

APPLES 2020

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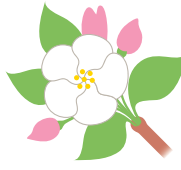





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Apple growth stage calendar

| | | | | | | |
|---|---|---|---|--|---|---|
|  |  |  |  |  |  |  |
| DORMANT | KING BLOOM | FULL BLOOM | PETAL FALL | FRUIT DEVELOPMENT | FRUIT PRESENT | POST HARVEST |
| Chateau | | | | | | Chateau |
| Parasol FL | Blossom Protect | Blossom Protect | | | | Parasol FL |
| | Promalin | Promalin | MaxCel Promalin | MaxCel | ReTain (July-September) | |
| | | | DiPel XenTari | DiPel XenTari | DiPel XenTari | |

2020 for all other insects in apples

Chateau® WDG herbicide is a PPO inhibitor that works as a barrier on the soil surface providing season-long residual control of tough broadleaf and grass weeds.

Chateau® WDG

Benefits

- Long-lasting residual, pre-emergent broadleaf weed control with bonus grass suppression
- Chateau stays where it is sprayed and will not leach or volatilize
- Group 14 herbicide (PPO inhibitor) works differently than many other commonly used herbicides, helping to manage resistance
- The herbicide barrier cannot be disturbed after moisture activation
- Offers flexible application timing

Registered crops

- | | |
|---|--------------------------------|
| • Asparagus | • Grape |
| • Blueberry (highbush and lowbush) | • Hops |
| • Broccoli | • Nut trees |
| • Celery | • Pome fruit |
| • Dry bulb onion | • Potato (Western Canada only) |
| • Established mint (peppermint and spearmint) | • Stone fruit |
| • Field pepper | • Strawberry |
| • Garlic | • Sweet potato |

General usage information

- Moisture is necessary to activate Chateau in soil for weed control (½ inch of rain or irrigation)
- This product will not control emerged weeds
- Significant crop injury may occur from applications made to poorly drained soils and/or applications made under cool, wet conditions
- Do not apply to farm alleys or roads where traffic may result in treated dust settling onto crops or other desirable vegetation
- Application to non-dormant crops or when soils are flooded after application may result in non-acceptable crop injury, including yield loss
- Use appropriate water volumes to ensure good coverage
- Apply prior to weed emergence
- Undesirable crop injury may occur if Chateau comes in contact with fruit or foliage
- DO NOT tank-mix with Dual II Magnum®



Technical information

HERBICIDE GROUP

- > Group 14

ACTIVE INGREDIENTS

- > flumioxazin 51.1%

PACKAGING

- > 4 x 1.13 kg case

RAINFAST

- > Requires ½ inch of rain or irrigation for activation

PCP

- > 29231

Specific crop usage information

WEEDS CONTROLLED/
SUPPRESSED

RATE

PHI APPLICATION INFORMATION

APPLE, GRAPE, NUT TREES, PEAR

| | | |
|---|---|---|
| <p>Canada fleabane Common lamb's-quarters Common ragweed Dandelion Eastern black nightshade Green foxtail Green pigweed Hairy nightshade Kochia Redroot pigweed</p> | <p>280 g/ha (113.3 g/ac.) on coarse- textured soils with <5% OM 420 g/ha (170 g/ac.) on medium- textured soils with <5% OM</p> | <p>GENERAL USAGE INFORMATION Chateau should be tank-mixed with glyphosate, present as isopropyl amine or potassium salt, for control of emerged weeds. Refer to the respective tank-mix partner label for rates, additional recommendations, restrictions and precautions. Follow the most restrictive label limitations and precautions of the tank-mix product(s) being used. Only apply to healthy, established trees. Do not apply when plants are under stress from insects, diseases, animals or winter injury, planting shock or any other stresses. Chateau should be applied as a uniform broadcast application to the orchard floor or as a uniform band directed at the base of the trunk Do not make more than 2 applications in a growing season Do not make a sequential application within 30 days of the first application Avoid direct or indirect spray contact to foliage and green bark (including non-barked vines; with the exception of undesirable suckers) Do not apply within 100 m of non-dormant pears</p> <hr/> <p>60 APPLICATION TO POME FRUIT (APPLE AND PEAR) Do not apply to apple or pear trees established less than 1 year, unless protected from spray contact by non-porous wraps, grow tubes or waxed container For apples, do not apply after budbreak unless using hooded or shielded application equipment and applicator can ensure the spray drift will not contact the crop fruit or foliage All applications to pears, or within 100 metres of pears, must be made after final harvest in the fall or 2 months before budbreak in the spring Apply to dormant pears only</p> <hr/> <p>60 APPLICATION TO GRAPES Do not apply to grapes established less than 2 years Do not apply to grapes that are not trellised or staked unless they are free standing New plantings of "own-rooted varieties", such as Concord, should be planted so that all roots are a minimum of 20 cm below the soil surface to be treated. In some situations, this may require hilling soil around newly planted vines so that the settled depth of the hill will be 10-12.5 cm above the vineyard floor. APPLICATION TO JUICE, RAISIN AND WINE GRAPES Do not apply during the period after budbreak through final harvest, unless using shielded application equipment and applicator can ensure the spray drift will not contact the crop fruit or foliage. Shielded applications during this time period should not be made with glyphosate, or products containing glyphosate. APPLICATION TO TABLE GRAPES Chateau may be applied during the period following final harvest in the fall Do not apply after budbreak in the spring</p> |
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WEEDS CONTROLLED/
SUPPRESSED RATE PHI APPLICATION INFORMATION

ASPARAGUS

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| Canada fleabane Common lamb's-quarters Common ragweed Dandelion Eastern black nightshade Green foxtail Green pigweed Hairy nightshade Kochia Redroot pigweed | 280 g/ha (113.3 g/ac.) 420 g/ha (170 g/ac.) | | <p>Apply only to dormant asparagus established for at least 1 year Applications should be made no sooner than 3 weeks prior to emergence of spears and must be sprinkler or rainfall activated with 1-2 cm of water or some scoring may result</p> <p>Application to non-dormant asparagus may result in unacceptable crop injury</p> <p>Do not work soil within 60 days prior to application in the spring Soil can be worked after spear harvest in preparation for Chateau application prior to fern emergence</p> <p>Treated soil that is splashed onto the ferns may result in spotting</p> <p>If using Dual II Magnum® for added grass control, apply Chateau in the late fall after the ferns have been mowed and apply Dual II Magnum® in the spring. Applying Chateau in the fall will ensure product activation and reduce risk of crop injury – apply after mowing of ferns and before ground freezes.</p> <p>For fall applications ferns may be mowed to a height of approximately 12-18 inches. This will ensure adequate snow coverage and still allow spray to reach the ground. A spring mowing will not reduce residual control.</p> |
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BLUEBERRY (highbush)

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|---|--|---|---|
| Canada fleabane Common lamb's-quarters Common ragweed Dandelion Eastern black nightshade Green foxtail Green pigweed Hairy nightshade Kochia Redroot pigweed | 280 g/ha (113.3 g/ac.) 420 g/ha (170 g/ac.) | 7 | <p>Do not apply after budbreak unless using hooded or shielded application equipment and applicator can ensure the spray drift will not contact the crop fruit or foliage</p> <p>Do not make more than 2 applications in a growing season</p> <p>Do not make a sequential application within 30 days of the first application</p> <p>Do not apply to highbush blueberries established less than 2 years</p> |
|---|--|---|---|

BLUEBERRY (lowbush)

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| Canada fleabane Common lamb's-quarters Common ragweed Dandelion Eastern black nightshade Green pigweed Hairy nightshade Kochia Redroot pigweed | 140 g/ha (56.7 g/ac.) 210 g/ha (85 g/ac.) | | <p>All applications should be made to dormant lowbush blueberries</p> <p>Do not make more than 2 applications in a growing season</p> <p>Do not make a sequential application within 30 days of the first application</p> <p>Apply Chateau to dormant plants in the sprout year (spring and/or fall) or as a dormant post harvest (fall)</p> |
| Moss (suppression) | 280 g/ha (113.3 g/ac.) 420 g/ha (170 g/ac.) | | |

