Oil 13E*	10 L/1,000 L water (1% solution)/ha	NS	For suppression. Apply when pest first appears. Repeat application every 7–14 days. For effective control, thorough coverage is essential. Do not exceed label rate otherwise phytotoxicity may result. REI: 12 hr

¹ See Appendix F for IRAC group definitions.

Table 8–1. Products registered for greenhouse eggplant insect and mite pestsFor more information on pesticide application, visit www.sprayers101.com — search keywords “greenhouse” or “airblast 101.”

LEGEND: PHI = pre-harvest interval (in days) NS = no information was provided on the product label REI = re-entry interval N/A = not applicable
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IRAC Group ¹	Common Name/ Active Ingredient	Trade Name/ Formulation	Rate	PHI	Remarks
TOBACCO BUDWORM (<i>Heliothis virescens</i>)					
11A	<i>Bacillus thuringiensis</i> subsp. <i>aizawai</i> strain ABTS-1857	XenTari WG*	500–1,000 g/ha	0	Treat when larvae are young (early instars) before the crop is damaged. Use sufficient spray volume to ensure thorough coverage but not to the point of run-off. Best results are obtained if applications are made in the evening or on a cloudy day. Repeat applications every 3–14 days as needed. This product is toxic to bees and certain beneficial insects. REI: Re-enter treated areas only after spray has dried.
13	chlorfenapyr	Pylon	30 mL/100 L water	0	For suppression. Maximum number of applications per crop cycle is 1. Do not apply using a spray volume greater than 1,000 L per hectare. Do not apply as an ultra-low-volume (ULV) spray. Do not apply through any type of irrigation equipment. This product is toxic to bees and certain beneficial insects. REI: 12 hr
TOMATO HORNWORM (<i>Manduca quinquemaculata</i>)					
13	chlorfenapyr	Pylon	30 mL/100 L water	0	For suppression. Do not exceed 1 application per crop cycle. Do not apply using a spray volume greater than 1,000 L per hectare. Do not apply as an ultra-low-volume (ULV) spray. Do not apply through any type of irrigation equipment. This product is toxic to bees and certain beneficial insects. REI: 12 hr
WHITEFLIES					
1B	naled	Dibrom	Vapour: 9.6 mL/100 m ³ Fog: 6.7–13.4 mL/100 m ²	N/A	Do not exceed 1 application per crop cycle, only after the last harvest at the end of the cropping cycle. Vapour treatment: Apply to cold pipes using a plastic squeeze bottle when plants are dry. Do not apply using a paint brush or any other method. Do not apply to hot pipes. Fogging treatment: Apply with automated fogging equipment only. All workers must evacuate the premises during the fogging operations. REI: 48 hr (must be fully ventilated before re-entry)
4A	imidacloprid	Intercept 60 WP	16 g/70 L water/ 1,000 mature plants	3	For use as a soil drench using micro-irrigation, drip irrigation, overhead irrigation, or hand-held or motorized calibrated irrigation equipment. Do not apply as a foliar application. Irrigate moderately but thoroughly after application, allowing no leaching and runoff from container for at least 10 days after application. Do not exceed 1 application per season. Applications should be made when infestation pressure surpasses threshold and beneficials are not able to maintain pest populations below damage thresholds. May harm pollinators and certain beneficial insects. REI: NS

