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**List of registered products for CUCUMBER PESTS in CANADA
and established MRLs/Tolerances (Note that OGVG strongly advises all growers to thoroughly read the label)**

Pesticide*	a.i.*	Group #	Rate*	Pest*	PHI (days)*	REI (hours)*	Remarks*	US Tolerance (ppm)**	Canada MRL (ppm)***
Ambush+A4:K42 50 EC or Pounce EC	Permethrin	3	200 mL/1000L 260 mL/1000L	Whiteflies	1	NS	Apply to achieve thorough coverage. Repeat as necessary.	1.5	0.5
Avid	Abamectin	6	30 mL/100L	Two spotted spider mite, leafminer	3	Do not re-enter treated areas until residues have dried.	No more than 5 applications per crop cycle.	0.005	0.005
Beleaf 50SG Insecticide (Sept 2012)	Flonicamid	29 (formerly 9C)	0.3 g product/L (30 g product/100 L)	Thrips, Aphids, lygus bugs, white flies	0	12	Apply before populations reach economic thresholds or as populations begin to increase but before damaging populations become established. Allow a minimum of 7 days between applications. Do not apply more than 2 applications per crop cycle (no more than 1 application per crop cycle may be foliar). Foliar: Apply sufficient volume to ensure good coverage, up to 1,000 L per hectare. The maximum volume should be used when plant foliage is dense. Do not apply more than 1 foliar application per crop cycle.	1.5	1.5
			12.5 mg product/plant				Drip: Apply through drip (trickle) irrigation systems or drench by hand using sufficient water volume to ensure delivery of the product to the roots. Do not apply this product through any other type of irrigation system.		
Bio-Ceres G	Beauveria bassiana strain ANT-03		2-4g/L water	Whiteflies, aphids, thrips	0	Do not re-enter into treated areas until the spray is dried.	Begin treatment of crops at the first appearance of the pest. Application rates, frequency, spray coverage and insect numbers impact the speed at which acceptable control is achieved. Depending on crop treated, 500 to 1,000 L of spray volume will typically be required for 1 hectare. This product is most effective when used early, before high insect populations develop. Reapply as necessary within a 7 day interval. In case of pest outbreak, the product can be used every 3 to 5 days. This product may be toxic to bees exposed to direct treatment, or drift. Do not apply this product while bees are actively foraging.	EXEMPT	EXEMPT

Bioprotec 3P	<i>Bacillus thuringiensis subsp. kurstaki strain EVB113-19</i>	11a	refer to label	Cabbage looper, tomato hornworm, <i>Duponchelia fovealis</i> , Banana moth (<i>Opogona sacchari</i>)	0	NS	refer to label	EXEMPT	EXEMPT
Bioprotec CAF	<i>Bacillus thuringiensis subsp. kurstaki strain EVB113-19</i>	11a	1.8 L/1000 L 0.9 - 1.8 L/1000L	Cabbage looper tomato hornworm	0	NS	refer to label	EXEMPT	EXEMPT
Botanigard ES	Beauveria bassiana Strain GHA		250-500 g/400L 500-1000 g/400 L 250-500 g/400 L	aphids thrips whiteflies	0	Foliar: 4; Bee-vectored: 0	Spray to wet, but avoid run-off. Apply at 5 to 10 day intervals. High populations may require 2 to 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.	EXEMPT	EXEMPT
Coragen	Chlorantraniliprole	28	125 ml/1000 L finished spray volume. The maximum finished spray volume is 1400 L/ha.	cabbage looper	1	12	Begin applications when treatment thresholds have been reached. Thorough coverage is required to obtain optimum control. Repeat applications if monitoring indicates it is necessary. Do not make more than 3 applications per crop cycle. Do not apply more than once every 7 days. Do not allow effluent or runoff from greenhouses containing this product to enter lakes, streams, ponds or other waters. Do not exceed a total of 750 ml of DUPONT™ CORAGEN™ insecticide per ha per crop cycle.	0.5	0.25
DDVP 20% EC	Dichlorvos	1B	6 mL/L	Aphids, whiteflies	7	24	Use cautiously as crop damage can occur, particularly under hot, humid conditions. Thoroughly ventilate before re-entering on the day following treatment.	NONE	0.1

