

2018-6591

2019-04-23

| Container
Label

GROUP	1B	INSECTICIDE
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MALATHION 85E

COMMERCIAL INSECTICIDE

WARNING POISON

READ THE LABEL AND ATTACHED BOOKLET BEFORE USING

REGISTRATION NO. 8372
PEST CONTROL PRODUCTS ACT

ACTIVE INGREDIENT: Malathion 85%

Expiry Date: yyyy-mm-dd

Lot # XXXX-XXX

This product is not to be sold or applied after the expiry date above.

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

LOVELAND PRODUCTS CANADA, INC.
789 DONNYBROOK DRIVE
DORCHESTER, ON
N0L 1G5
1-800-328-4678

NET CONTENTS: (1, 4, 5, 10, 20 Litres)

2018-6591

2019-04-23

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN.

Harmful if swallowed. Avoid breathing spray mist. Avoid repeated or prolonged contact with skin, eyes and clothing. Wash thoroughly. Avoid contamination of feed and foods. DO NOT use in buildings. Do not contaminate drinking troughs. Wash after handling or using. Avoid contamination of ponds, lakes, streams and other bodies of water which contain fish life or which may be used for irrigation or domestic purposes. Do not use in milk rooms. Remove lactating animals and calves under 1 month of age from buildings before treating. Do not apply oil based sprays to ornamentals as injury may occur. Use a respirator when spraying in closed areas.

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.

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.

When used in residential areas, outdoor use only. Residential areas are defined as any use site where bystanders including children could be exposed during or after application. This includes homes, schools, public buildings or any other areas where the general public including children could be exposed.

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

FIRST AID

TERMINATE EXPOSURE-Remove patient from the area of exposure. Remove contaminated clothing. If on skin wash exposed skin with soap and water. **CLEAN UNDER FINGER AND TOE NAILS**. If swallowed do NOT induce vomiting. Get prompt medical attention or contact a poison control centre **IMMEDIATELY**.

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. Do not induce vomiting unless told to do so by poison control centre or doctor. Do not give **any** liquid to the person. 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

2018-6591

2019-04-23

Malathion 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, tremor, 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.

STORAGE

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

Keep in original container during storage. Isomalathion, a toxic metabolite of malathion, forms when malathion product is stored at elevated temperatures or for extended periods of time. Malathion product must be stored in a cool (< 23°C) dry, well ventilated place away from seed, fertilizer or other pesticides. Do not use after the expiry date given on the primary panel.

DISPOSAL

1. Triple-or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instructions 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 the 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.

MALATHION 85E

COMMERCIAL INSECTICIDE

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RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, please note that MALATHION 85E Insecticide contains a Group 1B insecticide/acaricide. Any insect/mite population may contain individuals naturally resistant to MALATHION 85E Insecticide and other Group 1B insecticide/ acaricide. 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 MALATHION 85E Insecticide or other Group 1B insecticides/acaricides with different groups that control the same pests.
- Avoid application of more than the indicated number of sprays of MALATHION 85E 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, Loveland Products Canada Inc., 1-800-328-4678 or at www.lovelandproducts.ca.

GENERAL DIRECTIONS

MALATHION 85E is generally effective in controlling the insects and mites listed below. MALATHION 85E will work more effectively if the temperature is 20° C or more or when temperatures will reach or exceed this minimum. Use the rate of MALATHION 85E in the full volume of water. Add the specified amount of MALATHION 85E to the water in the spray tank and agitate well for 3 to 5 minutes before spraying.

FOR GROUND APPLICATION: dilute with water to 1000 L/ha unless otherwise stated. FOR AERIAL APPLICATION: unless otherwise stated, dilute with water to minimum spray volume of 30 L/ha when aerial application is specified.

PERSONAL PROTECTIVE EQUIPMENT

Wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes during mixing, loading, application, clean-up and repair. In addition, wear chemical-resistant headgear during open cab airblast application. Chemical-resistant headgear includes Sou'Wester hat, chemical-resistant rain hat or large brimmed waterproof hat and hood with sufficient neck protection. Gloves are not required during application within a closed cab.

AERIAL APPLICATION INSTRUCTIONS

Use only where aerial application is indicated on this label.

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. Do not apply to any body of water. 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.

Coarse sprays are less likely to drift, therefore, avoid combinations of pressure and nozzle type that will result in fine particles (mist). Use low nozzle pressures (Below 300 kPa). 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. Do not allow drift onto sensitive areas such as water, urban and residential areas.

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 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 1-800-328-4678 or obtain technical advice from the distributor or your

provincial agricultural representative. Application of this specific product must meet and/or conform to the following:

Volume: Apply the recommended rate in a minimum spray volume of 30 litres per hectare unless otherwise stated.

ENVIRONMENTAL HAZARDS:

TOXIC to aquatic organisms. Observe buffer zones specified under DIRECTIONS FOR USE.

TOXIC to birds.

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 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 between the treated area and the edge of the water body.

The use of this chemical may result in contamination of groundwater particularly in areas where soils are permeable (for example, sandy soil) and/or the depth to the water table is shallow.

DIRECTIONS FOR USE

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) medium. 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.

Aerial application: **DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty. **DO NOT** apply when wind speed is greater than 10 km/h at flying height at the site of application. **DO NOT** apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) medium. To reduce drift caused by turbulent wingtip vortices, the nozzle distribution along the spray boom length **MUST NOT** exceed 65% of the wing- or rotorspan.

Buffer zones:

Use of the following spray methods or equipment DO 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		Freshwater Habitat of Depths:		Estuarine/Marine Habitats of Depths:	
			Less than 1m	Greater than 1 m	Less than 1 m	Greater than 1 m
Field sprayer	canary grass. mustard, sugar beet		1	1	4	2
	flax, canola, rape, tobacco, tomato, onion, pea, potato, pumpkin, sweet clover, clover, cauliflower, collards, cranberry. dandelion, endives, garlic, horseradish, kohlrabi, leek, melon, parsley, salsify, shallot, Swiss chard, watercress, pasture and range grass, cucumber, eggplant, kale. lettuce, asparagus, bean, beet, broccoli, Brussel sprout. cabbage, carrot, parsnip, radish, squash. turnip, alfalfa, barley, rye, wheat, oats, pepper, rutabaga, lentil, wild rice		2	1	5	3
	Celery. spinach, blueberry		3	1	5	3
	Corn, strawberries, blackberry, boysenberry, dewberry, loganberry		3	1	10	4
	Raspberry		4	2	10	5
Airblast	Blueberry	Early growth stage	25	15	40	30
		Late growth stage	20	5	30	20
	Blackberry. boysenberry. dewberry. loganberry, grape	Early growth stage	30	20	45	35
		Late growth stage	20	10	35	25
	Raspberry, prune plum,	Early growth stage	35	20	45	35
		Late growth stage	25	15	35	25
	Apples, apricots, cherry, peach, plum, pear, Crabapples	Early growth stage	35	25	50	40
		Late growth stage	30	15	40	30

Aerial	Canary grass	Fixed wing	15	4	85	20
		Rotary wing	10	1	50	15
	mustard, flax, canola	Fixed wing	15	5	125	30
		Rotary wing	15	3	65	20
	Lentil	Fixed wing	20	5	150	35
		Rotary wing	15	5	75	25
	Wild Rice	Fixed wing	25	5	150	45
		Rotary wing	20	5	75	30
	Sweet Clover	Fixed wing	30	10	150	50
		Rotary wing	20	5	80	30
	Alfalfa, barley, oats, rye, wheat	Fixed wing	45	10	175	70
		Rotary wing	25	10	95	40

For tank mixes, consult the labels of the tank-mix partners and observe the largest (most restrictive) buffer zone of the products involved in the tank mixture and apply using the coarsest spray (ASAE) category indicated on the labels for those tank mix partners.