WEEDS CONTROLLED/
SUPPRESSED RATE PHI APPLICATION INFORMATION

TRANSPLANTED BROCCOLI

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|--|------------------------|--|---|
| Canada fleabane Common lamb's-quarters Common ragweed Dandelion Eastern black nightshade Green foxtail (suppression) Green pigweed Hairy nightshade Kochia Redroot pigweed | 210 g/ha (85 g/ac.) | | Apply Chateau as a hooded or shielded application to the middle of the rows Do not apply more than 210 g/ha during a single application or growing season Plants should be grown on raised or plastic mulched beds that are at least 10 cm higher than the treated row middle and the mulched bed must have a minimum of a 60 cm bed width Spray must remain between raised beds with minimal contact with the plastic If the top of the bed is contacted, severe injury can occur and it is advised that 2.5 cm of rain or irrigation must occur prior to transplanting residues |
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CANEBERRY

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|---|-------------------------|---|--|
| Canada fleabane Common lamb's-quarters Common ragweed Dandelion Eastern black nightshade Green foxtail Green pigweed Hairy nightshade Kochia Redroot pigweed | 420 g/ha (170 g/ac.) | 7 | Do not make more than 2 applications in a growing season Apply as a uniform broadcast application to the ground or as a uniform band. Avoid direct or indirect spray contact to foliage and green canes. Do not apply over the top of the crop Do not make a sequential application within 30 days of the first application |
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CELERY

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|---|--|--|---|
| Canada fleabane Common lamb's-quarters Common ragweed Dandelion Eastern black nightshade Green foxtail Green pigweed Hairy nightshade Kochia Redroot pigweed | 140 g/ha (56.7 g/ac.) 210 g/ha (85 g/ac.) Coarse-textured with <5% OM– 140 g/ha Medium-textured with <5% OM– 210 g/ha | | Do not apply more than 210 g of Chateau per hectare during a single growing season Plants should be grown on raised or plastic mulched beds that are at least 10 cm higher than the treated row middle and the mulched bed must have a minimum of a 60 cm bed width Spray must remain between raised beds If the top of the mulch beds are contacted, severe injury can occur due to foliage contact with treated plastic Use a hooded or shielded boom for application Irrigate treated field after application and prior to transplanting with minimum of ½ cm of water if rainfall does not occur between application and transplanting All applications must be made with hooded or shielded equipment Do not apply after crops are transplanted |
| For use in celery in muck soil | 140 g/ha (56.7 g/ac.) | | Weed control and length of residual may be reduced in muck soils |

DRY BULB ONION

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|---|---|----|---|
| Canada fleabane Common lamb's-quarters Common ragweed Eastern black nightshade Green pigweed Hairy nightshade Kochia Redroot pigweed | 140 g/ha (56.7 g/ac.) Coarse- and medium-textured mineral soil with <5% OM and muck soils | 45 | Avoid spray overlap as severe crop injury may occur Apply to transplanted onions between the 2-leaf and 6-leaf stage and on direct seed onions between the 3-leaf and 6-leaf stage prior to the emergence of weeds Do not apply in a tank-mix (except with Prowl® H ₂ O herbicide) or with an adjuvant as significant crop injury may result Do not tank-mix with other formulations of pendimethalin Do not apply on soils that contain greater than 90% sand plus gravel |
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WEEDS CONTROLLED/
SUPPRESSED RATE PHI APPLICATION INFORMATION

GARLIC

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|---|--|--|--|
| Canada fleabane Common lamb's-quarters Common ragweed Dandelion Eastern black nightshade Green foxtail Green pigweed Hairy nightshade Kochia Redroot pigweed | Coarse-textured with <5% OM— 280 g/ha (113.3 g/ac.) Medium-textured with <5% OM— 420 g/ha (170 g/ac.) | | FOR PRE-EMERGENT WEED CONTROL Apply prior to emergence of garlic, and within 3 days after planting garlic Avoid spray overlap as severe crop injury may occur Severe crop injury will result when soils are flooded following applications of Chateau Apply only once per growing season Do not apply on fine-textured soils Use appropriate water volumes to ensure good spray coverage This product will not control emerged weeds |
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HOPS

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|---|--|----|---|
| Canada fleabane Common lamb's-quarters Common ragweed Dandelion Eastern black nightshade Green foxtail Green pigweed Hairy nightshade Kochia Redroot pigweed | Coarse-textured with <5% OM— 280 g/ha (113.3 g/ac.) Medium-textured with <5% OM— 420 g/ha (170 g/ac.) | 30 | FOR PRE-EMERGENT WEED CONTROL Apply in the fall prior to weed emergence Apply a band to each side of the hop row and ensure rain activation When weeds are present apply as a tank-mix with carfentrazone-ethyl Apply only to dormant hops FOR SUCKER CONTROL Apply as a directed application after hops have reached a minimum of 1.8 m (6 ft.) in height for sucker control Application should be directed to the lower 0.6 m (2 ft.) of the hops Do not allow spray to contact green stem (unless used for sucker control), foliage, flowers or cones Do not use with an adjuvant |
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FIELD PEPPER

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|---|--|--|--|
| Canada fleabane Common lamb's-quarters Common ragweed Dandelion Eastern black nightshade Green foxtail (suppression) Green pigweed Hairy nightshade Kochia Redroot pigweed | 140 g/ha (56.7 g/ac.) 210 g/ha (85 g/ac.) Coarse-textured with <5% OM— 140 g/ha Medium-textured with <5% OM— 210 g/ha | | Do not apply more than 210 g of Chateau per hectare during a single growing season All applications must be made with hooded or shielded equipment Do not apply during or after bloom Spray must remain between raised beds Plants should be grown on raised or plastic mulched beds that are at least 10 cm higher than the treated row middle and the mulched bed must have a minimum of a 60 cm bed width If the top of the mulch beds are contacted, severe injury can occur due to foliage contact with treated plastic Do not apply after crops are transplanted |
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PEPPERMINT, SPEARMINT

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|---|--|----|--|
| Canada fleabane Common lamb's-quarters Common ragweed Dandelion Eastern black nightshade Green foxtail Green pigweed Hairy nightshade Kochia Redroot pigweed | 280 g/ha (113.4 g/ac.) Coarse-textured with <5% OM | 80 | Do not apply to row or baby mint, use only on established mint Apply as a single spring application to established, dormant mint for pre-emergent weed control In furrow-irrigated fields, corrugating that is done after a Chateau application will expose untreated soil and break the herbicide barrier, resulting in poor weed control Do not apply to stands established longer than 3 years |
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WEEDS CONTROLLED/
SUPPRESSED RATE PHI APPLICATION INFORMATION

POTATO (Western Canada only)

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|---|---|--|---|
| <p>Suppression of: Canada fleabane Common lamb's-quarters Common ragweed Eastern black nightshade Green pigweed Hairy nightshade Kochia Redroot pigweed</p> | <p>105 g/ha (42.5 g/ac.) Coarse- and medium-textured with <5% OM</p> | | <p>Do not apply more than 105 g Chateau per hectare during a single growing season Mechanical incorporation into the soil or disturbance of the soil surface will reduce weed control Chateau may be applied to potatoes after hilling A minimum of 5 cm of soil must cover the vegetative portion of the potato plant when Chateau is applied. Application to potatoes with less than 5 cm of soil cover may result in crop injury. Do not apply after cracking, this will result in severe crop injury Chateau will not be effective if applied prior to hilling Chateau must be activated before crop emergence (cracking) or serious crop injury could occur. Irrigation with at least ½-1 cm of water is recommended before ground crack occurs.</p> |
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STONE FRUIT

