

PMRA APPROVED - JD
02-MARCH-2011
2008-3049

GROUP 1B INSECTICIDE

<Container label>

WARHAWK® 480 EC Insecticide

AGRICULTURAL

Emulsifiable Concentrate

This product is not to be used in and around homes or other residential areas such as parks, school grounds, playing fields. It is not for use by homeowners or other uncertified users.

DANGER



POISON

EYE AND SKIN IRRITANT

Warning, contains the allergen soy

READ THE LABEL AND ATTACHED BOOKLET BEFORE USING

KEEP OUT OF REACH OF CHILDREN

GUARANTEE: Chlorpyrifos 480 g/L

REGISTRATION NUMBER 29984 PEST CONTROL PRODUCTS ACT

IN CASE OF EMERGENCY DUE TO A MAJOR SPILL, FIRE OR POISONING
INVOLVING THIS PRODUCT CALL DAY OR NIGHT, 1-800-561-8273

NET CONTENTS: 1 - 500 L

Loveland Products Inc.
P.O. Box 1286
Greeley, Colorado, USA 80632
970-685-3300

Distributed by:
United Agri Products Canada Inc
789 Donnybrook Drive
Dorchester, ON N0L 1G5
1-800-265-4624

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN AND UNAUTHORIZED PERSONNEL

Fatal if swallowed. May be harmful if inhaled or absorbed through skin. Causes eye irritation. May cause skin irritation. Do not get in eyes, on skin, or on clothing. Do not inhale vapours or spray mist. Handle chemical in a ventilated area. Wear protective clothing and rubber gloves when handling. Wash thoroughly with soap and water after handling and before eating, drinking, or smoking. Remove contaminated clothing and launder separately before reuse. Do not wear contaminated shoes or boots. Keep away from food, feedstuffs, and water supplies.

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 residue levels in the U.S. visit CropLife Canada's website at www.croplife.ca.

FIRST AID

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.

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 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 INHALED, move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

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

TOXICOLOGICAL INFORMATION

Chlorpyrifos is an organophosphate that is a cholinesterase inhibitor affecting the central and peripheral nervous systems and producing respiratory and cardiac depression. Typical symptoms of overexposure to cholinesterase inhibitors include headache, nausea, dizziness, sweating, salivation, runny nose and eyes. This may progress to muscle twitching, weakness and tremor in coordination, vomiting, abdominal cramps and diarrhea in more serious poisonings. A life threatening poisoning is signified by loss of consciousness, incontinence, convulsions and respiratory depression with a secondary cardiovascular component. Treat symptomatically. If exposed, plasma and red blood cell cholinesterase tests may indicate degree of exposure (baseline data are useful).

ANTIDOTE: Atropine, only by injection, is the preferable antidote. Administer atropine

sulphate in large doses; TWO or FOUR mg intravenously or intramuscularly as soon as cyanosis is overcome. Repeat at 5 to 10 minute intervals until signs of atropinization appear. Oximes, such as pralidoxime chloride, may be therapeutic if used early; however, use only in conjunction with atropine. **DO NOT GIVE MORPHINE OR TRANQUILIZERS.** In cases of severe acute poisoning, use antidotes immediately after establishing an open airway and respiration. With oral exposure, the decision of whether to induce vomiting or not should be made by an attending physician. At first sign of pulmonary edema, the patient should be given supplemental oxygen and treated symptomatically. Continued absorption of chlorpyrifos may occur and relapse may occur after initial improvement. **VERY CLOSE SUPERVISION OF THE PATIENT IS INDICATED FOR AT LEAST 48 HOURS.**

NOTE: Product contains a petroleum distillate solvent. Vomiting may cause aspiration pneumonia.

STORAGE

Keep away from food, drinks, and animal feedstuffs. Keep only in the original container, tightly closed. Do not store near heat or open flame.

Do not contaminate water, food or feed by storage. Store only in original container in secure, dry storage area. Prevent cross-contamination with other pesticides and fertilizers. Do not store above 38°C (100°F) for extended periods of time. If container is damaged or spill occurs, use product immediately or dispose of product and damaged container as indicated below.

DISPOSAL

Recyclable Containers:

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.

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Returnable-Refillable Containers:

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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.