Delegate WG	Spinetoram	5	92-132 g/1000 L	Control of cabbage looper, European corn borer Suppression of thrips	2	12	Apply as spray. Use the higher rate when insect populations are high and/or insects are large. Apply when cabbage looper or European corn borer eggs hatch and first instar larvae are present or when thrips first appear. Do not apply by fogger or mister. Monitoring is critical for proper timing of insecticide. Repeat applications as determined by further monitoring of pest pressure. 3 applications per crop cycle, with a minimum of 7 days between applications. <u>Refer to label for additional information</u>	0.3	0.3
Dibrom	Naled	1B	9.6 mL/100m ³ . Apply undiluted to cold pipes, then heat to 41C & close greenhouse for at least 4 hr.	Aphids, spider mites, whiteflies, mealy bugs, leafrollers	2	48	Vapour treatment. Maximum of 3 applications per crop, per cycle (including one postharvest). Minimum 7 day spray interval. 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. Thoroughly ventilate premises before re-entering. Avoid over treatment and direct application to plants as injury may result.	0.5	0.5
DiPel 2X DF (updated May 12 2016)	Bacillus thuringiensis, var. kurstaki strain ABTS-351	11	625 g/1000 L 75 – 150 g/250 L	Duponchelia fovealis Alfalfa looper, Cabbage looper	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. Apply at egg hatch to target young larvae (early instars). For best control thorough spray coverage is required. Ensure uniform deposits of DiPel 2X DF Biological Insecticide at sites of feeding and include treatment to both sides of foliage. Under heavy population pressure, or for larger larvae, shorten the spray interval or use the higher rate range. Repeat application at an interval to maintain control, usually 3-14 days. Weekly applications may be necessary if the eggs hatch is asynchronous.	EXEMPT	NS
Distance	Pyriproxyfen	7C	45 mL/100L	Whiteflies	3	12	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 from 14 to 28 days after the first application. Use longer interval when plants are not rapidly flushing new growth. Apply a maximum of 2 applications per cropping cycle. If the cropping cycle is less than 6 months, do not apply more than 2 applications per 6 months.	0.10	0.1

DynoMite WP or SanMite WP	Pyridaben	21A	284 g/ha 1000L water/ha	Two spotted spider mites	2	12	Maximum number of applications per crop cycle is 2. Apply at intervals of at least 28 days. Do not apply this product through any type of irrigation system. Do not apply as a fog.	NONE	0.1
Endeavor 50 WG	Pymetrozine	9B	100-200 g/ha in a minimum of 1000 L water/ha	green peach aphid, melon aphid	3	12	Do not apply more than 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. Do not reapply for at least 7 days. On hard-to-wet plants add a nonionic or organosilicone-based surfactant to improve coverage.	0.1	0.1
Entrust 80 W	spinosad (organic formulation)	5	72 g product per 1000 L of water as a dilute	Cabbage looper	2	12	The maximum application volume that can be used is 1000 L/ha. The use of this product for is restricted to plant growth stages for which thorough coverage can be achieved by application volumes of 1000 L/ha or less. Apply when eggs hatch and first instar larvae are present. Do not apply by a fogger or mister. Monitoring is critical for the proper timing of the insecticide. Repeat applications as determined by further monitoring of pest pressure. Three applications of Entrust 80 W can be used per crop cycle, with a minimum of 7 days between applications.	0.3	0.3
			30 g product per 1000 L of water as a dilute spray	European corn borer and exposed western flower thrips (suppression only)	2				

Entrust SC	spinosad	5	100 ml/1000L water	European corn borer	2	12	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. Three applications can be used per crop cycle, with a minimum of 7 days between applications.	0.3	0.3
			240 ml/1000L water	Loopers			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. Three applications can be used per crop cycle, with a minimum of 7 days between applications.		
			100 ml/1000L water	Thrips			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. Three applications can be used per crop cycle, with a minimum of 7 days between applications.		
Floramite SC	Bifenazate	Un	125 mL (30 g a.i.) in 400 L water	Two spotted spider mites	1	12	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. Application should be made as soon as mites appear and will provide residual control for up to 28 days. Maximum number of sprays per crop cycle is 2. Make only one 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.	0.75	0.75
Foray 48B	Bacillus thuringiensis subsp. kurstaki strain ABTS-351	11a	0.6-1.8 L in 500-1,000 L water per ha (60-180 mL per 1,000 m ²)	Cabbage loopers	0	NS	Apply using a high volume spray. Apply at 10 day interval when loopers first appear. In general, larvae should be treated when they are newly hatched.	EXEMPT	EXEMPT
Forbid 240 SC	Spiromesifen	23	30-50 mL/100 L	Two spotted spider mites, whiteflies	3	12	Maximum number of applications per crop cycle is 2. Restricted entry interval = 12 hr.	0.1	0.2
Intercept	Imidacloprid	4	16 g/80 L water/1000 mature plants	Whiteflies, aphids	1	NS	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. Do not apply more than once per season. Applications should be made when infestation pressure surpasses threshold and beneficials are not able to maintain pest populations below damage thresholds. Repellency of bumble bee pollinators and negative effects on some beneficials (<i>Orius</i> sp.) can occur.	0.5	0.5