Activity	REI
Greenhouse lettuce, pasture and rangeland, potato, sugar beets, salsify, radish, rutabaga, onions, garlic, leek, shallot, eggplant, pepper, tomato, blackberry, boysenberry, dewberry, strawberry, loganberry, barley, canola (rapeseed, rape), oats, wheat, rye, wild rice (cultivated), corn (grain, forage), alfalfa, clover, sweet clover, canary grass (for seed), mustard, flax, asparagus, tobacco, cranberries, aronia berry, Buffalo currant, Chilean guava, black currant, red currant, elderberry, European barberry, highbush cranberry, honeysuckle, jostaberry, juneberry, lingonberry, native currant, salal, sea buckthorn, bearberry, bilberry, cloudberry, muntries, partridgeberry, capulin, Chinese jujube, nectarine, plumcot, sloe	
<i>All activities</i>	12 hrs
Mushroom beds and houses	
<i>All activities</i>	12 hrs
Beets, turnips, carrots, horseradish, parsnip, lettuce, spinach, celery, collard, kale, parsley, Swiss chard, endive, kohlrabi, watercress, dandelion, beans, lentils, peas, cucumber, melon, pumpkin, squash, raspberry	
<i>All activities</i>	1 day
Greenhouse ornamentals, broccoli, Brussels sprouts, cabbage, cauliflower, blueberries	
<i>All activities</i>	2 days
Outdoor ornamentals	

Activity	REI
<i>All activities</i>	3 days
Apples, crabapples, apricots, pears	
<i>Hand thinning</i>	3 days
<i>Hand harvest, hand line irrigation</i>	2 days
<i>All other activities</i>	12 hrs
Peach, plum, prune plum, cherry	
<i>Hand thinning</i>	3 days
<i>All other activities</i>	1 day
Grapes, Amur river grape, gooseberry, kiwifruit, maypop, schisandra berry	
<i>Girdling, cane turning</i>	5 days
<i>Hand harvest, training, tying, leaf pulling, hand pruning, thinning</i>	4 days
<i>All other activities</i>	12 hrs

Maximum Number of Applications per Year and Minimum Application Intervals

Crop		
	Maximum Number of Applications per Year	Minimum Interval (days)
Pasture and range, potato, beets (table), turnips, carrots, horseradish, parsnip, sugar beets, salsify, radish, rutabaga, onions, garlic, leek, shallot, lettuce, spinach, celery, collard, kale, parsley, Swiss chard, endive, kohlrabi, watercress, dandelion, broccoli, Brussels sprouts, cabbage, cauliflower, cucumber, melon, pumpkin, squash, peach, plum, prune plum, cherry, barley, canola (rapeseed, rape), oats, wheat, rye, wild rice (cultivated), mustard, flax, asparagus, grapes, tobacco, cranberries	1	N/A
Greenhouse lettuce, raspberry	2	10
Greenhouse ornamentals, outdoor ornamentals	4	10
Beans, lentils, peas, blackberry, boysenberry, dewberry, strawberry, loganberry	2	7
Eggplant, pepper, tomato	4	7

Apples, crabapples, apricots, pears	2	10
Blueberry	3	4
Corn (grain, forage)	4	3
Alfalfa (2 applications per cut to max 4 per year), clover, sweet clover, canary grass (for seed)	2	14

FRUIT CROPS

Apply by ground only.

CROPS	PESTS	mL product per 1000L (unless specified per hectare)	MAX NO. OF APPLICATION per crop/year	DAYS BEFORE HARVEST	NOTE REFERENCE NUMBER
Apples, Crab-apples	Wooly apple aphid	610	2	3	
	Bud Moth	880			
	Green Apple Aphid Rosy Apple Aphid	610 – 880			
	Mealybugs	610 – 1220			
	Clover mite European Red mite Two-spotted mite, *Yellow mite	610 – 1220			
	Codling moth Plum curculio Scale crawlers	1220			
	Red-banded leaf roller	880 – 1220			
	MALATHION 85 E may cause injury to McIntosh and Courtland varieties if spray is applied within 4 weeks of harvest. *To control yellow mites, make at least 2 applications-				
	Apricots	Aphids, Codling moths Orange tortrix Scale insects	975 – 1220	2	7

Blackberry, Boysenberry, Dewberry, Loganberry	Aphids, Leafhoppers, Rose Chafers, Spider mites, Thrips	610 – 975	2	7	
Blueberries	Aphids, Cranberry fruitworm, Leafhoppers, Leafrollers, Rose chafers, Spider mites, Strawberry root weevil adults (BC only), Thrips	1000 in 1000L/ha	3	1	2
	Blueberry maggot adults Cherry fruitworm	550 in 1000L/ha			
Cherries	Black Cherry Aphid, Fruit Tree Leaf Roller	610-880	1	3	
	Injury may occur on certain varieties of sweet cherries in British Columbia.				
Cranberry	Blackheaded fireworms, Cranberry fruitworm, Leafhoppers, Meadow spittle bugs (nymphs)	610-1100	1	3	
Grapes	Aphids, Leafhoppers, Mealy bugs, Scale crawlers, Spider mites	880	1	3	
	Injury may occur on Ribier Grapes				
Grape Vines (Nursery stock)	Grape phylloxera		1		1
Peaches	Oriental fruit moth Plum curculio, Mites	490-855	1	7	
Pears	Aphids, Leafrollers, Mealybugs, Pear Psylla (suppression only), Pear slugs, Scale crawlers, Spider mites, Tent caterpillars	610-1220	2	3	

	Codling moth, Fruit tree leaf roller, Plum curculio, Red-banded leaf roller	1220			
Plums Prune Plums	Mealy plum aphid, Spider mites	490-855	1	3	
	Plum curculio	610-880			
Raspberries	Leafhoppers, Sap beetles, Thrips	880/ha	2	1	
	Bud weevil adults	1345/ha			
Strawberries	Aphids, Leafhoppers, Spider mites, Strawberry leafrollers	975/ha	2	3	
	Strawberry root weevil adults (B.C. only)	1345/ha			

FRUIT CROPS

NOTES Reference Numbers

1. Use 100-200 mL/100L of water solution. Remove excess soil from roots and dip in solution for 5 minutes. Two hundred and twenty five (225) litres treats about 500 plants.

LABELLING TREATED GRAPEVINE ROOTSTOCK:

All packaged grapevine rootstocks for sale or use in Canada must be labelled or tagged as follows: "These grapevine rootstocks have been treated with Malthion 85E, which contains malathion. Do not re-sell individual rootstocks without the attachment of this label. Store away from feed and other foodstuffs. Wear a long-sleeved shirt, long pants, gloves, socks and shoes during the unpacking, planting and handling of treated rootstocks, and during the clean-up, repair and maintenance of rootstock planting equipment.

2. For cranberry fruitworm, apply 2500 litres per hectare at egg hatch.

VEGETABLES

Apply the concentrate listed below for each crop using enough spray mixture to ensure thorough coverage.

Apply by ground only.

CROPS	PESTS	mL product per hectare	MAX NO. OF APPLICATION per crop/year	DAYS BEFORE HARVEST	NOTE REFERENCE NUMBER
Asparagus	Asparagus beetle	1220	1	1	
Beans	Aphids, Leafhoppers, Mexican bean beetle, Spider mites	735-1345	2	3	

Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Kale, Kohlrabi	Aphids, Cabbage loopers, Imported cabbageworm	535-1345	1	3	
Beets (table)	Aphids, Leafhoppers, Leafminers, Spider mites	535-1345	1	7	
Carrots	Aphids	880-975	1	7	
Celery	Aphids, Six-Spotted leafhoppers, Spider mites	1100	1	7	
Collards, Swiss Chard, Watercress	Aphids, Leafminers	1100	1	7	
Cucumbers, Pumpkins, Squash	Aphids, Spider mites, Leafhoppers	880	1	3	
	Do not apply Malathion to cucurbits unless plants are dry.				
Dandelion	Aphids	1100-1345	1	7	
Eggplant	Aphids, Spider Mites	535-1345	4	3	
Endive	Aphids, Spider Mites	535-1345	1	7	
Garlic	Aphids, Thrips	535-1345	1	3	
Horseradish	Aphids	535-1345	1	7	
Leek, Shallot	Aphids, Thrips	1100-1345	1	3	
Lettuce (Field)	Aphids, Cabbage loopers, Spider mites, Six Spotted Leafhoppers	735-1345	1	14 (leaf) 3 (head)	
Lettuce (Greenhouse)	Aphids, Armyworms, Greenhouse Whiteflies, Spider Mites, Thrips,	735-1345	2	7	
Melons	Aphids, Cucumber beetles, Leafhoppers, Leafminers, Spider mites	1100-1345	1	3	
	Do not apply Malathion to cucurbits unless plants are dry.				
Mushroom Beds & Houses	Mites, Phorid flies, Sciariid flies	12-20		2	1
Onions (Bulb and Green)	Thrips	1100	1	3	
Parsley	Aphids	1100-1345	1	20	

Parsnip	Aphids	535-1345	1	7	
Peas	Pea aphid, Leafhoppers, Pea weevil, Spider mites	1100	2	3	2
Peppers	Aphids, Leafhoppers, Maggots, Pepper weevil	610-1345	4	3	
Potatoes	Aphids, Colorado potato beetle, Leafhoppers, Spider mites	735-1100	1	3	
Radishes	Aphids, Flea beetles, Leafhoppers	535-1345	1	7	
Rutabagas Turnips	Aphids, Cabbage looper, Imported cabbageworm, Spider mites	535-1345	1	3	
Salsify	Aphids	535-1345	1	7	
Spinach	Aphids	1345	1	7	
Tomatoes	Aphids, Cucumber beetles, Leafhoppers, Leafminers, Spider mites, Tomato russet mites	735-975	4	3	

VEGETABLES NOTES

Reference

1. Use 12-20 mL MALATHION 85 E in 11 litres per 100 m². Apply immediately after picking.
Repeat about twice a week or as required. The same concentration of MALATHION 85 E may be sprayed on wooden surfaces in mushroom houses to the point of runoff as needed. When spraying these surfaces, cover beds and DO NOT direct spray towards mushrooms, soil, or casing.
2. Do not apply unless foliage is dry.