<Detachable pamphlet>

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manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

ENVIRONMENTAL AND USE PRECAUTIONS

This pesticide contains a petroleum distillate and is extremely toxic to fish and aquatic organisms, toxic to birds and wild mammals. This pesticide is TOXIC to bees exposed to direct treatment, drift, or residues on blooming plants. Do not use on flowering crops or weeds. DO NOT apply this product or allow it to drift to flowering crops or weeds if bees are visiting the treatment area. Applicators should inform local bee keepers prior to application if hives are in adjacent fields. Minimize spray drift to reduce harmful effects on bees in habitats close to the application site. TOXIC to certain beneficial insects. Minimize spray drift to reduce harmful effects on beneficial insects in habitats next to the application site such as hedgerows and woodland. Avoid contamination of aquatic systems such as lakes, streams, ponds, estuaries, oceans, or other waters during application. Do not contaminate these systems through direct application, disposal of waste, or cleaning of equipment. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent aquatic sites. Spilled material should be soaked up with absorbent material and disposed of in an approved manner. To reduce runoff from treated areas into aquatic habitats, consider the characteristics and conditions of the site before treatment. Site characteristics and conditions that may lead to runoff include, but are not limited to, heavy rainfall, moderate to steep slope, bare soil, poorly draining soil (e.g., soils that are compacted or fine textured such as clay). Avoid application of this product when heavy rain is forecast. Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip (buffer zone) between the treated area and the edge of the water body. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact the provincial regulatory authority or the manufacturer.

RESISTANCE MANAGEMENT

For resistance management, please note that WARHAWK® 480 EC INSECTICIDE contains a Group 1B insecticide. Any insect/mite population may contain individuals naturally resistant to WARHAWK® 480 EC INSECTICIDE and other Group 1B insecticides/acaricides. The resistant individuals may dominate the insect/mite population if this group of insecticides/acaricides are used repeatedly in the same fields. Other resistance mechanisms that are not linked to site of action but are 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 WARHAWK® 480 EC INSECTICIDE or other Group 1B insecticides/acaricides with different groups that control the same pests in a field.
- Use tank mixtures with insecticides/acaricides from a different group when such use is permitted.

- Insecticide/acaricide use should be based on an IPM program that includes scouting, record keeping, and considers cultural, biological and other chemical control practices.
- 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 Loveland Products Inc. at 970-356-4400.

NOTICE TO USER:

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GENERAL INFORMATION

WARHAWK® 480 EC INSECTICIDE is active against various insect pests by contact and ingestion. It is not systemic in the plant. Treatment of plants that are under extreme drought stress may result in some crop damage. The active ingredient in this product is decomposed by sunlight.

PRECAUTIONS FOR USE

Do not spray under windy conditions or from spraying equipment which could be expected to cause spray drift onto nearby crops or pastures. Do not mix with other pesticides when used on vegetables. Compatible with most commonly used pesticides except those that are alkaline. Do not add any additional adjuvants, surfactants, or spreader-stickers.

PRECAUTIONS FOR MIXERS/LOADERS

For liquid formulations packaged in containers more than 10 L

Mixers/loaders must use a closed mechanical transfer loading system.

Mixers/loaders must wear:

- coveralls over a long-sleeved shirt and long pants;
- chemical-resistant gloves;
- an air purifying respirator with an -R or -P series filter; and
- socks and shoes.

For liquid formulations packaged in containers holding 10 L or less

Mixers/loaders must wear:

- coveralls over a long-sleeved shirt and long pants;
- chemical-resistant gloves;
- a chemical-resistant apron;
- chemical-resistant footwear plus socks; and
- an air purifying respirator equipped with an -R or -P series filter.

PRECAUTIONS FOR APPLICATORS

Do not apply with high-pressure handwand equipment.

Applicators using airblast equipment with a closed cab must wear:

- a long-sleeved shirt and long pants
- socks and shoes
- chemical-resistant gloves when leaving cab for clean-up and repair (gloves must be removed and left outside when re-entering the cab)

Applicators using airblast equipment with an open cab must wear:

- a long-sleeved shirt and long pants
- chemical-resistant coveralls and head protection
- socks and shoes
- chemical-resistant gloves
- an air purifying respirator with an -R or -P series filter

Applicators using ground application equipment with a closed cab must wear:

- a long-sleeved shirt and long pants;
- chemical-resistant gloves when leaving cab for clean-up and repair (gloves must be removed and left outside when re-entering the cab); and
- socks and shoes.

Applicators using ground application equipment with an open cab must wear:

- coveralls over a long-sleeved shirt and long pants;
- chemical-resistant gloves; and
- socks and shoes.

Applicators using aerial application equipment must use enclosed cockpits and must wear:

- a long-sleeved shirt and long pants; and
- socks and shoes.

Applicators using handheld equipment must wear:

- a long-sleeved shirt and long pants;
- chemical-resistant coveralls and head protection (if spray is upwardly directed);
- chemical-resistant footwear and socks;
- chemical-resistant gloves; and
- an air purifying respirator with an -R or -P series filter.