Insecticidal Soap	Potassium salts of fatty acids		1-2L/100L	Aphids, two-spotted spider mites, earwigs, whiteflies, psyllids	5		May cause damage to plant under high temperature conditions.	EXEMPT	NS
Kontos (May 2016)	Spirotetramat	23	Spray mixture dilution is 30 to 42 mL / 100 Liters of water.	Aphids, whiteflies	3		Use appropriate spray volume for adequate crop foliage spray coverage. Spray crop to wet not to drip. Do not exceed a spray volume of 712 L per hectare (42 mL concentration) to 1,000 L per hectare (30 mL concentration). Use the higher concentration for higher pest infestation levels. Interval between applications is at least 7 to 14 days. Maximum product allowed per crop cycle is 900 mL per hectare (216 g a.i. per hectare). Maximum number of applications per cropping cycle is 3. Toxic to bee brood. Not acutely toxic to adult bees. Residues in/on pollen and nectar may harm bee brood. This product is toxic to certain beneficial insects.	0.3	0.3
Kopa Insecticidal Soap	Potassium salts of fatty acids		8L/400L of water	aphids, mites, whiteflies	0		Refer to label	EXEMPT	NS
Loopex	<i>Autographa californica</i> Nucleopolyhedrovirus		50-200 mL/400L of water	cabbage loopers	0	Do not allow worker entry into treated areas until mists have settled.	Application timing should target small larvae and be applied using high volume spray systems (minimum 400L/ha). Refer to label for additional information.	EXEMPT	NS

Met52 EC	Metarhizium anisopliae Strain F52		refer to label	mites, thrips, whiteflies	0	Do not re-enter until spray has dried.	<p>Mites: Foliar: Reduces pest numbers. Use the higher application concentration when pest pressure is high. Re-apply as required. The need for and timing of re-application should be determined by monitoring. An application interval of 5 to 10 days is recommended. Spray to wet all foliage, but avoid run-off. Do not apply through a thermal pulse fogger.</p> <p>Thrips: Foliar: Reduces pest numbers. Use the higher application concentration when pest pressure is high. Re-apply as required. The need for and timing of re-application should be determined by monitoring. An application interval of 5 to 10 days is recommended. Spray to wet all foliage, but avoid run-off. Do not apply through a thermal pulse fogger. Drench: 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 per 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.</p> <p>Whiteflies: Foliar: Reduces pest numbers. Use the higher application concentration when pest pressure is high. Re-apply as required. The need for and timing of re-application should be determined by monitoring. An application interval of 5 to 10 days is recommended. Spray to wet all foliage, but avoid run-off. Do not apply through a thermal pulse fogger.</p>	EXEMPT	NS
Neudosan Commercial or Opal Insecticidal Soap	potassium salts of fatty acids	NS	8 L in 400 L water	aphids, mites, whiteflies	0	NS	<p>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.</p>	NS	NS
Opal2 Insecticidal Soap	potassium salts of fatty acids		refer to label	whiteflies, psyllids, mites, mealybugs	0	NS	Insects must be sprayed directly to achieve proper control.	NS	NS
Pounce 384 EC	permethrin	3A	260 mL in 1,000 L	Greenhouse whitefly (<i>Trialeurodes vaporariorum</i>)	1	Re-entry into treated areas is permissible as soon as the spray deposit has dried.	Apply to thoroughly cover all foliage. Repeat as necessary.	1.5	0.5

