

GRAPPLE™ INSECTICIDE

FOR CONTROL OF INSECT PESTS IN VEGETABLE AND FRUIT CROPS AND AS A SEED PIECE
TREATMENT FOR POTATOES

AGRICULTURAL
SUSPENSION

GUARANTEE: Imidacloprid 240 g/L
Contains 1,2-benzisothiazolin-3-one at 0.1% or 5-chloro-2-methyl-4-isothiazolin-3-one at 0.0017%
and 2-methyl-4-isothiazolin-3-one at 0.0006% as preservatives

REGISTRATION NUMBER 28726 PEST CONTROL PRODUCTS ACT

READ THE LABEL AND LEAFLET BEFORE USING

KEEP OUT OF REACH OF CHILDREN
CAUTION POISON

SHAKE WELL BEFORE USING

NET CONTENTS: 1 Litre, 3.785 Litres

<p>IN CASE OF A MEDICAL EMERGENCY, CALL TOLL FREE, DAY OR NIGHT: 1-800-331-3148</p>
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Product Information: 1-800-331-3148

FMC Corporation
2929 Walnut Street
Philadelphia, PA 19104 USA

This product contains no colourant. An appropriate colourant must be added when this product is being applied to seed. Regulations pertaining to the "Seeds Act" must be strictly adhered to when using this product as a seed treatment.

NOTICE TO USER: This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN

Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes, or clothing.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Water-proof gloves
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining Personal Protective Equipment (PPE). If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove personal protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

NOTE: If this pest control product is to be used on a commodity that may be exported to the U.S. and you require information on acceptable residue levels in the U.S., visit CropLife Canada's website at www.croplife.ca.

ENVIRONMENTAL HAZARDS

Keep out of lakes, streams, ponds or other aquatic systems. Do not contaminate water when disposing of equipment washwaters. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area. This product is highly toxic to aquatic invertebrates. This product is toxic to birds. Dispose of all excess and any spilled treated seed pieces by covering or incorporating into the soil. Left over treated seed should be double sown around the headland, or buried away from water sources such as lakes, streams, ponds or other aquatic systems. Apply this product only in accordance with this label.

FIRST AID

IF SWALLOWED: Contact a Poison Control Centre or a Doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person. **IF ON SKIN OR CLOTHING:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice. **IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

TOXICOLOGICAL INFORMATION: No specific antidote is available. Treat the patient symptomatically.

STORAGE AND DISPOSAL

STORAGE: Store in cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of reach of children, preferably in a locked storage area.

DISPOSAL: Do not contaminate water, food, or feed by storage or disposal.

RECYCLABLE CONTAINER: Do not reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Make the empty, rinsed container unsuitable for further use.

If there is no container collection site in your area, dispose of the container in accordance with provincial requirements. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

GROUP	4	INSECTICIDE
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DIRECTIONS FOR USE

Read the entire DIRECTIONS FOR USE before using Grapple Insecticide.

DO NOT APPLY BY AIR.

Do not apply when wind speeds are greater than 12-15 km per hour.

Do not apply product or plant treated seed pieces within 15 metres of well-heads or aquatic systems, including marshes, ponds, ditches, streams, lakes, etc.

For application by air blast equipment, do not apply within 40 metres of well-heads or aquatic systems, including marshes, ponds, ditches, streams, lakes, etc.

Do not apply to terrains where there is a potential for surface run-off to enter aquatic systems.

Do not apply product or plant treated seed pieces when heavy rainfall is forecast for the next 48 hours.

Do not mix, load or clean spray equipment within 30 metres of well-heads or aquatic systems.

Do not apply this product through any type of irrigation system.

Do not reenter treated areas for 24 hours after foliar application of Grapple Insecticide.

This chemical demonstrates the properties and characteristics associated with chemicals detected in ground water. The use of Grapple Insecticide in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

MIXING INSTRUCTIONS

To prepare the spray, add a portion of the required amount of water to the spray tank and with agitation, add Grapple Insecticide. Complete filling the tank with balance of water needed. Maintain sufficient agitation during both mixing and application.

