

**(Container)**



# Lorsban™ 4E Insecticide

GROUP	<b>1B<sup>1</sup></b>	INSECTICIDE
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- 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.
- Emulsifiable concentrate, contains chlorpyrifos

AGRICULTURAL

READ THE LABEL AND BOOKLET BEFORE USING  
KEEP OUT OF REACH OF CHILDREN

GUARANTEE: chlorpyrifos 480 g/L

REGISTRATION NO. 14879 PEST CONTROL PRODUCTS ACT

**DANGER**  **POISON**

**EYE AND SKIN IRRITANT  
POTENTIAL SKIN SENSITIZER**

NET CONTENTS: 10 L

**Dow AgroSciences Canada Inc.**  
2400, 215 – 2<sup>nd</sup> Street S.W.  
Calgary, Alberta  
T2P 1M4  
1-800-667-3852

™Trademark of Dow AgroSciences LLC

**PRECAUTIONS**  
**FATAL OR POISONOUS IF SWALLOWED**  
**HARMFUL IF ABSORBED THROUGH SKIN**  
**CAUSES EYE AND SKIN IRRITATION**  
**POTENTIAL SKIN SENSITIZER**  
**KEEP OUT OF REACH OF CHILDREN**

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 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. This product has been shown to be a skin sensitizer in laboratory animal studies. Repeated exposure may cause allergic reaction in sensitive individuals. If this should happen, discontinue use and consult a physician. Keep away from food, feedstuffs and water supplies.

**PRECAUTIONS FOR MIXERS/LOADERS**

For 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
- shoes and socks

For 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., visit CropLife Canada's web site at [www.croplife.ca](http://www.croplife.ca).

## **PHYSICAL OR CHEMICAL HAZARDS**

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

## **FIRST AID**

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

**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.

**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.

## **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. Vomiting may cause aspiration pneumonia.

## **AGRICULTURAL CHEMICAL**

Do not ship or store with food, feeds, drugs or clothing.

## **ENVIRONMENTAL HAZARDS**

Lorsban 4E is toxic to birds and wildlife and extremely toxic to fish and aquatic organisms. Do not apply directly to water. Drift and run-off 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. Do not contaminate water by cleaning of equipment or disposal of waste. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Avoid use when bees are actively foraging. Cereals grown for cover crop treated with Lorsban 4E insecticide should not be harvested for human or animal consumption if treated within 60 days of harvest.

This product contains a petroleum distillate which is moderately to highly toxic to aquatic organisms. Avoid contamination of aquatic systems during application. Do not contaminate these systems through direct application, disposal of waste or cleaning equipment.

- TOXIC to birds. Any spilled or exposed granules must be incorporated into the soil or otherwise cleaned-up from the soil surface.
- TOXIC to wild mammals. Any spilled or exposed granules must be incorporated into the soil or otherwise cleaned-up from the soil surface.
- 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 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.
- 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.
- COMBUSTIBLE: Do not use or store near heat or open flame.

#### **STORAGE**

Do not contaminate water, food or feed by storage or disposal of wastes. Store in original container in secured dry storage area. Prevent cross-contamination with other pesticides and fertilizers. Do not store above 37° C for extended periods of time. Storage below 6.6° C may result in formation of crystals. If product crystallizes, store at 10 to 21° C and agitate to redissolve crystals. If container is damaged or spill occurs, use product immediately or dispose of product and damaged container as indicated below.

#### **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.

(Booklet)



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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.

### **Returnable Containers:**

Do not reuse this container for any purpose. For disposal, this empty container may be returned to the point of purchase (distributor/dealer).

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.



## GENERAL INFORMATION

Lorsban 4E is active against various insect pests by inhalation, contact and ingestion. It is not systemic in the plant system. This product is decomposed by sunlight. Treatment of plants that are under extreme drought stress may result in some crop damage.

## MIXING INSTRUCTIONS

To prepare the spray, add approximately 1/4 of the required amount of water to the spray tank and with agitation add the Lorsban 4E. Complete filling the tank with the balance of water needed. Do not allow the pesticide to come in contact with the water intake pipe. Maintain sufficient agitation during both mixing and application to ensure uniformity of the spray mixture. To avoid damage to the crop mix Lorsban 4E only with pesticides listed on this label.

## DIRECTIONS FOR USE

### GENERAL USE PRECAUTIONS

- **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
- Do not formulate this product into other end use products.

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

### Soil Applications

The higher rate of Lorsban 4E should be used when the soil surface is extremely dry or the insect infestation is heavy. When preplant soil applications of Lorsban 4E 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.

### Field Sprayer Applications<sup>1,2</sup>

Rate of Application (g a.i./ha)	Buffer Zones (metres) Required for the Protection of Aquatic Habitats With Water Depths Of:		
	< 1 metre	1–3 metre	> 3 metre
Up to 576	50	40	30
Greater than 576, and less than or equal to 1152	55	45	35
Greater than 1152 and up to 2304	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).