PureSpray Green Spray Oil 13E	Mineral Oil		1L/100L of water	Aphids, whiteflies mites, thrips	0	12	Deters feeding. Begin when pests appear. Apply at 7 to 10 day intervals. For effective control thorough coverage is essential. Do not exceed rate otherwise phytotoxicity may result. For suppression. Begin when pests appear. Apply at 7 to 10 day intervals. For effective control thorough coverage is essential. Do not exceed rate otherwise phytotoxicity may result	EXEMPT	NS
Safer's Insecticidal Soap	potassium salts of fatty acids		mix 10 mL in 500 mL water	mealybugs, mites, psyllids, whiteflies	NS	NS	Insects must be sprayed directly to achieve proper control. Refer to label for further information.	NS	NS
Safer's Trounce Insecticidal Soap	potassium salts of fatty acids + pyrethrins	NC + 3A	5 L in 100 L water	mites, whiteflies	1	NS	Refer to label for further information	NS	NS
Shuttle 15 SC (Feb, 2013)	Acequinocyl	20B	0.21 - 0.46 L per 500 L of water	Two-spotted spider mite (<i>Tetranychus urticae</i>)	1	12	Apply as a full coverage spray to the foliage. Thorough coverage is essential for effective control of Two-spotted spider mite. Actual spray volume will vary depending on the size of 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. Allow a minimum of 21 days between applications of Shuttle 15 SC Miticide. Do not apply more than 0.69kg ai/ha per crop cycle. Do not apply more than a maximum of two applications per crop.	0.15	0.15
Sluggo	Ferric phosphate		1.2-5 g/m2	Slugs and snails			Re-apply bait as needed or at least every 2 weeks if slugs and snails continue to be a problem.	EXEMPT	
Success	spinosad	5	50 ml/1000 L water	Thrips, Aphids, lygus bugs, white flies	2	12	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. Three applications can be used per crop cycle, with a minimum of 7 days between applications.	0.3	0.3
Vectobac	Bacillus thuringiensis, serotype H-14, strain AM 65-52	11	Light to moderate infestation: 2-4 L/1000L water; heavy infestation 4-8 L/1000L water	Fungus gnats	NS	NS	Do not mix and apply with fertilizers or fungicides containing copper or chlorine as this may neutralize the active ingredients. Apply weekly as a soil drench or when pest monitoring indicates the need. This product is a larvicide and will not control adult gnats.	EXEMPT	NS
Vendex 50W	Fenbutatin oxide (Hexakis)	12B	50 g/100 L	Two spotted spider mites	3	12	Begin applications when mites appear and repeat as necessary to maintain control. Thorough coverage of all foliage, especially the under surface of leaves, is essential. The addition of a suitable spreader-sticker will usually result in superior mite control. Not highly injurious to beneficial mites and is non-toxic to honeybees.	4.0	0.5

XenTari WG	<i>Bacillus thuringiensis</i> subsp. aizawai strain ABTS-1857	11a	500-1,000 g per ha	beet armyworm, corn earworm (tomato fruitworm), loopers (cabbage, tomato)	0	Do not re-enter until spray has dried.	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 at an interval sufficient to maintain control, usually 3 to 14 days, depending on plant growth rate, moth activity, and other factors. Toxic to bees and certain beneficial insects.	NS	NS
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NS = not specified

**List of registered products for CUCUMBER DISEASES in CANADA
and established MRLs/Tolerances**

Pesticide*	a.i.*		Rate*	Pest*	PHI (days)*		Remarks*	US Tolerance (ppm)**	Canada MRL (ppm)***
Actinovate SP (Updated May 12 2016)	<i>Streptomyces lydicus</i> strain WYEC 108		420 g/ 470-800L Seed treatment: 7.5- 42 g in 300 mL water per kg of seed; Hydroponic systems: 420-840 g per ha; Soil drench: 42-84 g in 100 L water per m ³ of growing media	suppression of powdery mildew suppression of <i>Pythium</i> spp.	0	1	Powdery mildew- For suppression. Make the first application when conditions are conducive to disease development and repeat application every 7 to 14 days. Use the shorter application interval under high disease pressure. Spray to wet, but avoid run-off. <i>Pythium</i> 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 every 7 to 14 days.	EXEMPT	
Cease	<i>Bacillus subtilis</i> strain QST 713		1.0-2.0 L/100 L water	gummy stem blight (<i>Didymella bryoniae</i>), Cercospora leaf spot (<i>Cercospora citrullina</i>), Downy mildew (<i>Pseudoperonospora cubensis</i>), powdery mildew (<i>Erysiphe spp.</i> , <i>Sphaerotheca spp.</i>)	0	NS	Apply preventively or in early stages of disease development. Repeat as necessary every 7-10 days. Maintain agitation during mixing and application to assure uniform coverage. Do not mix in spray tank with pesticides, surfactants or fertilizers. Do not allow spray mixture to stand overnight or for prolonged periods.	EXEMPT	
Confine Extra	mono- and di- potassium salts of phosphorous acid	33	3-5 L in 100 L water per ha 5-6 L in 100 L water per ha	Downy mildew Phytophthora foliar blight	1	Allow entry only after thorough ventilation and spray mist has cleared and the treated surface has dried.	For suppression. Use a maximum of 6 foliar applications per growing season. Begin applications when conditions are favourable for disease.	EXEMPT	

