

EXTENSION AND ADVISORY TEAM

SPRAY GUIDE FOR FIELD PEPPER

Nova Scotia Vegetable Crop Spray Guide 2023 [PEP1-23]









SPRAY GUIDE FOR PEPPER PRODUCTION

Nova Scotia Vegetable Crop Spray Guide 2023 [PEP1-23]

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LIABILITY STATEMENT

Recommendations in this guide are given for general information only and do not give the user the right to use a product in a manner not in accordance with the pesticide label or Pest Control Products Act. Perennia, by funding and printing this publication, and the editors/authors, do not offer any warranty or guarantee and do not assume any liability for crop loss, animal loss, health, safety, or environmental hazard caused by the use of any pesticide, advice, or recommendation in this schedule. Pesticides used in this schedule are products labeled for the target and crop. This information was retrieved from the Pest Management Regulatory online of Registered Products Database. The list of products presented in this schedule is intended to be complete, based on products known to be available in the region, but in no way is guaranteed to be complete. Some of the products listed may not be available. Trade names are given as a convenience to producers and are neither an endorsement of the product nor a suggestion that similar products are not available or effective.



CONTENTS

| LIABILITY STATEMENT | 1 |
|---|----|
| | |
| PESTICIDE EMERGENCY CONTACT INFORMATION | |
| | |
| ABBREVIATIONS AND CONVERSIONS | 3 |
| | |
| GUIDE TO WEED MANAGEMENT | 4 |
| | |
| GUIDE TO INSECT MANAGEMENT | 8 |
| OURDE TO DISTANCE ANALYSIST | |
| GUIDE TO DISEASE MANAGEMENT | 22 |



PESTICIDE EMERGENCY CONTACT INFORMATION

| Poison Control Centres | | |
|-------------------------------|-------------------------------------|-------------------------------------|
| Nova Scotia | 800.565.8161 or 902.470.8161 | IWK, Halifax, NS |
| New Brunswick | 911 | Ask for Poison Information |
| Prince Edward Island | 800.565.8161 or 902.470.8161 | IWK, Halifax, NS |
| Newfoundland | 709.722.1110 | Dr. Charles A. Janeway Child Health |
| | | Care Centre, |
| | | St. John's, NF |

| Environmental Emergencies (Pesticide Spills) | | | | | | | |
|--|--------------|--|--|--|--|--|--|
| Transport Canada Regional Operations Centre (24 hours) | | | | | | | |
| Nova Scotia | 800.565.1633 | | | | | | |
| New Brunswick | 800.565.1633 | | | | | | |
| Prince Edward Island | 800.565.1633 | | | | | | |
| Newfoundland | 800.563.9089 | | | | | | |

ABBREVIATIONS & CONVERSIONS

| Formulation and Measurement Abbreviations | | | | | | | | |
|---|--------------------------|-----|---------------------------------|--|--|--|--|--|
| FORMULATIONS | | | EMENTS | | | | | |
| DF | Dry flowable | mL | millilitre | | | | | |
| EC, E | Emulsifiable concentrate | kPa | kilopascal | | | | | |
| L | Liquid | kg | kilogram | | | | | |
| Sn / Su | Suspension | g | gram | | | | | |
| WP/W | Wettable powder | L | litre | | | | | |
| | | BIU | Billions of International Units | | | | | |
| | | ppm | parts per million (1000 ppb) | | | | | |
| | | ppb | parts per billion (1/1000 ppm) | | | | | |

| Helpful Conversions ¹ | |
|---|--|
| kPa X 0.14 = pounds per square inch (psi) | millilitres X 0.035 = fluid ounces |
| hectares X 2.47 = acres | litres X 35 = fluid ounces |
| kilograms X 2.2 = pounds | litres X 0.22 = imperial gallons |
| kilograms per hectare X 0.89 = pounds per acre | litres per hectare X 14.17 = fluid ounces per acre |
| kilograms per hectare X 0.40 = kilograms per acre | litres per hectare X 0.40 = litres per acre |
| | degree-days C X 1.8 = degree-days F |

It is not recommended to convert label rates to imperial units because there is a high probability of mathematical and rounding errors. Present day pesticides are formulated to be more effective in smaller amounts. Therefore, even small conversion errors can lead to the use of incorrect rates (either too high or too low). Use metric – you will be glad you did!

¹ Pesticide Units of Measurement





| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|--|---------------------------|-----------------------|------------------------------|---|--|--|--|
| WEEDS: | | | | | | | |
| Preplant Perennial weeds including quackgrass | Perennial weeds including | Roundup WeatherMAX | 1.67-4.67 L/ha | 12 hours | 7 | Apply in the fall or spring prior to planting. Annual weed control programs will be necessary to control weeds germinating after planting. For quackgrass control, apply it to actively growing quackgrass when at least 4 new leaves are present. The low rate (1.67 L/ha) will provide a minimum of one season | |
| | | | Touchdown Total | 1.8-5.0 L/ha | 12 hours | 7 | control, while higher rates (1.67 to 4.67 L/ha) will provide longer term control. The low rate of Roundup should be applied in 50 to 100 L/ha water. If higher water volumes are used add a suitable surfactant. Wait 72 hours before plowing under. Best control of quackgrass is obtained when these herbicides are applied in the fall. |
| | 14 | flumioxazin | Chateau WDG | 140-210 g/ha (depending on soil type) | 12 hours | - | Apply as a hooded or shielded application to row middles prior to transplanting. Rainfall or irrigation is necessary for activation. Plants should be grown on plastic raised beds that are at least 10 cm higher than row middles. |
| | 26 | Pelargonic acid | Beloukha | 16 – 27 L/ha | Until dry | 1 | Apply as a burndown for seedbed preparation or inter-row weed management. Apply before or after sowing, but at least 3 days before emergence. For harder-to-control weeds, higher rates or repeat applications may be required. |