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IRAC Group ¹	Common Name/ Active Ingredient	Trade Name/ Formulation	Rate	PHI	Remarks
WHITEFLIES (cont'd)					
7C	pyriproxyfen	Distance	45 mL/100 L water	3	Greenhouse whitefly (<i>Trialeurodes vaporariorum</i>), silverleaf whitefly (<i>Bemisia tabaci</i> B biotype), and sweet potato whitefly (<i>Bemisia tabaci</i>) Do not exceed a maximum finished spray of 2,000 L per hectare per application. Apply as a foliar spray mixture uniformly to all plant surfaces and to the point of run-off. Make first application when adult insects begin to appear. If necessary, make a second application between 14 and 28 days after the first application. Use longer interval when plants are not growing rapidly. Do not exceed 2 applications per crop cycle. If the crop cycle is less than 6 months, do not exceed 2 applications/6 months. REI: 12 hr
21A	fenpyroximate	FujiMite	2.5 L/ha	1	For suppression. Apply when pests are in immature stages or when populations reach economic thresholds. Apply in a minimum spray volume of 1,000 L per hectare to ensure thorough coverage of the foliage. Do not exceed 1 application per crop cycle. Toxic to certain beneficial insects. REI: 12 hr
23	spiromesifen	Forbid 240 SC	30–50 mL/100 L water (0.03%–0.05% solution)	3	Greenhouse whitefly (<i>Trialeurodes vaporariorum</i>), silverleaf whitefly (<i>Bemisia tabaci</i> B biotype), and sweet potato whitefly (<i>Bemisia tabaci</i>) Under high pest population pressure, repeat application every 10–14 days as needed. Do not exceed 2 applications per crop cycle. The maximum application volume is 2,000 L water per hectare. Avoid applying during the warmest part of the day. Effective against nymphs and has some effect on the pupal stage. Will not reduce adult whitefly populations. Toxic to certain beneficial insects. Residues on pollen and nectar may harm bee brood. REI: 12 hr
	spirotetramat	Kontos	30–42 mL/100 L water Maximum use rate/ single application: 300 mL/ha (72 g a.i./ha)	3	Use appropriate spray volume for adequate crop foliage spray coverage. Spray crop to wet but not to the point of run-off. Do not exceed a spray volume of 712–1,000 L per hectare (30–42 mL concentration). Use the higher concentration for higher pest infestation levels. Minimum interval between applications is 7–14 days. Do not exceed 900 mL (216 g a.i.) per hectare per crop cycle. Do not exceed 3 applications per crop cycle. Not acutely toxic to adult bees. Residues in/on pollen and nectar may harm bee brood. This product is toxic to certain beneficial insects. REI: 12 hr

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IRAC Group ¹	Common Name/ Active Ingredient	Trade Name/ Formulation	Rate	PHI	Remarks
WHITEFLIES (cont'd)					
28	cyantraniliprole	Exirel	750–1,000 mL/ha	1	For suppression. Thorough coverage is required to obtain optimum control. Use the higher listed rate and higher spray volumes for large plants or dense foliage. Do not apply in irrigation water. Use of mist blowers, thermal foggers, ultra-low volume (ULV) and electrostatic sprayers is not permitted. Do not exceed 4 applications per crop cycle. Minimum interval between applications is 7 days. Toxic to bees and certain beneficial insects. REI: 12 hr
UNF	<i>Beauveria bassiana</i> strain GHA	BotaniGard 22WP	250–500 g/400 L water	0	Foliar application method: Spray to wet but not to the point of run-off. Repeat application every 5–10 day. High populations may require 2–5-day intervals. Repeat applications for as long as pest pressure persists. Product use, especially at higher rates, may result in commercially unacceptable visible residues. Fungicides, some insecticide formulations, and some wetting agents and spreaders may kill the spores. Pollinator application method: For suppression. Uses a microbial inoculum dispenser that is attached to the front of the bumble bee hive. When used as directed, the impact on bees is minimal and is compatible with the release of some biological control agents, including <i>Aphidius colemani</i> , <i>Amblyseius swirskii</i> , <i>Encarsia formosa</i> and <i>Eretmocerus eremicus</i> . Do not release <i>Orius insidiosus</i> in the presence of bee-vectored BotaniGard 22WP. See label for more details. REI: Foliar: 4 hr; Bee-vectored: 0
	<i>Beauveria bassiana</i> PPRI 5339	Velifer	450–900 mL/ 1,000 L water	0	Apply in sufficient water volume for uniform coverage, but not to the point of runoff. Repeat application every 3–10 days. Use the higher concentration and shorter application intervals when pest population densities are high. May be harmful to beneficial insects and bees. REI: 4 hr
	<i>Metarhizium anisopliae</i> strain F52	Met52 EC	Foliar: 0.5–5 L/1,000 L water	0	Foliar application method: Reduces pest numbers. Use the higher application concentration when pest pressure is high. Repeat application every 5–10 days as needed. Spray to wet all foliage but not to the point of run-off. Do not apply through a thermal pulse fogger. REI: Re-enter treated areas only after spray has dried.