ROTATIONAL CROPS

Treated areas may be replanted with any crop specified on an imidacloprid label, or any crop for which a tolerance exists for the active ingredient, **AS SOON AS PRACTICAL FOLLOWING THE LAST APPLICATION.**

Rotation of fields treated with Grapple Insecticide to cereal grains (wheat, barley, oats) is acceptable after a minimum plant-back interval of 30 days and to peas and beans (including fababeans, soybeans, adzuki beans, mung beans, lima beans, scarlet runners, dry common beans, snap common beans), after a minimum plant-back interval of 9 months. Rotation to all other food and feed crops will require that a 12 month plant-back interval be observed. Green manure and other cover crops not intended for human or animal consumption are acceptable rotational crops which do not require a plant-back interval following treatment. Do not graze or harvest such cover crops for food or feed.

Imidacloprid is persistent and has a high potential for carryover; it is not recommended that this product be used in fields treated with Grapple Insecticide during the previous season.

RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, please note that Grapple Insecticide contains a Group 4 insecticide. Any insect population may contain individuals naturally resistant to Grapple Insecticide and other Group 4

insecticides. The resistant individuals may dominate the insect population if this group of insecticides is used repeatedly in the same fields. Other resistance mechanisms that are not linked to site of action, but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay insecticide resistance:

- Where possible, rotate the use of Grapple Insecticide or other Group 4 insecticides with different groups that control the same pests in a field.
- Insecticide use should be based on an IPM program that includes scouting, record keeping, and considers cultural, biological and other chemical control practices.
- Before spraying Grapple Insecticide, correctly identify the pest and ensure economic and agronomic thresholds are met as recommended by local provincial or IPM specialists.
- Monitor treated pest populations for resistance development.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or IPM recommendations for the specific site and pest problems in your area.
- For further information or to report suspected resistance contact FMC Corporation at 1-800-331-3148.

SPRAY DRIFT MANAGEMENT RECOMMENDATIONS

The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all of these factors when making application decisions. **AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.** Avoiding applications when wind direction is toward the aquatic area can reduce risk of exposure to sensitive aquatic areas.

RESTRICTIONS DURING TEMPERATURE INVERSIONS: Do not make any applications during temperature inversions. Drift potential is high during temperature inversions. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however if fog is not present, inversions can also be identified by the movement of smoke from a ground source. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical mixing.

AIRBLAST (AIR ASSIST) SPECIFIC RECOMMENDATIONS IN ORCHARDS:

Airblast sprayers carry droplets into the canopy of trees/bushes via a radially, or laterally directed air stream.

The following specific drift management practices should be followed:

- Adjust deflectors and aiming devices so that spray is only directed into the canopy;
- Block off upward pointed nozzles when there is no overhanging canopy;
- Use only enough air volume to penetrate the canopy and provide good coverage;
- Do not allow the spray to go beyond the edge of the cultivated area (i.e., turn off sprayer when turning at end rows);
- Only spray inward, toward the orchard, for applications to the outside rows.

RECOMMENDED APPLICATIONS - VEGETABLES

CROP	PEST	DOSAGE GRAPPLE	REMARKS
Potato	Colorado potato beetle, Aphids (including green peach, buckthorn, foxglove and potato aphid), Potato leafhopper, Potato flea beetle	Soil Application 7.5 to 12 mL per 100 m row or 850 mL to 1.3 L per hectare (based on 90 cm row spacing)	<ul style="list-style-type: none"> • Apply as a narrow band in-furrow. For best results, direct spray on the seed pieces or seed potatoes in the furrow. • The length of control may vary due to climate and soil conditions. The higher rate is recommended when extended length of control is needed. • Do not apply more than once per season as a soil application. • Do not follow a soil application with a foliar application. • Grapple Insecticide provides extended control of aphids and potato leafhopper. • Grapple Insecticide will aid in the early season suppression of over wintering potato flea beetle adults. • Scout potato fields frequently, especially during the warmer part of the season, and if insect pest populations exceed the threshold established by local potato extension specialists, apply a recommended foliar insecticide with a different mode of action than Grapple Insecticide.