## Aerial Application

**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®	<b>DO NOT</b> use greater than 30° deflection

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

### 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 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 1-800-667-3852 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.

### SITES, PESTS, RATES AND DIRECTIONS

**Economic thresholds** are not given on this label. Apply Lorsban 4E when recommended by provincial authorities and according to provincial guidelines. **Do not add any additional adjuvants, surfactants or spreader stickers to Lorsban 4E.**

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 750 millilitres (ml) -1.0 litres of product 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 1.0 – 1.5 litres of product 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 500 ml – 1.0 litres of product 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 875 ml – 1.2 litres of product 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 580 – 875 millilitres of product 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.

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 750 ml – 1.0 litres of product 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 875 ml – 1.2 litres of product 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 420 g a.i./ha. For application greater than 420 g a.i./ha, do not apply within 60 days of harvest. Do not enter treated fields until 1 day after application.
Pale western cutworm	Apply 875 ml – 1.2 litres of product in 100–200 L/ha for ground application equipment, or in at least 20 L/ha for aircraft. Apply as a broadcast spray when damage first appears.
Grasshoppers	Apply 580 ml – 1.2 litres of product 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.

CORN (FIELD, SWEET)	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	<p><b>SOIL TREATMENT (PREPLANTING)</b> Apply 2.4 litres of product 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><b>SEEDLING TREATMENT</b> Apply 1.2 – 2.4 litres of product in 200–400 L/ha. Apply once as a broadcast spray at the 2- to 5-leaf stage of the crop.</p>

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 of product 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	<p><b>SOIL TREATMENT</b> Apply 2.4 litres of product 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><b>SEEDLING TREATMENT</b> Apply 1.2 – 2.4 litres of product in 200–400 L/ha. Apply once as a broadcast spray at the 2- to 5-leaf stage of the crop.</p>
PAK CHOI, BROCCOLI, BRUSSELS SPROUT, CABBAGE, CAULIFLOWER, CHINESE CABBAGE	<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>

<p>Cabbage maggot</p>	<p>AT-PLANTING TREATMENT: Apply 210 millilitres of product/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 1.68 litres of product 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 of product 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 of product in 200–400 L/ha. Apply once as a broadcast spray at the 2- to 5-leaf stage of the crop.</p>
<p>GARLIC</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 of product . 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 of product 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 of product in 200–400 L/ha. Apply once as a broadcast spray at the 2- to 5-leaf stage of the crop.</p>
<p>RUTABAGA</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><b>SOIL TREATMENT</b> Apply 2.4 litres of product 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><b>SEEDLING TREATMENT</b> Apply 1.2 – 2.4 litres of product 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 millilitres of product in 125 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" data-bbox="571 646 1071 871"> <thead> <tr> <th>Row Spacing</th> <th>litres product/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>2.63</td> </tr> <tr> <td>90 cm</td> <td>2.33</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	litres product/ha	30 cm	7.0	60 cm	3.5	75 cm	2.8	80 cm	2.63	90 cm	2.33	105 cm	2.0
Row Spacing	litres product/ha														
30 cm	7.0														
60 cm	3.5														
75 cm	2.8														
80 cm	2.63														
90 cm	2.33														
105 cm	2.0														
<p>POTATO</p>	<p>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.</p>														
<p>Colorado potato beetle (larvae), potato flea beetle, tarnished plant bug</p>	<p>Apply 1.0 litres of product in 400–800 L/ha as a foliar spray.</p>														
<p>Black cutworm, darksided cutworm, redbacked cutworm</p>	<p><b>SOIL TREATMENT</b> Apply 2.4 litres of product . 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><b>SEEDLING TREATMENT</b> Apply 1.2 – 2.4 litres of product in 200–400 L/ha. Apply once as a broadcast spray when damage first appears.</p>														

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 of product 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.
Seed weevil	Ground or aerial application. Apply 1.2 litres of product in at least 20 L/ha. Apply in late July to early August when populations of weevils are observed in the sunflower heads.
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 of product 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), army cutworm, darksided cutworm, pale western cutworm, redbacked cutworm	Apply 875 ml – 1.2 litres of product 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 580-875 millilitres of product 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 millilitres of product 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 500 millilitres of product . 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.