Cueva Commercial	copper octanoate	M1	0.5-2% solution applied at 470-940 L per ha	Alternaria leaf blight, anthracnose, angular leaf spot, bacterial wilt, downy mildew, powdery mildew, septoria leaf spot	1	4	Re-apply using 5 to 10 day intervals. 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.	EXEMPT	
Cyclone (updated May 13 2016)	Citric Acid Lactic Acid		1.2% dilution in water	suppression of powdery mildew	0	Do not re-enter into treated areas until spray is dried.	For foilar treatment. Apply until runoff. Can be used every 7-10 days. Begin applications when conditions are conducive to disease development. Shake well before use.	EXEMPT	
			8% dilution in water	suppression of downy mildew	0	Do not re-enter into treated areas until spray is dried.			
Decree 50 WDG	Fenhexamid	17	1.5 kg in 500 L water (for small plants) or 1,500 L water (for large or mature plants) per ha (0.75 kg a.i. per ha)	Gray mold (<i>Botrytis cinerea</i>)	1	4	Begin application when conditions favour disease development. Repeat after 7 days if conditions continue to favour disease. Do not make more than 2 applications per crop cycle.	2	0.7
Double Nickel 55	<i>Bacillus amyloliquefaciens</i> strain D747	44	Foliar application: 1-2.5 kg per ha; Low disease pressure: 0.5-1 kg per ha	Powdery mildew	0	Keep unprotected persons out of treated areas until sprays have dried.	For suppression. Apply from fruit formation to end of maturity. Repeat application every 3 to 10 days (or 3 to 7 days under high disease pressure) for as long as conditions favour disease development.	EXEMPT	
Double Nickel LC	<i>Bacillus amyloliquefaciens</i> strain D747	44	Foliar application: 5-12.5 L per ha; 2.5-5 L per ha	Powdery mildew	0	Keep unprotected persons out of treated areas until sprays have dried.	For suppression. Apply from fruit formation to end of maturity. Repeat application every 3 to 10 days (or 3 to 7 days under high disease pressure) for as long as conditions favour disease development.	EXEMPT	
Ferbam 76 WDG	Ferbam	M3	2 kg in 1,000 L water	Gray mold (<i>Botrytis cinerea</i>)	1		Apply at weekly intervals. Causes severe injury to seedless English cucumbers.	NONE	7

Fontelis (updated May 13 2016)	Penthiopyrad	7	1 to 1.5 L/ha	Gray mold (<i>Botrytis cinerea</i>)	1	12	Begin applications prior to disease development and continue on a 7- to 14-day interval. Use higher rate and shorter interval when disease pressure is high. Make no more than 2 sequential applications of Fontelis Fungicide before switching to a fungicide with a different mode of action. Maximum seasonal use rate is 4.9 L/ha. Restricted entry interval = 12 hours	0.6	0.6
			1.25 L/ha	Powdery mildew (<i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i>)					
Influence LC	garlic powder		1.8% with high volume sprayer; Tank mix: 0.45% with Cyclone at 0.3% without surfactant	Powdery mildew	0	Do not enter treated areas until the spray is dried	For suppression. Apply preventatively or at first signs of disease. Repeat applications at 7 to 10 day intervals. Ensure thorough coverage of foliage. Do not exceed 18 L per ha. Do not use with ultra low volume sprayers.	EXEMPT	
Influence WP	garlic		6.9 kg/ha in 1000 L/ha water.	Downy mildew	0	Do not enter treated areas until the spray is dried	May inhibit symptoms when used in conjunction with integrated pest management strategies. Spray the foliage and substrate surface. Ensure thorough coverage. Repeat applications at 7 to 14 day intervals.	EXEMPT	
			6.9 kg/ha in 1000 L/ha water.	Powdery mildew			For suppression. Spray the foliage and substrate surface. Ensure thorough coverage. Repeat applications at 7 to 14 day intervals.		
			10-20 kg in 1,000 L water per 300 m ²	Pythium			For partial suppression. Apply as a drench to the substrate surface at seeding. Use the higher rate under high disease pressure or when conditions are conducive to disease development.		
Kumulus DF	sulphur	M2	120 g in 100 L water	Powdery mildew	1	24	Apply once every 5 days as required. Do not apply more than 8 applications per season. Do not apply if temperature is above 27°C (in shade) and high humidity prevails or are expected within 3 days after the treatment. Do not apply under intense sunshine.	EXEMPT	
Microscopic Sulphur WP	sulphur	M2	105 g in 100 L water	Powdery mildew	1	24	Apply at weekly intervals as needed. Do not make more than 8 applications per season. Do not apply if high temperatures (above 25°C) and high humidity prevail or are expected during the three days following application.	EXEMPT	