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|---|--|----|--|
| <p>Canada fleabane Common lamb's-quarters Common ragweed Dandelion Eastern black nightshade Green foxtail Green pigweed Hairy nightshade Kochia Redroot pigweed</p> | <p>280 g/ha (113.3 g/ac.) 420 g/ha (170 g/ac.) Coarse-textured with <5% OM– 140 g/ha Medium-textured with <5% OM– 210 g/ha</p> | 60 | <p>Chateau should be tank-mixed with glyphosate, present as isopropyl amine or potassium salt, for control of emerged weeds. Refer to the respective tank-mix partner label for rates, additional recommendations, restrictions and precautions. Follow the most restrictive label limitations and precautions of the tank-mix product(s) being used. Only apply to healthy, established trees. Do not apply when plants are under stress from insects, diseases, animals, winter injury, planting shock or any other stresses. Chateau should be applied as a uniform broadcast application to the orchard floor or as a uniform band directed at the base of the trunk Do not make more than 2 applications in a growing season Do not make a sequential application within 30 days of the first application Do not apply within 100 m of non-dormant pears Do not apply after budbreak unless using hooded or shielded application equipment and applicator can ensure the spray drift will not contact the crop fruit or foliage</p> |
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STRAWBERRY

| | | | |
|---|---|--|---|
| <p>Canada fleabane Common lamb's-quarters Common ragweed Dandelion Eastern black nightshade Green foxtail (suppression) Green pigweed Hairy nightshade Kochia Redroot pigweed</p> | <p>210 g/ha (85 g/ac.) Coarse- and medium-textured with <5% OM</p> | | <p>Broadcast applications may be made to dormant strawberries For non-dormant strawberries, applications must be made to row middles only, using a hooded or shielded sprayer Do not make more than 1 application per growing season Do not allow spray drift to come in contact with fruit or foliage Application after fruit set may result in spotting of fruit and should be avoided. Do not apply after fruit set.</p> |
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SWEET POTATO

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|--|---|--|--|
| <p>Suppression of: Common lamb's-quarters Common ragweed Eastern black nightshade Green pigweed Hairy nightshade Redroot pigweed</p> | <p>105 g/ha (42.5 g/ac.) Coarse- and medium-textured with <5% OM</p> | | <p>Do not apply more than 105 g of Chateau per hectare during a single growing season Apply Chateau prior to transplanting, do not apply after sweet potato slips have been transplanted Do not plant greenhouse grown transplants/slips into Chateau treated fields Do not use on any sweet potato variety other than "Beauregard", unless user has tested Chateau on other variety and has found crop tolerance to be acceptable Do not apply as part of any tank-mix, if tank-mix is applied before transplanting</p> |
|--|---|--|--|



Credit® Xtreme is a patented glyphosate formulation containing Dual-Salt Technology®. Its high-load formulation (540 g/L) provides fast and complete control of troublesome weeds.

Credit® Xtreme

Benefits

- Patented Dual-Salt Technology is a first of its kind innovation
- Provides broad-spectrum weed control through systemic activity
- More active ingredient in less volume – concentrated product means handling less
- Works quickly and mixes easily to make your job easier
- Excellent compatibility with tank-mixes
- Treats up to 60 acres with just one case (30 acres at standard rate)

Registered crops

- Apple
- Apricot
- Asparagus
- Blueberry (highbush and lowbush)
- Cherry
- Cranberry
- Ginseng
- Grape
- Peach
- Pear
- Plum
- Strawberry
- Sugar beet

General usage information

- Credit Xtreme is a non-selective herbicide that will kill or injure plants if it comes in contact with green tissue
- Allow at least 1 day after application before tillage
- Extreme care must be exercised to avoid the herbicide coming in contact or drifting onto foliage, suckers or fruit



Technical information

HERBICIDE GROUP

- > Group 9

ACTIVE INGREDIENTS

- > glyphosate 540 g/L

RAINFAST

- > Do not apply if rainfall is in forecast during application
- > No surfactant required

PACKAGING

- > 2 x 10 L case
- > 500 L tote
- > Bulk

PCP

- > 29888

RATE PHI APPLICATION INFORMATION

GRAPE

| | | |
|--|-----------|--|
| <p>1.5-8 L/ha (0.6l-3.2 L/ac.)</p> | <p>14</p> | <p>Remove all suckers prior to spraying (except for Concord) Suckering should be completed 2 weeks prior to application Do not apply to vines that are less than 3 years established Maximum 3 applications per year</p> |
|--|-----------|--|

STRAWBERRY

| | | |
|--|-----------|--|
| <p>0.67-1.34% solution (spot application) 22% solution (wiper application)</p> | <p>30</p> | <p>Apply when weeds are at a susceptible growth stage Maximum 1 application per year</p> |
|--|-----------|--|

SUGAR BEET

| | | |
|---|--|---|
| <p>0.67-1.34% solution (spot application)</p> | | <p>Treated crop MUST NOT be harvested Maximum 1 application per year</p> |
|---|--|---|

Blossom Protect™ is a biological fungicide that fits well in a fire blight protection plan in pome fruit.

Blossom Protect™

Benefits

- Effective protection against fire blight on pome fruit
- Unique mode of action
- Reduces the amount of resistant pathogens in the population
- No PHI
- Safe for humans and environment (not harmful to non-target organisms)

Registered crops

- Pome fruit

General usage information

- Agitate tank solution during application and use within 8 hours
- Apply Blossom Protect the day before predicted infection conditions. Further applications after 2 days if infection risk is still high and new blossoms open
- To be mixed with Buffer Protect™ (“Component A”), a citric acid buffer supplied together with Blossom Protect against fire blight. Use 1.5 kg Blossom Protect together with 10.5 kg Buffer Protect for trees of 2 m canopy height.
- Adjust the amount of product depending on the canopy height
- Reduce number of applications to 2 in case of varieties sensitive for russeting
- Tank-mixtures possible with wettable sulphur, fluopyram, anilinopyrimidines and some DMI. Other fungicides have to be applied separately from treatments with Blossom Protect the day before or 2 days after the application of Blossom Protect. Exception: lime sulfur can be applied 6 hrs after Blossom Protect. Contact your Nufarm Horticulture Specialist for more information on tank-mix partners.
- Maximum storage period of 18 months at room temperature (20°C) or 30 months at cool storage (8°C) from the manufacturing date
- Add sufficient water to the tank, do not use hot water
- Add Blossom Protect to the water, while stirring
- Do not prepare highly concentrated pre-mixtures of Blossom Protect



Technical information

CHEMICAL CLASS

> N/A – Biological

ACTIVE INGREDIENTS

> *Aureobasidium pullulans*

PACKAGING

> 12 kg box: Blossom Protect (1.5 kg canister) + Buffer Protect (10.5 kg bag)

RAINFAST

> 3 hours

PCP

> 30552

Biological
fungicide

APPROVED FOR
ORGANIC PRODUCTION

Specific crop usage information

DISEASE CONTROLLED RATE APPLICATION INFORMATION

BEARING AND NON-BEARING POME FRUIT

| DISEASE CONTROLLED | RATE | APPLICATION INFORMATION |
|---|---|--|
| Fire blight <i>(Erwinia amylovora)</i> | 1 m canopy height: 0.75 kg/ha (500 L/ha water volume) 0.3 kg/ac. (202 L/ac. water volume) | According to phenology: apply up to 4 times at 10%, 40%, 70% and 90% open blossoms (BBCH 61-69) According to a forecast system (e.g. Maryblyt): apply a maximum number of 5 times when model indicates risk of infection The solution should be stirred during application |

Parasol® FL is one of the smallest and most consistent copper particle size formulations available. It disperses effortlessly in water providing protection from disease.

Parasol® FL

Benefits

- Easy to handle and mix
- Has a higher Metallic Copper Equivalent (MCE) than some other coppers on the market providing optimal control of tough diseases
- Superior formulation stays in suspension and quickly disperses in water
- Highly compatible with other products
- Superior rainfastness
- One of the smallest and most consistent sizes of copper particles available in Canada

Registered crops

- | | |
|-----------------------------|-------------|
| • Apple | • Nectarine |
| • Apricot | • Peach |
| • Bean | • Pears |
| • Cherries (sweet and sour) | • Pepper |
| • Cucumber | • Potato |
| • Filberts | • Tomato |
| • Hazelnut | |

General usage information

- Use as a preventative/protective fungicide spray
- Use on a 7-14 day interval depending on disease conditions
- Adaptable for spraying with all types of equipment
- No surfactants needed
- No buffer zone required when applied as spot treatment



Technical information

CHEMICAL CLASS

> M1 fungicide

ACTIVE INGREDIENTS

> copper hydroxide 24.4%

PACKAGING

> 2 x 10 L case

RAINFAST

> 2 hours

PCP

> 25901

Specific crop usage information

DISEASE CONTROLLED RATE PHI APPLICATION INFORMATION

APPLE TREES, PEAR TREES

| | | | |
|--|-------------------------|---|---|
| Fire blight (<i>Erwinia amylovora</i>) Bacterial blight (<i>Pseudomonas syringae</i>) | 4.7 L/ha (1.9 L/ac.) | 2 | Apply a dormant application in sufficient water for complete coverage Use 2 applications per year; apply at Silvertip and after harvest with 50% leaf drop |
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APRICOT TREES