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IRAC Group ¹	Common Name/ Active Ingredient	Trade Name/ Formulation	Rate	PHI	Remarks	
WHITEFLIES (cont'd)						
NC	canola oil	Vegol Crop Oil*	1 part concentrate: 50 parts water (2% solution)	0	Apply at first sign of insect presence. Thoroughly spray plants until the plant parts are wet, including underside of leaves. Insects, including eggs, must be contacted with spray. Do not exceed 4 applications per year. Minimum interval between applications is 7 days. Toxic to beneficial insects. REI: NS	
	mineral oil	Purespray Green Spray Oil 13E*	10 L/1,000 L water (1% solution)/ha	NS	Deters feeding. Apply when pest first appears. Repeat application every 7–14 days. For effective control, thorough coverage is essential. Do not exceed label rate, otherwise phytotoxicity may result. REI: 12 hr	
	potassium salts of fatty acids	Kopa Insecticidal Soap*	8 L/400 L water	1 part concentrate: 100 parts water	0	Spray early in morning or evening or when overcast. Combining this product with sulphur or applying this product within 3 days of sulphur application may increase the plant damage caused by sulphur on sensitive plants. Do not tank mix with sulphur when temperatures are higher than 32°C. REI: NS
		Neudosan Commercial*				
		Opal Insecticidal Soap*				
Opal2 Insecticidal Soap*						
Safer's Insecticidal Soap Concentrate*	Insects must be sprayed directly to achieve proper control. Spray all plant surfaces thoroughly at 2-week intervals. REI: NS					
NC + 3A	potassium salts of fatty acids + pyrethrins	Safer's Trounce Insecticidal Soap*	5 L/100 L water	1	Spray all plant surfaces as required by pest pressure at 2-week intervals. REI: NS	

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FRAC Group ¹	Common Name/ Active Ingredient	Trade Name/ Formulation	Rate	PHI	Remarks
BACTERIAL CANKER (<i>Clavibacter michiganensis</i> subsp. <i>michiganensis</i>)					
24	kasugamycin	Kasumin 2L	1.2 L/240 L water/ha (100 ppm)	1	For suppression. Do not exceed 3 applications per season. Minimum interval between applications is 7 days. Do not make more than 2 sequential applications before switching to a product with a different mode of action. REI: 12 hr
M 01	copper octanoate	Cueva Commercial*	0.5%–2% solution applied at 470–940 L/ha	1	Repeat application every 5–10 days. Do not exceed 15 applications per year. If concerned about sensitivity of plants, apply to individual plants or small areas to determine if plant damage occurs. REI: 4 hr
BACTERIAL SPECK (BACTERIAL BLIGHT) (<i>Pseudomonas syringae</i> pv. <i>tomato</i>)					
44	<i>Bacillus subtilis</i> strain QST 713	Cease* Rhapsody ASO*	1–2 L/100 L water	0	For suppression. Begin application when environmental conditions are conducive to disease development. Repeat application every 7–10 days as needed. REI: NS
M 01	copper octanoate	Cueva Commercial*	0.5%–2% solution applied at 470–940 L/ha	1	Repeat application every 5–10 days. Do not exceed 15 applications per year. If concerned about sensitivity of plants, apply to individual plants or small areas to determine if plant damage occurs. REI: 4 hr
BACTERIAL SPOT (BACTERIAL LEAF SPOT) (<i>Xanthomonas campestris</i> pv. <i>vesicatoria</i>)					
24	kasugamycin	Kasumin 2L	1.2 L/240 L water/ha (100 ppm)	1	For suppression. Do not exceed 3 applications per season. Minimum interval between applications is 7 days. Do not make more than 2 sequential applications before switching to a product with a different mode of action. REI: 12 hr
M 01	copper octanoate	Cueva Commercial*	0.5%–2% solution applied at 470–940 L/ha	1	Repeat application every 5–10 days. Do not exceed 15 applications per year. If concerned about sensitivity of plants, apply to individual plants or small areas to determine if plant damage occurs. REI: 4 hr
EARLY BLIGHT (<i>Alternaria solani</i>)					
7	penthiopyrad	Fontelis	1.25–1.75 L/ha	0	For suppression. Begin applications prior to disease development. Repeat application every 7–10 days. Use higher rate and shorter interval when disease pressure is high. Do not exceed 5.25 L per hectare per season. Make no more than 2 sequential applications before switching to a fungicide with a different mode of action. REI: 12 hr
19	<i>polyoxin D zinc salt</i>	Polyoxin D Zinc Salt 5SC	537–926 mL/ha (29–50 g a.i./ha)	0	For suppression. Apply as a foliar spray in sufficient water to provide thorough coverage of foliage (and fruit when present). Begin as preventative application when conditions favour disease development. Repeat application every 7–14 days as needed to maintain suppression. Do not exceed 150 g a.i. per hectare per year. REI: Re-enter treated areas only after spray has dried.