DIRECTIONS FOR USE

MIXING: To prepare the spray, add approximately 1/4 of the required amount of water to the clean spray tank, add required quantity of product and mix well. Complete filling the tank with the balance of the water needed.

Do not allow the pesticide to come into contact with the water intake pipe. Maintain sufficient agitation during both mixing and application to ensure uniformity of the spray mixture.

To avoid injury to the crop, mix only with pesticides listed on this label.

For all applications: DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty.

For aerial applications: DO NOT apply when wind speed is greater than 16 km/h at flying height at the site of application. The nozzle type is restricted to CP®, with the following set-up restriction:

Nozzle Type Restriction

CP® **DO NOT** use greater than 30° deflection

For airblast applications: Airblast applications are only permitted on peaches and nectarines. **DO NOT** direct spray above plants to be treated. Turn off outward pointing nozzles at row ends and outer rows. **DO NOT** apply when wind speed is greater than 16 km/h at the application site as measured outside of the treatment area on the upwind side.

Buffer Zones

The buffer zones specified in the following tables are required between the point of direct application and the closest downwind edge of sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands), estuarine habitats and marine habitats.

Aerial Applications

For all aerial applications, a buffer zone of 100 metres is required for the protection of aquatic habitats.

Field Sprayer Applications^{1,2}

Rate of Application (L/ha)	Buffer Zones (metres) Required for the Protection of Aquatic Habitats With Water Depths Of:		
	< 1 metre	1-3 metres	> 3 metres
Up to 1.2	50	40	30
Greater than 1.2, and less than or equal to 2.4	55	45	35
Greater than 2.4 and up to 4.8	60	50	40

¹For field sprayer application, buffer zones can be reduced with the use of drift reducing spray shields. When using a spray boom fitted with a full shield (shroud, curtain) that extends to the crop canopy or ground, the labeled buffer zone can be reduced by 70%. When using a spray boom where individual nozzles are fitted with cone-shaped shields that are no more than 30 cm above the crop canopy or ground, the labeled buffer zone can be reduced by 30%.

²Buffer zones are not required for treatments applied as a drench (i.e., drench applications for control of cabbage maggot, onion maggot and seedcorn maggot).

Airblast Applications

Rate of Application (L/ha)	Buffer Zones (metres) Required for the Protection of Aquatic Habitats With Water Depths Of:		
	< 1 metre	1–3 metre	> 3 metre
Up to 3.6	80	70	55

AERIAL APPLICATION

Directions for Use

Crops and rates for control of various insects are given in the table below. Uniform coverage of the crop and crop canopy is essential. Use a boom and nozzle configuration which provides optimum coverage.

Apply only by fixed-wing or rotary aircraft equipment which has been functionally and operationally calibrated for the atmospheric conditions of the area and the application rates and conditions of this label.

Label rates, conditions and precautions are product specific. Read and understand the entire label before opening this product. Apply only at the rate recommended for aerial application on this label. Where no rate for aerial application appears for the specific use, this product cannot be applied by any type of aerial equipment.

Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices.

Use Precautions

Apply only when meteorological conditions at the treatment site allow for complete and even crop coverage. Apply only under conditions of good practice specific to aerial application as outlined in the National Aerial Pesticide Application Manual, developed by the Federal/Provincial/Territorial Committee on Pest Management and Pesticides.

Do not apply to any body of water. Avoid drifting of spray onto any body of water or other non-target areas. Specified buffer zones should be observed.

Coarse sprays are less likely to drift, therefore, avoid combinations of pressure and nozzle type that will result in fine particles (mist). Do not apply during periods of dead calm or when wind velocity and direction pose a risk of spray drift. Do not spray when the wind is blowing towards a nearby sensitive crop, garden, terrestrial habitat (such as shelter-belt) or aquatic habitat.

Operator Precautions

Do not allow the pilot to mix chemicals to be loaded onto the aircraft. Loading of premixed chemicals with a closed system is permitted. It is desirable that the pilot have communication capabilities at each treatment site at the time of application.

The field crew and the mixer/loaders must wear chemical resistant gloves, coveralls and goggles or face shield during mixing/loading, cleanup and repair. Follow the more stringent label precautions in cases where the operator precautions exceed the generic label recommendations on the existing ground boom label.

All personnel on the job site must wash hands and face thoroughly before eating and drinking. Protective clothing, aircraft cockpit and vehicle cabs must be decontaminated regularly.

Product Specific Precautions

Read and understand the entire label before opening this product. If you have questions, call the manufacturer at 970-356-4400 or obtain technical advice from the distributor or your provincial agricultural representative. Application of this specific product must meet and/or conform to the following:

VOLUME: Apply the recommended rate in a minimum spray volume of 20 litres per hectare.

