

Detachable pamphlet

GROUP	<b>1B</b>	INSECTICIDE
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**PYRINEX™ 480 EC**

**for Food Crops**

**Insecticide**

**AGRICULTURAL**

**Contains Chlorpyrifos**

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  
POTENTIAL SKIN SENSITIZER

**READ THE LABEL AND BROCHURE BEFORE USING**

**KEEP OUT OF REACH OF CHILDREN**

**GUARANTEE: Chlorpyrifos 480 g/L**  
Warning, contains the allergen, soya

**REGISTRATION NO. 23705 PEST CONTROL PRODUCTS ACT**

Makhteshim Agan of North America Inc.  
4515 Falls of Neuse Road, Suite 300  
Raleigh, NC 27609, USA  
919-256-9300

**NET CONTENTS: 10 L**

## **PRECAUTIONS**

KEEP OUT OF REACH OF CHILDREN

FATAL OR POISONOUS IF SWALLOWED. CAUSES EYE AND SKIN IRRITATION. POTENTIAL SKIN SENSITIZER.

Do not get in eyes, on skin or on clothing. Avoid breathing vapour or spray mist. Handle only with adequate ventilation. Wear protective clothing, impervious gloves and chemical worker's goggles when handling. Wash thoroughly with soap and water after handling and before eating or smoking. Immediately remove contaminated clothing and wash separately from other laundry before reuse. Destroy contaminated leather articles, including shoes. Do not apply this product in such a manner as to directly or through drift expose workers or other persons.

## **PRECAUTIONS FOR MIXERS/LOADERS**

### **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
- socks and shoes

### **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
- 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 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 when re-entering the cab)
- 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
- socks and shoes

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

- a long-sleeved shirt and long pants
- 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
- an air purifying respirator with an -R or -P series filter

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., refer to [www.croplife.ca](http://www.croplife.ca)

## **ENVIRONMENTAL PRECAUTIONS**

## **HAZARDS**

This pesticide is extremely toxic to fish and aquatic organisms in adjacent aquatic sites. Do not contaminate water by cleaning of equipment or disposal of waste. Cereals grown for cover crop treated with PYRINEX 480 EC insecticide should not be harvested for human or animal consumption if treated within 60 days of harvest. Spilled material should be soaked up with absorbent material and disposed of in an approved manner.

TOXIC to birds. TOXIC to wild mammals. TOXIC to bees exposed to direct treatment, drift, or residues on blooming plants. Do not use on flowering crops or weeds. 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.

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 beekeepers 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.

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.

## **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 the 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. Typical symptoms of overexposure to cholinesterase inhibitors include headache, nausea, dizziness, sweating, salivation, runny nose and eyes. This may progress to muscle twitching, weakness, tremors, incoordination, 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). Atropine, only by injection, is the preferable antidote. Oximes, such as pralidoxime chloride, may be therapeutic if used early; however, use only in conjunction with atropine. 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.

NOTE: Product contains a petroleum distillate solvent.

### **PHYSICAL AND CHEMICAL HAZARDS**

COMBUSTIBLE. Do not store or use near heat or open flame.

### **GENERAL INFORMATION**

PYRINEX 480 EC insecticide is active against various insect pests as a stomach poison, via contact and by vapour action. It does not hold any systemic activity and is of short residual duration when exposed to ultraviolet (UV) light in the presence of slight moisture. Residual activity is extended in the absence of UV light. Use the higher rate of PYRINEX 480 EC insecticide when the surface of the soil to be treated is extremely dry or insect infestations are heavy. Do not incorporate pre-plant soil treatments made to muck soils. If practiced, incorporation in mineral soils should be light (top 5 cm). For foliar applications best results will be obtained when application is made in early evening. Applications should be broadcast in sufficient water to give thorough coverage of the intended soil, plant or pest target.

### **Restricted Entry Intervals**

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

### **MIXING INSTRUCTIONS**

Add required amount of PYRINEX 480 EC Insecticide into the spray tank  $\frac{2}{3}$  filled with the final desired spray volume under agitation. Add the balance of water to fill tank to the final desired volume. To maintain a uniform spray mixture, keep agitator running during mixing and application. To avoid phytotoxicity, do not mix with other pesticide products or treat plants that are under extreme drought stress.

### **STORAGE**

Do not contaminate water, food or feed by storage or disposal of wastes. Avoid storage at high temperatures. Protect from moisture. Avoid contamination with water, acids or alkalines. Do not store near heat or open flame. Keep container closed.

### **DISPOSAL**

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.

**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.

### **AERIAL APPLICATION**

#### **Directions for Use**

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 1-212-661-9800 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:

See specific crop instructions for additional precautions and recommended application rates.