<p>Orange wheat blossom midge (WHEAT only)</p>	<p>Apply 830 ml – 1.0 litres of product in 50–200 L/ha for ground application. Apply 1.0 litres of product 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.</p>
<p>ONION (bulb, pickling)</p>	<p>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.]</p>
<p>Black cutworm, darksided cutworm, redbacked cutworm</p>	<p><b>SOIL TREATMENT</b>          Apply 2.4 – 4.8 litres of product 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><b>SEEDLING TREATMENT</b>          Apply 2.4 – 4.8 litres of product 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>
<p>TOBACCO</p>	<p>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.</p>
<p>Black cutworm, darksided cutworm, redbacked cutworm</p>	<p><b>SOIL TREATMENT</b>          Apply 2.4 – 4.8 litres of product 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.</p>

Darksided cutworm	<p><b>COVER CROP TREATMENT</b></p> <p>Apply 1.125 - 1.2 litres of product 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.</p>
Carrot	<p>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 within 60 days of harvest</p>

Black cutworm, darksided cutworm, redbacked cutworm	<p><b>SOIL TREATMENT</b></p> <p>Apply 2.4 – 4.8 litres of product in 200–400 L/ha. Apply once per season before planting. 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><b>SEEDLING TREATMENT</b></p> <p>Apply 2.4 – 4.8 litres of product 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>
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## Preharvest Intervals

<b>Time Between Last Application and Harvest</b>	
<b>Crop</b>	<b>Days</b>
potato	7
Chinese cabbage, Pak-choi	15
strawberry	20
lentils (for applications up to 875 mL/ha), canola, flax	21
rutabaga (post-plant drench treatment)	28
rutabaga (pre-plant or seedling treatments)	30
broccoli, Brussels sprouts, cabbage, cauliflower	32
green pepper	40
sunflower	42
garlic	50
cucumber, lentils (for application greater than 875 mL/ha), barley, wheat, oats, bulb onion, carrot	60
celery, sweet and field corn (seedling treatment only)	70
Sugar beet	90

**Restricted Entry Intervals**

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

**TANK-MIX COMBINATIONS WITH HERBICIDES**

Lorsban 4E can be tank mixed with the herbicides listed for wheat, oats and barley. The mixture will control insect pests as well as broadleaved or grassy weeds as recommended on the labels of the products used. **Read carefully and follow all use directions and use precautions on both the Lorsban 4E 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.**

When tank mixing Lorsban 4E with the following herbicides, always add the herbicide to the spray tank and then add the Lorsban 4E:

- Avenge 200-C Wild Oat Herbicide
- Banvel plus 2,4-D Amine
- Buctril M
- Glean Herbicide Dry Flowable
- MCPA Ester
- MCPA Amine
- Tordon™ 202C Liquid Herbicide
- 2,4-D Amine
- 2,4-D Ester

**NOTE:** If Lorsban 4E is added first, it may settle out and cause plugging of lines or nozzles.

**NOTE TO USER:** READ THE FOLLOWING BEFORE USING THIS PRODUCT FOR THE INDICATED SPECIAL USE APPLICATIONS: The DIRECTIONS FOR USE for this product for the use(s) described below were developed by persons other than Dow AgroSciences Canada Inc. and accepted for registration by Health Canada under the User Requested Minor Use Label Expansion program. Dow AgroSciences Canada Inc. itself makes no representation or warranty with respect to performance (efficacy) and/or crop tolerance (phytotoxicity) claims for this product when used on the crop(s) listed below.

Accordingly, the Buyer and User assume all risks related to performance and crop tolerance arising, and agree to hold Dow AgroSciences Canada Inc. harmless from any claims based on efficacy and/or phytotoxicity in connection with the use(s) described below.

**DIRECTIONS FOR USE**

FILBERT	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 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.
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.
GREEN ONION	Do not harvest within 30 days of treatment. Use a maximum of one application per year. Ground application only (DO NOT APPLY BY AIRCRAFT).
Onion maggot	Apply as a drench banded over the row. Apply 150 millilitres of product per 1000 metres of row using 800 litres of water per hectare (equivalent to 3.9 – 4.9 L of product/ha at row spacings of 30-38 cm). Lorsban 4E should be applied at the time of set planting or 7 to 10 days after seeding.

Refer to the main Lorsban 4E label for additional details and instructions, including preharvest intervals, before using.

READ THE ROTATIONAL CROPPING RESTRICTIONS ON THE FULL LABEL BEFORE USING THIS PRODUCT.

**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.

<b>FOREST: LODGEPOLE PINE</b>	Ground application only (DO NOT APPLY BY AIRCRAFT). For use in Western Canada only.
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<p>Mountain pine beetle</p>	<p><b>Restricted Use</b>  <b>NATURE OF RESTRICTION:</b> This product is to be used only in the manner authorized. Contact local pesticide regulatory authorities about appropriate use permits that may be required.</p> <p>To be applied only under the direct supervision of commercial applicator responsible for insect control programs.</p> <p>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.</p> <p>Prepare a spray solution of 41.66 litres of product/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.</p>
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**PESTS OF ORNAMENTALS (COMMERCIAL PRODUCTION ONLY) - GREENHOUSES AND NURSERIES ONLY**

Use Lorsban 4E to treat flowers, shrubs, vines, shade and flowering trees and evergreens found to be infested with the pests listed in the following table. Dilute Lorsban 4E with water according to directions given in the table and apply using suitable hand or power spray equipment in a manner to provide complete and uniform coverage. For best results apply a wetting spray to both upper and lower leaf surfaces and infested limb and trunk areas. Attempt to penetrate dense foliage but avoid overspraying to the point of excessive run-off. Treat when pests appear and repeat at 7 to 10 day intervals, if needed.