	<p>Colorado potato beetle Aphids (including green peach, buckthorn, foxglove and potato aphid) Potato leafhopper Potato flea beetle</p>	<p>Seed Piece Treatment</p> <p>26 – 39 mL per 100 kg seed pieces</p>	<ul style="list-style-type: none"> • Apply only in areas with adequate ventilation or in areas that are equipped to remove spray mist or dust. • Apply specified dosage as a diluted spray onto seed-pieces using a shielded spray system that is well contained and will prevent the loss of any liquid. • Do not dilute with any more than 3 parts water to 1 part Grapple Insecticide. Agitate or stir spray solution as needed. • For optimal insect control, good coverage of the seed piece is required. • The length of control will vary depending on the rate used. Consult your local extension personnel or dealer for information relevant to your area. The higher rate of Grapple Insecticide is recommended when extended length of control is needed. • Grapple Insecticide provides early season control of over-wintering adult potato flea beetles. • As part of the seed cutting and treating process, application of a fungicide registered for potato seed treatment or an inert absorbent ingredient is recommended. • Plant seed-pieces as soon as possible after cutting and treating. • Avoid prolonged exposure of Grapple Insecticide - treated seed-pieces to sunlight. Do not use treated seed pieces for food, feed, or fodder. • Do not apply any subsequent application of imidacloprid (i.e. Grapple Insecticide in-furrow or foliar application) or other group 4 insecticide following Grapple Insecticide potato seed piece treatment. • Do not apply more than 1.165 L of Grapple Insecticide (0.280 kg ai) per hectare per year. Thus for seeding rates higher than 2985 kg seed/ha, the higher application rate (39 ml/100 kg of seed) can not be used. For seeding rates between 2985 kg seed/ha and 4480 kg seed/ha, ensure that the application rate does not exceed 1.165 L per hectare. The lower application rate (26 ml/100 kg) may be used for seeding rates up to 4480 kg seed/ha. Do not use this method of application for seeding rates higher than 4480 kg seed/ha.
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	Colorado potato beetle, Aphids (including green peach, buckthorn, foxglove and potato aphid)	Foliar Application 200 mL per hectare	<ul style="list-style-type: none"> • For optimal control, good coverage of the foliage is needed. • Refer to sprayer manual for recommended water volumes, pressures and correct settings. • A maximum of two (2) foliar applications of Grapple Insecticide may be made per crop per season. • Apply specified dosage as pest numbers begin to increase but before a damaging population becomes established. Scout fields and retreat if needed. For control of aphids: Two applications at least 7 days apart may be required to achieve control. • Do not make a foliar Grapple Insecticide application following a soil or seed treatment application of Grapple Insecticide in the same crop. • Allow at least 7 days after the last Grapple Insecticide application to harvest.
Tomato (fieldgrown) Ontario, Quebec and Atlantic Canada Only	Colorado potato beetle	Transplant Soil Application 7 to 10 mL/100 metre row See conversion chart #1 for linear application for common bed (row) spacing	<ul style="list-style-type: none"> • Apply specified dosage in furrow at transplanting. • Applications can be made as a drench in the transplanting water or through application equipment set up exclusively to apply Grapple Insecticide. Applications should be directed into the root zone. • The rate applied affects the length of control. Use the high rate when pest pressure is anticipated to be high at transplanting , or where pest pressure is continuous. • Do not apply more than once per season as a soil application. • Do not follow a soil application with a foliar application.