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| Coryneum blight (<i>Coryneum carpophilum</i>) | 4.5-6.7 L/ha (1.9-2.7 L/ac.) | 2 | Apply as a dormant application before foliage buds swell |
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BEAN

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| Bacterial blight, common (<i>Xanthomonas campestris</i> <i>pv. phaseoli</i>) Bacterial blight, halo (<i>Pseudomonas syringae</i> <i>pv. phaseolicola</i>) | 2.3-3.12 L/ha (0.93-1.25 L/ac.) | 2 | For protective sprays, apply first application when plants are 15 cm high Apply on 7-14 day schedule depending on local conditions Do not apply more than 6 treatments per year |
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CHERRY TREES (sweet and sour)

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| Bacterial canker (<i>Pseudomonas spp.</i>) | 8.8-13.1 L/ha (3.6 - 5.3 L/ac.) | 2 | Apply when 75% of the leaves have fallen Make a second application in early spring before bud break Use the low rate on small trees and the high rate on large trees |
|---|------------------------------------|---|--|

CUCUMBER

| | | | |
|---|------------------------------------|---|---|
| Angular leaf spot (<i>Pseudomonas syringae</i> <i>pv. lachrymans</i>) | 2.3-3.12 L/ha (0.93-1.25 L/ac.) | 2 | Apply weekly once the plants begin to vine Do not apply more than 5 treatments per year Minimum re-treatment interval of 7 days |
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HAZELNUTS, FILBERTS

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| Bacterial blight (<i>Xanthomonas campestris</i>) Eastern Filbert Blight (<i>Anisogramma anomala</i>) | 4.4 to 11.4 L/ha (1.8 to 4.6 L/ac.) | 2 | Apply as a dormant application when 75% of the leaves have fallen and again in the early spring before bud set Use low rate on small trees, high rate for large trees |
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PEACH TREES, NECTARINE TREES

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|--|--|---|--|
| Coryneum blight (<i>Coryneum carpophilum</i>) Leaf curl (<i>Taphrina deformans</i>) | Before bud swell in the spring: 4.5-6.7 L/ha (1.8-2.7 L/ac.) After leaf fall: 4.5-8.9 L/ha (1.8-3.6 L/ac.) | 2 | Apply as a dormant spray before bud swell in the spring (low rate) and after leaf fall in the fall (high rate) Use the higher rate when rainfall is very heavy and disease pressure is high |
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PEPPER

| | | | |
|--|------------------------------------|---|--|
| Bacterial spot (<i>Xanthomonas campestris</i> <i>pv. vesicatoria</i> and <i>X. vesicatoria</i>) | 2.3-3.12 L/ha (0.93-1.25 L/ac.) | 2 | When disease threatens, apply on a 7-14 day interval depending on disease severity and rainfall Do not apply more than 10 treatments per year, with a minimum re-treatment interval of 3 days |
|--|------------------------------------|---|--|

DISEASE CONTROLLED RATE PHI APPLICATION INFORMATION

POTATO

| | | | |
|--|---|----------|--|
| <p>Early blight (<i>Alternaria solani</i>) Late blight (<i>Phytophthora infestans</i>)</p> | <p>0.8-1.8 L/ha (0.32-0.73 L/ac.)</p> | <p>2</p> | <p>Apply at 7-10 day intervals starting when plants are 15 cm high until harvest Combine with 1.75-2.25 kg/ha of mancozeb Apply 2.4 L/ha (0.97 L/ac.) at vinekill with a desiccant or alone after vinekill, prior to harvest for disease management This late treatment may reduce infection of tubers by the late blight fungus during harvesting Do not apply more than 10 treatments per year, with a minimum re-treatment interval of 5 days</p> |
|--|---|----------|--|

TOMATO

| | | | |
|--|----------------------------------|----------|---|
| <p>Bacterial spot (<i>Xanthomonas campestris</i> <i>pv. vesicatoria</i>) Early blight (<i>Alternaria solani</i>) Late blight (<i>Phytophthora infestans</i>)</p> | <p>2.3 L/ha (0.93 L/ac.)</p> | <p>2</p> | <p>When disease threatens, apply on a 7-10 day interval, and more frequently depending on disease severity and rainfall Combine with 1.75-2.25 kg/ha mancozeb Do not apply more than 10 treatments per year, with a minimum re-treatment interval of 3 days</p> |
|--|----------------------------------|----------|---|

MaxCel® PGR delivers precision thinning, enhanced fruit size and return bloom for top quality apples.

MaxCel® PGR

Benefits

- Reduces hand thinning costs
- Promotes cell division and fruit growth beyond the thinning effect producing larger apples
- Improves return bloom
- Improves packout and marketable yield
- Does not stress the tree or cause stunting of fruit, even with multiple year use

Registered crops

- Apple
- Pear

General usage information

- Maximum rate of 22.5 L/ha (9.1 L/ac.) per season
- Adequate spray volume is required for thorough coverage (1,000 L/ha or 400 L/ac.)
- The optimum thinning application timing is between 8-14 mm fruit size
- The water spray solution pH should be as close to neutral as possible, and should not exceed pH 8.5
- Allow 7-10 days to observe the effects of application
- For more information on use pattern information or rates based on ppm please refer to the MaxCel label or contact the Nufarm Horticulture Specialist



Technical information

CHEMICAL CLASS

- > Plant Growth Regulator

ACTIVE INGREDIENTS

- > 6-Benzyladenine (6-BA) 1.9%

PACKAGING

- > 10 x 1 L case
- > 2 x 5 L case

RAINFAST

- > 6 hours

PCP

- > 28851

Specific crop usage information

OBJECTIVE RATE PHI APPLICATION INFORMATION

APPLE

| | | | |
|--|---|----|---|
| Size enhancement Enhanced return bloom | 2.5 L/ha (1 L/ac.) 50 ppm | 86 | Make 2-4 applications starting at petal fall (3-10 day intervals) This rate is used for sizing (little to no thinning should occur at this rate) |
| Use for moderate thinning on easier to thin varieties such as McIntosh | 3.75 L/ha (1.5 L/ac.) 75 ppm | | Ideal thinning window is between 5-15 mm. MaxCel can be used at any time during this window. |
| Ideal rate for most thinning used on varieties such as Gala and Empire | 5 L/ha (2 L/ac.) 100 ppm | | The optimum timing for MaxCel to be used is at the 8-14 mm range |
| Use on hard to thin varieties (Fuji and Golden Delicious) or for a more aggressive thinning effect on varieties such as Gala | 6.25 L/ha (2.5 L/ac.) 125 ppm | | Apply MaxCel at the beginning of a warming trend when temperatures the few days following application are expected to be above 18°C |
| Use in orchards with hard to thin varieties or in orchards with a history of difficulty thinning | 7.5-10 L/ha (3-4 L/ac.) 150-200 ppm | | Increased thinning will occur when conditions are cloudy and warm |

PEAR

| | | | |
|-----------------------------------|--|----|--|
| Size enhancement | 2.5-5 L/ha (1-2 L/ac.) 50-100 ppm | 86 | Use this rate for sizing pears (little to no thinning should occur at this rate) |
| Thinning Enhanced return bloom | 6.25-10 L/ha (2.5-4 L/ac.) 125-200 ppm | | The optimum timing for MaxCel to be used is at the 8-14 mm range |

All rates in the table above are based on a water volume of 1,000 L/ha (400 L/ac.).
Please refer to chart for ppm information.

COMPATIBILITY

MaxCel is compatible with some thinners and pesticides including formulations of SEVIN® and NAA. If compatibility of MaxCel with another product and the resulting plant response is unknown, it should be tested on a small scale. Do not apply tank-mix combinations unless your previous experience indicates the mixture is effective and will not result in application difficulties or result in plant injury. Please consult with a Nufarm Horticulture Specialist if you have questions on mixing MaxCel with other products.

If tank-mixing with NAA, do not use on Fuji, Mutsu, Golden Delicious, Red Delicious or varieties known to throw pygmy fruit – please consult the Horticulture Specialist at Nufarm if you are new to this tank-mix combination for more details on using MaxCel combined with NAA and concerns about pygmy fruit.