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FRAC Group ¹	Common Name/ Active Ingredient	Trade Name/ Formulation	Rate	PHI	Remarks
LEGEND: PHI = pre-harvest interval (in days) NS = no information was provided on the product label REI = re-entry interval * = product is potentially acceptable for organic production. Organic growers must always check with their certifying bodies to verify the acceptability of any product prior to using it.					
EARLY BLIGHT (<i>Alternaria solani</i>) (cont'd)					
44	<i>Bacillus amyloliquefaciens</i> strain D747	Double Nickel 55*	0.5–2 kg/ha	0	Apply from flowering to fruiting. Repeat application every 3–10 days (or 3–7 days under high disease pressure) for as long as conditions favour disease development. REI: Re-enter treated areas only after spray has dried.
		Double Nickel LC*	2.5–10 L/ha		
M 01	copper octanoate	Cueva Commercial*	0.5%–2% solution applied at 470–940 L/ha	1	Repeat application every 5–10 days. Do not exceed 15 applications per year. If concerned about sensitivity of plants, apply to individual plants or small areas to determine if plant damage occurs. REI: 4 hr
GREY MOULD (BOTRYTIS BLIGHT) (<i>Botrytis cinerea</i>)					
7	fluopyram	Luna Privilege	500 mL/ha	0	Begin fungicide applications preventatively. Use sufficient water volume and spray pressure to provide thorough and uniform coverage. Do not exceed 2 applications per crop cycle. Minimum application interval is 6 weeks. Do not apply under low light conditions as crop injury may occur. Suggested spray volumes by crop height: 1.7 m: 1,000 L/ha 3.4 m: 1,500–2,000 L/ha REI: 12 hr
	penthiopyrad	Fontelis	1.25–1.75 L/ha	0	Begin applications prior to disease development. Repeat application every 7–10 days. Use higher rate and shorter interval when disease pressure is high. Do not exceed 5.25 L per hectare per season. Make no more than 2 sequential applications before switching to a fungicide with a different mode of action. REI: 12 hr
17	fenhexamid	Decree 50 WDG	1.5 kg/ha (0.75 kg a.i./ha)	1	Begin application when conditions favour disease development. Repeat application every 7–10 days If conditions continue to favour disease. Do not exceed 3 applications per crop cycle. REI: 4 hr
19	polyoxin D zinc salt	Polyoxin D Zinc Salt 5SC	463–926 mL/ha (25–50 g a.i./ha)	0	For suppression. Apply as a foliar spray in sufficient water to provide thorough coverage of foliage (and fruit when present). Begin as a preventative application when conditions favour disease development. Repeat application every 7–10 days as needed to maintain suppression. Do not exceed 150 g a.i. per hectare per year. REI: Re-enter treated areas only after spray has dried.