FIELD CROPS

May be applied by ground or air as indicated.

CROPS	PESTS	mL product per hectare	MAX NO. OF APPLICATIONs /crop/year	DAYS BEFORE HARVEST	NOTE REFERENCE NUMBER
Alfalfa	Alfalfa weevil larvae, Aphids, Grasshoppers, Leafhoppers, Lygus bugs, Spider mites, Spittle bugs (adult)	1100-1345	2 per cut max 4 per year	7	1, 11
	Alfalfa blotch leafminer	1345		7	2

Canary grass (for seed)	Aphids	685	2	14	3,11
Clover	Aphids, Grasshoppers, Leafhoppers, Spider mites	1100-1345	2	7	4
Canola Mustard Rape	Diamondback moth larvae	270-415	1	7	6,11
	Flea beetles, Grasshopper	535-855			
Corn (Grain or Forage)	Earworms, European corn borer	1100-1345	4	5	5
Flax	Grasshoppers	535-855	1	7	6,11
<u>Grain Crops</u> Barley Oats Rye Wheat	Armyworms, English grain aphids, Grasshoppers, Greenbugs, Winter grain mites	1100-1345	1	7	11,12
	Cereal leaf beetle	1075			
Lentils	Grasshoppers	830	2	14	7,11
Peas (Field)	Aphids, Leafhoppers, Maggots, Pea	1100	2	3	
Sugar beets	Flea beetles	535	1		8
Sweet Clover	Sweet clover weevils	735-1220	2		9,11
Tobacco	Aphids, Leafhoppers, Tobacco	735-975	1	7	
Wild rice	Wild riceworm	1100	1	10	10,11
	For cultivated wild rice. Use knapsack sprayer or similar applicator. Limitation: Do not use on fish-bearing waters such as rivers or lakes.				

FIELD CROPS

NOTES Reference Number

1. Do not apply to alfalfa in bloom. Apply when 75% of foliage shows feeding damage.
2. Apply as soon as pinholes in leaves are noted, usually mid to late May. Do not apply more than the max. number of applications.
3. Apply when more than 50 aphids per canary seed head between heading and soft dough stage.
4. Do not apply to clover in bloom.
5. Apply when 10% of ears show silk. Repeat at 3 to 5 day intervals until a max of 4 applications are made. Check with local agricultural authorities for correct timing.
6. Treat when bees are absent from field and temperature is above 18 degrees C.
7. Two applications, with 7 day intervals between.
8. Apply at the 3 - 5 leaf stage when insects or damage first appears.
9. Spray field margins of first year clover in late summer or early fall when migration of adults is occurring. Remove cattle while treating; cattle may return immediately after spraying.
10. For control in non-fishbearing waters such as cultivated or paddy grown wild rice, that are confined to the property of the user and where there is no outflow beyond the property limits
11. May be applied by air.

12. Apply when cereal leaf beetle larvae reach 2 to 3 per stem.

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 described below were developed by persons other than Loveland Products Canada Inc. and accepted for registration by Health Canada under the User Requested Minor Use Label Expansion program. Loveland Products 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 listed below.

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

GRAPES

For foliar application only, using conventional ground application equipment. Ensure sufficient water volume is used to guarantee thorough coverage. Use a minimum of 500 L of water per hectare. Apply prior to harvest when treatment thresholds have been reached, as determined by local monitoring. Consult extension specialists for timing.

Crop	Pest	Rate per Ha	Maximum No. of Applications	Days Before Harvest	Restricted-Entry Interval
Grapes	Adult Multicoloured Asian Lady Beetle	880 mL	1	3	Girdling, cane turning = 5 days Hand harvest, training, tying, leaf pulling, hand pruning, thinning = 4 days All other activities = 12 hrs

SUPPRESSION OF SPOTTED WING DROSOPHILA

Method of Application: Foliar, GROUND APPLICATION ONLY. Use a maximum of 1000 L of water per hectare. Application Interval: 7-10 days for all crops (if applicable). Timing of applications should be based on the presence of adult flies of the pest, as determined by local monitoring.

Please see Restrctied Entry Interval table for the crops listed below.

Crops (including cultivars, varieties, and hybrids of the listed crops)	mL product per 1000 L	Maximum No. of Applications per crop/year	Days Before Harvest
Stone Fruits (Crop Group 12-09): Apricot, Capulin, Cherries ¹ , Chinese jujube, Japanese apricot, Nectarine, Peach, Plums ² , Plumcot,	610-855	1, except 2 for apricots with a 10-day interval	7, except 3 for cherries and plums

Sloe			
Caneberries (Crop Subgroup 13-07A): Blackberries ³ , Loganberry, Raspberries ⁴	975	2	1
Bushberries (Crop Subgroup 13-07B): Aronia berry, Blueberry (highbush and lowbush), Chilean guava, Currants ⁵ , Elderberry, European barberry, Gooseberry, Highbush cranberry, Honeysuckle (edible), Huckleberry, Jostaberry, Juneberry, Lingonberry, Salal, Sea buckthorn	1000	3	1
Small Fruits Vine Climbing, except Fuzzy Kiwifruit (Crop Subgroup 13-07F): Amur river grape, Gooseberry, Grape, Kiwifruit (hardy), Maypop, Schisandra berry	880	1	3
Low Growing Berries (Crop Subgroup 13-07G): Bearberry, Bilberry, Blueberry (lowbush), Cloudberry, Cranberry, Lingonberry, Muntries, Partridgeberry, Strawberry	1000	2, except 1 for cranberry	3

¹Including black, Nanking, sweet, and tart cherries.

²Including American, beach, Canada, cherry, Chickasaw, Damson, Japanese, Klamath, and prune plums.

³Including Andean blackberry, arctic blackberry, bingleberry, black satin berry, boysenberry, brombeere, California blackberry, Chesterberry, Cherokee blackberry, Cheyenne blackberry, common blackberry, coryberry, darrowberry, dewberry, Dirksen thornless berry, evergreen blackberry, Himalayaberry, hulberry, lavacaberry, loganberry, lowberry, Lucretiaberry, mammoth blackberry, marionberry, mora, mures deronce, nectarberry, northern dewberry, olallieberry, Oregon evergreen berry, phenomenalberry, rangeberry, ravenberry, rossberry, Shawnee blackberry, southern dewberry, tayberry, youngberry, and zarzamora.

⁴Including black, red, and wild raspberries.

⁵Including black, buffalo, native, and red currants.

ANNUAL CANARYGRASS					
Crop	Pest	Rate per Ha	Maximum No. of Applications/crop/year	Days Before Harvest	COMMENTS
Annual canarygrass	Aphids	685 mL	1	14	<ul style="list-style-type: none"> • Apply when more than 50 aphids per canary seed head between heading and soft dough stage. • May be applied by air. • Annual canarygrass is NOT to be cut for feed or grazed. • Annual canarygrass seeds can be harvested for human consumption.

*It is recommended to test Malathion 85E Insecticides on a representative portion of ornamental species to ensure no phytotoxic effects before full commercial use

YOUNG GRASSHOPPER CONTROL IN PASTURES AND RANGELAND

Use 830mL of MALATHION 85 E per hectare of pasture range. For pasture and range grass repeat as necessary. Do not apply to fields occupied by dairy animals, but may be grazed or harvested on the day of application. In alfalfa, use at the rate of 975 -1465mL per hectare, max 2 applications per cut, max 4 applications per year. Do not apply within 7 days of harvest. Do not enter or allow worker entry into treated areas during the restricted-entry interval of 12 hours. Do not apply when crop is in bloom. Apply when 75% of alfalfa foliage shows feeding damage.

OUTDOOR ORNAMENTALS

Thorough, full coverage applications should be made with, max 4 applications/year per ornamental crop, with min 10 days intervals. Do not enter or allow worker entry into treated areas during the restricted-entry interval of 3 days. Apply at first appearance of pests.

	mL product in 1000L of water/ha
Aphids, mealy bugs, spider mites	880
Oyster shell scale*	610
Lace bug	610-880
Leafminers	1220
Bagworms	1220
Tent caterpillar	1220

Pine needle scales*	2445
Spruce Budworm	2930
Four-lined leaf bug, leafhoppers, tarnished plant bug, thrips, European pine shoot moths, Sawflies	880

*Apply when scale crawlers have settled on foliage.

NOTE: Injury may occur on African violet, Boulan fern, Crassula, Ilex, Juniper (Canaerti & Sabina), Maidenhair fern, Petunia, Pteris fern, and young plants.

GREENHOUSE ORNAMENTALS

Carnation, Chrysanthemum, Geranium, Rose, Snapdragon. Foliar Spray – to control Aphids, Mealybugs, Spider mites, Thrips, Whitefly. Mix 7.5 ml of MALATHION 85E with sufficient water to cover 100 m²

DO NOT APPLY AS A FOG, AEROSOL, MIST OR SPACE SPRAY IN RESIDENTIAL AREAS

Residential areas are defined as sites where bystanders including children may be potentially exposed during or after spraying. This includes around homes, schools, parks, playgrounds, playing fields, public buildings or any other areas where the general public including children could be exposed.