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|---|-------|---------------------|------------------------------|---|--|---------------------------------------|---|
| Preplant Incorporated | 3 | trifluralin | Treflan EC | 1.25-2.4 L/ha | 12 hours | - | Transplants only. Incorporate within 24 hours of application. See label for specific rates re: timing and soil type. |
| Germinating annual grasses and some broadleaves | 15 | napropamide | Devrinol 50 DF | 2.24-4.5 kg/ha | 12 hours | - | One application per season. |
| Preplant Broadleaves | 14 | Carfentrazone-ethyl | Aim®EC NEW 2023 | 37-117 mL/ha | 12 hours | 1 | Hooded sprayer, Maximum two applications per year (including post-harvest treatment). A minimum of 100 liters per hectare of spray solution. Use of an adjuvant is recommended. |
| Preemergence Germinating | 3 | chlorthal dimethyl | Dacthal W-75 | 9.0-15.5 kg/ha | 12 hours | - | Apply 4-6 weeks after transplanting. If weeds have emerged, cultivate before application. Do not apply more than 15.5kg/ha. |
| annual grasses and some broadleaves | 13 | clomazone | Command 360 ME | 1.55-2.35 L/ha | 12 hours | 70 | Do not use on banana peppers. Make a single herbicide application in a minimum of 95 L water/ ha before transplanting, and prior to weed emergence. Place roots of the transplants below the chemical barrier when planting. Do not apply in sandy soil, do not incorporate. Crop rotation restrictions may apply! |
| | 14 | Flumioxazin | Chateau EZ | 149 mL/ha (Coarse textured soil) 224 mL/ha (medium - fine textured soil. | 12 hours | - | Apply as a hooded or shielded application to row middles prior to transplanting for preemergence control of the weeds. Rainfall or irrigation must occur between application and transplanting in order to activate the product. Crop injury may occur from applications made to poorly drained soil and/or applications made in cool and wet conditions. |

^{- 5 -}



| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|--|-------|-------------------|------------------------------|---------------------------|--|---------------------------------------|---|
| Preemergence Germinating annual grasses and some broadleaves (cont.) | 15 | s-metolachlor | Dual II Magnum or Komodo | 1.15-1.25 L/ha | 12 hours | 80 | Controls nightshades and annual grasses. Apply within 48 hrs of transplanting. Risk of crop injury when soil temperature is below 10 C. |
| Postemergence Grasses | 1 | Sethoxydim | Poast Ultra plus Merge | 0.32-1.1 L/ha 1-2 L/ha | 12 hours | 30 | Does not control sedges or broadleaf weeds. Does not provide residual weed control. Apply to actively growing grasses at the 1-6 leaf stage. |
| Postemergence Grasses and broadleaves | - | Acetic Acid | Serene NEW 2023 | 179-717.5 L/ha | When residue is dry | - | Greenhouse or field use. Highest rate corresponds to full-strength spot treatment. Lowest rate for small (3-5 leaf) actively growing weeds. Apply as a uniform band or spot application directed at weeds on the ground between the crops. Use hooded or shielded application equipment. Do not spray the crop directly. Do not apply it when plants are under stress. Retreatment is required for regrowth of weeds. |
| Post- transplant/Row middle application Broadleaf weeds & nutsedge | 2 | Halosulfuron | Sandea WG | 35-70 g/ha | 12 hours | 30 | Post-transplant – Apply as a directed (away from crop) spray 21 days after transplanting, or when the plants are a minimum of 15.25 cm tall, but prior to flowering. Row Middle Applications - Applied between rows of direct-seeded or transplanted peppers for the control of nutsedge and listed broadleaf weeds. Avoid contact of the herbicide with crop. If plastic is used on the planted row, adjust equipment to keep the application off the plastic. Reduce rate and spray volume in proportion to area actually sprayed. |

^{- 6 -}

^{*}Red text indicates label changes and products that are new to this guide in 2023.





| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|--------------------------|-------|---------------------|------------------------------|--------------|--|---------------------------------------|---|
| Post-harvest burndown | 14 | Carfentrazone-ethyl | Aim®EC NEW 2023 | 37-117 mL/ha | 12 hours | - | Hooded sprayer, Maximum two applications per year (including pre-plant treatment). A minimum of 100 liters per hectare of spray solution. |





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|-----------------------------|-------|-------------------|------------------------------|------------|---------------------------------|---------------------------------------|--|
| INSECTS: | | | | | | | |
| Aphids and Pepper Maggot | 1B | dimethoate | Lagon 480 E | 0.7-1 L/ha | 12 hours | 3 | Maximum 2 applications per season, with a minimum application interval of 7 days. Toxic to bees. |
| | 4 | acetamiprid | Assail 70 WP Aceta 70 WP | 56-86 g/ha | 12 hours | 7 | Aphids. Max 4 applications per season for aphids. Do not apply more than once every 7 days. Thorough and uniform spray coverage is required for adequate control. Use high rate under heavy pest pressure. |
| | | thiamethoxam | Actara 25 WG | 105 g/ha | 12 hours | 1 | Aphids. Max. 2 applications/yr. Apply before aphids reach damaging levels. |
| | 28 | Tetraniliprole | Vayego 200 SC | 150 mL/ha | 12 hours | 1 | Aphid Suppression. Begin applications when treatment thresholds have been reached. Apply as a directed foliar spray ensuring thorough coverage. Minimum application volume: 150L/ha. No more than 4 applications per season. Minimum interval between applications is 5 days. Do not apply less than 12 days prior to bloom. Do not apply while plants are blooming. |





| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|----------------------------------|-------|-------------------|------------------------------|---|--|---------------------------------------|--|
| Aphids and Pepper Maggot (cont.) | 28 | Cyantraniliprole | Exirel | Aphids: 500-1500 ml/ha Pepper maggot: 1000- 1500 ml/ha | 12 hours | 1 | Aphids in field peppers, suppression of pepper maggot in greenhouse peppers. Begin applications when treatment thresholds have been reached. Thorough coverage is important to obtain optimum control. Apply no more than 4 times per season. Aphids: for optimum control, apply Hasten Spray Adjuvant at 0.25%, or MSO Concentrate with Leci-Tech at 0.5% v/v. with 5 days between applications for aphid treatment. Pepper maggot: must be controlled at the adult life stage. Control may not be possible once oviposition. Select a spray volume appropriate for plant size/density. |
| | 29 | Flonicamid | Beleaf 50SG | Field: 0.12-0.16 kg/ha Greenhouse: 0.3 g/L foliar 30 mg/m² | 12 hours | 0 days | Field or greenhouse use. Aphids only. Thorough spray coverage of plant foliage is essential. Field: Minimum of 94 L of water/ha, increasing with larger/denser plants. Maximum of 3 applications/ season; allow 7 days between applications. Greenhouse: Apply before damaging populations establish. FoliarApply sufficient water for good coverage (up to 1000L/ha). Do not apply more than 1 foliar per drop cycle. Drip irrigation/drench- do not apply more than 2 applications per crop cycle. Use sufficient water volume. |

