

2011-5024  
2011-11-22

UBG WRAP

**GROUP 2A INSECTICIDE**

**THIONEX 50 W**  
**Wettable Powder Insecticide**

COMMERCIAL

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

DANGER                      POISON

READ THE LABEL BEFORE USING

VERY TOXIC TO FISH

GUARANTEE: Endosulfan 50%  
Warning, contains the allergen soy.

REGISTRATION NO. 14617  
PEST CONTROL PRODUCTS ACT

NOTE TO USER	
Last date of use is December 31, 2012 on the following crops/sites:	apple, broccoli, Brussels sprouts, cabbage, cauliflower, grape, pear, greenhouse cucumber, greenhouse tomato.
Last date of use is December 31, 2016 on the following crops:	apricot, celery, cherry, cucumber, eggplant, lettuce (head), melon, ornamentals (outdoors), ornamentals (greenhouse), peach, pepper, plum, potato, pumpkin, squash, strawberry, tomato.
DO NOT use this product on any crop or site after December 31, 2016. This product is not to be used in and around homes or other residential areas such as parks, school grounds and playing fields. It is not for use by homeowners or other uncertified users.	

LOVELAND PRODUCTS CANADA INC.  
789 Donnybrook Drive  
Dorchester, Ontario  
N0L 1G5  
1-800-265-4624

NET CONTENTS: 1 kg

## **PRECAUTIONS**

### **KEEP OUT OF REACH OF CHILDREN.**

Hazardous if swallowed, inhaled or absorbed through the skin. After handling, wash thoroughly with soap and water before drinking or smoking and change to clean clothing.

Do not apply or allow to drift to areas occupied by unprotected persons and animals or to streams, lakes or ponds to protect wildlife: **THIS PRODUCT IS VERY TOXIC TO FISH.** Avoid contamination of feed or food, including such crops on which residue is unsafe. Do not contaminate fertilizer, seed and like commodities. Causes severe injury to Concord grapes. Some injury may occur to lima beans, geraniums and chrysanthemums.

When spraying in greenhouses and during commercial or prolonged exposure in spray-mixing and loading operations, wear synthetic rubber gloves and a suitable mask or respirator for ENDOSULFAN protection, such as American Optical Respirator 5058 or Wilson Agritox Respirator. Avoid breathing dust.

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

Keep the following personal protective equipment immediately available for use in case of emergency (i.e. a broken package, spill or equipment breakdown): chemical-resistant coveralls, chemical-resistant gloves, chemical-resistant headgear and a NIOSH-approved respirator.

Apply only when the potential for drift to areas of human habitation or areas of human activity (houses, cottages, schools and recreational areas) is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment and sprayer settings.

DO NOT make silage from treated crop or feed crop refuse to livestock or allow them to graze on treated sites.

### Mixing and Loading Wettable Powder

Wear chemical-resistant coveralls over long-sleeved shirt and long pants, chemical resistant gloves, chemical resistant footwear and a NIOSH-approved respirator during mixing/loading, clean-up and repair.

### Application using handheld equipment

Wear coveralls over long-sleeved shirt and long pants, chemical resistant gloves, and shoes plus socks.

DO NOT handle more than 0.54 kg of product in a day per person. (At the rate of 1.2 kg product/1000 L water, this allows an applicator to apply approximately 450 L spray mixture per day.) Note: this restriction is in place to minimize exposure to individual

operators and means that the application may need to be performed over multiple days or using multiple applicators.

#### Application using airblast equipment

Applicators using airblast equipment must either:

(i) use a closed cab that provides both a physical barrier and respiratory protection (i.e., dust/mist filtering and/or vapour/gas purification system). The closed cab must have a chemical resistant barrier that totally surrounds the occupant and prevents contact with pesticides outside the cab. Wear coveralls over a long-sleeved shirt, long pants, shoes plus socks. Have chemical resistant gloves ready for leaving the cab during calibration, repair or cleaning of equipment; or

(ii) use an open cab and wear chemical resistant coveralls over a long-sleeved shirt, long pants, chemical-resistant shoes plus socks, chemical resistant gloves, chemical-resistant headgear, and a NIOSH approved respirator. Chemical resistant headgear includes So'Westers, or large brimmed, waterproof hats, and hoods with sufficient neck protection. Avoid touching face or other unprotected parts of the body during application.

For apricot, peach, cherry and plum: do not handle more than 32 kg of product in a day per person (At the rate of 4.5 kg/ha, this allows for treatment of approximately 7 ha/day.) Note: this restriction is in place to minimize exposure to individual operators and means that the application may need to be performed over multiple days or using multiple applicators.