EMPTY GRAIN ELEVATORS, GRANARY BINS AND GRAIN BOX CARS

Pests controlled: Confused flour beetles, flat grain beetles, granary weevils, grain mites, Indian meal moths, lesser grain borers, red flour beetle, rice weevils, rusty grain beetles, saw toothed grain beetles.

Spray Mixture: 490 mL of MALATHION 85 E in either 15 litres of water or 15 litres of deodorized kerosene (The deodorized kerosene solution should be made up of 4 parts kerosene type solvent plus one part aromatic hydrocarbon type solvent).

Directions for Use: Before storing new grain, clean premises thoroughly, including floors, walls, under and behind machinery or equipment. Remove and burn all sweepings and debris. Reclean before retreatment. Maintain good sanitation at all times. Spray to the point of run-off or at the rate of approximately 5 litres of spray mixture per 100 m². Use spray equipment and nozzles that will produce a coarse spray. This same spray should be applied around the outside of bins and elevators to help prevent reinfestation.

Grain Elevators, Granary Bins: Whenever these areas become empty, clean and then spray. Every three weeks, clean and spray the work floor, walls and surrounding areas.

Grain Box Cars: Before loading, clean, then starting at a point on the car wall approximately 60 cm above the estimated sack line level, spray the walls and floor, using 4-5 litres of spray per car. Allow sprayed cars to stand empty with door open until the spray has thoroughly dried. Line the walls and floor of the car with kraft paper and then load.

PRECAUTIONS

Use a respirator when spraying in closed areas. Wear long pants, long sleeved shirts and chemical-resistant gloves during mixing/loading, application, clean-up and repair.

Do not apply directly to grain. Application must be made by an experienced or trained person. Wait until spray has thoroughly dried before storing grain in treated areas. MALATHION 85 E must be applied only to empty grain holding facilities. It must not be sprayed directly on grain milling equipment while the mill is in operation.

STORED GRAIN PROTECTION

WHEAT, RYE, CORN, BARLEY AND OATS:

For the protection of stored grain such as wheat, oats, corn, rye, or barley against confused flour beetle, granary weevil, rice weevil, saw-toothed grain beetle, flat grain beetle, red flour beetle, rusty grain beetle, lesser grain borer, Indian meal moth and grain mites, apply as follows:

WHEAT, RYE AND CORN	10 mL/1000 kg in 10 to 20 L water
BARLEY	12 mL/1000 kg in 10 to 20 L water
OATS	17 mL/1000 kg in 10 to 20 L water

Grain treated with MALATHION 85 E should not be offered for sale until seven (7) days after treatment. To protect stored grain from attack by Indian meal moth, apply MALATHION 85 E to the surface of clean or uninfested grain at the rate of 295 mL in 5 - 10 L of water per 100 m² of grain surface area. Apply spray evenly over the surface of the grain and rake to a depth of 15 cm. Apply immediately after grain is loaded into storage. Any of the standard spray applicators on the market which can be calibrated to deliver a known volume of liquid are suitable for applying MALATHION 85 E.

For small amounts of grain in farm storage, where special application equipment is not available, any type of low pressure sprayer holding 5 L or more can be used. The spray can be applied to the grain stream as the grain is being elevated into storage. The first step would be to test spray in a tank of water to determine the rate at which the sprayer is discharging - then regulate the flow of grain to get the proper amount of spray.

STORAGE

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

Keep in original container during storage. Isomalathion, a toxic metabolite of malathion, forms when malathion product is stored at elevated temperatures or for extended periods of time.

Malathion product must be stored in a cool (< 23°C) dry, well ventilated place away from seed, fertilizer or other pesticides. Do not use after the expiry date given on the container label.

DISPOSAL

1. Triple-or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instructions 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 the 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.

**FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL DAY OR NIGHT 1-800-561-8273 or
CHEMTREC – DAY OR NIGHT 1 800-424-9300**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

- 1.1 PRODUCT IDENTIFIER:** PEST CONTROL PRODUCTS ACT REGISTRATION NO. 8372
TRADE NAME: MALATHION 85E
- 1.2 RECOMMENDED USE:** GROUP 1B INSECTICIDE
- 1.3 MANUFACTURED FOR AND DISTRIBUTED BY:**
 LOVELAND PRODUCTS CANADA, INC.
 PO Box 5234 | 64137 Hwy 543 E • High River, Alberta T1V 1M4
- 1.4 24 Hour Emergency Phone: (Chemtrec):** 1-800-424-9300 (Toll Free) - **Additional Emergency Phone** 1-800-561-8273
 Loveland Technical Service: 1-800-328-4678

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Acute Toxicity - Oral

Category 4

H302

2.2 Label elements



Signal word:

WARNING

Hazard Statement:

H302 – Harmful if swallowed.

H313 – May be harmful in contact with skin.

H333 – May be harmful if inhaled.

Precautionary
Statement:

(Prevention):

P264 – Wash hands and face thoroughly after handling.

P270 – Do not eat, drink or smoke when using this product.

Precautionary
Statement:

(Response):

P301+P312 – IF SWALLOWED: Call a poison centre/doctor/physician if you feel unwell.

P330 – Rinse mouth.

Precautionary
Statement:

(Storage):

Not required or applicable.

Precautionary
Statement:

(Disposal):

P501 – Dispose of contents/container according to local and provincial regulations.

2.3 Other hazards

None known



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3. COMPOSITION, INFORMATION ON INGREDIENTS

3.1 Substances

3.2 Mixtures

Chemical Name:	CAS No.	Concentration [%]
Malathion	121-75-5	85
Other ingredients	Proprietary	15

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice: Get medical attention if symptoms occur.

Eye contact: 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.

Ingestion: 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.

Skin contact: 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.

Inhalation: 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 treatment advice.

4.2 Most Important Symptoms and Effects, Acute and Delayed

Symptoms: Eye irritation. Harmful if swallowed.

4.3 Immediate Medical Attention and Special Treatment

Treatment: Treat symptomatically. Symptoms may be delayed.

FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-800-561-8273

Take container, label or product name with you when seeking medical attention.

NOTES TO PHYSICIAN: This product may cause cholinesterase inhibition. Atropine is antidotal. 2-PAM may be effective as an adjunct to atropine.

5. FIRE FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA:

Suitable Extinguishing Media: Foam, carbon dioxide (CO₂), dry powder, water spray. Do not use water jet as this will spread the fire.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

Specific Hazards During Firefighting: Product will decompose rapidly when heated to temperatures at or over 280 °F (140 °C). Release of volatile, toxic compounds such as dimethyl sulfide, sulfur dioxide, carbon monoxide, and phosphorus pentoxide are possible.

5.3 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

Special Protective Equipment for Firefighters: Self-contained breathing apparatus and full protective gear should be worn in fighting large fires involving chemicals. Use water spray to keep fire exposed containers cool. Keep people away. Isolate fire and deny unnecessary entry.

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Personal Precautions: Avoid inhalation of vapours, dusts and spray mist and contact with skin and eyes. Ensure adequate ventilation. Wear suitable protective clothing.

6.2 ENVIRONMENTAL PRECAUTIONS

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Do not contaminate water. Do not allow to enter drains, sewers, or watercourses.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN-UP

Methods for Clean-Up: Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. After removal flush contaminated area thoroughly with water.
Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to Remove residual contamination.
Never return spills to original containers for re-use.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING:

Advice on Safe Handling: Avoid inhalation of dusts, vapours / spray and contact with eyes, skin and clothing. Do not breathe dusts, mist or vapour. Wear personal protective equipment. Do not use in areas without adequate ventilation. Avoid prolonged exposure. Wash thoroughly after handling. Do not empty into drains. Handle and open container with care. Use care in handling/storage. Wash before eating, drinking and/or smoking.

7.2 CONDITIONS FOR SAFE STORAGE:

Requirements for Storage Areas and Containers: Store in original containers only. Store in a cool, dry, well-ventilated place, preferably in a locked storage area. Store out of direct sunlight. Do not contaminate water, food or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 CONTROL PARAMETERS:

OCCUPATIONAL EXPOSURE LIMITS

U.S. Workplace Exposure Level (ACGIH®) STEL/CEIL (C)

Components	Type	Value
Malathion	TWA	1 mg/m ³ IFV

U.S. Workplace Exposure Level (OSHA) PELs

Components	Type	Value
Malathion	TWA	15 mg/m ³ Total dust - Skin

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Specimen
Acetylcholinesterase inhibiting Pesticides	70% of individual's baseline	Cholinesterase activity in red blood cells

8.2 EXPOSURE CONTROLS:

Engineering Measures

Provide adequate general and local exhaust ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapours and spray mists. Provide eyewash station and safety shower.

Individual Protection Measures:

Eye / Face Protection: Goggles or shielded safety glasses are recommended.