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FRAC Group ¹	Common Name/ Active Ingredient	Trade Name/ Formulation	Rate	PHI	Remarks
GREY MOULD (BOTRYTIS BLIGHT) (<i>Botrytis cinerea</i>) (cont'd)					
44	<i>Bacillus amyloliquefaciens</i> strain D747	Double Nickel 55*	Foliar: 1.25–3.6 kg/ha Low disease pressure: 0.9–1 kg/ha	0	For suppression. Use from flowering to fruit maturity. Repeat application every 3–10 days (or 3–7 days under high disease pressure) for as long as conditions favour disease development. REI: Re-enter treated areas only after spray has dried.
		Double Nickel LC*	Foliar: 6.25–18 L/ha Low disease pressure: 4.5–5 L/ha		
9 + 12	cyprodinil + fludioxonil	Cease*	1–2 L/100 L water	0	For suppression. Begin application when environmental conditions are conducive to disease development. Repeat application every 7–10 days as needed. REI: NS
		Rhapsody ASO*			
BM 01	BLAD polypeptide	Fracture	1.5–3.3 L/ha in a minimum of 200 L water/ha	0	Begin applications prior to onset of disease development. Repeat applications every 7–10 days. Use a higher rate and shorter interval when disease pressure is moderate to high. Do not exceed 5 applications per crop cycle. REI: NS
		Problad Plus			
BM 02	<i>Trichoderma harzianum</i> Rifai strain KRL-AG2	RootShield HC*	3.75–7.5 g/L water	NS	For suppression. Use a quantity of spray solution to thoroughly cover foliage. Spray to wet but not to the point of run-off. Use higher rates when conditions favour disease development or high disease pressure is anticipated. REI: 4 hr
NC	<i>Aureobasidium pullulans</i> DSM 14940 and DSM 14941	Botector*	1 kg/ha in 500–2,000 L water	0	Apply preventatively if climatic conditions are favourable for infection or at first sign of disease onset. Repeat application every 7–10 days as needed. Do not exceed 5 applications per year. REI: 4 hr

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PHYTOPHTHORA BLIGHTS (LATE BLIGHT, PHYTOPHTHORA FOLIAR BLIGHT)					
P 07	mono- and dibasic sodium, potassium, and ammonium phosphites	Phostrol	2.9–5.8 L/ha in a minimum of 225 L water/ha	0	Phytophthora capsici For suppression. Begin applications when conditions favour disease development. Repeat applications every 7–14 days. Use the higher rate and shorter application interval when disease pressure is high. Do not exceed 4 applications per year. REI: Allow entry only after thorough ventilation, spray mist has cleared and the treated surface has dried.
	mono- and di-potassium salts of phosphorous acid	Confine Extra	5–10 L/ha in a minimum of 100 L water	1	Phytophthora spp., Phytophthora infestans For suppression. Do not exceed 5 foliar and/or chemigation applications per growing season. Begin applications when conditions are favourable for disease. REI: Allow entry only after thorough ventilation, spray mist has cleared and the treated surface has dried.
		Rampart	Foliar: 3–8 L/1,000 L water/ha Drench: 5–7 L in a minimum of 1,000 L water	0	Phytophthora capsici For suppression. Use the higher rate and shorter application interval when disease pressure is high. Foliar: Apply lower rate every 2–4 weeks after plants become established. Drench: Apply with normal irrigation schedule. REI: 4 hr. After REI, re-entry into treated areas is only permitted after thorough ventilation, spray mist has cleared and the treated surface has dried.
M 01	copper octanoate	Cueva Commercial*	0.5%–2% solution applied at 470–940 L/ha	1	Phytophthora infestans Repeat application every 5–10 days. Do not exceed 15 applications per year. If concerned about sensitivity of plants, apply to individual plants or small areas to determine if plant damage occurs. REI: 4 hr
POWDERY MILDEW					
7	fluopyram	Luna Privilege	100 mL/ha	0	Leveillula taurica Begin fungicide applications preventatively. Use sufficient water volume and spray pressure to provide thorough and uniform coverage. Do not exceed 3 applications per crop cycle. Minimum application interval is 6 weeks. Do not apply under low light conditions as crop injury may occur. Suggested spray volumes by crop height: 1.7 m - 1000 L/ha 3.4 m - 1500–2000 L/ha REI: 12 hr