		Foliar Application 200 mL per hectare	<ul style="list-style-type: none"> • For optimal control, good coverage of the foliage is needed. • For best results, time application before a damaging population becomes established. • A total of two (2) applications of Grapple Insecticide may be applied as foliar sprays per season. • Do not make a Grapple Insecticide foliar application following a soil application of Grapple Insecticide in the same crop. • Allow at least 5 days between foliar applications and at least 7 days between last application and harvest.
Field Lettuce (Head and	Lettuce aphid	Transplant Tray Plug Drench 10.2 mL per	<ul style="list-style-type: none"> • Drench plugs (transplants) prior to transplanting. • Apply specified dosage in enough water to ensure Grapple Insecticide reaches the root zone but does not

Leaf) British Columbia, Ontario, Quebec, Nova Scotia and Prince Edward Island Only		1000 plants	leach out of the plug. <ul style="list-style-type: none"> • CAUTION: Gloves must be worn at transplanting. • Do not apply Grapple Insecticide to the same field more than once per season. • Do not follow a transplant plug application with a field drench or foliar application. • Allow at least 21 days after Grapple Insecticide application to harvest.
		Soil application -Field Drench 650 mL per hectare See conversion chart #2 for linear application for common row spacing	<ul style="list-style-type: none"> • Apply to plants in the field as a drench after transplanting. • Apply specified dosage in 2000 L/ha of water as a narrow (5 cm or less) surface band directly to the plant row. • Application should be made with sufficient water to ensure incorporation into the root zone. • Apply only one field drench in the same field per season. • Do not follow a field drench application with any other Grapple Insecticide application in the same season. • Allow at least 21 days after Grapple Insecticide application to harvest.
		Foliar Application 200 mL per hectare	<ul style="list-style-type: none"> • For optimal control, good coverage of the foliage is needed. • Refer to sprayer manual for recommended water volumes, pressures and correct settings. • Two foliar applications may be made per lettuce crop; a maximum of two foliar applications may be made in the same field per season. • Do not make a Grapple Insecticide foliar application following a soil application (field drench, transplant plug drench) in the same crop. • Allow at least 7 days after Grapple Insecticide application to harvest.

<u>Crop Group 5:</u> Broccoli, Chinese Broccoli (gai lon), Broccoli raab (rapini), Brussels sprouts, Cabbage, Chinese Cabbage (bok choy	Aphids (including Cabbage aphid, Green Peach aphid,	Sidedress application (soil injection) 730 mL per hectare	<ul style="list-style-type: none"> • GROUND APPLICATION ONLY • Apply after plants are established. • Sidedress by soil injection to a depth of 2.5 cm or more and within 5-10 cm to the side of each row.
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and napa), Chinese Cabbage Mustard (gai choy), Cauliflower, Cavalo broccoli, Collards, Kale, Kohlrabi, Mizuna, Mustard Greens, Mustard Spinach, Rape Greens	Turnip aphid)	Foliar Application 200 mL per hectare	<ul style="list-style-type: none"> • Apply using sufficient water volume to insure uniform application. • Observe a 21-day pre-harvest interval (PHI). • Use one application per season. • GROUND APPLICATION ONLY • Add sufficient water to provide good coverage. Good coverage is required to obtain sufficient control. • Apply when economic thresholds indicate that treatment is required. • Up to 2 foliar applications per season; do not apply a foliar application after a sidedress. • Allow at least 7 days between applications. • Observe a 7-day pre-harvest interval (PHI).
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CONVERSION CHART # 1: FOR LINEAR APPLICATION

Bed (Row) Spacing: Cm (inches)	76 (30)	152 (60)	152 (60)	168 (66)
Rows Per Bed	Single	Single	Twin	Twin
Low Rate: mL/100 metre row (mL/ha)	7 (920)	7 (460)	7 (920)	7 (835)
High Rate: mL/100 metre row (L/ha)	10 (1.3)	10 (0.66)	10 (1.3)	10 (1.2)