Skin Protection: Chemical resistant clothing is recommended. Routinely wash work clothing and protective equipment to remove contaminants. The use of chemical-resistant gloves is recommended when handling undiluted product. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

Respiratory Protection: In case of inadequate ventilation or risk of inhalation of mists or vapours, use suitable respiratory equipment such as MSHA/NIOSH approved respirator with approved filter. If respirators are used, a program should be in place to assure compliance with 29 CFR 1910.134, the OSHA Respiratory Protection standard. Wear air supplied respiratory protection if exposure concentrations are unknown.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 APPEARANCE : Liquid

ODOUR: Aromatic solvent.

ODOUR THRESHOLD: No data available.

COLOUR: Colourless to amber.

pH: No data available

MELTING POINT / FREEZING POINT: No data available

BOILING POINT: 312 °F / 156 °C (based on the active)

FLASH POINT: 158 °F / 70 °C.

FLAMMABILITY (solid, gas): No data available.

UPPER / LOWER FLAMMABILITY OR EXPLOSIVE LIMITS: No data available.

VAPOUR PRESSURE: 3.4×10^{-6} mm Hg @ 25 °C.

SOLUBILITY: Emulsifies

PARTITION CO-EFFICIENT, n-OCTANOL / WATER: No data available.

AUTO-IGNITION TEMPERATURE: No data available.

DECOMPOSITION TEMPERATURE: No data available

VISCOSITY: No data available

SPECIFIC GRAVITY (Water = 1): 1.194 g/ml

DENSITY: 1.19 kg/L

Note: These physical data are typical values based on material tested but may vary from sample to sample.
Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

10. STABILITY AND REACTIVITY

10.1 REACTIVITY

Stable

10.2 CHEMICAL STABILITY

Stable under normal temperature conditions

10.3 POSSIBILITY OF HAZARDOUS REACTIONS

No reactions known under normal use conditions. Will not polymerize.

10.4 CONDITIONS TO AVOID

The active ingredient will decompose rapidly at temperatures above 100 °C.

10.5 INCOMPATIBLE MATERIALS

Strong oxidizers, strong alkalis, amines. The active ingredient can corrode iron, steel, tin plate, lead and copper.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

May include but are not limited to Dimethyl sulfide, sulfur dioxide, oxides of carbon, and phosphorus pentoxide from combustion.

11. TOXICOLOGICAL INFORMATION

11.1 LIKELY ROUTES OF EXPOSURE

Skin contact.

LC₅₀ (rat): > 5.1 mg/L (4 HR)

LD₅₀ Oral (rat): > 550 mg/kg

LD₅₀ Dermal (rat): > 2000 mg/kg

Acute Toxicity Estimates: No data available for product

Skin Irritation (rabbit): May cause skin irritation.

Eye Irritation (rabbit): May cause eye irritation.

Specific Target Organ Toxicity: Eyes, skin, respiratory system, liver, blood cholinesterase, CNS, CVS, GI tract.

Aspiration: No data available for product

Skin Sensitization (guinea pig): Sensitizer

Carcinogenicity: ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen); IARC-3 (Unclassifiable as to Carcinogenicity in Humans).

Germ Cell Mutagenicity: No data available for product

Interactive Effects: None known

12. ECOLOGICAL INFORMATION

12.1 ECOTOXICITY

A toxic hazard to fish. Avoid spills or release to watercourses. The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. This product is not intended for use in aquatic settings.

Ecotoxicological Data Components

Species

Test Results

Malathion	Oncorhynchus mykiss	0.18 mg/L – 96-hour LC ₅₀
	Daphnia magna	0.72 µg/L – 96-hour EC ₅₀
	Bees	0.38 µg/bee – LD ₅₀ acute oral
	Bees	0.27 µg/bee – LD ₅₀ topical

Drift or runoff may adversely affect non-target plants.

Do not apply directly to water.

Do not contaminate water when disposing of equipment wash water.

Do not apply when weather conditions favor drift from target area.

12.2 PERSISTENCE AND DEGRADABILITY

Biodegradability: Malathion is biodegradable but does not fulfill criteria for being readily biodegradable.

12.3 BIOACCUMULATIVE POTENTIAL

Bioaccumulation: Bioconcentration potential is low (BCF 95).

12.4 MOBILITY IN SOIL

Malathion is of medium mobility in soil under normal conditions, but degrades rapidly.

12.5 OTHER ADVERSE EFFECTS

Assessment: No data available.

13. DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

Do not reuse containers for any purpose. Make the empty 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. Do not contaminate water, food, or feed by storage or disposal. For disposal, the container may be returned to the point of purchase (distributor/dealer). It must be refilled by the distributor/dealer with the same product. Do not reuse the product container for any other purpose.



SAFETY DATA SHEET

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MALATHION 85E

SUPERSEDES: 09/12/15

14. TRANSPORT INFORMATION

14.1 LAND TRANSPORT

TDG Shipping Description: NOT REGULATED FOR GROUND OR RAIL TRANSPORT.

DOT Shipping Description: GREATER THAN 11 GALLONS: RQ UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (MALATHION), 9, III, MARINE POLLUTANT, ERG GUIDE 171

U.S. Surface Freight Classification: INSECTICIDES, INSECT REPELLENTS, NOI, OTHER THAN POISON (NMFC 102120, CLASS: 60)

15. REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS

NFPA & HMIS Hazard Ratings:

NFPA

2	Health	0	Least
2	Flammability	1	Slight
0	Instability	2	Moderate
		3	High
		4	Severe

HMIS

2	Health
2	Flammability
0	Reactivity
B	PPE

SARA Hazard Notification/Reporting

SARA Title III Hazard Category:	Immediate	<u>Y</u>	Fire	<u>N</u>	Sudden Release of Pressure	<u>N</u>
	Delayed	<u>Y</u>	Reactive	<u>N</u>		

Reportable Quantity (RQ) under U.S. CERCLA: Malathion (CAS: 121-75-5) 100 pounds.

SARA, Title III, Section 313: Malathion (CAS: 121-75-5) 85%.

RCRA Waste Code: Not listed

CA Proposition 65: Not applicable.

16. OTHER INFORMATION

SDS STATUS: Format.

PREPARED BY: Registrations and Regulatory Affairs

REVIEWED BY: Environmental Health and Safety

Disclaimer and Limitation of Liability: This data sheet was developed from information on the constituent materials identified herein and does not relate to the use of such materials in combination with any other material or process. No warranty is expressed or implied with respect to the completeness or ongoing accuracy of the information contained in this data sheet, and LOVELAND PRODUCTS CANADA, INC. disclaims all liability for reliance on such information. This data sheet is not a guarantee of safety. Users are responsible for ensuring that they have all current information necessary to safely use the product described by this data sheet for their specific purpose.

2018-6591

2019-04-23

| Container
Label

GROUP	1B	INSECTICIDE
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MALATHION 85E

COMMERCIAL INSECTICIDE

WARNING POISON

READ THE LABEL AND ATTACHED BOOKLET BEFORE USING

REGISTRATION NO. 8372
PEST CONTROL PRODUCTS ACT

ACTIVE INGREDIENT: Malathion 85%

Expiry Date: yyyy-mm-dd

Lot # XXXX-XXX

This product is not to be sold or applied after the expiry date above.

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

LOVELAND PRODUCTS CANADA, INC.
789 DONNYBROOK DRIVE
DORCHESTER, ON
N0L 1G5
1-800-328-4678

NET CONTENTS: (1, 4, 5, 10, 20 Litres)

2018-6591

2019-04-23

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN.

Harmful if swallowed. Avoid breathing spray mist. Avoid repeated or prolonged contact with skin, eyes and clothing. Wash thoroughly. Avoid contamination of feed and foods. DO NOT use in buildings. Do not contaminate drinking troughs. Wash after handling or using. Avoid contamination of ponds, lakes, streams and other bodies of water which contain fish life or which may be used for irrigation or domestic purposes. Do not use in milk rooms. Remove lactating animals and calves under 1 month of age from buildings before treating. Do not apply oil based sprays to ornamentals as injury may occur. Use a respirator when spraying in closed areas.

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.

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.

When used in residential areas, outdoor use only. Residential areas are defined as any use site where bystanders including children could be exposed during or after application. This includes homes, schools, public buildings or any other areas where the general public including children could be exposed.

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

FIRST AID

TERMINATE EXPOSURE-Remove patient from the area of exposure. Remove contaminated clothing. If on skin wash exposed skin with soap and water. **CLEAN UNDER FINGER AND TOE NAILS**. If swallowed do NOT induce vomiting. Get prompt medical attention or contact a poison control centre **IMMEDIATELY**.

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. Do not induce vomiting unless told to do so by poison control centre or doctor. Do not give **any** liquid to the person. 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

2018-6591

2019-04-23

Malathion 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, tremor, 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.

STORAGE

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

Keep in original container during storage. Isomalathion, a toxic metabolite of malathion, forms when malathion product is stored at elevated temperatures or for extended periods of time. Malathion product must be stored in a cool (< 23°C) dry, well ventilated place away from seed, fertilizer or other pesticides. Do not use after the expiry date given on the primary panel.