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FRAC Group ¹	Common Name/ Active Ingredient	Trade Name/ Formulation	Rate	PHI	Remarks
POWDERY MILDEW (cont'd)					
19	polyoxin D zinc salt	Polyoxin D Zinc Salt 5SC	278–926 mL/ha (15–50 g a.i./ha)	0	<i>Oidium neolycopersici</i> Apply as a foliar spray in sufficient water to provide thorough coverage of foliage (and fruit when present). Begin as preventative application when conditions favour disease development. Repeat application every 7–14 days as needed to maintain suppression. Use a higher rate under conditions of high disease pressure. Do not apply more than 150 g a.i. per hectare per year. REI: Re-enter treated areas only after spray has dried.
9 + 12	cyprodinil + fludioxonil	Palladium WG	775 g/ 475–2,000 L water/ha	1	<i>Leveillula taurica</i> For suppression. Begin applications when conditions become favourable to disease, but before infection. If favourable conditions persist, repeat application every 7–10 days. Make no more than 2 sequential applications before alternating with a treatment with another mode of action. Do not make more than 3 applications per crop cycle. REI: 24 hr
M 02	sulphur	Agrotek Vaporized Sulphur*	0.4–3.2 g/1,000 m ²	NS	<i>Leveillula taurica</i> Use 1 vaporizer per 1,000 m ² . Start using before plants show signs of infection. Use for 1–8 hr per night, 2–7 days/week. Do not apply if temperature is above 24°C and high humidity prevails. Certain species of beneficial insects are sensitive to sulphur. REI: 2 hr
P 05	<i>Reynoutria sachalinensis</i> extract	Regalia Maxx*	1.25–2.5 mL/L water (0.125%–0.25% v/v)	0	<i>Erysiphe cichoracearum</i>, <i>Leveillula taurica</i>, <i>Oidium neolycopersici</i> For suppression. Begin applications at the first sign of disease, or when conditions become conducive for disease development. Repeat application every 7–10 days as needed. Use the shorter spray interval under high disease pressure. Spray to achieve complete coverage but not runoff. Do not apply in a spray volume of more than 1,500 L per hectare. REI: Re-enter treated areas only after spray has dried.
NC	mineral oil	Purespray Green Spray Oil 13E*	10 L/1,000 L water (1% solution)/ha	NS	<i>Leveillula taurica</i> For suppression. Apply when conditions are favourable for disease development and/or when first symptoms appear. Repeat application every 7–14 days. For effective control, thorough coverage is essential. Do not exceed label rate, otherwise phytotoxicity may result. REI: 12 hr
SEPTORIA LEAF SPOT					
M 01	copper octanoate	Cueva Commercial*	0.5%–2% solution applied at 470–940 L/ha	1	<i>Septoria lycopersici</i> Repeat application every 5–10 days. Do not exceed 15 applications per year. If concerned about sensitivity of plants, apply to individual plants or small areas to determine if plant damage occurs. REI: 4 hr