Microthiol Disperss	sulphur	M2	120 g in 100 L water	Powdery mildew	1	24	Apply when disease first appears and repeat every 5 days as necessary. Do not apply more than 8 applications per season. Do not apply under intense sunshine. Do not apply if temperature will exceed 27°C (in shade) and high humidity prevails within three days following spraying, due to the risk of crop injury.	EXEMPT	
MilStop	Potassium bicarbonate	NC	5.6 kg in 2000L water/ha	Powdery mildew	0		Start application at first sign of disease. Uniform and complete coverage of the foliage is essential for the most effective results. Number of applications will depend on disease pressure. Use 7 day intervals between applications. Maximum number of applications per season is 10. Do not apply through any type of irrigation system.	EXEMPT	
Mycostop	Streptomyces griseoviridis strain K61		Rockwool: 5-10 mg per plant (for spraying and drenching use 10-20 mL per plant of 0.05% suspension); Beds: 5-10 g per 100 m ² (for spraying and drenching use 0.1-0.2 L per m ² of 0.05% suspension)	Fusarium, pythium, root diseases, stem rot	0		For suppression. Apply immediately after transplanting. Repeat applications at 3 to 6 week intervals. For seedling production, apply first spray after emergence using lower rate.	EXEMPT	
Nova	Myclobutanil	3	340 g/ in 1000L water/ha	Powdery mildew, gummy stem blight	2	12	Use a maximum of one applicatin per crop cycle. Apply as soon as possible after initial infection.	0.2	0.3
Orondis	oxathiapiprolin	U15	0.175-0.35 L per ha	Phytophthora foliar blight	0	12	Foliar application only. Begin applications prior to disease development and continue on a 5 to 14 day interval. Use higher rate and shorter interval when disease pressure is high.	0.2	0.2
Palladium WG	cyprodinil + fludioxonil	9 + 12	775 g in 200-3,000 L water per ha	Powdery mildew	1	24	For suppression. Do not make more than 3 applications per crop cycle. First application should be made when disease first appears; a second application should be made 7 to 10 days later. Make no more than 2 sequential applications before alternating with another registered fungicide with a different mode of action. The third application can be made at a 7 to 10 day interval if conditions remain favourable for disease development.	0.7	0.7
Prestop	Gliocladium catenulatum		125-250 mL of 0.5% suspension/10	<i>Pythium</i> sp., <i>Rhizoctonia solani</i>	0	4	For suppression. Apply as a growing media treatment or as a drench treatment. Most effective when applied	EXEMPT	

	(fungus)		L of growth media, or 100 L of 0.5% suspension /2,000 plants	<i>Fusarium oxysporum</i>			preventatively, before disease starts. Treat the growing media prior to seeding, transplanting or potting, or else make a drench application immediately after seeding, transplanting or potting. Additional applications can be made as a drench. Repeat applications every 3 to 6 weeks, with shorter intervals used under conditions of moderate to high disease pressure.		
			Apply sufficient 0.5% suspension to wet plants, but not to run-off	<i>Botrytis cinerea</i>			For suppression. Apply as a foliar spray treatment to plant stems and leaves. Spray to wet but not to run-off. Most effective when applied preventatively, before disease starts. Repeat applications every 3 to 4 weeks, with shorter intervals used under conditions of moderate to high disease pressure.		
			Apply sufficient 1.0% suspension to wet plants, but not to run-off	gummy stem blight					
Previcur N (updated August 2013)	Propamocarb hydrochloride	28	10 mL in 10 L water and apply solution at a rate of 100-200 mL per plant. The higher rate should be used for second and third application. 1.5 L/ha	Pythium root rot Suppression of downy mildew	2	12	Do not mix with other products. Prevent intense sunlight after application. A maximum of 4 applications can be made per crop cycle. Do not apply more than 2 seeding/seedling applications per crop cycle. Do not apply more than 2 after transplanting applications per crop cycle. For suppression. Apply when plants begin to vine, or when conditions first become favourable for disease development, but before infection. Make a maximum of 1 application per crop cycle.	1.5	2.5
Pristine WG	Boscalid	7	1.3 kg/ha in a minimum water volume of 250 L/ha	Powdery mildew (<i>Sphaerotheca fuliginea</i>) suppression	0	Do not re-enter until sprays have dried.	For suppression. Apply when conditions favour disease development. Do not apply this product using any type of foggers or misters. Do not apply more than once per crop cycle. Do not use on greenhouse transplants.	0.5	0.5
	Pyraclostrobin	11		gummy stem blight (<i>Didymella bryoniae</i>) suppression				0.5	0.5
PureSpray Green Spray Oil 13E	Mineral Oil		1L/100L of water	suppression of powdery mildew (<i>Sphaerotheca fuliginea</i>)	0	12	For suppression. Begin when conditions are favourable for disease development and/or when first symptoms appear. Apply at 7 to 10 day intervals. For effective control thorough coverage is essential. Do not exceed rate otherwise phytotoxicity may result.	EXEMPT	