^{- 9 -}





| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|---------------------------------|-------|--------------------------------|------------------------------|---------------------|--|---------------------------------------|---|
| Aphids, Psyllids and Whiteflies | 23 | spirotetramat | Movento 240 SC | 220-365 ml/ha | 12 hours | 1 | Minimum 7-day interval between applications. DO NOT apply this product during crop flowering period or when flowering weeds are present. This product is TOXIC to bees through direct contamination of pollen and nectar. |
| | | | Movento 150 OD | 347-585 ml/ha | 12 hours | 1 | Minimum 7-day interval between applications. DO NOT apply this product during crop flowering period or when flowering weeds are present. This product is TOXIC to bees through direct contamination of pollen and nectar. |
| | NC | Potassium salts of fatty acids | Kopa Insecticidal Soap | 8L in 400L water | - | 0 | Field and greenhouse use. Do not spray when plants are under stress. Apply at 700-1900 L/ha solution. Avoid spraying during full sun. Spray early in morning or evening or when overcast. |



| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|------------------|-------|-------------------|------------------------------|--|--|---------------------------------------|---|
| Aphids, Whitefly | 4D | Flupyradifurone | BYI 02960 200SL | Aphids (foliar): 500 – 750 mL/ha Whiteflies (foliar): 750 – 1000 mL/ha Aphids and Whiteflies (soil): 750-1000mL /1000 plants | 12 hours | Foliar: 1 Soil: 45 | ensuring thorough coverage. Minimum application volume of 100 L/ha. Minimum of 7 days between applications. The maximum amount allowed per season is 2000 mL/ha. Soil: Plant population/ha cannot exceed 26,650 when application rate is 750 mL/10,000 plants, or 20,000 plants/ha when application rate used is 1000 mL/10,000 plants. Apply specified dosage by the following method: 1. Chemigation into root-zone through low-pressure drip, trickle, micro-sprinkler, or equivalent equipment. 2. Injection below the eventual seed-line prior to planting. Place BYI 02960 200SL Insecticide 7-10 cm below seed-line |
| | | Flupyradifurone | Altus | Aphids: 500 – 750 mL/ha Whiteflies: 750 – 1000 mL/ha | 12 hours | 3 | Greenhouse Only. Monitor crops and commence applications once local thresholds are reached. Minimum application volume is 500 L/ha. The minimum interval between applications is 10 days. See label for directions regarding drench application. |
| | 9D | Afidopyropen | Versys | Aphids: 0.1L/ha Whiteflies: 0.35-0.5 L/ha | 12 hours | 0 | Field uses only. Melon and green peach aphids. Silverleaf and sweet potato whitefly. Allow a minimum of 7 days between applications. Monitor pest population and reapply if necessary once thresholds are reached. Application during the crop blooming period may be made only in the evening when most bees are not foraging. Max 4 applications per year. |

^{- 11 -}



| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|--------------------------|-------|-------------------------------------|--------------------------------|---|--|---------------------------------------|--|
| Aphids, Whitefly (cont.) | 9D | | Sefina NEW 2023 | Aphids: 0.2L/ha Whiteflies: 0.7-1.0 L/ha | 12 hours | 0 | Green peach and potato aphid, sweet potato and silverleaf whitefly. Allow a minimum of 7 days between applications. Apply a minimum spray volume of 100-200 L/ha. Max 4 applications per year. |
| | - | Beauveria bassiana strain ANT-03 | Bioceres EC | 2-4 mL/L water | 4 hours | 0 | For Greenhouse peppers. Apply when pest is first noticed. Most effective early before high insect populations develop. Control can be observed 5-7 days after application. Spray volume 500-1000 L/ha. Reapply within a 7-day interval. In case of pest outbreak, can be applied every 3-5 days. |
| Whitefly | - | Beauveria bassiana strain R444 | BASSIDOR NEW 2023 | 0.5-1.0g/ 1L of water | 4 hours | 0 | Greenhouse use/for transplants. Apply every 3-7 days depending on pest pressure. Ensure to use enough water to sufficiently cover the crop. Use within 6 hours of mixing. Avoid use of fungicides 3 days before/after use. |
| Cutworms | 1B | Chlorpyrifos FINAL USE 2023 | Pyrinex 480 EC Warhawk 480 EC | Soil treatment: 2.4L Seedling treatment: 1.2-2.4 L/ha | 24 hours | 40 | Green pepper only. Do not apply more than once per season. For soil application: use 200-400L solution/ha. Do not incorporate. Apply 3-7 days before planting/transplant. For seedling treatment: use 200-400L solution/ha. Apply once as a broadcast spray at 2-5 leaf stage of the crop. |
| | 3 | permethrin | Pounce 384 EC | 180-390 ml/ha | 12 hours | 1 | Apply up to 5 leaf stage. Applications should be made under warm, moist conditions in the evening/night when cutworm activity is highest. Do not disturb soil for 5 days after treatment. Max 5 applications, at a 7-day interval. |

^{- 12 -}



| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|------------------------|-------|-----------------------------|------------------------------|---|--|---------------------------------------|---|
| Cutworms (cont.) | 6, 28 | Abamectin, cyantraniliprole | Minecto Pro | 370-556 mL/ha 0.1-0.5% v/v non-ionic surfactant | 12 hours | 7 | Begin applications when treatment thresholds have been reached. For early season cutworm control, apply it to foliage when rain is not expected in the next 24 hours. For optimal control, apply to smaller plants or when lower portions of plant can receive adequate coverage. |
| | 28 | Cyantraniliprole | Exirel | 500-750 ml/ha | 12 hours | 1 | Begin applications when treatment thresholds are reached. For early season cutworm control, apply to foliage when rain is not expected in the next 24 hours. For optimal control, apply to smaller plants or when lower portions of plant can receive thorough coverage. Do not make more than 4 applications per season. |
| | | Tetraniliprole | Vayego 200 SC | 150 mL/ha | 12 hours | 1 | Begin applications when treatment thresholds have been reached. Apply as a directed foliar spray ensuring thorough coverage. No more than 4 applications per season. Minimum interval between applications is 5 days. Do not apply less than 12 days prior to bloom. Do not apply while plants are blooming. |
| European Corn Borer | 3 | 3 deltamethrin | Decis 5 EC Poleci 2.5 EC | 250-300 ml/ha 500-600 ml/ha in 200-500 L water/ha | 12 hours | 3 | Apply when egg masses begin to hatch or when first signs of insect feeding are evident. Repeat at 5–7-day intervals. Max. 3 applications/season. |
| | | permethrin | Pounce 384 EC | 180 ml/ha | When dry | 1 | Apply when corn borer is first noticed between end of July to mid-September. Max. 4 applications per year, with a re-application interval of minimum 7 days. |