DO NOT apply this product directly to aquatic habitats (such as lakes, rivers, sloughs, ponds, prairie pot holes, creeks, marshes, streams, reservoirs, ditches and wetlands), estuaries habitats or marine habitats.

DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

Application by aircraft is permitted only where specified in the directions for use.

A plantback interval of 30 days must be observed between application and planting of rotational crops, with the exception of radish, Chinese cabbage, pak choi and cole crops for which no plantback restriction is required.

TANK MIX COMBINATIONS WITH HERBICIDES

WARHAWK® 480 EC INSECTICIDE can be tank mixed with the herbicides listed below for wheat, oats, and barley. The mixture will control insect pests as well as grassy or broadleaf weeds as recommended on the labels of the products used.

Read carefully and follow all use directions and use precautions on both the WARHAWK® 480 EC INSECTICIDE label and the label of the herbicide to be used for tank mixing. Failure to follow the rates of use and timing of application as recommended for each product

will result in unsatisfactory control of the insect or weed target pest.

NOTE: If WARHAWK® 480 EC Insecticide is added first, it may settle out and cause plugging of lines or nozzles.

When tank-mixing with the following herbicides, always add herbicide to the partially water-filled spray tank, then add the WARHAWK 480 EC INSECTICIDE, then add the remaining water:

AVENGE 200-C ¹	BUCTRIL M ³	MCPA Ester	TORDON 202 C ⁵
BANVEL ²	GLEAN ⁴	MCPA Amine	2,4-D Ester
2,4-D Amine			

¹ AVENGE 200-C is a Registered Trademark of Amvac Chemical Corporation.

² BANVEL is a Registered Trademark of BASF Corporation.

³ BUCTRIL M is a Registered Trademark of Bayer CropScience.

⁴ GLEAN is a Registered Trademark of E.I. DuPont de Nemours & Co.

⁵ TORDON 202 C is a Trademark of Dow Agrosiences.

Soil Applications

The higher rate of WARHAWK® 480 EC Insecticide should be used when the soil surface is extremely dry or the insect infestation is heavy. When preplant soil applications of WARHAWK® 480 EC Insecticide are being made to muck soil, do not incorporate. Incorporation on mineral soils should be no deeper than 5 cm.

Foliar Applications

Best results will be obtained when application is made during the early evening. Apply as a broadcast application in sufficient water to ensure thorough coverage of the foliage.

Restricted Entry Intervals

The worker restricted entry level (REI) is 24 hours for all crops, except cauliflower (10 days) and tree nuts (2 days).

Sites and Pests	Rates and Directions
CANOLA	Do not apply more than once per season. Do not apply within 21 days of harvest. Application is permitted by ground application equipment or aircraft where specified. Do not enter treated fields until 1 day after application.
Bertha armyworm, alfalfa looper, armyworm	Apply 0.75-1 litres in 50-200 L/ha for ground application equipment, or in 10-30 L/ha for aircraft. Apply as a foliar spray. Use the higher rate of dilution when infestations are heavy and when the foliage is dense. Spray in the evening to reduce harm to pollinators.
Diamondback moth (larvae)	Apply 1-1.5 litres in 100-200 L/ha for ground application equipment, or in 40 L/ha for aircraft. Apply as a foliar spray. Use the higher rate of dilution when infestations are heavy and when the foliage is dense. Spray in the evening to reduce harm to pollinators.
Lygus bugs	Apply 0.5-1 litre in 50-200 L/ha for ground application equipment, or in 10-30 L/ha for aircraft. Apply as a foliar spray. Use the higher rate of dilution when infestations are heavy and when the foliage is dense. Spray in the evening to reduce harm to pollinators.
Army cutworm, darksided cutworm, pale western cutworm, redbacked cutworm, variegated cutworm	Apply 0.875-1.21 litres in 50-200 L/ha for ground application equipment, or in 10-30 L/ha for aircraft. Apply to the soil or foliage. When preplant soil applications are being made to muck soil, do not incorporate. Incorporation on mineral soils should be no deeper than 5 cm.
Grasshoppers	Apply 0.58-0.875 litre in 50-200 L/ha for ground application equipment, or in 10-30 L/ha for aircraft. Apply as a foliar spray. Use the low rate for the control of juvenile grasshoppers and the high rate for the control of a dult grasshoppers. Adjacent ungrazed and uncultivated areas such as roadsides, rights-of-way and fence lines should be treated at the first sign of infestation.
FILBERT (hazelnut)	DO NOT APPLY BY AIRCRAFT. Do not apply more than three times per season. Do not apply within 14 days of harvest. Ground application only. Do not enter treated fields until 4 days after application to conduct scouting