Regalia Maxx (updated May 13 2016)	Extract of <i>Reynoutria sachalinensis</i>		0.25% v/v (2.5 mL per L) 0.125-0.25% v/v (1.25-2.5 mL per L)	Downy mildew Powdery mildew	0	Do not enter treated area until spray is dried	For suppression. Begin applications at the first sign of disease, or when conditions become conducive for disease development. Repeat as necessary on a 7 to 10 day interval. Use the shorter spray interval under high disease pressure. Spray until just prior to runoff. Do not apply in a spray volume of more than 1,500 L per ha.	EXEMPT	
Revus	Mandipropamid	40	400 ml/ha of REVUS with 1.5L/ha of PREVICUR N Fungicide	downy mildew	2	12	Apply as a resistance management tool in a tank mix as a foliar application when plants begin to vine or when disease threatens. Do not make more than 1 application per crop cycle. Do not apply by chemigation. Do not apply to greenhouse-grown seedlings to be transplanted in the field, until after they have been transplanted out.	0.6	0.6
Rhapsody ASO	Bacillus subtilis strain QST 713	44	1.0-2.0 L/100 L water	gummy stem blight (<i>Didymella bryoniae</i>), Cercospora leaf spot (<i>Cercospora citrullina</i>), Downy mildew (<i>Pseudoperonospora cubensis</i>), powdery mildew (<i>Erysiphe spp.</i> , <i>Sphaerotheca spp.</i>)	0	NS	For suppression. Begin applications soon after emergence or transplant when environmental conditions and plant stage are conducive to rapid disease development. Repeat as necessary on 7 to 10 day intervals. Thorough coverage is essential. Maintain agitation during mixing and application to assure uniform coverage. Do not mix in spray tank with pesticides, surfactants or fertilizers. Do not allow spray mixture to stand overnight or for prolonged periods.	EXEMPT	
Ridomil Gold 480 EC or Ridomil Gold 480 SL	Metalaxyl-M	4	Apply 250 mL of solution (0.75-1.25 mL/ 10 L) at base of plant after transplanting.	Pythium crown and root rot	21	12	Apply once per crop cycle immediately after transplanting as a drench to the growing media at the base of each plant. Do not use in the propagation house. Do not apply to cucumbers intended for transplant out to fields. Do not apply to cucumbers grown in soil.	1.0	1
RootShield WP	Trichoderma harzianum rifai strain KRL-AG2	NC	Drench: 55-110 g per m ³ using a suspension of 30-45 g in 100 L	Pythium, Rhizoctonia, Fusarium spp.	NS	NS	For suppression. Can be applied through low pressure watering nozzles such as fan nozzles or other watering systems. Effective when root zone exceeds 10°C.	EXEMPT	
RootShield Granules	Trichoderma harzianum rifai strain KRL-AG2	NC	600-750 g per cubic metre (loose) planting mix or soil	<i>Pythium</i> , <i>Rhizoctonia</i> , <i>Fusarium</i>	NS	4	For suppression. For best results, thoroughly incorporate granules during mix preparation or pot filling, or incorporate into planting beds by raking or tilling. Effective when root zone exceeds 10°C.	EXEMPT	
RootShield HP	<i>Trichoderma harzianum</i> Rifai strain KRL-AG2	NC	Drench: 55-110 g per m ³ using a suspension of 30-45 g in 100 L	<i>Fusarium</i> spp., <i>Pythium</i> spp., <i>Rhizoctonia</i> spp.	NS	4	For suppression. Can be applied through low pressure watering nozzles such as fan nozzles or other watering systems.	EXEMPT	