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|-----------------------------------|-------|-------------------|------------------------------|--|--|---------------------------------------|--|
| European Corn Borer (cont.) | 5 | Spinetoram | Delegate | Field: 160 g/ha Greenhouse: 92-132 g/ha | 12 hours | 2 | Greenhouse and field use. Apply when eggs hatch and first instar larvae are present. Max. 3 applications per crop cycle. Do not make more than 2 consecutive applications. Greenhouse: apply rate in 1000L of water as a dilute spray. |
| | | spinosad | Success | Field: 83 ml/ha Greenhouse: 50mL/1000L water | 12 hours | 1 (field) 2 (indoor) | Field and greenhouse use. Field: Maximum 2 applications/yr, with 7-10 days between applications. Use only on small larvae and low infestations. Greenhouse: Maximum application volume of 2000L/ha. Use of product is restricted to growth stages where thorough coverage can be achieved in this volume. Apply when eggs hatch and first instar larvae are present. 3 applications/crop cycle, with a minimum of 7 days between applications. |
| | | | Entrust 80 | Field: 50 g/ha Greenhouse: 72g/1000L water | 12 hours | 1 (field) 2 (indoor) | Control. Maximum 2 applications/yr. Allow 7-10 days between applications. Applications should be timed to coincide with peak egg hatch. |
| | | | Entrust | Field: 167 ml/ha Greenhouse: 100mL/1000L water | | | Entrust Greenhouse: Maximum application volume of 2000L/ha. Use of product is restricted to growth stages where thorough coverage can be achieved in this volume. Apply when eggs hatch and first instar larvae are present. |



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| European Corn Borer (cont.) | 6, 28 | Abamectin, cyantraniliprole | Minecto Pro | 370-566 mL/ha 0.1-0.5% v/v non-ionic surfactant | 12 hours | 7 | Time the application to coincide with peak egg hatch. Scout for European corn borer by monitoring egg laying and egg hatch to determine application timing. Thorough coverage is important to obtain optimum control. |
| | 11 | Bascillus thuringensis | Bioprotec CAF | 2.8 L/ha | - | 1 | Apply to young larvae at first signs of infestation. Repeat application 2-4 times as necessary to maintain control of young larvae. Application interval is 7-10 days; ground application only. |
| | 15 | novaluron | Rimon 10 EC | 410-820 ml/ha | 12 hours | 1 | First application should be made just prior to egg hatch. Scout to monitor egg-laying and egg hatch to determine application timing. Use higher application rates and spray volumes for higher pest pressure, when larvae are large, or when the foliage canopy is tall or dense. Max. 3 applications per crop per season, re-applying every 7-10 days to protect new growth or when monitoring indicates need. *Also supresses pepper weevil. |
| | 18 | Methoxyfenozide | Intrepid | 0.3 – 0.6 L/ha | 12 hours | 1 | Apply at the first signs of feeding damage before the insect enters the fruit. Repeat applications after 7-14 days if required based on population monitoring. Monitoring insect populations is key to controlling this pest. Use higher rate for heavy infestations or larger crop canopies. |



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|-----------------------------------|-------|-------------------|------------------------------|---------------------------|--|---------------------------------------|---|
| European Corn Borer (cont.) | 28 | Cyantraniliprole | Exirel | 500-750 ml/ha | 12 hours | 1 | Begin applications when treatment thresholds have been reached. Thorough coverage is important to obtain optimum control. Do not make more than 4 applications per season. 7-14 days between applications. |
| | | Tetraniliprole | Vayego 200 SC | 150 mL/ha | 12 hours | 1 | Time application to coincide with peak egg hatch. Apply as a directed foliar spray ensuring thorough coverage. Use minimum application volume of 150L/ha. No more than 4 applications per season. Minimum interval between applications is 5 days. Do not apply less than 12 days prior to bloom. Do not apply while plants are blooming. |
| Mites | 3 | Fenpropathrin | Danitol | 779 mL/ha | See label | See label | Two spotted spidermite. Apply with ground equipment in adequate water for uniform coverage (a minimum of 250 L/ha). Apply when the first pest activity is noticed. Treatment is recommended when mite populations are just beginning to build (less than 5 motiles/leaf). DO NOT tank mix with any copper formulations. Do not exceed 1 application/year. |
| | 20 | Bifenazate | Acramite 50WS | 851 g/ha | 12 hours | 3 | Two-spotted spidermite. Apply a minimum of 500 L/ha. Ensure thorough coverage of all leaf surfaces. One application per year. |
| | 23 | spiromesifen | Forbid 240 SC | 30-50 mL/100L of water | 12 hours | 7 | Greenhouse Only. Two spotted spider mites. Max 2 applications per crop cycle, with a 10– 14-day interval. Minimum application volume of 100 L/ha. |



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|---------------------------|-------|---|----------------------------------|-------------------|---------------------------------|---------------------------------------|--|
| Mites (cont.) | - | Beauveria bassiana strain ANT-03 | Bioceres EC | 2-4 mL/L water | 4 hours | 0 | For Greenhouse peppers. Apply when pest is first noticed. Most effective before high insect populations develop. Control can be observed 5-7 days after application. Spray volume 500-1000 L/ha. Reapply within a 7-day interval. In case of pest outbreak, can be applied every 3-5 days. |
| | | mineral oil | Purespray Green Spray Oil 13E | 1% solution | 12 hours | - | Greenhouse and Field use. Suppression. Use sufficient spray volume (up to 1000 L/ha) to ensure thorough crop coverage. Begin when mites appear. Apply at 7-14- day intervals. Do not apply more than 8 summer spray applications per growing season. |
| | | Silicon dioxide | DX13 Dust | | 4 hours | | Greenhouse Only. Spider mites. Apply at first sign of infestation. Apply even coating on all plant surfaces to be protected. Use sufficient product to obtain good coverage. Re-apply after 7 – 14 days. Make 3-10 re-applications per pepper crop. Wash vegetables after harvesting. |
| Colorado Potato Beetle | - | Beuveria bassiana strain ANT-03 containing at least 1x10 ¹⁰ spores (conidia)/g | BioTitan WP | 4-8 g/L | 4 hours or until dry | 0 | Apply at first appearance of the pest. Use early before a high population develops. Control can be seen after 5-7days. Spray volume of 500-1000 L/ha should be sufficient. Reapply with a 7-day interval. In case of outbreak can apply every 3-5 days. |
| | 4 | acetamiprid | Assail 70 WP Aceta 70 WP | 40-80 g/ha | 12 hours | 7 | Max 2 applications/season for at least 7 days apart. Thorough and uniform spray coverage is required to obtain adequate control. Use the high rate under heavy pest pressure. Do not apply less than 7 days before harvest. |





| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|--------------------------------------|-------|---------------------|------------------------------|---------------------|--|---------------------------------------|--|
| Colorado Potato Beetle (cont.) | 4D | Flupyradifurone | BYI 02960 200SL | 750 – 1000 mL/ha | 12 hours | 1 | Apply as a directed foliar spray ensuring thorough coverage. Minimum of 7 days between applications. Maximum amount allowed per season is 2000 mL/ha. |
| | 28 | chlorantraniliprole | Coragen | 250-375 ml/ha | 12 hours | 1 | Begin applications when treatment thresholds have been reached. Use high rate under heavy insect pressure. Max. 4 applications per season. Do not apply more than once every 5 days. Do not apply if any Group 28 was used at planting as in-furrow, soil, or seed treatment. |
| | | Tetraniliprole | Vayego 200 SC | 150 mL/ha | 12 hours | 1 | Begin applications when treatment thresholds have been reached. Apply as a directed foliar spray ensuring thorough coverage (minimum 150L/ha). No more than 4 applications per season. Minimum interval between applications is 5 days. Do not apply less than 12 days prior to bloom. Do not apply while plants are blooming. Do not apply if any Group 28 Insecticide was applied at planting. |
| | | Cyantraniliprole | Exirel | 750-1000 ml/ha | 12 hours | 1 | Begin applications when treatment thresholds are reached. Thorough coverage is important to obtain optimum control. Do not make more than 4 applications per season, with 7-14 days between applications. |



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|----------------|-------|---|------------------------------|--|--|---------------------------------------|--|
| Cabbage Looper | 5 | spinetoram | Delegate WG | Field: 140-200 g/ha Greenhouse: 92-132 g/ha | 12 hours | 1 (field) 2 (indoor) | Time application with peak egg hatch. Repeat applications based on monitoring. Use higher rate for higher infestations or advanced growth stages. Apply a maximum of 3 times/year with a minimum 5-day (outdoor) or 7-day (greenhouse) re-treatment interval. |
| | | Spinosad | Success | Field: 182 ml/ha Greenhouse: 120 mL/ha | 12 hours | 1 | Apply up to a maximum of 3 applications per year. Allow 7 - 10 days between applications. Also controls imported cabbage worm, diamondback moth, western flower thrips. |
| | 11 | Bacillus thuringiensis, subsp. aizawai, (Strain ABTS-1857) | XenTari WG | 500-1000 g/ha | 4 hours | 0 | Apply every 5-7 days. Apply using 500–1000 L water per ha to ensure full coverage but not to the point of run off. |
| | 18 | Methoxyfenozide | Intrepid | 0.3 – 0.6 L/ha | 12 hours | 1 | Apply at the first sign of feeding damage or when infestations reach threshold levels as determined by insect monitoring. Apply again after 7-14 days if required based on population monitoring. Use the higher rate for heavy infestations, advanced growth stages of the target pest or larger crop canopies. |
| | 28 | Cyantraniliprole | Exirel | 250-500 ml/ha | 12 hours | 1 | Begin applications when treatment thresholds have been reached. Thorough coverage is important to obtain optimum control. Maximum of 4 applications per season, with a minimum 7-day re-application interval. |



| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|--|-------|---|------------------------------|---------------|--|---------------------------------------|--|
| Armyworm, Beet armyworm, Fall armyworm | 3 | Fenpropathrin | Danitol | 779 mL/ha | See label | See label | Apply with ground equipment in adequate water for uniform coverage (a minimum of 250 L/ha). Apply when the first pest activity is noticed. DO NOT tank mix with any copper formulations. Do not exceed 1 application/year. |
| | 11 | Bacillus thuringiensis, subsp. aizawai, (Strain ABTS-1857 fermentation solids, spores, and insecticidal toxins) | XenTari WG | 500-1000 g/ha | 4 hours | 0 | Beet armyworm. Apply every 5-7 days. Apply using 500–1000 L water per ha to ensure full coverage but not to the point of run off. |
| | 28 | Tetraniliprole | Vayego 200 SC | 150 mL/ha | 12 hours | 1 | Apply as a directed foliar spray ensuring thorough coverage. No more than 4 applications per season. Minimum interval between applications is 5 days. Do not apply less than 12 days prior to bloom. Do not apply while plants are blooming. |
| | | Cyantraniliprole | Exirel | 500 ml/ha | 12 hours | 1 | Begin applications when treatment thresholds have been reached. Thorough coverage is important to obtain optimum control. Do not apply more than 4 times per season, with a minimum of 7 days between applications. |



| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|--|-------|---|------------------------------|---------------|--|---------------------------------------|--|
| Tomato fruitworm (corn earworm) Tobacco hornworm (suppression) | 3 | Fenpropathrin | Danitol | 779 mL/ha | See label | See label | Apply with ground equipment in adequate water for uniform coverage (a minimum of 250 L/ha). Apply when the first pest activity is noticed. DO NOT tank mix with any copper formulations. Do not exceed 1 application/year. |
| Tomato hornworm (suppression) | 11 | Bacillus thuringiensis, subsp. aizawai, (Strain ABTS-1857 fermentation solids, spores, and insecticidal toxins) | XenTari WG | 500-1000 g/ha | 4 hours | 0 | Tobacco budworm, Tomato fruitworm. Apply every 5-7 days. Apply using 500–1000 L water per ha to ensure full coverage but not to the point of run off. |
| | 28 | Cyantraniliprole | Exirel | 750 ml/ha | 12 hours | 1 | Begin applications when treatment thresholds have been reached. Thorough coverage is important to obtain optimum control. Do not apply more than 4 times per season, with a minimum 7-day interval. |
| Spotted wing drosophila | 3 | Fenpropathrin | Danitol | 779 mL/ha | See label | See label | Apply with ground equipment in adequate water for uniform coverage (a minimum of 250 L/ha). Apply when the first pest activity is noticed. DO NOT tank mix with any copper formulations. Do not exceed 1 application/year. |
| | 5 | Spinosad | Entrust | 364 ml/ha | 12 hours | 1 | Field use. Maximum of 3 applications per year with 7 -10 days between applications. Application should be based on the presence of adult pests (flies) as determined by local monitoring. |



| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|---------------------|-------|--|------------------------------|--|--|---------------------------------------|---|
| DISEASES: | | | | | | | |
| Bacterial Leaf spot | 24 | Kasugamycin as hydrochloride hydrate | Kasumin | 100 ppm | 12 hours | 1 day | Greenhouse or field use, but do not apply on greenhouse vegetable transplants. Begin applications when conditions favour disease development. Repeat applications at intervals that are necessary or when conditions favour disease development. Max 3 applications per season, with a min interval of 7 days between applications. Do not apply more than 1.8L/ha/year. |
| | М | copper hydroxide | Kocide 2000 | 2.52 kg/ha | 48 hours | 2 | Apply at 7–14-day intervals. Max. 10 applications per year. |
| | M1 | Copper | Cueva | 0.5% - 2% solution | 4 hours | 1 | Re-apply using 5–10-day intervals. Apply at 470-940 L/ha. |
| | BM02 | Bacillus subtilis | Serenade Opti | 0.6-1.7 Kg/ha | 4 hours | 0 | Begin application soon after emergence or transplant when conditions are conducive to disease development. Repeat as necessary on 7–10-day intervals. When conditions and plant stage are conducive to rapid disease development, use in a rotational program with other registered bactericides. |
| | P05 | Reynoutria sachalinensis | Regalia® Rx NEW 2023 | Outdoor: 5-10 L/ha Greenhouse: 0.5-1.0% v/v | When dry | 0 | Field and greenhouse use. Suppression Outdoor: Apply preventatively beginning soon after transplant. Repeat applications in 7-10-day intervals depending upon crop growth and disease pressure. Greenhouse: Begin applications when conditions become conducive for disease development. Repeat as necessary on a 7–10-day interval. Do not apply a spray volume of more than 1500 L/HA. |

^{- 22 -}



| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|--------------|-------|-------------------|------------------------------|----------------|--|---------------------------------------|--|
| Leaf Blights | 7 | Benzovindiflupyr | Aprovia | 500-750 ml/ha | 12 hours | 1 | Early blight, Anthracnose, Septoria leaf spot. Begin applications prior to disease development; continue a 7-day interval, starting at first fruit set for all diseases except Early blight. For Early blight apply on a 7–14- day interval starting prior to disease establishment. If disease pressure is high, use the highest rate. Max. 3L/ha/season. |
| | | boscalid | Cantus WDG | 175-315 g/ha | 12 hours | 0 | Field use only. Early blight. Maximum 5 applications/yr. Do not make more than 2 applications before rotating to a different fungicide group. |
| | | Fluopyram | Velum Prime | 500 mL/ha | 12 hours | 0 | Early Blight. Chemigation into root-zone through low-pressure drip, trickle, microsprinkler, or equivalent equipment. Do not make more than 2 sequential applications of any Group 7 before rotating. Do not apply more than 500g fluopyram/ha/year. |
| | | | FPY 500 | 500 mL/ha | 12 hours | 0 | through low-pressure drip, trickle, microsprinkler, or equivalent equipment. See label for instructions on different application methods. Do not make more than 2 sequential applications of any other Group 7 containing fungicide before rotating. |
| | | penthiopyrad | Fontelis | 1.25-1.75 L/ha | 12 hours | 0 | Field and greenhouse use. Suppression of Early Blight. Begin applications prior to disease development, continue a 7–10-day interval. Use higher rate and shorter intervals when disease pressure is high. The maximum seasonal rate is 5.25 L/ha. Do not make more than 2 sequential applications before switching to another mode of action. |

^{- 23 -}



| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|-------------------------|-------|-----------------------------------|------------------------------|---------------|--|---------------------------------------|---|
| Leaf Blights (cont.) | 7, 3 | Benzovindiflupyr & Difenoconazole | Aprovia Top | 643-967 ml/ha | 12 hours | 1 | Early blight, Anthracnose, Septoria leaf spot. Begin applications prior to disease development and continue throughout the season on a 7-day interval, starting at first fruit set for all diseases except Early blight. For Early blight apply on a 7–14-day interval starting prior to disease establishment. If disease pressure is high, use the highest rate. Apply as a broadcast foliar spray in a minimum of 150 L/ha of water for thorough coverage. |
| | | Pydiflumetofen Difenoconazole | A20259 | 1.0 L/ha | 12 hours | 0 | Field use only. Early blight, Anthracnose, Septoria leaf spot. Apply on a 7–14-day interval, starting prior to disease establishment. The minimum spray volume is 150L/ha. Maximum 2 applications per season. |
| | 9, 12 | Cyprodinil and fludioxonil | Switch 62.5 WG | 775-975 g/ha | 12 hours | 0 | Anthracnose. Begin applications prior to or at the onset of disease and repeat at 7–10-day intervals if conditions remain favourable for disease development. Make no more than 2 sequential applications before using another fungicide. Apply in sufficient water to ensure thorough coverage. Do not make more than 3 applications/yr. |
| | 11 | pyraclostrobin | Cabrio EG | 560-840 g/ha | 12 hours | 0 | Anthracnose, early blight, and late blight control. Max 6 applications/yr. Make no more than 2 applications before rotating to a different fungicide group. Minimum water volume of 225L/ha. |



| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|-------------------------|--------|-----------------------------------|------------------------------|--------------------|--|---------------------------------------|---|
| Leaf Blights (cont.) | 19 | Polyoxin D zinc salt | Diplomat 5SC | 537 – 926 ml/ha | When dry | 0 | Field and greenhouse use. Early blight. 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 and continue a 7–14-day interval as needed to maintain suppression. Do not apply more than 150 g a.i./ha/season or 12 months. |
| | 49, 40 | Oxathiapiprolin, Mandipropamid | Orondis Ultra | 0.6 L/ha | 12 hours | 1 | Begin applications prior to disease development and continue a 7-14-day interval. Use shorter intervals when disease pressure is high. |
| | U15 | Oxathiapiprolin | Zorvec Enicade | 0.175-0.35 L/ha | 12 hours | 0 | Field and greenhouse use. Late blight. Begin applications prior to disease development and continue a 5–14-day interval. Use higher rate and shorter interval when disease pressure is high. |
| | BM02 | Bacillus subtilis | Serenade Opti | 2.5 Kg/ha | 4 hours | 0 | Suppresses early blight. Make the first application when plants are 6-10 cm high, or when conditions are conducive for disease development. Repeat on an interval of 5-7 days. |
| | | Bacillus | Double Nickel LC | 2.5-10 L/ha | When dry | 0 | Field or greenhouse use. Early blight. Growth |
| | | amyloliquefaciens strain D747 | Double Nickel 55 | 0.5-2.0 kg/ha | | | stage: From flowering to fruiting. Repeat application every 3-10 days for as long as conditions favor disease development. Lower rates for smaller (ex. newly emerged) plants or those under lower disease pressure. |



| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|-----------------------|-------|----------------------------------|------------------------------|--------------------|--|---------------------------------------|--|
| Botrytis Grey Mold | 7 | boscalid | Cantus WDG | 420 g/ha | 12 hours | 0 | Field use only. Maximum 5 applications/yr. Do not make more than 2 applications before rotating to a different fungicide group. |
| | | penthiopyrad | Fontelis | 1.25-1.75 L/ha | 12 hours | 0 | Field and Greenhouse use. Begin applications prior to disease development; continue a 7–10-day interval. Use higher rate and shorter intervals when disease pressure is high. The maximum seasonal rate is 5.25 L/ha. Do not make more than 2 sequential applications before switching to another mode of action. |
| | 7, 3 | Pydiflumetofen Difenoconazole | A20259 | 1.0 L/ha | 12 hours | 0 | Field use only. Apply on a 7–14-day interval, starting prior to disease establishment. The minimum spray volume is 150L/ha. Maximum 2 applications per season. |
| | 9, 12 | Cyprodinil, fludioxinil | Switch 62.5 WG | 775-975 g/ha | 12 hours | 0 | Begin applications when conditions become favorable for disease but before infection. Max. 3 applications per year. Make no more than 2 sequential applications before switching to another mode of action. Minimum spray volume of 200L water/ha recommended. |
| | 19 | Polyoxin D zinc salt | Diplomat 5SC | 463 – 926 ml/ha | When dry | 0 | Greenhouse and Field use. 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 and continue a 7–10-day interval as needed to maintain suppression. Do not apply more than 150 g a.i./ha/season or 12 months. |



| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|----------------------------------|-------|---|------------------------------|--------------------------------------|--|---------------------------------------|--|
| Botrytis Grey Mold (cont.) | BM02 | Bacillus subtilis | Serenade Opti | 1.7-3.3 Kg/ha | 4 hours | 0 | Make the first application when plants are 6-10 cm high, or when conditions are conducive for disease development and repeat on an interval of 5-7 days. |
| | | Bacillus amyloliquefaciens strain D747 | Double Nickel LC | 6.25-18 L/ha Low rate: 4.5-5 L/ha | When dry | 0 | Field or greenhouse use. Growth stage: From flowering to fruit maturity. Repeat application every 3 to 10 days for as long as conditions favor disease development. |
| | | | Double Nickel 55 | 1.25-3.6 kg/ha Low rate: 0.9-1 kg/ha | | | |
| | | Bacillus amyloliquefaciens strain MBI 600 | Serifel | 0.25 – 0.5 Kg/ha | 4 hours | 0 | Begin application shortly after emergence or transplanting and continue 7-10-day intervals if conditions are favourable for disease development. Use the highest rate and the shortest interval when conditions favour high disease pressure. |
| Powdery Mildew | 7 | Benzovindiflupyr | Aprovia | 500-750 ml/ha | 12 hours | 1 | Begin applications prior to disease development; continue throughout season at 7-day intervals, starting at first fruit set. If disease pressure is high, use the highest rate. Apply as a broadcast foliar spray with a minimum of 150L/ha for good coverage. |
| | | Penthiopyrad | Fontelis | 1.0 – 1.75 L/ha | 12 hours | 0 | Field and greenhouse use. Begin applications prior to disease development and repeat on a 7- to- 10-day interval. Use the highest rate and the shortest interval when conditions favour high disease pressure. Do not make more than 2 consecutive applications before switching to a different mode of action. Max 5.25 L/ha/yr |



| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|---------------------------|-------|---|------------------------------|--|--|---------------------------------------|--|
| Powdery Mildew (cont.) | 7, 3 | Benzovindiflupyr & Difenoconazole | Aprovia Top | 643-967 ml/ha | 12 hours | 1 | Begin applications prior to disease development; continue throughout season at 7-day intervals, starting at first fruit set. If disease pressure is high, use the highest rate. Apply as a broadcast foliar spray in a minimum of 150 L/ha of water for thorough coverage. |
| | | Pydiflumetofen Difenoconazole | A20259 | 1.0 L/ha | 12 hours | 0 | Field use only. Apply on a 7–14-day interval, starting prior to disease establishment. The minimum spray volume is 150L/ha. Maximum 2 applications per season. |
| | BM02 | Bacillus subtilis | Serenade Opti | 1.7-3.3 Kg/ha | 4 hours | 0 | Begin application soon after emergence or transplant and repeat on an interval of 7-10 days. |
| | BM02 | Bacillus amyloliquefaciens strain MBI 600 | Serifel | 0.5 Kg/ha | 4 hours | 0 | Begin application shortly after emergence or transplanting and continue 7-10-day intervals if conditions are favourable for disease development. Use the highest rate and the shortest interval when conditions favour high disease pressure. |
| | P05 | Reynoutria sachalinensis | Regalia® Rx NEW 2023 | Outdoor: 5-10 L/ha Greenhouse: 0.5-1.0% v/v | When dry | 0 | Greenhouse and field use. Suppression. Begin applications when conditions become conducive for disease development. Repeat as necessary on a 7–10-day interval. Do not apply a spray volume of more than 1500 L/HA. |





| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|---------------------------|-------|----------------------------|----------------------------------|---|--|---------------------------------------|---|
| Powdery Mildew (cont.) | NC | Potassium bicarbonaDite | MilStop | Field: 2.8-5.6 kg/ha Greenhouse: 5.6 kg/ha | 4 hours | 0 | Start application at first sign of disease. Repeat as required on 7-day intervals. Field: Apply in a spray volume of 1000 L/ha Greenhouse: Spray volume of 2000 L/ha |
| | | Streptomyces lydicus | Actinovate SP | 425g/1100L water | 1 hour | - | Greenhouse and field use. Spray leaves and blossoms to get wet but avoid run-off. Apply as a foliar spray to leaves and blossoms starting at transplant and repeat every 7-14 days. Applied using hand-held backpack or ground spray equipment. |
| | | mineral oil | Purespray Green Spray Oil 13E | 1% solution | 12 hours | - | Greenhouse and field use. Use sufficient spray volume (up to 1000 L/ha) to ensure thorough crop coverage. Begin when the first symptoms appear, or conditions are favourable for disease development. Apply at 7 – 14-day intervals. Apply no more than 8 summer spray applications per growing season. |
| | - | Tea tree oil | Timorex Gold | 1.0 – 1.5 L/ha | 4 hours | 2 | Field or greenhouse use. Apply in 400-800 L/ha spray volume. For preventative treatments, apply at 7–14-day intervals, depending on disease level. Use shorter interval when conditions promote rapid disease development. |



| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|--|--------|-------------------------------|--|---------------------------------|--|---------------------------------------|--|
| Phytophthora Blight (Phytophthora capsici) | 29 | Fluazinam | Allegro 500F | 1.75 L of product/ha | 24 hours | 30 | Field use. Suppression . Soil drench and/or foliar, broadcast, ground application only. Begin applications at transplant. The initial application may be by soil drench or foliar application. All subsequent applications should be foliar. Spray volume: 280 - 560 L water/ha. 7-day interval. Max 6 applications/year. No more than 3 sequential applications before alternating to a different chemical family. |
| | 40 | mandipropamid | Revus plus Non-ionic adjuvant | 600 ml/ha plus 0.125% v/v | 12 hours | 1 | For greenhouse or field use. Suppression. Make one application as a drench, immediately before transplant to the field or begin applications prior to disease development and continue a 7–10-day schedule for plants remaining in the greenhouse. See label for soil phase application |
| | 40, 45 | Ametoctradin, dimethomorph | Zampro | 1.0 L/ha | 12 hours | 4 | Use in rotation with fungicides having a different mode of action active against downy mildew to reduce the risk of resistance development. Begin applications prior to disease development and continue a 5-7-day interval. Maximum 3 applications. |
| | 43 | fluopicolide | Presidio | 292 ml/ha | 12 hours | 2 | Suppression. For resistance management Must be tank-mixed with a labeled rate of another fungicide with a different mode of action. Apply as a soil or foliar application on a 7–10-day schedule beginning when conditions are favourable for disease development, prior to disease onset. Application should begin at planting or transplanting. |

^{- 30 -}

^{*}Red text indicates label changes and products that are new to this guide in 2023.



| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|--|--------|-----------------------------------|------------------------------|--|--|---------------------------------------|--|
| Phytophthora Blight (Phytophthora capsici) (cont.) | 49, 40 | Oxathiapiprolin, Mandipropamid | Orondis Ultra | 0.6 L/ha | 12 hours | 1 | Foliar phase: Begin applications prior to disease development and continue a 7-14-day interval. Use shorter intervals when disease pressure is high. Soil phase: Suppression. ORONDIS Ultra Fungicide must be applied in a manner that ensures the product solution adequately saturates the root zone of the transplant plug through a transplant water application. When applied to crown/roots, will suppress Phytophthora root and crown rot. |
| | 49 | Oxathiapiprolin | Orondis 200SC | 0.35-1.4 L/ha | 12 hours | 0 | Soil phase. Apply at plant, in furrow, drip or in transplant water. Use the higher rates for heavier soils, for longer application intervals, or for susceptible varieties. |
| | U15 | | Zorvec Enicade | Foliar phase: 0.175-0.35 L/ha Soil phase: 0.7-2.8 L/ha | | | Field and greenhouse use. Foliar phase: Begin applications prior to disease development and continue at 5–14-day intervals. Use higher rate and shorter intervals when disease pressure is high. Soil phase: Apply at plant, in furrow, drip or in transplant water. See specific soil application directions on label. |
| | | | Zorvec Epicaltrin | 0.35-1.4 L/ha | 12 hours | 0 | Field or greenhouse use. <u>Soil phase</u> : Apply at plant, in furrow, drip or in transplant water. Use higher rates for heavier soils, longer application intervals, or susceptible varieties. *Do not follow soil applications of Epicaltrin with foliar applications of other oxathiapiprolin-containing fungicides. Use either soil applications or foliar applications but not both to control the relevant disease. |

^{- 31 -}

^{*}Red text indicates label changes and products that are new to this guide in 2023.





| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|--|-------|---|--|---------------|--|---------------------------------------|---|
| Phytophthora Blight (Phytophthora capsici) (cont.) | BM02 | Bacillus amyloliquefaciens strain D747 | Double Nickel LC (1x10 ¹⁰ spores/mL) | 0.5-2.5 L/ha | When dry | 0 | Field or greenhouse use. Partial suppression of soil level Phytophthora blight infection. For transplanted crops: Apply preventatively to transplants in the greenhouse or nursery before transplanting. See soil application instructions on the label. For crops grown from seed: Apply at planting, following instructions for banded/in furrow application. See 'Soil application' instructions on label. Follow up applications can be made at 2–4-week intervals after planting or transplanting. |
| | | | Double Nickel 55 | 0.1-0.5 kg/ha | | | |
| Phytophthora Blight, pythium damping off, and crown rot | 49, 4 | Oxathiapiprolin + Metalaxyl-M and S- isomer | Orondis®Gold NEW 2023 | 2 L/ha | 12 hours | 7 | Apply a minimum water volume of 400 L/ha. The maximum number of applications is 1 for Pythium damping-off; 3 for phytophthora blight and crown rot. Re-treatment interval is every 30 days. |
| Post-emergence damping off, Verticillium wilt | BM02 | Trichoderma asperellum and Trichoderma gamsii | Foretryx™ NEW 2023 | 2.8 Kg/ha | 4 hours | 0 | Greenhouse or field use. Suppression . Apply a minimum water volume of 100 L/ha. Apply once at sowing. If rainfall is not expected, follow the treatment with light irrigation of 1.5 - 3.2 mm of water per hectare. |



| Pest | Group | Active Ingredient | Pesticide Product Name | Rate | Restricted Entry Interval (REI) | Pre- harvest Interval (days) | Remarks |
|-----------|-------|-------------------|------------------------------|---------------------|--|---------------------------------------|--|
| Nematodes | - | Fluazaindolizine | Salibro | <u>Pre-plant</u> | 12 hours | 1 | Root-knot nematode. |
| | | | | <u>incorporated</u> | | | Pre-plant incorporated: |
| | | | | or pre- | | | Broadcast with a minimum of 140 L/ha of |
| | | | | plant/at-plant | | | water and thoroughly incorporate 10-15 cm |
| | | | | chemigation: | | | into the soil. For maximum residual efficacy, |
| | | | | 2.24-4.48 L/ha | | | pre-plant incorporates within 7 days prior to |
| | | | | | | | planting. Do not apply more than 4.48L/ha |
| | | | | Post-plant | | | per year. |
| | | | | chemigation: | | | Marie and the second se |
| | | | | 1.12-2.24 L/ha | | | Minimum retreatment interval: 14 days |
| | | | | | | | Post-plant incorporation: |
| | | | | | | | Supplement in-season chemigation following |
| | | | | | | | a pre-plant or at plant application. |
| | | | | | | | a pre plant of at plant application. |
| | | | | | | | See label for more detailed instructions. |
| | | Fluensulfone | Nimitz 480EC | 4 – 8 L/ha | 12 hours | - | Root-knot and Root lesion nematodes. |
| | | | | | | | Applications can be broadcast incorporated, |
| | | | | | | | banded, and incorporated, or applied by drip |
| | | | | | | | (trickle) chemigation. Apply a minimum of 7 |
| | | | | | | | days before transplanting. Do not plant any |
| | | | | | | | crops not on label into treated land for 365 |
| | | | | | | | days following application. |

Use the following web link to search for any pesticide label mentioned in this guide, or any other pesticide registered in Canada: http://pr-rp.hc-sc.gc.ca/ls-re/index-eng.php