	activities.
Filbert aphid	Apply 4.2 – 4.8 litres of product in 100 L/ha. Apply as a foliar spray with ground application only using an airblast sprayer. Direct nozzles of air blast sprayer into the orchard when spraying border rows.
FLAX	Do not apply more than once per season. Do not apply within 21 days of harvest. Application is permitted by ground application equipment or aircraft where specified. Do not enter treated fields until 1 day after application.
Bertha armyworm	Apply 0.75-1 litres in 50-200 L/ha for ground application equipment and 10-30 L/ha for aircraft. Apply as a foliar spray. Use the higher rate for larger larvae or when foliage is dense.
Army cutworm, darksided cutworm, pale western cutworm, redbacked cutworm, variegated cutworm, armyworm	Apply 0.875-1.21 litres in 50-200 L/ha for ground application equipment, or in 10-30 L/ha for aircraft. Apply to the soil or foliage.
LENTIL	Application is permitted by ground application equipment or aircraft where specified. Do not apply more than once per season. Do not apply within 21 days of harvest for applications up to 0.875 L/ha. For application greater than 0.875 L/ha, do not apply within 60 days of harvest. Do not enter treated fields until 1 day after application.
Pale western cutworm	Apply once at seedling stage, when damage is first noticed. Use boom configurations that maximize spray coverage and penetration of the crop canopy. Apply 0.875 L – 1.2L in 100–200 L of water/ha for ground application equipment, or in 20 L/ha for aircraft. Apply as a broadcast spray when damage first appears.
Grasshoppers	Use a boom and nozzle configuration which provides optimum coverage. Foliar applications: Best results will be obtained when application is made during the early evening. Apply as a broadcast application in sufficient water to ensure thorough coverage of the foliage. Use the higher rate when infestations are heavy and when foliage is dense. Apply 0.58 L – 1.2L in 50 –200 L water/ha for ground application equipment, or in 10–30 L/ha for aircraft. Apply once per year at the flowering to early podding stage of crop. Uniform coverage of the crop and the crop canopy is essential. Use the low rate for the control of juvenile grasshoppers and the high rate for the control of a dult grasshoppers. Adjacent ungrazed and uncultivated areas such as roadsides, right-of-ways and fence lines should be

	treated at the first sign of infestation.
CORN - FIELD, SWEET (Seedling treatment only)	Do not apply more than 1 application per season. Do not apply within 70 days of harvest. Ground application only (DO NOT APPLY BY AIRCRAFT). Do not enter treated fields until 1 day after application.
Black cutworm, darksided cutworm, redbacked cutworm	SOIL TREATMENT (PREPLANTING): Apply 2.4 litres in 200-400 L/ha. Apply once as a soil treatment 3-7 days before planting. Do not incorporate. Also apply to a 15 m strip into adjacent fence rows. SEEDLING TREATMENT: Apply 1.2-2.4 litres in 200-400 L/ha. Apply once as a broadcast spray at the 2- to 5-leaf stage of the crop.
STRAWBERRY	Do not apply more than once per season. Ground application only (DO NOT APPLY BY AIRCRAFT). Do not apply within 20 days of harvest. Do not enter treated fields until 1 day after application.
Strawberry cutworm (crown borer)	Apply 1.2 litres in 2000 L/ha. Apply once as a foliar spray between June 1 and June 15. Large volumes of water are desirable to ensure full wetting of the crown area of the plants.
CELERY, CUCUMBER, PEPPER (GREEN)	Do not apply more than once per season. Do not apply within 70 days of harvest for celery, 40 days of harvest for pepper, or 60 days of harvest for cucumber. Ground application only (DO NOT APPLY BY AIRCRAFT). Do not enter treated fields until 1 day after application.
Black cutworm, darksided cutworm, redbacked cutworm	SOIL TREATMENT: Apply 2.4 litres in 200-400 L/ha. Apply once as a soil treatment 3-7 days before planting or transplanting. Do not incorporate. Also apply to a 15 m strip into adjacent fence rows. SEEDLING TREATMENT: Apply 1.2-2.4 litres in 200-400 L/ha. Apply once as a broadcast spray at the 2- to 5-leaf stage of the crop.
PAK CHOI, BROCCOLI, BRUSSELS SPROUT, CABBAGE, CAULIFLOWER, CHINESE CABBAGE	Ground application only (DO NOT APPLY BY AIRCRAFT). Do not enter treated fields until 1 day after application for pak choi and Chinese cabbages. Do not enter treated fields until 10 days after application for cauliflower, 1 day after application for all other crops. [See also below.] If no granular chlorpyrifos treatment has been used, do not apply more than twice per season to broccoli, cabbages, cauliflower, Chinese cabbages and pak choi, or three times per season to Brussels sprouts. If granular treatment has been used, do not apply more than once per season to broccoli, cabbages, cauliflower, Chinese cabbages and pak choi, or twice per season to Brussels sprouts. Do not apply within 32 days of harvest for broccoli, Brussels sprouts,