CONVERSION CHART # 2: FOR LINEAR ROW APPLICATION

Rate/ha	Rate in mL/1000 m of Row Based on Row Spacing of:				
	30 cm (12 inches)	35 cm (14 inches)	40 cm (16 inches)	45 cm (18 inches)	50 cm (20 inches)
650 mL/ha	19.5	22.8	26	29.3	32.5

RECOMMENDED APPLICATIONS – FRUIT			
CROP	PEST	DOSAGE GRAPPLE**	REMARKS

Apple	Postbloom Applications: Green apple aphid Rosy apple aphid Mullein leafbug Tentiform leafminer* White apple leafhopper	230 mL/ha 380 mL/ha 200 mL/ha	<ul style="list-style-type: none"> • Apply specified dosage as a dilute or concentrate foliar spray as needed after pollination is complete and bees have been removed from the orchard. • Thorough uniform coverage of foliage is necessary for optimal control. • A total of two (2) applications of Grapple Insecticide may be applied as foliar sprays per season. • Allow at least 7 days between last application and harvest.
<p>*For first generation tentiform leafminer control, make first application as soon as pollination is complete and bees are removed from the orchard. Greatest tentiform leafminer control will result from the earliest possible application. For second-generation tentiform leafminer, optimal control of egg and early instar larvae is obtained from applications made early in the adult flight. A second application may be required 10 days later if severe pressure continues or if generations are overlapping. A single application may result in suppression only. Grapple Insecticide will not control late stage larvae. Tentiform leafminer has developed resistance to other insecticides after repeated use. As with any insecticide, the use of Grapple Insecticide should conform to resistance management strategies established for the use area.</p>			
Peach Nectarine	Postbloom Applications: Aphids (incl. Green Peach Aphid)	230 mL/ha	<ul style="list-style-type: none"> • GROUND APPLICATION ONLY (incl. use of airblast equipment). • Apply specified dosage as a foliar spray after pollination is complete and bees have been removed from the orchard. • Monitor aphid populations. Consult provincial guidelines and local extension experts. • Thorough uniform coverage of foliage is necessary for optimal control. • Apply in a minimum spray volume of 500 L/ha. Refer to sprayer manual for recommended water volumes, spray pressures and correct settings. • Scout fields and retreat if needed. • A maximum of two (2) foliar applications of GRAPPLE

			<p>Insecticide may be made per crop per year.</p> <ul style="list-style-type: none"> • Allow at least 7 days between applications. • Do not apply within 7 days of harvest.
<p>Cherries, Sweet and sour <i>British Columbia and Ontario only</i></p>	<p>Postbloom Applications: Western cherry fruit fly Black cherry fruit fly</p>	233 mL/ha	<ul style="list-style-type: none"> • Monitor for adult cherry fruit fly and apply as a foliar spray within 6 days of first fly emergence. • Thorough uniform coverage of foliage is necessary for optimal control. • Consult provincial guidelines and local extension experts. • A maximum of five (5) foliar applications of Grapple Insecticide may be made per crop per year. • Allow at least 10 days between applications. • Do not apply within 10 days of harvest.

**The amount of Grapple Insecticide required per hectare will depend on tree size and volume of foliage present. The rate per hectare is based on a standard of 3000 litres of dilute spray solution per hectare for standard trees 4.5-5.5 m high. For example to calculate the rate required for aphid control on small apple trees multiply 77 mL of Grapple Insecticide times the number of 1000 L of spray solution to thoroughly wet foliage just prior to the point of run off for one hectare of trees being treated. For concentrate sprays, apply the same amount of product per hectare as a dilute spray, based on tree size and foliage volume.

NOTE TO USER: READ THE FOLLOWING BEFORE USING THIS PRODUCT FOR THE INDICATED SPECIAL USE APPLICATIONS (BELOW): The DIRECTIONS FOR USE for this product for the uses described below were developed by persons other than FMC Corporation and accepted for registration by Health Canada under the User Requested Minor Use Label Expansion program. FMC Corporation itself makes no representation or warranty with respect to performance (efficacy) or crop tolerance (phytotoxicity) claims for this product when used on the crops listed below. Accordingly, User assume all risks related to performance and crop tolerance arising, and agree to hold FMC Corporation harmless from any claims based on efficacy or phytotoxicity in connection with the uses described below.