DISPOSAL

1. Triple-or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instructions 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 the 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.

MALATHION 85E

COMMERCIAL INSECTICIDE

WARNING POISON

READ THE LABEL AND ATTACHED BOOKLET BEFORE USING

REGISTRATION NO. 8372
PEST CONTROL PRODUCTS ACT

ACTIVE INGREDIENT: Malathion 85%

This product is not to be sold or applied after the expiry date on the container label.

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

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RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, please note that MALATHION 85E Insecticide contains a Group 1B insecticide/acaricide. Any insect/mite population may contain individuals naturally resistant to MALATHION 85E Insecticide and other Group 1B insecticide/ acaricide. 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 MALATHION 85E Insecticide or other Group 1B insecticides/acaricides with different groups that control the same pests.
- Avoid application of more than the indicated number of sprays of MALATHION 85E 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, Loveland Products Canada Inc., 1-800-328-4678 or at www.lovelandproducts.ca.

GENERAL DIRECTIONS

MALATHION 85E is generally effective in controlling the insects and mites listed below. MALATHION 85E will work more effectively if the temperature is 20° C or more or when temperatures will reach or exceed this minimum. Use the rate of MALATHION 85E in the full volume of water. Add the specified amount of MALATHION 85E to the water in the spray tank and agitate well for 3 to 5 minutes before spraying.

FOR GROUND APPLICATION: dilute with water to 1000 L/ha unless otherwise stated. FOR AERIAL APPLICATION: unless otherwise stated, dilute with water to minimum spray volume of 30 L/ha when aerial application is specified.

PERSONAL PROTECTIVE EQUIPMENT

Wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes during mixing, loading, application, clean-up and repair. In addition, wear chemical-resistant headgear during open cab airblast application. Chemical-resistant headgear includes Sou'Wester hat, chemical-resistant rain hat or large brimmed waterproof hat and hood with sufficient neck protection. Gloves are not required during application within a closed cab.

AERIAL APPLICATION INSTRUCTIONS

Use only where aerial application is indicated on this label.

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. Do not apply to any body of water. 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.

Coarse sprays are less likely to drift, therefore, avoid combinations of pressure and nozzle type that will result in fine particles (mist). Use low nozzle pressures (Below 300 kPa). 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. Do not allow drift onto sensitive areas such as water, urban and residential areas.

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 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 1-800-328-4678 or obtain technical advice from the distributor or your

provincial agricultural representative. Application of this specific product must meet and/or conform to the following:

Volume: Apply the recommended rate in a minimum spray volume of 30 litres per hectare unless otherwise stated.

ENVIRONMENTAL HAZARDS:

TOXIC to aquatic organisms. Observe buffer zones specified under DIRECTIONS FOR USE.

TOXIC to birds.

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 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 between the treated area and the edge of the water body.

The use of this chemical may result in contamination of groundwater particularly in areas where soils are permeable (for example, sandy soil) and/or the depth to the water table is shallow.

DIRECTIONS FOR USE

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) medium. 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.

Aerial application: DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply when wind speed is greater than 10 km/h at flying height at the site of application. DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) medium. To reduce drift caused by turbulent wingtip vortices, the nozzle distribution along the spray boom length MUST NOT exceed 65% of the wing- or rotorspan.

Buffer zones:

Use of the following spray methods or equipment DO 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		Freshwater Habitat of Depths:		Estuarine/Marine Habitats of Depths:	
			Less than 1m	Greater than 1 m	Less than 1 m	Greater than 1 m
Field sprayer	canary grass. mustard, sugar beet		1	1	4	2
	flax, canola, rape, tobacco, tomato, onion, pea, potato, pumpkin, sweet clover, clover, cauliflower, collards, cranberry. dandelion, endives, garlic, horseradish, kohlrabi, leek, melon, parsley, salsify, shallot, Swiss chard, watercress, pasture and range grass, cucumber, eggplant, kale. lettuce, asparagus, bean, beet, broccoli, Brussel sprout. cabbage, carrot, parsnip, radish, squash. turnip, alfalfa, barley, rye, wheat, oats, pepper, rutabaga, lentil, wild rice		2	1	5	3
	Celerv. spinach, blueberrv		3	1	5	3
	Corn, strawberries, blackberry, boysenberry, dewberry, loganberry		3	1	10	4
	Raspberry		4	2	10	5
Airblast	Blueberry	Early growth stage	25	15	40	30
		Late growth stage	20	5	30	20
	Blackberry. boysenberry. dewberry. loganberry, grape	Early growth stage	30	20	45	35
		Late growth stage	20	10	35	25
	Raspberry, prune plum,	Early growth stage	35	20	45	35
		Late growth stage	25	15	35	25
	Apples, apricots, cherry, peach, plum, pear, Crabapples	Early growth stage	35	25	50	40
		Late growth stage	30	15	40	30

Aerial	Canary grass	Fixed wing	15	4	85	20
		Rotary wing	10	1	50	15
	mustard, flax, canola	Fixed wing	15	5	125	30
		Rotary wing	15	3	65	20
	Lentil	Fixed wing	20	5	150	35
		Rotary wing	15	5	75	25
	Wild Rice	Fixed wing	25	5	150	45
		Rotary wing	20	5	75	30
	Sweet Clover	Fixed wing	30	10	150	50
		Rotary wing	20	5	80	30
	Alfalfa, barley, oats, rye, wheat	Fixed wing	45	10	175	70
		Rotary wing	25	10	95	40

For tank mixes, consult the labels of the tank-mix partners and observe the largest (most restrictive) buffer zone of the products involved in the tank mixture and apply using the coarsest spray (ASAE) category indicated on the labels for those tank mix partners.

Activity	REI
Greenhouse lettuce, pasture and rangeland, potato, sugar beets, salsify, radish, rutabaga, onions, garlic, leek, shallot, eggplant, pepper, tomato, blackberry, boysenberry, dewberry, strawberry, loganberry, barley, canola (rapeseed, rape), oats, wheat, rye, wild rice (cultivated), corn (grain, forage), alfalfa, clover, sweet clover, canary grass (for seed), mustard, flax, asparagus, tobacco, cranberries, aronia berry, Buffalo currant, Chilean guava, black currant, red currant, elderberry, European barberry, highbush cranberry, honeysuckle, jostaberry, juneberry, lingonberry, native currant, salal, sea buckthorn, bearberry, bilberry, cloudberry, muntries, partridgeberry, capulin, Chinese jujube, nectarine, plumcot, sloe	
<i>All activities</i>	12 hrs
Mushroom beds and houses	
<i>All activities</i>	12 hrs
Beets, turnips, carrots, horseradish, parsnip, lettuce, spinach, celery, collard, kale, parsley, Swiss chard, endive, kohlrabi, watercress, dandelion, beans, lentils, peas, cucumber, melon, pumpkin, squash, raspberry	
<i>All activities</i>	1 day
Greenhouse ornamentals, broccoli, Brussels sprouts, cabbage, cauliflower, blueberries	
<i>All activities</i>	2 days
Outdoor ornamentals	

Activity	REI
<i>All activities</i>	3 days
Apples, crabapples, apricots, pears	
<i>Hand thinning</i>	3 days
<i>Hand harvest, hand line irrigation</i>	2 days
<i>All other activities</i>	12 hrs
Peach, plum, prune plum, cherry	
<i>Hand thinning</i>	3 days
<i>All other activities</i>	1 day
Grapes, Amur river grape, gooseberry, kiwifruit, maypop, schisandra berry	
<i>Girdling, cane turning</i>	5 days
<i>Hand harvest, training, tying, leaf pulling, hand pruning, thinning</i>	4 days
<i>All other activities</i>	12 hrs

Maximum Number of Applications per Year and Minimum Application Intervals

Crop		
	Maximum Number of Applications per Year	Minimum Interval (days)
Pasture and range, potato, beets (table), turnips, carrots, horseradish, parsnip, sugar beets, salsify, radish, rutabaga, onions, garlic, leek, shallot, lettuce, spinach, celery, collard, kale, parsley, Swiss chard, endive, kohlrabi, watercress, dandelion, broccoli, Brussels sprouts, cabbage, cauliflower, cucumber, melon, pumpkin, squash, peach, plum, prune plum, cherry, barley, canola (rapeseed, rape), oats, wheat, rye, wild rice (cultivated), mustard, flax, asparagus, grapes, tobacco, cranberries	1	N/A
Greenhouse lettuce, raspberry	2	10
Greenhouse ornamentals, outdoor ornamentals	4	10
Beans, lentils, peas, blackberry, boysenberry, dewberry, strawberry, loganberry	2	7
Eggplant, pepper, tomato	4	7

Apples, crabapples, apricots, pears	2	10
Blueberry	3	4
Corn (grain, forage)	4	3
Alfalfa (2 applications per cut to max 4 per year), clover, sweet clover, canary grass (for seed)	2	14

FRUIT CROPS

Apply by ground only.