#### Application using groundboom equipment

Use a closed cab that provides both a physical barrier and respiratory protection (i.e. dust/mist filtering and/or vapour/gas purification system). The closed cab must have a chemical resistant barrier that totally surrounds the occupant and prevents contact with pesticides outside the cab. Wear coveralls over long-sleeved shirt and long pants, and shoes plus socks. Have chemical resistant gloves ready for leaving the cab during calibration, repair or cleaning of equipment.

For potatoes, do not handle more than 174 kg product in a day per person. (At the rate of 1.75 kg product/ha, this allows for treatment of approximately 100 ha/day.) Note: this restriction is in place to minimize exposure to individual operators and means that the application may need to be performed over multiple days or using multiple applicators. For use every other year only.

If entry into treated areas is required (ie: prior to the specified restricted-entry interval [REI]), workers must wear coveralls over a long-sleeved shirt and long pants, chemical-resistant gloves, shoes plus socks and either goggles or a face shield.

## **ENVIRONMENTAL HAZARDS**

TOXIC to aquatic organisms, birds and small wild mammals.

TOXIC to bees exposed to direct treatment, drift or residues on flowering crops or weeds.

DO NOT apply this product to flowering crops or weeds if bees are visiting the treatment area. 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.

To reduce runoff from treated areas into aquatic habitats, avoid application to areas with a moderate to steep slope, compacted soil, or clay.

Avoid application when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.

To minimize the release of endosulfan into the environment due to volatilization, endosulfan should only be applied on cool mornings and evenings when air temperatures are 15°C or lower. To further reduce volatilization to the atmosphere, incorporation into the soil should occur concurrently with applications.

**BUFFER ZONES:**

Use of the following spray methods or equipment DOES NOT require a buffer zone: hand-held or backpack sprayer and spot treatment. The buffer zones specified in the table below 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) and estuarine/marine habitats.

Method of Application	Crop		Buffer Zones (metres) required for the protection of:			
			Freshwater Habitats of depths		Estuarine/Marine Habitats of Depths:	
			Less than 1m	Greater than 1m	Less than 1m	Greater than 1m
Field Sprayer *	cucumber, squash, melon, pumpkin, eggplant, pepper, tomato, potato, strawberry		90	40	120	120
	broccoli, Brussels sprouts, cabbage, cauliflower, lettuce		75	30	120	120
	celery		50	20	120	120
Airblast	apples, pear, apricot, cherry, peach, plum, grape	early growth stage	70	60	90	80
		late growth stage	60	50	80	70

\* For field sprayer application, buffer zones can be reduced by using drift reducing spray shields. When using a spray boom fitted with a full shield (shroud, curtain) that extends to the crop canopy, 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, the labelled buffer zone can be reduced by 30%.

## **RESISTANCE MANAGEMENT RECOMMENDATIONS**

For resistance management, please note that THIONEX 50W Insecticide contains a Group 2A insecticide/acaricide. Any insect/mite population may contain individuals naturally resistant to THIONEX 50W Insecticide and other Group 2A 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/acaricide resistance:

- Where possible, rotate the use of THIONEX 50W Insecticide or other Group 2A insecticides/acaricides with different groups that control the same pests in a field.
- Avoid application of more than the indicated number of sprays of THIONEX 50W Insecticide or other insecticides/acaricides in the same group in a season.
- 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 and to report suspected resistance, contact the Technical Service, United Agri Products, 1-800-265-4624 or at [www.uap.ca](http://www.uap.ca).

## **DIRECTIONS FOR USE**

Unless otherwise mentioned, apply when insects first appear and repeat as required to maintain control. Rates “per 1000 litres” are on basis of dilute spray. Rates “per hectare” for tree fruits are based on mature trees. For vegetables and small fruits, use sufficient water for thorough coverage, depending on foliage development and spray equipment. Thorough wetting of all plant parts, which are to be treated, is essential for good results. Agitate continuously.

Apply by ground only. DO NOT apply by air.

DO NOT allow effluent or runoff from greenhouses containing this product to enter lakes, streams, ponds or other waters.

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

As this product is not registered for the control of pests in aquatic systems, DO NOT use to control aquatic pests.

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

Field sprayer application: DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) fine classification. Boom height must be 60 cm or less above the crop or ground.