VOLUME OF MAXCEL PGR PER VOLUME OF SPRAY REQUIRED TO OBTAIN GIVEN PPM CONCENTRATIONS

SOLUTION VOLUME

CONCENTRATION

| Litres (L) | 10 ppm | 25 ppm | 50 ppm | 75 ppm | 100 ppm | 125 ppm | 150 ppm | 175 ppm | 200 ppm |
|------------|--------|--------|--------|--------|---------|---------|---------|---------|---------|
| 380 | 190 mL | 475 mL | 950 mL | 1.42 L | 1.9 L* | 2.38 L | 2.85 L | 3.33 L | 3.8 L |
| 1,000 | 470 mL | 1.25 L | 2.5 L | 3.75 L | 5 L | 6.25 L | 7.50 L | 8.75 L | 10 L |

*For a 100 ppm solution applied to 0.4 ha (1 ac.)



Promalin® PGR improves size and fruit shape (typiness) of many apple varieties by elongating fruit and giving them more pronounced calyx lobes.

Promalin® PGR

Benefits

- Increases fruit size and shape
- Delivers consistent results
- Provides an excellent return on investment
- Does not require an adjuvant

Registered crops

- Apple
- Cherries
- Pear

General usage information

- Adequate spray volume is required for thorough coverage (1,000 L/ha or 400 L/ac.)
- Thorough crop coverage is required for desired results
- Do not apply when temperatures are below freezing
- The spray solution pH should be neutral and not exceed 8.5
- Promalin should be applied alone
- Applications should be made during slow drying conditions to maximize absorption



Technical information

CHEMICAL CLASS

- > Plant Growth Regulator

ACTIVE INGREDIENTS

- > 6-Benzyladenine (6-BA) 1.8%
- > Gibberellic Acid (GA4+7) 1.8%

PACKAGING

- > 10 x 500 mL case

RAINFAST

- > 6 hours

PCP

- > 16636

Specific crop usage information

OBJECTIVE RATE PHI APPLICATION INFORMATION

APPLE

| | | | |
|--|--|----|--|
| Improve typiness Single application | 1.2-2.3 L/ha (0.5-0.9 L/ac.) | 28 | Apply at early king bloom to early stages of petal fall (optimal timing is 80% king bloom) |
| Improve typiness Two applications | 0.6-1.2 L/ha (0.2-0.5 L/ac.) | | Make first application at early king bloom and the second 3-21 days later, when the remainder of the canopy comes into bloom |
| Reduce russet | 250-500 mL/ha (100-200 mL/ac.) | | Make a maximum of 4 applications starting between the bloom and petal fall (closer to petal fall is ideal) Follow up with sequential applications on a 7-12 day interval Earlier applications, shorter intervals and higher rates are recommended when conditions are long, cold and wet |
| Increase fruit set after a frost | 1.2-2.3 L/ha (0.5-0.9 L/ac.) | | Apply within 24 hours after a frost event when the crop is between early bloom and full bloom Allow trees to thaw before making application The trees MUST be in the bloom stage for this treatment to be effective |
| Branching – foliar application (nursery and orchard) | 125-500 ppm (62.5-250 mL Promalin per 10 L of spray solution) | | For orchard trees, apply at 1-3 in. of new terminal growth For nursery stock, treat after trees have reached a terminal height at which lateral branching is desired |
| Branching – latex application (nursery and orchard) | 100-165.6 mL Promalin per 500 mL latex paint | | Apply in the spring when terminal buds begin to swell but before shoots emerge |

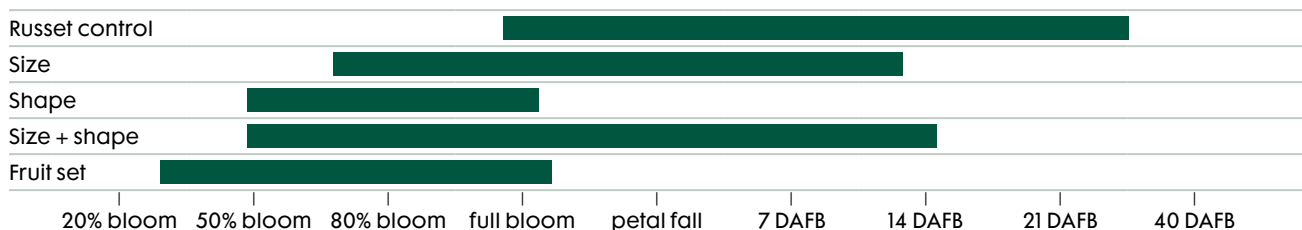
PEAR (non-bearing)

| | | | |
|--|---|----|---|
| Increase fruit set | 250 mL/ha (100 mL/ac.) | 28 | Make first application at 10-30% open flowers on the old wood Make second application between full bloom and petal fall |
| Branching – foliar application (nursery and orchard) | 250-1,000 ppm (125-500 mL Promalin per 10 L of spray solution) | | For orchard trees, apply at 1-3 in. of new terminal growth For nursery stock, treat after trees have reached a terminal height at which lateral branching is desired |

SWEET CHERRIES (non-bearing)

| | | | |
|---|---|----|--|
| Branching – foliar application (nursery only) | 250-1,000 ppm (125-500 mL Promalin per 10 L of spray solution) | 28 | Treat after trees have reached a terminal height at which lateral branching is desired |
| Branching – latex application (orchard only) | 100-165.6 mL Promalin per 500 mL latex paint | | Apply in the spring when terminal buds begin to swell but before shoots emerge |

OPTIMUM TIMINGS FOR PROMALIN APPLICATIONS



Note: DAFB = days after full bloom; Optimum timings based on 20 years of trials and commercial experience

OBJECTIVE APPLICATION INFORMATION

USE MAXCEL AND PROMALIN COMBINED (for an optimal thinning, sizing and fruit finish program)

| | |
|--------------------------------------|--|
| Typy and well sized apples | Follow the Promalin recommendations above for improved typiness Apply the MaxCel treatment at 10-12 mm fruit size at 3.75-6.25 L/ha (1.5-2.5 L/ac.), depending on the variety |
| Well sized fruit with reduced russet | Follow the recommendations above for russet control Apply the MaxCel treatment at 8-12 mm fruit size at 3.75-6.25 L/ha (1.5-2.5 L/ac.), depending on the variety |

The combination of these products in a program have proven to increase fruit quality and thus increasing overall packout. Do not use MaxCel and Promalin as a tank-mix.

Harvest the potential™ of your apple crop with ReTain®, a plant growth regulator that temporarily inhibits ethylene production to slow fruit maturation, ripening and fruit drop.

ReTain® PGR

Benefits

- Keeps fruit hanging longer
- Reduces watercore and stem bowl cracking
- Maintains and improves fruit firmness
- Provides greater uniformity in maturity across all fruit at each pick
- Increases fruit size as fruit grows longer
- Increased fruit set on cherries

Registered crops

- Apple
- Cherries

General usage information

- Adequate spray volume is required for thorough coverage (935 - 1,870 L/ha)
- A silicone surfactant must be used when applying ReTain – Xiameter® at 0.05-0.1% v/v
- Use the lower rate of surfactant when trees are stressed, or if there are extreme weather conditions like drought or excessive heat
- Maximum 1 application per season
- The spray solution pH should be neutral and not exceed 8.5
- If applying to trees under stress due to water, heat, disease or poor nutrition – be aware that the benefits and efficacy of ReTain may be reduced in these circumstances
- Please consult the Horticulture Specialist at Nufarm for specific use pattern information related to specific varieties and growing areas
- Do not mix ReTain with any other products other than Xiameter
- Do not apply in high heat
- We do not recommend applying close application intervals of ReTain and Captan and/or Maestro®. Please contact Nufarm for more details and support with respect to using ReTain and these fungicides safely.