CROPS	PESTS	mL product per 1000L (unless specified per hectare)	MAX NO. OF APPLICATION per crop/year	DAYS BEFORE HARVEST	NOTE REFERENCE NUMBER
Apples, Crab-apples	Wooly apple aphid	610	2	3	
	Bud Moth	880			
	Green Apple Aphid Rosy Apple Aphid	610 – 880			
	Mealybugs	610 – 1220			
	Clover mite European Red mite Two-spotted mite, *Yellow mite	610 – 1220			
	Codling moth Plum curculio Scale crawlers	1220			
	Red-banded leaf roller	880 – 1220			
	MALATHION 85 E may cause injury to McIntosh and Courtland varieties if spray is applied within 4 weeks of harvest. *To control yellow mites, make at least 2 applications-				
	Apricots	Aphids, Codling moths Orange tortrix Scale insects	975 – 1220	2	7

Blackberry, Boysenberry, Dewberry, Loganberry	Aphids, Leafhoppers, Rose Chafers, Spider mites, Thrips	610 – 975	2	7	
Blueberries	Aphids, Cranberry fruitworm, Leafhoppers, Leafrollers, Rose chafers, Spider mites, Strawberry root weevil adults (BC only), Thrips	1000 in 1000L/ha	3	1	2
	Blueberry maggot adults Cherry fruitworm	550 in 1000L/ha			
Cherries	Black Cherry Aphid, Fruit Tree Leaf Roller	610-880	1	3	
	Injury may occur on certain varieties of sweet cherries in British Columbia.				
Cranberry	Blackheaded fireworms, Cranberry fruitworm, Leafhoppers, Meadow spittle bugs (nymphs)	610-1100	1	3	
Grapes	Aphids, Leafhoppers, Mealy bugs, Scale crawlers, Spider mites	880	1	3	
	Injury may occur on Ribier Grapes				
Grape Vines (Nursery stock)	Grape phylloxera		1		1
Peaches	Oriental fruit moth Plum curculio, Mites	490-855	1	7	
Pears	Aphids, Leafrollers, Mealybugs, Pear Psylla (suppression only), Pear slugs, Scale crawlers, Spider mites, Tent caterpillars	610-1220	2	3	

	Codling moth, Fruit tree leaf roller, Plum curculio, Red-banded leaf roller	1220			
Plums Prune Plums	Mealy plum aphid, Spider mites	490-855	1	3	
	Plum curculio	610-880			
Raspberries	Leafhoppers, Sap beetles, Thrips	880/ha	2	1	
	Bud weevil adults	1345/ha			
Strawberries	Aphids, Leafhoppers, Spider mites, Strawberry leafrollers	975/ha	2	3	
	Strawberry root weevil adults (B.C. only)	1345/ha			

FRUIT CROPS

NOTES Reference Numbers

1. Use 100-200 mL/100L of water solution. Remove excess soil from roots and dip in solution for 5 minutes. Two hundred and twenty five (225) litres treats about 500 plants.

LABELLING TREATED GRAPEVINE ROOTSTOCK:

All packaged grapevine rootstocks for sale or use in Canada must be labelled or tagged as follows: "These grapevine rootstocks have been treated with Malthion 85E, which contains malathion. Do not re-sell individual rootstocks without the attachment of this label. Store away from feed and other foodstuffs. Wear a long-sleeved shirt, long pants, gloves, socks and shoes during the unpacking, planting and handling of treated rootstocks, and during the clean-up, repair and maintenance of rootstock planting equipment.

2. For cranberry fruitworm, apply 2500 litres per hectare at egg hatch.

VEGETABLES

Apply the concentrate listed below for each crop using enough spray mixture to ensure thorough coverage.

Apply by ground only.

CROPS	PESTS	mL product per hectare	MAX NO. OF APPLICATION per crop/year	DAYS BEFORE HARVEST	NOTE REFERENCE NUMBER
Asparagus	Asparagus beetle	1220	1	1	
Beans	Aphids, Leafhoppers, Mexican bean beetle, Spider mites	735-1345	2	3	

Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Kale, Kohlrabi	Aphids, Cabbage loopers, Imported cabbageworm	535-1345	1	3	
Beets (table)	Aphids, Leafhoppers, Leafminers, Spider mites	535-1345	1	7	
Carrots	Aphids	880-975	1	7	
Celery	Aphids, Six-Spotted leafhoppers, Spider mites	1100	1	7	
Collards, Swiss Chard, Watercress	Aphids, Leafminers	1100	1	7	
Cucumbers, Pumpkins, Squash	Aphids, Spider mites, Leafhoppers	880	1	3	
	Do not apply Malathion to cucurbits unless plants are dry.				
Dandelion	Aphids	1100-1345	1	7	
Eggplant	Aphids, Spider Mites	535-1345	4	3	
Endive	Aphids, Spider Mites	535-1345	1	7	
Garlic	Aphids, Thrips	535-1345	1	3	
Horseradish	Aphids	535-1345	1	7	
Leek, Shallot	Aphids, Thrips	1100-1345	1	3	
Lettuce (Field)	Aphids, Cabbage loopers, Spider mites, Six Spotted Leafhoppers	735-1345	1	14 (leaf) 3 (head)	
Lettuce (Greenhouse)	Aphids, Armyworms, Greenhouse Whiteflies, Spider Mites, Thrips,	735-1345	2	7	
Melons	Aphids, Cucumber beetles, Leafhoppers, Leafminers, Spider mites	1100-1345	1	3	
	Do not apply Malathion to cucurbits unless plants are dry.				
Mushroom Beds & Houses	Mites, Phorid flies, Sciariid flies	12-20		2	1
Onions (Bulb and Green)	Thrips	1100	1	3	
Parsley	Aphids	1100-1345	1	20	

Parsnip	Aphids	535-1345	1	7	
Peas	Pea aphid, Leafhoppers, Pea weevil, Spider mites	1100	2	3	2
Peppers	Aphids, Leafhoppers, Maggots, Pepper weevil	610-1345	4	3	
Potatoes	Aphids, Colorado potato beetle, Leafhoppers, Spider mites	735-1100	1	3	
Radishes	Aphids, Flea beetles, Leafhoppers	535-1345	1	7	
Rutabagas Turnips	Aphids, Cabbage looper, Imported cabbageworm, Spider mites	535-1345	1	3	
Salsify	Aphids	535-1345	1	7	
Spinach	Aphids	1345	1	7	
Tomatoes	Aphids, Cucumber beetles, Leafhoppers, Leafminers, Spider mites, Tomato russet mites	735-975	4	3	

VEGETABLES NOTES

Reference

1. Use 12-20 mL MALATHION 85 E in 11 litres per 100 m². Apply immediately after picking.
Repeat about twice a week or as required. The same concentration of MALATHION 85 E may be sprayed on wooden surfaces in mushroom houses to the point of runoff as needed. When spraying these surfaces, cover beds and DO NOT direct spray towards mushrooms, soil, or casing.
2. Do not apply unless foliage is dry.

FIELD CROPS

May be applied by ground or air as indicated.

CROPS	PESTS	mL product per hectare	MAX NO. OF APPLICATIONs /crop/year	DAYS BEFORE HARVEST	NOTE REFERENCE NUMBER
Alfalfa	Alfalfa weevil larvae, Aphids, Grasshoppers, Leafhoppers, Lygus bugs, Spider mites, Spittle bugs (adult)	1100-1345	2 per cut max 4 per year	7	1, 11
	Alfalfa blotch leafminer	1345		7	2

Canary grass (for seed)	Aphids	685	2	14	3,11
Clover	Aphids, Grasshoppers, Leafhoppers, Spider mites	1100-1345	2	7	4
Canola Mustard Rape	Diamondback moth larvae	270-415	1	7	6,11
	Flea beetles, Grasshopper	535-855			
Corn (Grain or Forage)	Earworms, European corn borer	1100-1345	4	5	5
Flax	Grasshoppers	535-855	1	7	6,11
<u>Grain Crops</u> Barley Oats Rye Wheat	Armyworms, English grain aphids, Grasshoppers, Greenbugs, Winter grain mites	1100-1345	1	7	11,12
	Cereal leaf beetle	1075			
Lentils	Grasshoppers	830	2	14	7,11
Peas (Field)	Aphids, Leafhoppers, Maggots, Pea	1100	2	3	
Sugar beets	Flea beetles	535	1		8
Sweet Clover	Sweet clover weevils	735-1220	2		9,11
Tobacco	Aphids, Leafhoppers, Tobacco	735-975	1	7	
Wild rice	Wild riceworm	1100	1	10	10,11
	For cultivated wild rice. Use knapsack sprayer or similar applicator. Limitation: Do not use on fish-bearing waters such as rivers or lakes.				