	cabbages, cauliflower or Chinese cabbages; or within 15 days of harvest for pak choi.												
Cabbage maggot	<p>AT-PLANTING TREATMENT: Apply 210 mL/1000 m row. Apply one drench spray in 1000 L/ha spray solution, 10 cm on each side of the plant, 7-10 days after seeding or 3 days after transplanting.</p> <p>POST PLANTING DRENCH: Mix 1.7 litres in enough water to make 1000 L of finished spray. Apply 12.5 L of this solution per 100 m of row on soil, 10 cm on each side of the plant. Do not apply to harvestable portions of the crop.</p> <p>Row Spacing L/ha</p> <table> <tr> <td>30cm</td> <td>7.0</td> </tr> <tr> <td>60cm</td> <td>3.5</td> </tr> <tr> <td>75cm</td> <td>2.8</td> </tr> <tr> <td>80cm</td> <td>2.63</td> </tr> <tr> <td>90cm</td> <td>2.33</td> </tr> <tr> <td>105cm</td> <td>2.0</td> </tr> </table> <p>If no granular treatment was used at seeding: For broccoli, Brussels sprouts, cabbages and cauliflower, apply a drench treatment within 3 days of transplanting (after plant recovery) or 7-10 days after seeding. Repeat 21 days after the transplanting drench or 28 days after the seeding drench.</p>	30cm	7.0	60cm	3.5	75cm	2.8	80cm	2.63	90cm	2.33	105cm	2.0
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105cm	2.0												
Black cutworm, darksided cutworm, redbacked cutworm (for BROCCOLI, BRUSSEL SPROUTS, CABBAGE, CAULIFLOWER, CHINESE CABBAGE)	SOIL TREATMENT: Apply 2.4 litres in 200 -400 L/ha. Apply once, 3 -7 days before transplanting. Do not incorporate. Also apply to a 15 m strip into adjacent fence rows.												
	SEEDLING TREATMENT: Apply 1.2-2.4 litres in 200 -400 L/ha. Apply once as a broadcast spray at the 2- to 5-leaf stage of the crop.												
GARLIC	Do not apply more than twice per season. Do not apply within 50 days of harvest. Ground application only (DO NOT APPLY BY AIRCRAFT). Do not enter treated fields until 1 day after application.												
Onion maggot	Apply 3.5 litres in 1000 L/ha. Apply as a drench to the soil over the seedling row.												
Black cutworm, darksided cutworm, redbacked cutworm	SOIL TREATMENT: Apply 2.4 litres in 200 -400 L/ha. Apply once, 3 -7 days before transplanting. Do not incorporate. Also apply to a 15 m strip into adjacent fence rows.												
	SEEDLING TREATMENT: Apply 1.2-2.4 litres in 200 -400 L/ha. Apply once as a broadcast spray at the 2- to 5-leaf stage of the crop.												
RUTABAGA	Ground application only (DO NOT APPLY BY AIRCRAFT). Do not enter treated fields until 1 day after												