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ROOT DISEASES					
ROOT ROTTS (DAMPING OFF)					
28	propamocarb hydrochloride	Previcur N	10 mL/10 L water Apply solution at a rate of 100–200 mL/plant.	2	Pythium spp. Do not mix with other products. Prevent intense sunlight after application. Do not exceed 4 applications per crop cycle. Do not exceed 2 seeding/seedling applications per crop cycle. Do not exceed 2 after-transplanting applications per crop cycle. The higher rate should be used for second and third application. REI: 12 hr
44	<i>Bacillus subtilis</i> strain MBI 600	Serifel*	50 g/12.5 L water/ 21.9 m ³ growing media	NS	Fusarium spp., Pythium spp., Rhizoctonia solani For suppression. Prior to planting, apply as a spray while suspended onto 21.9 m ³ of plant growing media (potting soil, peat moss or peat-based mixtures). Mix thoroughly to ensure adequate distribution of the product. REI: NS
BM 02	<i>Trichoderma harzianum</i> Rifai strain KRL-AG2 and <i>Trichoderma virens</i> strain G-41	BW240 WP	30–60 g/100 L water/ m ² of soil/potting mixture surface	0	Fusarium spp., Phytophthora spp., Pythium spp., Rhizoctonia spp. For suppression. Apply immediately after sowing seed or planting. A second application may be made after 8–10 weeks if the disease is expected. Do not use overhead boom chemigation for second application or after the four-leaf stage. Use a higher rate and shorter interval when disease pressure is high. REI: 4 hr
M 04	captan	Captan 50 WP	2.5 kg/1,000 L water applied at rates of 50–85 L/100 m ²	NS	Use as a soil treatment. Work into the upper 7.5–19 cm of soil before planting. REI: 48 hr
		Captan 80 WP	1.5 kg/1,000 L water applied at rates of 50–85 L/100 m ²	NS	Use as a soil treatment. Work into the upper 7.5–10 cm of soil before planting. REI: 48 hr
		Maestro 80 DF	1.25 kg/1,000 L water applied at rates of 50–85 L/100 m ²	NS	Use as a soil treatment. Work into the upper 7.5–10 cm of soil before planting. REI: 48 hr
		Supra Captan 80 WP			
NC	<i>Streptomyces lydicus</i> strain WYEC 108	Actinovate SP	See Remarks.	NS	Pythium spp. For suppression. Apply as a seed treatment through mist-type commercial seed treatment equipment, slurry or other comparable methods that provide thorough coverage of treated seeds. Prior to planting, dissolve product in water and spray directly on seed. For hydroponic systems, apply solution to the growing media or apply as a soil drench. Repeat application every 7–14 days. REI: Re-enter treated areas only after spray has dried. Rates: Seed treatment: 7.5–42 g in 300 mL water/kg of seed Hydroponic systems: 420–840 g/ha Soil drench: 42–84 g/100 L water/m ³ of growing media

¹ See Appendix G for FRAC group definitions.

Table 8–2. Products registered for greenhouse eggplant diseasesFor more information on pesticide application, visit www.sprayers101.com — search keywords “greenhouse” or “airblast 101.”