A re-entry interval of two days for workers conducting crop contact activities is required for use on Greenhouse Ornamentals.

**NOTE:** Environmental factors have significant effects on phytotoxic expression. Lorsban 4E has been tested on numerous ornamental plants without causing serious phytotoxicity. However, do not use on azaleas, camellias, poinsettias, rose bushes or variegated ivy because of possible injury to these plants.

Pest	Amount of Product per 1000 L	Specific Host Plants
spittlebugs	88-150 mL	various ornamental plants
mealybugs	200 mL	various ornamental plants
aphids	375 mL	beech, birch, elm, hickory, linden, maple, oak, pine, flowering cherry, flowering plum, spruce, tulip tree, viburnum, willow, spirea, nasturtium
clover mite, European red mite, honey locust mite, red oak mite, spruce spider mite, two-spotted spider mite	375-500 mL	Arborvitae, juniper
borers such as ash and lilac borers	500 mL	locust, birch, mountain ash, willow, lilac

Eastern and forest tent caterpillars	500 mL	ash, birch
European pine sawfly, redheaded pine sawfly	500 mL	conifers, mountain ash
grasshoppers	500 mL	various ornamental plants
thrips	500 mL	various ornamental plants
whiteflies	500 mL	various ornamental plants
leafhoppers such as potato and six-spotted leafhoppers	1 L	various ornamental plants
scale insects such as lecanium, cottony maple, San Jose, oystershell	2 L	various ornamental plants

500 mL is equivalent to 240 g of chlorpyrifos per 1000 L

1 L is equivalent to 480 g of chlorpyrifos per 1000 L

2 L is equivalent to 960 g of chlorpyrifos per 1000 L

**For Control of Japanese beetle (larvae)**

Controls Japanese beetle (larvae) infesting soil in which outdoor ornamentals (including containerized nursery stock) are growing. Apply to the soil when grubs are young and actively feeding near the soil surface, usually during late July, August, September or as recommended by your local agricultural representative. Use at rates of 4.5 L/1000 L on various ornamental plants. Apply as a coarse, low pressure spray using suitable application equipment. Immediately after spraying irrigate the treated area with 1 to 2 cm of water to wash the insecticide into the underlying soil. Spraying may also take place in April and May.

**For container grown stock:** Submerge the entire root ball or container in a solution of 45 mL Lorsban 4E /10L water (4.5 L/1000 L) until all bubbling stops. Remove plants from solution and allow to drain.

**PESTS OF TURF (SOD FARMS ONLY)**

Use Lorsban 4E to control the pests listed in the following table by application at the recommended dosages and in accordance with the directions given below. Dilute Lorsban 4E in enough water to obtain complete and uniform coverage of pest infested areas and apply as a coarse, low pressure spray using suitable application equipment. Do not use on ornamental plants including flowers, shrubs, vines, shade and flowering trees and evergreens.

Pest	Amount of Product per 100 m <sup>2</sup>	Specific Directions
ants, chinch bugs, cutworms	22.5 mL	Spray when pests first appear, repeat when needed.
crane fly larvae (leatherjackets)	20-25 mL	Apply as drenching spray in water in late fall after the flight of adult crane flies has ceased for the year.
sod webworms	22.5 mL	For sod webworms delay watering or mowing the treated area for 12-24 hours after treatment.
turfgrass (hyperodes spp) weevil (annual and bluegrass weevil)	22.5 mL	Spray suspected problem areas in mid-April and again in mid-May, or as recommended by your local agricultural representative.

22.5 mL/100 m<sup>2</sup> = 112.5 mL/500 m<sup>2</sup> = 225 mL/1000 m<sup>2</sup> or 2.25 L/ha

### **RESISTANCE MANAGEMENT RECOMMENDATIONS**

For resistance management, please note that Lorsban 4E contains a Group 1B<sup>1</sup> insecticide. Any insect population may contain individuals naturally resistant to Lorsban 4E and other Group 1B<sup>1</sup> insecticides. The resistant individuals may dominate the insect population if this group of insecticides 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 Lorsban 4E or other Group 1B<sup>1</sup> 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 Dow AgroSciences Canada Inc. at 1-800-667-3852 or at [www.dowagro.ca](http://www.dowagro.ca).

**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.

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