	<p>application. Do not apply within 30 days of harvest. [See also below.]</p> <p>If no granular chlorpyrifos treatment has been used, do not apply more than 4 times per season. If granular chlorpyrifos treatment has been used, do not apply more than 3 times per season.</p>														
Black cutworm, darksided cutworm, redbacked cutworm	<p>SOIL TREATMENT: Apply 2.4 litres in 200-400 L/ha. Apply once, 3-7 days before transplanting. Do not incorporate. Also apply to a 15 m strip into adjacent fence rows.</p> <p>SEEDLING TREATMENT: Apply 1.2-2.4 litres in 200-400 L/ha. Apply once as a broadcast spray at the 2- to 5-leaf stage of the crop.</p>														
Cabbage maggot	<p>Apply 210 mL in 12.5 L/1000 m row. Apply as a postplanting drench to soil, 10 cm on each side of the plant. Application rates for different row spacings are as follows:</p> <table border="1"> <thead> <tr> <th>Row Spacing</th> <th>L/ha</th> </tr> </thead> <tbody> <tr> <td>30 cm</td> <td>7.0</td> </tr> <tr> <td>60 cm</td> <td>3.5</td> </tr> <tr> <td>75 cm</td> <td>2.8</td> </tr> <tr> <td>80 cm</td> <td>2.6</td> </tr> <tr> <td>90 cm</td> <td>2.3</td> </tr> <tr> <td>105 cm</td> <td>2.0</td> </tr> </tbody> </table> <p>Do not apply to harvestable portions of the crop. If no granular treatment was used at seeding, apply drench treatments at 10, 28, 49 and 70 days after seeding. If granular treatment with a chlorpyrifos insecticide was used at seeding, apply drench treatments at 28, 49 and 70 days after seeding.</p>	Row Spacing	L/ha	30 cm	7.0	60 cm	3.5	75 cm	2.8	80 cm	2.6	90 cm	2.3	105 cm	2.0
Row Spacing	L/ha														
30 cm	7.0														
60 cm	3.5														
75 cm	2.8														
80 cm	2.6														
90 cm	2.3														
105 cm	2.0														
CARROT	<p>Ground application only (DO NOT APPLY BY AIRCRAFT). Do not apply more than once per season. Do not apply within 60 days of harvest. Do not enter treated fields until 1 day after application.</p>														
Black cutworm, darksided cutworm, redbacked cutworm	<p>SOIL TREATMENT: Apply 2.4-4.8 litres in 200-400 L/ha. Apply once per season before planting or transplanting. May also be applied to a 15 m strip adjacent to fence rows. Use the low rate except under conditions of low soil moisture. Use the high rate if the top 1 cm of soil is dry. When preplant soil applications are being made to muck soil, do not incorporate. Incorporation on mineral soils should be no deeper than 5 cm.</p> <p>SEEDLING TREATMENT: Apply 2.4-4.8 litres in 200-400 L/ha. Apply as a broadcast spray at the 2- to 5-leaf stage. Use the low rate except under conditions of low soil moisture. Use the high rate if the top 1 cm of soil is dry.</p>														
POTATO	<p>Ground application only (DO NOT APPLY BY</p>														

	AIRCRAFT). Do not apply more than once per season. Do not apply within 7 days of harvest. Do not enter treated fields to conduct scouting, hand weeding or irrigation activities until 1 day after application.
Colorado potato beetle (larvae), potato flea beetle, tarnished plant bug	Apply 1 Litre in 400-800 L/ha as a foliar spray.
Black cutworm, darksided cutworm, redbacked cutworm	SOIL TREATMENT: Apply 2.4 litres in 200 -400 L /ha. Apply once as a broadcast spray 3-7 days before planting. Do not incorporate. Also apply to a 15 m strip into adjacent fence rows. SEEDLING TREATMENT: Apply 1.2-2.4 litres in 200 -400 L/ha. Apply once as a broadcast spray when damage first appears.
SUNFLOWER	Application is permitted by ground application equipment or aircraft where specified. Do not apply more than once per season. Do not apply within 42 days of harvest. Do not enter treated fields until 1 day after application.
Army cutworm, pale western cutworm, redbacked cutworm	Ground application only (DO NOT APPLY BY AIRCRAFT). Apply 1.2 litres in 50-200 L/ha. Apply as a broadcast spray when damage first appears. When preplant soil applications are being made to muck soil, do not incorporate. Incorporation on mineral soils should be no deeper than 5 cm.
Seed weevil (buchid)	Ground or aerial application. Apply 1.2 litres in at least 20 L/ha. Apply in late July to early August when populations of weevils are observed in the sunflower heads. Aerial spray: For aerial applications, apply 1.2 L/ha in a maximum of 40 L/ha spray solution using a boom configuration that maximizes spray coverage of the target.
SUGARBEET	Ground application only (DO NOT APPLY BY AIRCRAFT). Do not apply more than once per season. Do not apply within 90 days of harvest. Do not enter treated fields until 1 day after application.
Pale western cutworm, redbacked cutworm	Apply 1.2-2.4 litres in 50-200 L/ha. Apply as a broadcast spray to crop seedlings when damage first appears. When preplant soil applications are being made to muck soil, do not incorporate. Incorporation on mineral soils should be no deeper than 5 cm.
BARLEY, WHEAT, OATS	Do not apply more than once per season to barley or wheat. Do not apply within 60 days of harvest. Application is permitted by ground application equipment or aircraft where specified. Do not enter treated fields until 1 day after application.
Armyworm (including bertha armyworm),	Apply 0.875-1.2 litres in 50 -200 L /ha for ground application equipment or in 10-30 L/ha for aircraft. Apply