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

CROPS	INSECTS	RATE / HECTARE
APPLE, PEAR (EASTERN CANADA)	Green apple aphid, Rosy apple aphid, Pear leaf blister mite, Tarnished plant bugs: Apply when local government spray letters or calendars recommend spraying for these insects. Do not make more than 2 applications after Calyx.	1 kg/1000 L 4.5 kg/ha
	White Apple Leafhopper, Potato Leafhopper: Apply late July, early August when young nymphs are at threshold levels. One application per year.	2.6 kg/ha
	Rust mite, Pear psylla, Codling moth: Apply when local government spray letter or calendars recommend spraying for these insects.	1.5 kg/1000 L 6.75 kg/ha
	<b>DO NOT ENTER treated area for 4 days. DO NOT APPLY within 15 days of harvest. Apply a maximum of two applications per year (unless otherwise specified), with a minimum of 7 days between applications. Do not exceed 5.6 kg product/ha per season.</b>	
APPLE, PEAR (BRITISH COLUMBIA)	Green apple aphid, Leafhopper, Rosy apple aphid, Lygus bugs	750 g/1000 L 3.25 kg/ha
	White Apple Leafhopper, Potato Leafhopper: Apply late July, early August when young nymphs are at threshold levels. One application per year. Apply according to provincial recommendations.	2.6 kg/ha
	<b>DO NOT ENTER treated area for 4 days. DO NOT APPLY within 15 days of harvest. Apply a maximum of two applications per year (unless otherwise specified), with a minimum of 7 days between applications. Do not exceed 5.6 kg</b>	

	<b>product/ha per season.</b>	
APRICOT, CHERRY, PEACH, PLUM (EASTERN AND WESTERN CANADA)	Peach tree borer (Root borer) Lesser peach tree borer: Make 3 applications (hand-held equipment only) in Eastern Canada (2 applications in B.C.) when local government spray calendar recommends spraying. Spray thoroughly all bark areas on trunk and main scaffold limbs. Apply coarse spray with a sprayer at 2000-2700kPa pressure. Avoid spraying on the fruit.	1.5 kg/1000 L
	Black cherry aphid, Peach silver mite, Plum rust mite, Green peach aphid, Mealy plum aphid, Twig borer, Plant bugs, Stink bugs, Leafhopper and Eye-spotted budmoth. For Peach silver mite use the higher rate. Apply at the time and rates as recommended in local government calendar or spray letters. Do not make more than 2 applications (handheld equipment only) during the fruiting season.	0.75-1 kg/1000 L 3.25-4.5 kg/ha
	<b>DO NOT ENTER treated area for thinning for 20 days. DO NOT ENTER treated area for all other activities for 7 days. DO NOT APPLY within 18 days of harvest. Apply a maximum of one application by airblast or 3 applications by handheld equipment per year (unless otherwise specified). Do not exceed 5.6 kg product/ha per season. Do not exceed 1.2kg product/1000L for application with high-pressure handwand equipment.</b>	
GRAPE	Phylloxera (leaf form) in Ontario To control the leaf-form of Phylloxera, apply in regular post-bloom spray and repeat in the first cover spray. Spray 2500 L/ha of spray as thorough coverage is necessary for good control.	1 kg/1000 L
	<b>DO NOT ENTER treated area for 2 days. DO NOT APPLY within 30 days of harvest. Apply a maximum of two applications per year with a minimum of 7 days between applications. Do not exceed 2.5kg product/ha per season.</b>	
STRAWBERRY	Cyclamen mite: Apply 4000-8000 L/ha depending on foliage development before bud formation in spring; repeat after harvest if mites present.	2-4 kg/ha
	Tarnished plant bug, Strawberry aphid, Spittle bug: Apply 2000 L/ha. For plant bug, apply at first bloom and repeat 10 days later. For aphid, apply when noticed. For Spittle bug, apply when eggs hatch. ENDOSULFAN is	2 kg/ha



	moderately toxic to bees and can be safely applied in early morning or evenings when bees are not working in the field. Geese may be used for weeding after 24 hours following application of THIONEX 50W. Such geese may be used for human consumption after 2 months following the last application.	
	<b>DO NOT ENTER treated area for scouting, hand weeding, irrigation, mulching for 7 days. DO NOT ENTER treat area for all other activities for 12 days. DO NOT APPLY within 12 days of harvest. Apply a maximum of two applications per year with a minimum of 7 days between applications.</b>	
POTATO	Aphid, Colorado potato beetle, Potato flea beetle, Tuber flea beetle, Leafhopper, Tarnished plant bug: Apply when insects first appear. For Tarnished plant bug, use 1.5 kg/ha. Do not ensile or feed crop refuse (vines, tops, stocks or threshings) to livestock.	1.1-1.5 kg/ha
	<b>DO NOT ENTER treated area for 5 days. DO NOT APPLY within 5 days of harvest. Apply a maximum of two applications with a minimum of 7 days between applications in one season. For use every other year only.</b>	
PEPPER, EGGPLANT	Aphid, Hornworm, Colorado potato beetle, Flea beetle, pepper maggot: Apply lower rate when insects first appear, repeat as required. Spray plants thoroughly, also underside of leaves. If applied at 2.25 kg/ha, the Tomato fruit worm is also controlled.	1.1-2.25 kg/ha
	<b>DO NOT ENTER treated area for 9 days. DO NOT APPLY within 27 days of harvest. Apply a maximum of two applications per year with a minimum of 7 days between applications. Do not exceed 4.4 kg product/ha per season.</b>	
TOMATO, CUCUMBER (Greenhouse)	Whitefly, Aphid: Spray plants thoroughly when insects first appear. Wear suitable mask or respirator.	1.1 kg/ha
	<b>DO NOT ENTER treated area for 2 days. DO NOT APPLY within 2 days of harvest. Apply a maximum of one application per crop cycle. Do not exceed 1.2 kg product/1000L for application with high-pressure handwand equipment.</b>	
CUCUMBER, MELON	Aphid, Cucumber beetle, Squash vine borer, Potato flea beetle: Apply when aphids and beetles first appear. For squash vine borer, thoroughly spray the base and stems of plants.	1.1 kg/ha
	Tarnished Plant Bug Ground application: mix in sufficient water for good coverage. Apply when pest first observed.	1.1 kg/ha