RECOMMENDED APPLICATIONS - FRUITS AND VEGETABLES

CROP	PEST	DOSAGE GRAPPLE	REMARKS
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<p>Highbush Blueberries British Columbia Only</p>	<p>Blueberry aphid (Ericaphis fimbriata) and other known aphid vectors of Blueberry Scorch Virus</p>	<p>Foliar Application 175 mL product/ha</p>	<p>GROUND APPLICATION ONLY</p> <ul style="list-style-type: none"> • Apply as a foliar spray in fields where blueberry scorch virus is a potential problem. <p><u>Application Timing:</u></p> <ul style="list-style-type: none"> • Apply post-bloom after bees have been removed. • Monitor for aphids, and apply as a foliar spray once the aphid population has started to build up but before winged aphids are seen. Consult provincial guidelines and local extension experts. • For optimal control, apply product in sufficient water for good coverage of foliage (up to 1000 L spray / ha). • A maximum of two (2) foliar applications of Grapple Insecticide may be made per crop per year. • Allow at least 7-10 days between applications. • Do not apply within 14 days of harvest.
<p>Highbush blueberry in Ontario and Quebec only</p>	<p>Larvae of Japanese beetle and Larvae of European chafer</p>	<p>1.2 L/ha</p>	<p>GROUND APPLICATION ONLY</p> <ul style="list-style-type: none"> • The need for and timing of application should be based on monitoring of the site, previous records or experiences, current season adult trapping or other methods. • Apply to ground around and under blueberry bushes and to grass- covered rows, row middles, drive lanes, headlands and other grassy areas in and around the blueberry field. • Apply just prior to or during egg hatch of the target pest. • Apply in 200 L of water per hectare. • Avoid application to areas which are waterlogged or saturated, which will not allow penetration of the active ingredient into the plant root zone. • Sufficient irrigation (e.g., 5 – 10 mm on turf) should occur within 24 hours after application to move the active ingredient to the root zone but avoid over watering (e.g., more than 20 mm on turf). • The treated area must be in such a condition that irrigation water will penetrate vertically into the soil profile, which will ensure an adequate distribution

			<p>of the active ingredient.</p> <ul style="list-style-type: none"> • Avoid runoff or puddling of irrigation water following application. • Avoid mowing turf until after irrigation has occurred so that uniformity of application will not be affected. • DO NOT apply Grapple Insecticide during flowering of blueberries. • Apply Grapple Insecticide only once per year as directed by this label. • Do not apply within 14 days of harvesting blueberries.
Eggplant	Colorado potato beetle	Transplant Soil Application 7 to 10 mL/100 m row	<ul style="list-style-type: none"> • Apply specified dosage in furrow at transplanting. • Applications can be made as a drench in the transplanting water or banded over row through application equipment set up exclusively to apply Grapple Herbicide. Applications should be directed into the root zone. • The rate applied affects the length of control. Use the high rate when pest pressure is anticipated to be high at transplanting, or where pest pressure is continuous. • Do not apply more than once per season as a soil application. • Allow at least 70 days after Grapple Insecticide application to harvest. • Do not follow a soil application with a foliar application.
		Foliar Application 200 mL per hectare	<ul style="list-style-type: none"> • For optimal control, good coverage of the foliage is needed. • Refer to sprayer manual for recommended water volumes, pressures and correct settings. • Apply after transplanting as indicated by scouting. • For best results, time application before a damaging population becomes established. • A total of two (2) applications of Grapple Insecticide may be applied as foliar sprays per season. • Allow at least 5 days between foliar applications and at least 7 days between last application and harvest. • Do not make a Grapple Insecticide