Technical information

CHEMICAL CLASS

- > Plant Growth Regulator

ACTIVE INGREDIENTS

- > Aviglycine hydrochloride (AVG) 15%

PACKAGING

- > 20 x 333 g case

RAINFAST

- > 8 hours

PCP

- > 25609

Specific crop usage information

OBJECTIVE RATE PHI APPLICATION INFORMATION

APPLE

| | | | |
|--|---|----------|---|
| <p>Delayed fruit maturity Improved harvest management Reduced pre-harvest fruit drop Additional time for increase in fruit size Additional time for colour development Maintenance of fruit firmness Improved fruit quality Enhanced storage quality</p> | <p>1 pouch/0.4 ha (1 pouch/ac.)</p> | <p>7</p> | <p>Apply 4 weeks prior to the anticipated beginning of the normal harvest for the specific variety you are spraying. Applying ReTain at this time will help delay and better manage harvest.</p> <p>When temperatures are high (above 32°C) it is important to use the 0.05% v/v rate of a silicone surfactant (Xiameter)</p> |
|--|---|----------|---|

PLEASE NOTE

Under difficult colouring conditions, colour development of certain bi-colour apple cultivars such as Gala and Honeycrisp™ may be delayed when ReTain is applied at 1 pouch per 0.4 hectare (1 acre)

SWEET CHERRY

| | | | |
|------------------|---|----------|---|
| <p>Fruit set</p> | <p>1 pouch/0.4 ha (1 pouch/ac.)</p> | <p>7</p> | <p>Make a single application of ReTain during bloom. Efficacy requires thorough coverage of the product on the flower buds and flowers.</p> <p>Use appropriate water volume based on tree size</p> <p>Applications between balloon stage to first bloom are more effective than earlier or later applications</p> <p>Do not apply after petal fall</p> <p>Do not apply when fruit are present</p> <p>ReTain on cherries is not meant to be used as a harvest management aid</p> |
|------------------|---|----------|---|

DiPel® 2X DF is a leading biological insecticide with a high potency resistance management tool for proven control of Lepidoptera pests in both conventional and organic cropping systems.

DiPel® 2X DF

Benefits

- The most potent Bt insecticide on the market with a unique mode of action, making it an excellent tool for managing resistance
- Immediately deters insects from feeding – death occurs within 1-3 days
- The dry, flowable formulation is convenient and easy to handle with tank-mix flexibility
- Not harmful to bees or beneficial insects making it a great tool for spring feeding caterpillars
- No REI and safe for humans

Registered crops

- | | | |
|------------------------------------|--------------------------|------------------------------|
| • Apple | • Corn (sweet and field) | • Ornamental and shade trees |
| • Asian radish | • Cranberry | • Parsley |
| • Berries and small fruit | • Ginseng | • Pear |
| • Blueberry (highbush and lowbush) | • Grape | • Potato |
| • Bok choy | • Greenhouse herbs | • Raspberry |
| • Broccoli | • Greenhouse ornamentals | • Sea buckthorn |
| • Cabbage | • Greenhouse vegetables | • Spinach |
| • Cauliflower | • Herbs and spices | • Stone fruit |
| • Chinese broccoli | • Kale | • Sunflower |
| • Chinese cabbage | • Lettuce | • Timothy |
| • Chokecherry | • Mustard greens | • Tobacco |
| • Collards | • Nut crops | • Tomato |
| | | • Turnip greens |

For a complete list of all crops registered and what is included for each crop group refer to the label

General usage information

- OMRI-certified for use in organic production
- Apply when insect pests are small (egg hatch to early instars) before crop damage occurs
- Apply using sufficient water volume for thorough crop coverage
- Repeat at an interval sufficient to maintain control, usually 3-14 days
- Use with a water pH 7 or lower
- **Use with a non-ionic surfactant for hard to wet foliage (such as cabbage or broccoli)**



Technical information

CHEMICAL CLASS

- > Group II

ACTIVE INGREDIENTS

- > *Bacillus thuringiensis, var. kurstaki strain ABTS-351 (57%)*

PACKAGING

- > 24 x 0.5 kg case
- > 5 kg bag

RAINFAST

- > Avoid application when heavy rainfall is in the forecast

PCP

- > 26508



APPROVED FOR
ORGANIC PRODUCTION

Specific crop usage information

INSECT CONTROLLED RATE APPLICATION INFORMATION

APPLE, PEAR

| | | |
|---|-------------------------------------|--|
| Leafrollers* (Fruitree, European, Oblique-banded, Three-lined) | 1,125-1,675 g/ha (455-678 g/ac.) | *Apply in 600-800 L/ha at pink stage and, if populations are heavy, at petal fall using an air-blast orchard sprayer. Weekly applications may be necessary if egg hatch is asynchronous. Best results are obtained if applications are made in the evening or on a cloudy day **For use in combination with Ripcord™ or Cymbush® See the respective labels for specific instructions Follow the most restrictive label |
| Winter moth** (not registered for pears) | 280 g/ha (113 g/ac.) | |

ASIAN RADISH, BOK CHOY, CHINESE BROCCOLI, CHINESE CABBAGE

| | | |
|----------------------|----------------------------------|--|
| Cabbage looper | 275-550 g/ha (111-222 g/ac.) | Use in 400 L/ha A non-ionic surfactant is suggested for this crop Refer to General Information |
| Diamondback moth | 275 g/ha (111 g/ac.) | |
| Imported cabbageworm | 55-140 g/ha (22.3-56.7 g/ac.) | |

BLUEBERRY (highbush), CHERRY, CRANBERRY

| | | |
|-------------------------------|---------------------------|--|
| Cherry fruitworm Fruitworm | 1,680 g/ha (680 g/ac.) | Apply at egg hatch, from petal fall through to green fruit stage Use a minimum of 300 L/ha and an airblast sprayer Maximum of 4 applications per season Repeat on a 3-14 day interval if needed |
|-------------------------------|---------------------------|--|

BLUEBERRY (lowbush)

| | | |
|---|-----------------------------------|--|
| Blueberry spanworm Chainspotted geometer Rannoch looper | 550-1,125 g/ha (222-455 g/ac.) | Maximum of 4 applications per year Apply in a minimum of 300 L/ha Apply when larvae in the first or second instar are present at or above the economic threshold |
|---|-----------------------------------|--|

BROCCOLI

| | | |
|--|----------------------------------|---|
| Cabbage looper | 275-550 g/ha (111-222 g/ac.) | A non-ionic surfactant is suggested for this crop Refer to General Information |
| Diamondback moth Imported cabbageworm | 55-140 g/ha (22.3-56.7 g/ac.) | |

CABBAGE

| | | |
|----------------------|---------------------------------|---|
| Cabbage looper | 275-550 g/ha (111-222 g/ac.) | A non-ionic surfactant is suggested for this crop Refer to General Information |
| Diamondback moth | 55-275 g/ha (22.3-222 g/ac.) | |
| Imported cabbageworm | 275 g/ha (111 g/ac.) | |

INSECT CONTROLLED RATE APPLICATION INFORMATION

CAULIFLOWER

| | | |
|----------------------|----------------------------------|---|
| Cabbage looper | 275-550 g/ha (111-222 g/ac.) | A non-ionic surfactant is suggested for this crop |
| Imported cabbageworm | 55-140 g/ha (22.3-56.7 g/ac.) | Maximum of 5 applications per year |

CHOCHEERRY ORCHARDS AND SHELTERBELTS

| | | |
|--------------|-------------------------|---|
| Fall webworm | 635 g/ha (257 g/ac.) | 1 application per year Mix 0.288 kg of product in 1,000 L of water Apply at a rate of 22 L mixture per 100 m ² Apply as soon as tents are visible |
|--------------|-------------------------|---|

COLLARDS

| | | |
|----------------|---------------------------------|---|
| Cabbage looper | 275-550 g/ha (111-222 g/ac.) | A non-ionic surfactant is suggested for this crop |
|----------------|---------------------------------|---|

CRANBERRIES

| | | |
|--------------------------|---------------------------------|------------------------------|
| Green and brown spanworm | 275-550 g/ha (111-222 g/ac.) | Refer to general information |
|--------------------------|---------------------------------|------------------------------|

GINSENG

| | | |
|-------------|-----------------------------------|--|
| Leafrollers | 565-1,125 g/ha (228-455 g/ac.) | Ground application – apply in 760-1,250 L/ha water, maximum of 2 applications per year For best control apply when larvae are in early instar stage |
|-------------|-----------------------------------|--|

GRAPE

| | | |
|------------------|---------------------------|--|
| Grape berry moth | 1,125 g/ha (455 g/ac.) | Begin applications after adult flight begins – before egg hatch Use a high water volume Repeat on a 7-10 day interval Maximum 6 applications per year |
| Leafrollers | 125-250 g/ 400 L water | Repeat on a 3-14 day interval |