	<b>DO NOT ENTER treated area for 4 days. DO NOT APPLY within 13 days of harvest. Apply a maximum of two applications per year with a minimum of 7 days between applications.</b>	
SQUASH, PUMPKIN	Aphid, Cucumber beetle, Squash vine borer, Potato flea beetle: Apply when aphids and beetles first appear. For squash vine borer, thoroughly spray the base and stems of plants.	1.1 kg/ha
	Tarnished Plant Bug Ground application: mix in sufficient water for good coverage. Apply when pest first observed.	1.1 kg/ha
	<b>DO NOT ENTER treated area for hand weeding, pruning, hand thinning for 12 days. DO NOT ENTER treat area for all other activities for 10 days. DO NOT APPLY within 13 days of harvest. A maximum of two applications per year with a minimum of 7 days between applications.</b>	
CABBAGE, CAULIFLOWER, BROCCOLI, BRUSSELS SPROUTS	Aphid, Flea beetle, Imported cabbage worm, Cabbage looper, Diamondback moth (larvae): For all loopers use 1.75 kg and use drop pipes to spray under side of foliage. Use the 1.1 kg rate only for small worms and flea beetles; for large worms and aphids use the 1.75 kg rate. Do not feed crop refuse to livestock.	1.1-1.75 kg/ha 125-250 g/ 1000 L
	<b>DO NOT ENTER treated area for 9 days. DO NOT APPLY within 9 days of harvest. Apply a maximum of two applications per year with a minimum of 7 days between applications.</b>	
CELERY, HEAD LETTUCE	Aphid, Cabbage looper, Imported cabbage worm: Trim celery at harvest. Do not feed crop refuse to livestock. Do not apply to green house lettuce.	1.75 kg/ha
	<b>DO NOT ENTER treated area for 4 days. DO NOT APPLY within 17 days of harvest. For celery, a maximum of one application per year. For lettuce, a maximum of two applications per year with a minimum of 7 days between applications.</b>	
ORNAMENTALS (Outdoors and Greenhouse)	Aphids, Whitefly, Cyclamen mite, Black vine weevil, Rose chafer, Spruce gall aphid, Elm leaf beetle: Do not use on birch trees. Cyclamen mite requires very thorough application. On Chrysanthemums, apply before flowering for best results. DO NOT treat Bonnafon mums and geraniums in the greenhouse or mum cuttings within one month of planting. When applying in greenhouse wear suitable mask or respirator.	1 kg/1000 L

	For Black vine weevil on Japanese yew, use 1.5 kg/1000L and spray lower branches and soil in early July (do not apply using high-pressure handwand equipment). For Spruce gall aphid apply in 1st half of May (do not apply using high-pressure handwand equipment).	
	<b>DO NOT ENTER greenhouse treated area for 2 days following application. DO NOT ENTER outdoor treated area for handline irrigation, for 17 days following application. DO NOT ENTER outdoor treated area for any other activities, for 4 days following application. For greenhouse use, apply a maximum of one application per crop cycle. For outdoor use, apply a maximum of two applications per year with a minimum of 7 days between applications. Do not exceed 5.6 kg product/ha.</b>	

**COMPATIBILITY:** Endosulfan is compatible with most commonly used insecticides and fungicides, except Bordeaux mixture and hydrated lime.

**FIRST AID**

**IF ON SKIN OR CLOTHING:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.

**IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

**IF SWALLOWED:** Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

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

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

**TOXICOLOGICAL INFORMATION:**

Endosulfan is a central nervous system stimulant. Symptoms of poisoning are nausea, headache, general feeling of being unwell, followed by generalized convulsion. There is no specific antidote. Use saline cathartics and gastric lavages. Amobarbital-sodium or thiopental-sodium may be given intravenously for convulsion. Do not give stimulants.

**DISPOSAL**

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instruction for any required additional cleaning of the container prior to its disposal.
3. Make the empty container unsuitable for further use.
4. Dispose of the container in accordance with provincial requirements.
5. 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 this 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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