			application following a soil application of Grapple Insecticide in the same crop.
Sweet Potato Ontario and Quebec Only	Reduction in numbers of Larvae of European Chafer	Soil application - Field drench 1.2 L/ha	<ul style="list-style-type: none"> • GROUND APPLICATION ONLY • Apply to sweet potato rows, headlands and other grassy areas around the sweet potato field. • Apply as a single soil drench application after transplanting and before sweet potato foliage covers more than 25% of the planting bed to ensure adequate soil penetration. • Apply just prior to or during egg hatch of the target pest. • Apply in 200 L of water per hectare • Avoid application to areas which are waterlogged or saturated, which will not allow penetration of the active ingredient into the plant root zone. • Sufficient irrigation (e.g., 5-10 mm) should occur immediately (maximum 24 hours) after application to move the active ingredient to the root zone but avoid over watering (e.g., more than 20 mm). • The treated area must be in such a condition that irrigation water will penetrate vertically into the soil profile, which will ensure an adequate distribution of the active ingredient. • Avoid runoff or puddling of irrigation water following application. • Avoid mowing grassy areas until after irrigation has occurred so that uniformity of application will not be affected. • DO NOT apply GRAPPLE Insecticide during flowering of sweet potatoes. • Apply GRAPPLE Insecticide only once per season. • Do not apply within 125 days of harvest.
Ginseng	Reduction in numbers of European	Soil Application 1.2 L/ha	<ul style="list-style-type: none"> • GROUND APPLICATION ONLY • The need for and timing of application should be based on monitoring of the site, previous records

	chafer larvae		<p>or experiences, current season adult trapping or other methods.</p> <ul style="list-style-type: none"> • Apply to entirely new seeded ginseng beds before mulch is laid down. • Apply just prior to or during egg hatch of the target pest. • Apply in 200 L of water per hectare • Avoid application to areas which are waterlogged or saturated, which will not allow penetration of the active ingredient into the plant root zone. • Sufficient irrigation (e.g., 5-10 mm) should occur immediately (maximum 24 hours) after application to move the active ingredient to the root zone but avoid over watering (e.g., more than 20 mm). • The treated area must be in such a condition that irrigation water will penetrate vertically into the soil profile, which will ensure an adequate distribution of the active ingredient. • Avoid runoff or puddling of irrigation water following application. • Apply GRAPPLE Insecticide only once per ginseng garden life. • Allow 3 years between application of GRAPPLE Insecticide and harvest.
Strawberries	Strawberry Aphid	Soil Drench 850 mL – 1.3 L/ha	<ul style="list-style-type: none"> • GROUND APPLICATION ONLY • Apply to established strawberry plantings. • Apply specified dosage of GRAPPLE Insecticide when growth begins in the spring. • Aphid populations may be very low, but treatment is still necessary before formation and dispersal of winged aphids. • Do not apply immediately prior to bud opening or during bloom or when bees are actively foraging. • Apply specified dosage in 2000 L/ha of water as a surface band directly to the plant row. Application should be made with sufficient water to ensure incorporation into the root zone.