FRAC Group ¹	Common Name/ Active Ingredient	Trade Name/ Formulation	Rate	PHI	Remarks
LEGEND: PHI = pre-harvest interval (in days) NS = no information was provided on the product label REI = re-entry interval * = product is potentially acceptable for organic production. Organic growers must always check with their certifying bodies to verify the acceptability of any product prior to using it.					
ROOT ROTTS (CROWN AND ROOT ROT, ROOT AND STEM ROT, ROOT AND STEM WILT)					
28	propamocarb hydrochloride	Previcur N	10 mL/10 L water Apply solution at a rate of 100–200 mL/plant.	2	Pythium spp. Do not mix with other products. Prevent intense sunlight after application. Do not exceed 4 applications per crop cycle. Do not exceed 2 seeding/seedling applications per crop cycle. Do not exceed 2 after transplanting applications per crop cycle. The higher rate should be used for second and third application. REI: 12 hr
P 07	mono- and dibasic sodium, potassium, and ammonium phosphites	Phostrol	2.9–5.8 L/ha in a minimum of 225 L water/ha	0	Phytophthora spp., Pythium spp. For suppression. Begin applications when conditions favour disease development. Repeat application every 7–14 days. Use the higher rate and shorter application interval when disease pressure is high. Do not exceed 4 applications per year. REI: Allow entry only after thorough ventilation, spray mist has cleared and the treated surface has dried.
	mono- and di-potassium salts of phosphorous acid	Confine Extra	5–10 L/ha in a minimum of 100 L water	1	Pythium spp. For suppression. Do not exceed 5 foliar and/or chemigation applications per growing season. Begin applications when conditions are favourable for disease. REI: Allow entry only after thorough ventilation, spray mist has cleared and the treated surface has dried.
		Rampart	Foliar: 3–8 L/1,000 L water/ha Drench: 5–7 L in a minimum of 1,000 L water	0	Phytophthora spp., Pythium spp. For suppression. Use the higher rate and shorter application interval when disease pressure is high. Foliar: Apply lower rate every 2–4 weeks after plants become established. Drench: Apply with normal irrigation schedule. REI: 4 hr. After REI, re-entry into treated areas is only permitted after thorough ventilation, spray mist has cleared and the treated surface has dried.
44	<i>Bacillus subtilis</i> strain MBI 600	Serifel*	50 g/12.5 L water/ 21.9 m ³ growing media	NS	Fusarium spp., Pythium spp., Rhizoctonia solani For suppression. Prior to planting, apply as a spray while suspended onto 21.9 m ³ of plant growing media (potting soil, peat moss or peat-based mixtures). Mix thoroughly to ensure adequate distribution of the product. REI: NS
BM 02	<i>Streptomyces lydicus</i> strain WYEC 108	Actinovate SP	See Remarks.	NS	Pythium spp. For suppression. Apply as a seed treatment through mist-type commercial seed treatment equipment, slurry or other comparable methods that provide thorough coverage of treated seeds. Prior to planting, dissolve product in water and spray directly on seed. For hydroponic systems, apply solution to the growing media or apply as a soil drench. Repeat application every 7–14 days. REI: Re-enter treated areas only after spray has dried. Rates Seed treatment: 7.5–42 g in 300 mL water/kg of seed Hydroponic systems: 420–840 g/ha Soil drench: 42–84 g/100 L water/m ³ of growing media
	<i>Trichoderma harzianum</i> Rifai strain KRL-AG2	Bora WP* RootShield WP*	Drench: 55–110 g/m ³	NS	Fusarium spp., Pythium spp., Rhizoctonia spp. For suppression. Can be applied through low-pressure watering nozzles such as fan nozzles or other watering systems. REI: NS

¹ See Appendix G for FRAC group definitions.

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NS = no information was provided on the product label

REI = re-entry interval

* = product is potentially acceptable for organic production. Organic growers must always check with their certifying bodies to verify the acceptability of any product prior to using it.

FRAC Group ¹	Common Name/ Active Ingredient	Trade Name/ Formulation	Rate	PHI	Remarks
ROOT ROTS (CROWN AND ROOT ROT, ROOT AND STEM ROT, ROOT AND STEM WILT) (cont'd)					
M 04	captan	Captan 50 WP	2.5 kg/1,000 L water applied at rates of 50–85 L/100 m ²	NS	Use as a soil treatment. Work into the upper 7.5–19 cm of soil before planting. REI: 48 hr
		Captan 80 WP	1.5 kg/1,000 L water applied at rates of 50–85 L/100 m ²	NS	Use as a soil treatment. Work into the upper 7.5–10 cm of soil before planting. REI: 48 hr
		Maestro 80 DF	1.25 kg/1,000 L water applied at rates of 50–85 L/100 m ²		
		Supra Captan 80 WP			

¹ See Appendix G for FRAC group definitions.