GREENHOUSE CUCUMBER

| | | |
|---|---------------------------------|--|
| Alfalfa looper Cabbage looper <i>Duponchelia fovealis</i> | 625 g/1,000 L 75-150 g/250 L | Make applications when egg hatch is complete and when larvae are small Repeat every 3-14 days if needed |
|---|---------------------------------|--|

GREENHOUSE EGGPLANT, PEPPER, TOMATO

| | | |
|----------------|----------------|--|
| Cabbage looper | 75-150 g/250 L | Make applications when egg hatch is complete and when larvae are small Repeat every 3-14 days if needed |
|----------------|----------------|--|

GREENHOUSE FRUITING VEGETABLES

| | | |
|-----------------------------|-------------------------|--|
| <i>Duponchelia fovealis</i> | 625 g/1,000 L | Make applications when egg hatch is complete and when larvae are small Repeat every 7 days if needed |
| Lepidopteran leafminers | 500-1,000 g/ 1,000 L | Make applications when egg hatch is complete and when larvae are small Repeat every 7-10 days if needed |

INSECT CONTROLLED RATE APPLICATION INFORMATION

GREENHOUSE HERBS, GREENHOUSE ORNAMENTALS

| | | |
|-----------------------------|---------------|---|
| <i>Duponchelia fovealis</i> | 625 g/1,000 L | Make applications when egg hatch is complete and when larvae are small Repeat every 7 days if needed |
|-----------------------------|---------------|---|

GREENHOUSE WASABI

| | | |
|----------------------------------|----------------|---|
| Alfalfa looper Cabbage looper | 75-150 g/250 L | Apply at the first signs of infestation Treat when larvae are young (early instars) Repeat applications on a 7-10 day interval if needed Maximum 8 applications per year |
|----------------------------------|----------------|---|

HOPS

| | | |
|---------------------|-----------------------------------|---|
| European corn borer | 560-1,120 g/ha (226-453 g/ac.) | Apply at first sign of infestation Repeat on a 3-14 day interval if needed |
| Hop looper | 275-550 g/ha (111-222 g/ac.) | |

KALE, LETTUCE, MUSTARD GREENS, SPINACH, TURNIP GREEN

| | | |
|----------------|---------------------------------|---|
| Cabbage looper | 275-550 g/ha (111-222 g/ac.) | A non-ionic surfactant is suggested for this crop |
|----------------|---------------------------------|---|

NUT CROPS – HAZELNUTS, PECANS, SWEET CHESTNUTS, WALNUTS

| | | |
|---|-------------------------------------|------------------------------|
| Leafrollers (European, Fruitree, Oblique-banded, Three-lined) | 1,125-1,675 g/ha (455-678 g/ac.) | Refer to general information |
|---|-------------------------------------|------------------------------|

PARSLEY

| | | |
|----------------|-------------------------|------------------------------|
| Cabbage looper | 275 g/ha (111 g/ac.) | Refer to general information |
|----------------|-------------------------|------------------------------|

QUINOA

| | | |
|---------------------|-----------------------------------|---|
| European corn borer | 560-1,120 g/ha (226-453 g/ac.) | Apply when pinhole feeding is observed in at least 5% of the plants Repeat on a 7-day interval if needed Apply before larvae begin stalk-boring |
|---------------------|-----------------------------------|---|

RED RASPBERRY

| | | |
|--|-----------------------------------|------------------------------|
| Early season Oblique-banded leafroller | 550-1,125 g/ha (222-455 g/ac.) | Refer to general information |
|--|-----------------------------------|------------------------------|

STONE FRUIT – APRICOT, CHERRY PEACH PLUM/PRUNE

| | | |
|---|-------------------------------------|---|
| Fruitworm | 1,125-1,675 g/ha (455-678 g/ac.) | Apply in 2,000 L/ha at pink stage to petal fall |
| Leafrollers (European, Fruitree, Oblique-banded, Three-lined) | | Apply in 600-800 L/ha at pink stage and, if populations are heavy, at petal fall using an air-blast orchard sprayer. Weekly applications may be necessary if egg hatch is asynchronous. |

SUNFLOWER

| | | |
|----------------|---------------------------------|--|
| Sunflower moth | 315-625 g/ha (127-253 g/ac.) | Applied as an aerial application. Mix amount in 20 L of water. Apply when 20-50% of heads are in bloom Thorough coverage is needed, apply second application if required |
|----------------|---------------------------------|--|

| INSECT CONTROLLED | RATE | APPLICATION INFORMATION |
|--------------------------|-----------------------------------|---|
| SWEET CORN | | |
| European corn borer | 560-1,120 g/ha (226-453 g/ac.) | Apply when pinhole feeding is observed in at least 5% of the plants Repeat on a 7-day interval if needed |
| TIMOTHY | | |
| Essex (European) skipper | 140-275 g/ha (56.7-111 g/ac.) | Refer to general information |
| TOBACCO | | |
| Hornworm | 55-140 g/ha (22.3-56.7 g/ac.) | Refer to general information |
| TOMATO | | |
| Cabbage looper | 275-550 g/ha (111-222 g/ac.) | Refer to general information |
| Tomato fruitworm | 550 g/ha (222 g/ac.) | For tomato fruitworm apply every 5-7 days Refer to general information |

XenTari® WG is a leading biological Bt insecticide that controls a broad range of pests with proven control on tomato looper in greenhouses, as well as armyworm and diamondback moth control in conventional and organic operations.

XenTari® WG

Benefits

- Unique mode of action making it an excellent tool for managing resistance
- Immediately deters insects from feeding – death occurs within 1-3 days
- Excellent product to rotate with conventional insecticides
- Not harmful to bees or beneficial insects making it a great tool for spring feeding caterpillars
- No REI and safe for humans

Registered crops

- | | | | |
|---------------------------------------|----------------------------------|--------------------------|-------------------------------|
| • Artichoke | • Chinese celery | • Greenhouse ornamentals | • Poppy seed |
| • Beans (dry and succulent) | • Fennel | • Hare's ear mustard | • Radish (including oriental) |
| • Brassica leafy greens | • Fruiting vegetables | • Herbs and spices | • Rhubarb |
| • Brassica vegetables (head and stem) | • Garden beets | • Hops | • Rutabaga |
| • Bulb vegetables | • Ginseng | • Horseradish | • Sea kale |
| • Camelina | • Grapes | • Kohlrabi | • Stone fruit |
| • Canola | • Greenhouse cucumber | • Leafy greens | • Sugar beets |
| • Cardoon | • Greenhouse fruiting vegetables | • Mustard seed | • Sweet potatoes |
| • Celery | • Greenhouse lettuce | • Oil radish | • Sweet rocket |
| • Celtuce | | • Outdoor ornamentals | • Tobacco |
| | | • Pome fruit | • Tree nuts |
| | | | • Turnip |

For a complete list of all crops registered and what is included for each crop group refer to the label

General usage information

- Apply when insect pests are small (egg hatch to early instars) before crop damage occurs
- Apply in sufficient water volume for thorough crop coverage
- Use with a water pH 7 or lower
- Use a non-ionic surfactant for hard to wet foliage (such as cabbage or broccoli)
- XenTari is OMRI certified for use in organic production



Technical information

CHEMICAL CLASS

- > Group II

ACTIVE INGREDIENTS

- > *Bacillus thuringiensis subsp. aizawai*, Strain ABTS-1857 (48.1%)