## **DIRECTIONS FOR USE**

### **RESISTANCE-MANAGEMENT RECOMMENDATIONS**

For resistance management, please note that PYRINEX 480 EC Insecticide contains a Group 1B insecticide. Any insect/mite population may contain individuals naturally resistant to PYRINEX 480 EC Insecticide and other Group 1B 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 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 PYRINEX 480 EC Insecticide or other Group 1B insecticides with different groups that control the same pests in a field.
- Use tank mixtures with insecticides from a different group when such use is permitted.
- Insecticide 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 Makhteshim Agan of North America, Inc. at 1 212 661-9800 or at [www.main.co.il](http://www.main.co.il).

### **Buffer Zones for Protection of Aquatic Habitats**

**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**

**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<sup>1,2</sup>**

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

<sup>1</sup> For 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 labelled 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 labelled buffer zone can be reduced by 30%.

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

**DO NOT** apply this product directly to aquatic habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, 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.

Sites and Pests	Rates and Directions
<b>CANOLA</b>	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 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

Sites and Pests	Rates and Directions
	evening to reduce harm to pollinators.
Diamondback moth (larvae)	Apply 1-1.5 litres in 50-200 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 0.875-1.2 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 adult grasshoppers. Adjacent ungrazed and unoccupied areas such as roadsides, rights-of-way and fence lines should be treated at the first sign of infestation.
<b>FLAX</b>	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 litre 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 0.875-1.2 litres in 50-200 L/ha for ground application equipment, or in 10-30 L/ha for aircraft. Apply to the soil or foliage.
<b>LENTIL</b>	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 0.875-1.2 litres in 100-200 L/ha for ground application equipment, or in 20 L/ha for aircraft. Apply as a broadcast spray when damage first appears.
Grasshoppers	Apply 0.60-1.2 litres in 50-200 L/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 adult grasshoppers. Adjacent ungrazed and unoccupied areas such as roadsides, right-of-ways and fence lines should be treated at the first sign of infestation.
<b>CORN (FIELD, SWEET)</b>	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.

Sites and Pests	Rates and Directions
Black cutworm, darksided cutworm, redbacked cutworm	<p>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.</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>
<b>STRAWBERRY</b>	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 1.172-1.2 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.
<b>ASIAN RADISH (LO BOK, DAIKON)</b>	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 0.21 litres in 1000 L of water per 1000 m row. Apply as a drench over seeded rows at 7, 20 and 35 days after seeding.
<b>RADISH</b>	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 mL in 380 L of water per 1000 m row. Apply as a drench with seed at planting time.
<b>CELERY, CUCUMBER, PEPPER (GREEN)</b>	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	<p>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.</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>
<b>PAK CHOI, BROCCOLI, BRUSSELS SPROUT, CABBAGE, CAULIFLOWER, CHINESE CABBAGE</b>	<p>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.]</p> <p>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.</p>
Cabbage maggot	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,

Sites and Pests	Rates and Directions
	<p>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>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>
<p>Black cutworm, darksided cutworm, redbacked cutworm (for BROCCOLI, BRUSSEL SPROUTS, CABBAGE, CAULIFLOWER, CHINESE CABBAGE)</p>	<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>
<p><b>CHINESE BROCCOLI</b></p>	<p>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.</p>
<p>Cabbage maggot</p>	<p>Apply 150 mL in 800 L/1000 m row. Apply once per season banded over the row 5-7 days after seeding.</p>
<p><b>GARLIC</b></p>	<p>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.</p>
<p>Onion maggot</p>	<p>Apply 3.5 litres in 1000 L/ha. Apply as a drench to the soil over the seedling row.</p>
<p>Black cutworm, darksided cutworm, redbacked cutworm</p>	<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>
<p><b>RUTABAGA</b></p>	<p>Ground application only (DO NOT APPLY BY AIRCRAFT). Do not enter treated fields until 1 day after 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>
<p>Black cutworm, darksided cutworm, redbacked cutworm</p>	<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>
<p>Cabbage maggot</p>	<p>Apply 210 mL in 125 L/1000 m row. Apply as a postplanting drench to soil,</p>

Sites and Pests	Rates and Directions														
	<p>10 cm on each side of the plant. Application rates for different row spacings are as follows:</p> <table> <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														
<b>CARROT</b>	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.														
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>														
<b>POTATO</b>	Ground application only (DO NOT APPLY BY 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	<p>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.</p> <p>SEEDLING TREATMENT: Apply 1.2-2.4 litres in 200-400 L/ha. Apply once as a broadcast spray when damage first appears.</p>														
<b>SUNFLOWER</b>	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. Do not apply by aircraft. 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.														