			<ul style="list-style-type: none"> • The rate applied affects the length of control. Use higher rates where infestations may occur later in crop development or where pest pressure is continuous. • Allow at least 30 days after GRAPPLE Insecticide application to harvest. • Do not apply more than once per season. • Scout strawberry fields frequently, especially during the warmer part of the season, and if populations of aphids exceed the threshold established by local extension specialists, apply a recommended foliar insecticide with a different mode of action than GRAPPLE Insecticide.
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<p><u>Crop Group 9:</u></p> <p>Citron melon, Muskmelon, Water melon, Summer and Winter Squash, Pumpkin, Cucumber, Chayote (fruit), Chinese waxgourd, Gherkin, Edible Gourd, Momordica ssp.,</p> <p>Grown in Manitoba, Ontario, Quebec and the Maritimes</p>	Cucumber beetle	<p>Soil Application</p> <p>18 ml per 100 m row</p> <p>Use a maximum of 1.165 L/ha</p> <p>(see conversion chart #3 for common row spacing)</p> <p>Transplant Water Application*</p> <p>25 ml per 1000 plants</p>	<p>GROUND APPLICATION ONLY</p> <p>GRAPPLE Insecticide provides early season control of cucumber beetle populations in direct seeded or transplanted cucurbits.</p> <p>Apply specified dosage of GRAPPLE Insecticide in of the following methods:</p> <ul style="list-style-type: none"> • In-furrow spray directed on or below seed; apply in 200 L/ha of water. • As a narrow (5 cm or less) surface band spray over seedline during planting in 200 L/ha of water and incorporate to a depth of 2.5 to 4 cm (1 to 1 ½”) with sufficient irrigation. Sufficient irrigation (e.g., 5-10 mm) should occur within 24 hours after application to move the active ingredient to the plant root zone but avoid over watering (e.g., more than 20 mm). • Post-seeding/planting drench or hill drench to seedlings or established transplants; use higher water volumes – sufficient to thoroughly wet the soil. • Subsurface side-dress or soil injection on both sides of each row of seedlings or established transplants; apply in 200 L/ha of water. <ul style="list-style-type: none"> • Apply specified dosage into the planting hole shortly prior or at transplanting. • Apply specified dosage in 150 mL of planting water per plant.
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			• *Do not use this application method on pickling cucumbers.
<ul style="list-style-type: none"> • Allow at least 21 days after GRAPPLE Insecticide application to harvest. • Do not apply more than once per season. • Do not apply more than 1.165 L of GRAPPLE Insecticide (0.28 kg ai) per hectare per crop season. • Scout cucurbit fields frequently, especially during the warmer part of the season, and if populations of cucumber beetle exceed the threshold established by local extension specialists, apply a recommended foliar insecticide. Do not use a Group 4 insecticide for any foliar treatments following a soil application of GRAPPLE Insecticide. 			

CONVERSION CHART # 3: FOR COMMON ROW SPACING

Row Spacing in cm (in):	155 (61)	183 (72)	213 (84)	244 (96)
Rate mL/100 m row (L/ha):	18 (1.16)	18 (0.98)	18 (0.85)	18 (0.74)

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN

Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes, or clothing.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Water-proof gloves
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining Personal Protective Equipment (PPE). If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove personal protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing. Apply only in areas with adequate ventilation or in areas that are equipped to remove spray mist. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. **HANDLERS OF TREATED SEED MUST WEAR THE PERSONAL PROTECTIVE EQUIPMENT LISTED ABOVE.**

NOTE: If this pest control product is to be used on a commodity that may be exported to the U.S. and you require information on acceptable residue levels in the U.S., visit CropLife Canada's website at www.croplife.ca.

ENVIRONMENTAL HAZARDS

Keep out of lakes, streams, ponds or other aquatic systems. Do not contaminate water when disposing of equipment washwaters. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area. This product is highly toxic to aquatic invertebrates. This product is toxic to birds. Dispose of all excess and any spilled treated seed pieces by covering or incorporating into the soil. Left over treated seed should be double sown around the headland, or buried away from water sources such as lakes, streams, ponds or other aquatic systems. Apply this product only in accordance with this label.

FIRST AID

IF SWALLOWED: Call a poison control centre or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person. **IF ON SKIN:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice. **IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice. Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

TOXICOLOGICAL INFORMATION: No specific antidote is available. Treat the patient symptomatically.

STORAGE AND DISPOSAL

STORAGE: Store in cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of reach of children, preferably in a locked storage area.

DISPOSAL: Do not contaminate water, food, or feed by storage or disposal.

RECYCLABLE CONTAINER: Do not reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Make the empty, rinsed container unsuitable for further use.

If there is no container collection site in your area, dispose of the container in accordance with provincial requirements. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

6-2-08

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