PACKAGING

- > 24 x 500 g case

RAINFAST

- > Avoid application when heavy rainfall is in the forecast

PCP

- > 31557



APPROVED FOR ORGANIC PRODUCTION

Specific crop usage information

| INSECT CONTROLLED | RATE | APPLICATION INFORMATION |
|---|-----------------------------------|--|
| ARTICHOKE | | |
| Beet armyworm Corn earworm | 500-1,000 g/ha (202-404 g/ac.) | Apply sufficient spray volume to ensure uniform deposition on all plant surfaces Use 1,000L water/ha (404 L/ac.) to ensure full coverage but not to the point of runoff |
| BEANS (dry and succulent) | | |
| Beet armyworm Corn earworm | 500-1,000 g/ha (202-404 g/ac.) | Apply sufficient spray volume to ensure uniform deposition on all plant surfaces Mix with sufficient water to ensure full coverage but not to the point of runoff |
| BRASSICA LEAFY GREENS, BRASSICA HEAD AND STEM VEGETABLES | | |
| Cabbage looper Cross-striped cabbageworm Diamondback moth Imported cabbageworm | 500-1,000 g/ha (202-404 g/ac.) | Apply sufficient spray volume to ensure uniform deposition on all plant surfaces Recommended 500 L/ha (202 L/ac.) |
| BULB VEGETABLES – CHIVE, DAYLILY, ELEGANS HOSTA, FRITILLARIA, GARLIC, KURRAT, LADY'S LEEK, LEEK, LILY, ONIONS, SHALLOT, WILD LEEK | | |
| Leek moth | 500-1,000 g/ha (202-404 g/ac.) | Apply sufficient spray volume to ensure uniform deposition on all plant surfaces Recommended 1,000 L/ha (404 L/ac.) |
| CANOLA, CAMELINA, HARE'S EAR MUSTARD, MUSTARD SEED, OIL RADISH, POPPY SEED, SWEET ROCKET | | |
| Bertha armyworm Diamondback moths | 500-1,000 g/ha (202-404 g/ac.) | Apply sufficient spray volume to ensure uniform deposition on all plant surfaces Recommended 500 L/ha (202 L/ac.) |
| CARDOON, CELERY, CHINESE CELERY, CELTUCE, FENNEL, RHUBARB, SEA KALE | | |
| Beet armyworm Cabbage looper | 500-1,000 g/ha (202-404 g/ac.) | Apply sufficient spray volume to ensure uniform deposition on all plant surfaces Recommended 500 L/ha (202 L/ac.) |
| FRUITING VEGETABLES | | |
| Beet armyworm Cabbage looper Tobacco budworm Tomato fruitworm | 500-1,000 g/ha (202-404 g/ac.) | Apply every 5-7 days Use 500-1,000 L/ha (202-404 L/ac.) to ensure full coverage, but not to the point of runoff |
| GARDEN BEETS, SUGAR BEETS, INCLUDING LEAVES | | |
| Beet armyworm Beet webworm | 500-1,000 g/ha (202-404 g/ac.) | Apply sufficient spray volume to ensure uniform deposition on all plant surfaces Recommended 500 L/ha (202 L/ac.) |
| GINSENG | | |
| Oblique-banded leafroller | 500-1,000 g/ha (202-404 g/ac.) | Apply sufficient spray volume to ensure uniform deposition on all plant surfaces Recommended 500 L/ha (202 L/ac.) |
| GRAPE | | |
| Grape berry moth Grape leafroller Grape leaf folder Grapeleaf skeletonizer Oblique-banded leafroller Omnivorous leafroller | 500-1,000 g/ha (202-404 g/ac.) | Begin applications at "black head stage" of eggs, 2 days before larvae hatch May be repeated if needed every 7-10 days up to 6 applications per year |

| INSECT CONTROLLED | RATE | APPLICATION INFORMATION |
|---|-----------------------------------|---|
| GREENHOUSE BEANS | | |
| Beet armyworm Cabbage looper Corn earworm Tomato looper | 500-1,000 g/ha (202-404 g/ac.) | Apply with sufficient water to ensure full coverage, but not to the point of runoff |
| GREENHOUSE CUCUMBER | | |
| Beet armyworm Cabbage looper Corn earworm Tomato looper | 500-1,000 g/ha (202-404 g/ac.) | Apply with sufficient water to ensure full coverage, but not to the point of runoff |
| GREENHOUSE EGGPLANT, PEPPER, TOMATO | | |
| Beet armyworm Cabbage looper Tobacco budworm Tomato fruitworm Tomato leafminer Tomato looper | 500-1,000 g/ha (202-404 g/ac.) | Apply with sufficient water to ensure full coverage, but not to the point of runoff |
| GREENHOUSE LETTUCE | | |
| Beet armyworm Cabbage looper Corn earworm Tomato looper | 500-1,000 g/ha (202-404 g/ac.) | Apply with sufficient water to ensure full coverage, but not to the point of runoff |
| GREENHOUSE ORNAMENTALS | | |
| Beet armyworm Corn earworm Tomato looper | 750-1,000 g/ha (303-404 g/ac.) | Apply with sufficient water to ensure full coverage, but not to the point of runoff |
| HERBS AND SPICES | | |
| Beet armyworm Cabbage looper | 500-1,000 g/ha (202-404 g/ac.) | Apply sufficient spray volume to ensure uniform deposition on all plant surfaces Recommended 500 L/ha (202 L/ac.) |
| HOPS | | |
| Hop looper | 500-1,000 g/ha (202-404 g/ac.) | Apply at first sign of infestation when larvae are small Use with sufficient water to ensure full coverage, but not to the point of runoff |
| KOHLRABI | | |
| Cabbage looper Cross-striped cabbageworm Diamondback moth Imported cabbageworm | 500-1,000 g/ha (202-404 g/ac.) | Apply sufficient spray volume to ensure uniform deposition on all plant surfaces Recommended 500 L/ha (202 L/ac.) |
| LEAFY GREENS | | |
| Beet armyworm Cabbage looper | 500-1,000 g/ha (202-404 g/ac.) | Apply sufficient spray volume to ensure uniform deposition on all plant surfaces Recommended 500 L/ha (202 L/ac.) |
| OUTDOOR ORNAMENTALS | | |
| Corn earworm Beet armyworm Tomato looper | 750-1,000 g/ha (303-404 g/ac.) | Apply with sufficient water to ensure full coverage, but not to the point of runoff |

INSECT CONTROLLED RATE APPLICATION INFORMATION

POME FRUIT

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|--|-----------------------------------|---|
| Cankerworms Codling moth Fruittree leafroller Oblique-banded leafroller Oriental fruit moth Redbanded leafroller Tufted apple budworm Varigated leafroller Winter moth | 500-1,600 g/ha (202-648 g/ac.) | Apply using 500-1,600 L/ha (202-648 L/ac.) at pink stage and if populations are heavy at petal fall If egg hatch is asynchronous weekly applications may be necessary Follow general application instructions if multiple applications are needed |
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ROOTS, TUBERS AND LEAVES OF HORSERADISH, RADISH, ORIENTAL RADISH, RUTABAGA, TURNIP (cultivars, varieties and hybrids of these)

| | | |
|---|-----------------------------------|--|
| Cabbage looper Cross-striped cabbageworm Diamondback moth Imported cabbageworm | 500-1,000 g/ha (202-404 g/ac.) | Apply sufficient spray volume to ensure uniform deposition on all plant surfaces Recommended 500 L/ha (202 L/ac.) |
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STONE FRUIT

| | | |
|---|-----------------------------------|---|
| Cankerworms Varigated leafroller Fruittree leafroller Oblique-banded leafroller Oriental fruit moth | 500-1,600 g/ha (202-648 g/ac.) | Apply using 500-1,600 L/ha (202-648 L/ac.) at pink stage and if populations are heavy at petal fall If egg hatch is asynchronous weekly applications may be necessary Follow general application instructions if multiple applications are needed |
|---|-----------------------------------|---|

SWEET POTATOES

| | | |
|---------------|-----------------------------------|--|
| Beet armyworm | 500-1,000 g/ha (202-404 g/ac.) | Apply sufficient spray volume to ensure uniform deposition on all plant surfaces Recommended 500 L/ha (202 L/ac.) |
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TOBACCO

| | | |
|--|-----------------------------------|--|
| Beet armyworm Tobacco budworm Tomato fruitworm | 500-1,000 g/ha (202-404 g/ac.) | Apply every 5-7 days Use 500-1,000 L/ha (202-404 L/ac.) to ensure full coverage, but not to the point of runoff |
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TREE NUTS

| | | |
|---|-----------------------------------|---|
| Cankerworms Codling moth (on walnuts, heartnuts and butternuts) Fruittree leafroller Oblique-banded leafroller Varigated leafroller | 500-1,600 g/ha (202-648 g/ac.) | Apply using 500-1,600 L/ha (202-648 L/ac.) at pink stage and if populations are heavy at petal fall If egg hatch is asynchronous weekly applications may be necessary Follow general application instructions if multiple applications are needed |
|---|-----------------------------------|---|

Always read and follow the product label for more detailed information on control of weeds, insects or disease, application directions, and use precautions.
Please refer to label for more information including future label expansions that may include new crops, pests and use patterns.
Please refer to label for re-entry periods.

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