army cutworm, darksided cutworm, pale western cutworm, redbacked cutworm	to soil or foliage. When preplant soil applications are being made to muck soil, do not incorporate. Incorporation on mineral soils should be no deeper than 5 cm.
Grasshoppers	Apply 0.58 -0.875 litres in 50 -200 L /ha for ground application equipment, or in 10-30 L/ha for aircraft. Apply as a broadcast foliar spray. Use the low rate for juvenile grasshoppers and the high rate for adults. Treat adjacent ungrazed and unoccupied areas such as roadsides, rights-of-way and fence lines at the first sign of infestation.
Brown wheat mites	Apply 625 mL in 50 -200 L/ha for ground application equipment or in 10-30 L/ha for aircraft. Apply as a foliar spray.
Russian wheat aphid	Apply 0.500L in a minimum of 100 L of water/ha for ground application equipment or in a minimum of 20 L/ha and maximum of 40 L/ha spray solution for aircraft. Apply as a foliar spray. Application can be made in spring or fall when aphids exceed the economic threshold. Use a boom configuration that will maximize spray coverage and penetration of the crop canopy.
Orange wheat blossom midge (WHEAT only)	Apply 0.83 -1 litre in 50-200 L/ha for ground application. Apply 1 litre in 10-30 L/ha for aerial application. Apply when adults reach the economic threshold and when 25% of the wheat heads have emerged from the boot, but preferably delay spraying until 30% of the crop is flowering. Timing is critical to ensure good control. Applications should be made in the late afternoon or early evening when temperatures exceed 15°C and wind speed is less than 10 km /h. Apply as a foliar spray. Use boom configurations that maximize spray coverage and penetration of crop canopy.
ONION (bulb)	Ground application only (DO NOT APPLY BY AIRCRAFT). Do not apply more than once per season. Do not enter treated fields until 1 day after application. Do not apply to bunching onions. [See also below.] Do not apply within 60 days of harvest.
Black cutworm, darksided cutworm, redbacked cutworm	SOIL TREATMENT: Apply 2.4-4.8 litres in 200-400 L/ha. Apply once per season before planting or transplanting. Application is also permitted on a 15 m strip adjacent to fence rows. Use the low rate except under conditions of low soil moisture. Use the high rate if the top 1 cm of soil is dry. When preplant soil applications are being made to muck soil, do not incorporate. Incorporation on mineral soils should be no deeper than 5 cm. SEEDLING TREATMENT: Apply 2.4-4.8 litres in 200 -

	400 L/ha. Apply as a broadcast spray at the 2- to 5-leaf stage. Use the low rate except under conditions of low soil moisture. Use the high rate if the top 1 cm of soil is dry.
TOBACCO	Do not apply more than once per season. Ground application only (DO NOT APPLY BY AIRCRAFT). Do not enter treated fields until 1 day after application. For application of field before tobacco is planted or transplanted.
Black cutworm, darksided cutworm, redbacked cutworm	SOIL TREATMENT: Apply 2.4-4.8 litres in 200-400 L/ha. Apply once, 3-7 days before planting or transplanting. If the top 1 cm or more of soil is dry, use the higher rate. When preplant soil applications are being made to muck soil, do not incorporate. Incorporation on mineral soils should be no deeper than 5 cm. Also apply to a 15 m strip into adjacent cover crop and to fence rows.
Darksided cutworm	COVER CROP TREATMENT: Apply 1.125-1.2 litres in 200-400 L/ha. Darksided cutworms may feed on the cover crop before spring plough-down. Apply to the area planted to tobacco and to a strip about 15 m into nearby cover crop and fence rows. Application should be made in mid to late April, 4 to 5 days before plough-down. When the rye cover crop is about 15 cm tall, the cutworm larvae will be at the right stage for the best control. Cereals grown for cover crop treated with this insecticide should not be used for human or animal consumption if treated within 60 days of harvest.
ASIAN RADISH (LO BOK, DAIKON)	Do not apply more than 3 times per season. Ground application only (DO NOT APPLY BY AIRCRAFT). Do not apply within 32 days of harvest. Do not enter treated fields until 1 day after application.
Cabbage maggot	Apply 210 millilitres in 1000 L of water per 1000 m row. Apply as a drench over seeded rows at 7, 20 and 35 days after seeding.
RADISH	Do not apply more than once per season. Ground application only (DO NOT APPLY BY AIRCRAFT). Do not apply within 21 days of harvest. Do not enter treated fields until 1 day after application.
Cabbage maggot	Apply 85 millilitres of product in 380 L of water per 1000 m row. Apply as a drench with seed at planting time.
CHINESE BROCCOLI	Do not apply more than once per season. Ground application only (DO NOT APPLY BY AIRCRAFT). Do not apply within 21 days of harvest. Do not enter treated fields until 1 day after application.
Cabbage maggot	Apply 150 millilitres of product in 800 L/1000 m row. Apply once per season banded over the row 5-7 days after seeding.

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