Rovral WDG	Iprodione	2	1 kg/1000 L	Botrytis grey mould, gummy stem blight	2	NS	Spray to run-off ensuring good coverage of the plants, particularly stem nodes, immediately following any pruning. Begin application at the first sign of disease. Apply label rate using 1,000-2,000 L water per hectare. Spray to run-off ensuring good coverage of the plants, particularly stem nodes, immediately following any pruning. Begin application at the first sign of disease.	NONE	0.5
Rovral WP	iprodione	2	100 g in 100 L water per ha	Grey mould (Botrytis blight, stem canker) gummy stem blight	2	12	Spray to run-off ensuring good coverage of the plants, particularly stem nodes, immediately following any pruning. Begin application at the first sign of disease. Apply label rate using 1,000-2,000 L water per hectare. Spray to run-off ensuring good coverage of the plants, particularly stem nodes, immediately following any pruning. Begin application at the first sign of disease.	NONE	0.5
Scala SC	pyrimethanil	9	2 L in per ha		1	24	Apply at first sign of disease. Spray volumes will vary depending on crop canopy height. Use appropriate spray volume to ensure thorough coverage of leaf canopy and stems. A minimum of 485 L per ha for smaller plants, increasing to 1,000-2,500 L per ha for larger plants. Repeat applications should be made on a 7 to 14 day interval depending on disease conditions. Do not apply more than 2 applications per growing season. Do not apply more than 1 application before alternating with a fungicide with a different mode of action. Ventilate for at least 2 hours after application. Proper ventilation after spraying is essential to avoid brown or necrotic spots that can be caused by the vapour activity of Scala SC.	1.5	1.5

Serifel	<i>Bacillus subtilis</i> strain MBI 600	44	50 g in 12.5 L water per 21.9 m ³ growing media	<i>Fusarium</i> spp., <i>Pythium</i> spp., <i>Rhizoctonia solani</i>	NS	NS	For suppression. While suspended apply as a spray onto 21.9 m ³ of plant growing media (potting soil, peat moss or peat based mixtures) prior to planting. Mix thoroughly to ensure adequate distribution of the product.	EXEMPT	
Timorex Gold	Tea Tree Oil	46	2-8 L in 400-800 L water per ha	Control of Powdery Mildew Suppression of Downy mildew	2	24	For suppression. Do not spray during the warm hours of the day and in hot seasons with temperatures above 35°C. Do not apply through any type of irrigation system. Good coverage and wetting of foliage is required. For preventative treatments, apply at 7 to 14 day intervals, depending on disease level. Use shorter application intervals under conditions that promote rapid disease development. Do not apply with captan or sulphur which	Non-crop use†	EXEMPT
Triatum G	<i>Trichoderma harzianum</i> Rifai strain T-22	NS	Before filling seed trays or containers: 750 g per m ³ ; Subsequent applications at transplanting or repotting: 375 g per m ³ ; Crops on	Pythium	NS	NS	For suppression. For the best results, being use from propagation onwards, before occurrence of disease. Mix evenly in growing medium before filling seed trays at propagation and transplanting.	EXEMPT	

Trianium P	<i>Trichoderma harzianum</i> Rifai strain T-22	NS	Sowing: 1.5 g per m ² of cultivated area, suspended in 2.5-5 L water; Transplanting high crop density: 3 g per m ² of cultivated area (1.5 g per m ² if plants have been treated previously); Transplanting low crop density: 30 g per 1,000 plants (15 g per 1,000 plants if plants have been treated previously).	Pythium	NS	NS	For suppression. For the best results, begin using from propagation onwards, before occurrence of disease. Transplanting high crop density: Use a water volume equivalent to 10% of the substrate volume or 2 to 5 L per m ² . Low crop density: Use a water volume equivalent to 10% of the substrate volume or 100 L per 1,000 plants.	EXEMPT	
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The MRL (maximum residue limit) or tolerance is the maximum concentration of a pesticide that may remain in or on a food at the farm gate when the pesticide is used according to registered label directions (e.g. use

* Source: Product label

** United States Federal Electronic Register, Title 40: Protection of the Environment, Part 180 - Tolerances and exemptions from tolerances for pesticide chemicals in food

*** PMRA website

NC=not classified

NS=not stated

† The EPA has classified Timorex Gold as a “non-crop use” in the United States because no tea tree oil residues were found on the crop beyond background levels after 48 hours.

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