Sites and Pests	Rates and Directions
Seed weevil	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.
<b>SUGARBEET</b>	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.
<b>BARLEY, WHEAT, OATS</b>	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), army cutworm, darksided cutworm, pale western cutworm, redbacked cutworm	Apply 0.875-1.2 litres in 50-200 L/ha for ground application equipment or in 10-30 L/ha for aircraft. Apply 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 mite	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 0.5 litres in a minimum of 100 L/ha for ground application equipment or in a minimum of 20 L/ha for aircraft. Apply as a foliar spray.
Orange wheat blossom midge (WHEAT only)	<p>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.</p> <p>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.</p>
<b>ONION (bulb, pickling)</b>	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	<p>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.</p> <p>SEEDLING TREATMENT: Apply 2.4-4.8 litres in 200-400 L/ha. Apply as a</p>

Sites and Pests	Rates and Directions
	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.
<b>TOBACCO</b>	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.
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.
<b>FILBERT</b>	Do not apply more than three times per season. Do not apply within 14 days of harvest. Ground application only (DO NOT APPLY BY AIRCRAFT). Do not enter treated fields until 4 days after application to conduct scouting activities.
Filbert aphid	Apply 4.2-4.8 litres 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.
<b>FOREST: LODGEPOLE PINE</b>	RESTRICTED USE: Ground application only (DO NOT APPLY BY AIRCRAFT). For use in Western Canada only.
Mountain pine beetle	NATURE OF RESTRICTION: This product is to be used only in the manner authorized. Contact local pesticide regulatory authorities about appropriate use permits that may be required. To be applied only under the direct supervision of commercial applicator responsible for insect control programs. EC formulation: For ground use only to control small infestations of mountain pine beetle in lodgepole pine forest stands. Monitor stands from mid-June to mid-July to determine the trees that are infested. Treat infested trees within a few weeks of expected beetle emergence, usually early July, to kill the adult beetles. Avoid spraying when conditions favour drift from spray area. Prepare a spray solution of 42 litres PYRINEX 480 EC/1000 L of water to make a spray containing 2% active ingredient by weight. Apply at a rate of 1 L spray /m <sup>2</sup> of bark prior to adult beetle emergence. Treat boles from ground level up to a height of at least 3 m or until a bole diameter of 12.5 cm is reached.

The **DIRECTIONS FOR USE** for Cabbage maggot in Asian radish (Lo Bok, Daikon), Chinese broccoli and radish, were developed by persons other than Makhteshim Agan of North America, Inc. (MANA) and accepted for registration by the Pest Management Regulatory Agency under the User Requested Minor Use Label Expansion Program. MANA itself makes no representation or warranty with respect to performance (efficacy) and/or crop tolerance (phytotoxicity) claims for this product when used on Asian radish, Chinese broccoli and radish. Accordingly, the Buyer and User assume all liability arising, and agree to hold MANA harmless from any claims based on efficacy and/or phytotoxicity in connection with the use described for Asian radish, Chinese broccoli and

radish.

**DIRECTIONS:** For PYRINEX 480 EC Insecticide (GROUND SPRAY ONLY) to control Cabbage maggot in: Asian radish (Lo Bok, Daikon) – Apply 210 mL of product diluted in 1000 L of water per 1000 m of row as a drench over seeded rows at 7, 20 and 35 days after seeding. Make a maximum of 3 applications per year. Do not apply within 32 days of harvest.

**Chinese broccoli** – Apply once per season banded over the row as a ground drench 5-7 days after seeding. Apply 150 mL of product diluted in 800 L of water per 1000 m of row. (At the standard spacing for Chinese broccoli, this application rate is equivalent to 2.2 kg ai/ha.) Do not apply within 21 days of harvest.

**Radish** – Apply 85 mL of product diluted in 380 L water per 1000 m row as a drench with seed at planting time. Do not apply within 21 days of harvest. Apply once per season.

**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.

The **DIRECTIONS FOR USE** for Wireworm control in potatoes were developed by persons other than Makhteshim Agan of North America, Inc. (MANA). MANA itself makes no representation or warranty with respect to performance (efficacy) and/or crop tolerance (phytotoxicity) in connection with the use described for wireworm control in potatoes.

Accordingly, the Buyer and User assume all responsibility for all damage or loss arising, and agree to hold MANA harmless from any claims based on efficacy and/or phytotoxicity in connection with the use described for wireworm control in potatoes.

**DIRECTIONS FOR USE**

**Potato: Wireworm** – (In furrow at planting) – Apply 21.6 mL product in 5 L water per 100 metres of row (equivalent to 2.4 L product/ha, based on 90 cm row spacing).

**Pre-harvest Interval**

Potatoes cannot be harvested within 70 days of treatment.

**Restricted Entry Intervals**

The worker restricted entry interval (REI) is 24 hours.