FIELD CROPS

NOTES Reference Number

1. Do not apply to alfalfa in bloom. Apply when 75% of foliage shows feeding damage.
2. Apply as soon as pinholes in leaves are noted, usually mid to late May. Do not apply more than the max. number of applications.
3. Apply when more than 50 aphids per canary seed head between heading and soft dough stage.
4. Do not apply to clover in bloom.
5. Apply when 10% of ears show silk. Repeat at 3 to 5 day intervals until a max of 4 applications are made. Check with local agricultural authorities for correct timing.
6. Treat when bees are absent from field and temperature is above 18 degrees C.
7. Two applications, with 7 day intervals between.
8. Apply at the 3 - 5 leaf stage when insects or damage first appears.
9. Spray field margins of first year clover in late summer or early fall when migration of adults is occurring. Remove cattle while treating; cattle may return immediately after spraying.
10. For control in non-fishbearing waters such as cultivated or paddy grown wild rice, that are confined to the property of the user and where there is no outflow beyond the property limits
11. May be applied by air.

12. Apply when cereal leaf beetle larvae reach 2 to 3 per stem.

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 described below were developed by persons other than Loveland Products Canada Inc. and accepted for registration by Health Canada under the User Requested Minor Use Label Expansion program. Loveland Products 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 listed below.

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

GRAPES

For foliar application only, using conventional ground application equipment. Ensure sufficient water volume is used to guarantee thorough coverage. Use a minimum of 500 L of water per hectare. Apply prior to harvest when treatment thresholds have been reached, as determined by local monitoring. Consult extension specialists for timing.

Crop	Pest	Rate per Ha	Maximum No. of Applications	Days Before Harvest	Restricted-Entry Interval
Grapes	Adult Multicoloured Asian Lady Beetle	880 mL	1	3	Girdling, cane turning = 5 days Hand harvest, training, tying, leaf pulling, hand pruning, thinning = 4 days All other activities = 12 hrs

SUPPRESSION OF SPOTTED WING DROSOPHILA

Method of Application: Foliar, GROUND APPLICATION ONLY. Use a maximum of 1000 L of water per hectare. Application Interval: 7-10 days for all crops (if applicable). Timing of applications should be based on the presence of adult flies of the pest, as determined by local monitoring.

Please see Restrcted Entry Interval table for the crops listed below.

Crops (including cultivars, varieties, and hybrids of the listed crops)	mL product per 1000 L	Maximum No. of Applications per crop/year	Days Before Harvest
Stone Fruits (Crop Group 12-09): Apricot, Capulin, Cherries ¹ , Chinese jujube, Japanese apricot, Nectarine, Peach, Plums ² , Plumcot,	610-855	1, except 2 for apricots with a 10-day interval	7, except 3 for cherries and plums

Sloe			
Caneberries (Crop Subgroup 13-07A): Blackberries ³ , Loganberry, Raspberries ⁴	975	2	1
Bushberries (Crop Subgroup 13-07B): Aronia berry, Blueberry (highbush and lowbush), Chilean guava, Currants ⁵ , Elderberry, European barberry, Gooseberry, Highbush cranberry, Honeysuckle (edible), Huckleberry, Jostaberry, Juneberry, Lingonberry, Salal, Sea buckthorn	1000	3	1
Small Fruits Vine Climbing, except Fuzzy Kiwifruit (Crop Subgroup 13-07F): Amur river grape, Gooseberry, Grape, Kiwifruit (hardy), Maypop, Schisandra berry	880	1	3
Low Growing Berries (Crop Subgroup 13-07G): Bearberry, Bilberry, Blueberry (lowbush), Cloudberry, Cranberry, Lingonberry, Muntries, Partridgeberry, Strawberry	1000	2, except 1 for cranberry	3

¹Including black, Nanking, sweet, and tart cherries.

²Including American, beach, Canada, cherry, Chickasaw, Damson, Japanese, Klamath, and prune plums.

³Including Andean blackberry, arctic blackberry, bingleberry, black satin berry, boysenberry, brombeere, California blackberry, Chesterberry, Cherokee blackberry, Cheyenne blackberry, common blackberry, coryberry, darrowberry, dewberry, Dirksen thornless berry, evergreen blackberry, Himalayaberry, hulberry, lavacaberry, loganberry, lowberry, Lucretiaberry, mammoth blackberry, marionberry, mora, mures deronce, nectarberry, northern dewberry, olallieberry, Oregon evergreen berry, phenomenalberry, rangeberry, ravenberry, rossberry, Shawnee blackberry, southern dewberry, tayberry, youngberry, and zarzamora.

⁴Including black, red, and wild raspberries.

⁵Including black, buffalo, native, and red currants.

ANNUAL CANARYGRASS					
Crop	Pest	Rate per Ha	Maximum No. of Applications/crop/year	Days Before Harvest	COMMENTS
Annual canarygrass	Aphids	685 mL	1	14	<ul style="list-style-type: none"> • Apply when more than 50 aphids per canary seed head between heading and soft dough stage. • May be applied by air. • Annual canarygrass is NOT to be cut for feed or grazed. • Annual canarygrass seeds can be harvested for human consumption.

*It is recommended to test Malathion 85E Insecticides on a representative portion of ornamental species to ensure no phytotoxic effects before full commercial use

YOUNG GRASSHOPPER CONTROL IN PASTURES AND RANGELAND

Use 830mL of MALATHION 85 E per hectare of pasture range. For pasture and range grass repeat as necessary. Do not apply to fields occupied by dairy animals, but may be grazed or harvested on the day of application. In alfalfa, use at the rate of 975 -1465mL per hectare, max 2 applications per cut, max 4 applications per year. Do not apply within 7 days of harvest. Do not enter or allow worker entry into treated areas during the restricted-entry interval of 12 hours. Do not apply when crop is in bloom. Apply when 75% of alfalfa foliage shows feeding damage.

OUTDOOR ORNAMENTALS

Thorough, full coverage applications should be made with, max 4 applications/year per ornamental crop, with min 10 days intervals. Do not enter or allow worker entry into treated areas during the restricted-entry interval of 3 days. Apply at first appearance of pests.

	mL product in 1000L of water/ha
Aphids, mealy bugs, spider mites	880
Oyster shell scale*	610
Lace bug	610-880
Leafminers	1220
Bagworms	1220
Tent caterpillar	1220

Pine needle scales*	2445
Spruce Budworm	2930
Four-lined leaf bug, leafhoppers, tarnished plant bug, thrips, European pine shoot moths, Sawflies	880

*Apply when scale crawlers have settled on foliage.

NOTE: Injury may occur on African violet, Boulan fern, Crassula, Ilex, Juniper (Canaerti & Sabina), Maidenhair fern, Petunia, Pteris fern, and young plants.

GREENHOUSE ORNAMENTALS

Carnation, Chrysanthemum, Geranium, Rose, Snapdragon. Foliar Spray – to control Aphids, Mealybugs, Spider mites, Thrips, Whitefly. Mix 7.5 ml of MALATHION 85E with sufficient water to cover 100 m²

DO NOT APPLY AS A FOG, AEROSOL, MIST OR SPACE SPRAY IN RESIDENTIAL AREAS

Residential areas are defined as sites where bystanders including children may be potentially exposed during or after spraying. This includes around homes, schools, parks, playgrounds, playing fields, public buildings or any other areas where the general public including children could be exposed.

EMPTY GRAIN ELEVATORS, GRANARY BINS AND GRAIN BOX CARS

Pests controlled: Confused flour beetles, flat grain beetles, granary weevils, grain mites, Indian meal moths, lesser grain borers, red flour beetle, rice weevils, rusty grain beetles, saw toothed grain beetles.

Spray Mixture: 490 mL of MALATHION 85 E in either 15 litres of water or 15 litres of deodorized kerosene (The deodorized kerosene solution should be made up of 4 parts kerosene type solvent plus one part aromatic hydrocarbon type solvent).

Directions for Use: Before storing new grain, clean premises thoroughly, including floors, walls, under and behind machinery or equipment. Remove and burn all sweepings and debris. Reclean before retreatment. Maintain good sanitation at all times. Spray to the point of run-off or at the rate of approximately 5 litres of spray mixture per 100 m². Use spray equipment and nozzles that will produce a coarse spray. This same spray should be applied around the outside of bins and elevators to help prevent reinfestation.

Grain Elevators, Granary Bins: Whenever these areas become empty, clean and then spray. Every three weeks, clean and spray the work floor, walls and surrounding areas.

Grain Box Cars: Before loading, clean, then starting at a point on the car wall approximately 60 cm above the estimated sack line level, spray the walls and floor, using 4-5 litres of spray per car. Allow sprayed cars to stand empty with door open until the spray has thoroughly dried. Line the walls and floor of the car with kraft paper and then load.

PRECAUTIONS

Use a respirator when spraying in closed areas. Wear long pants, long sleeved shirts and chemical-resistant gloves during mixing/loading, application, clean-up and repair.

Do not apply directly to grain. Application must be made by an experienced or trained person. Wait until spray has thoroughly dried before storing grain in treated areas. MALATHION 85 E must be applied only to empty grain holding facilities. It must not be sprayed directly on grain milling equipment while the mill is in operation.

STORED GRAIN PROTECTION

WHEAT, RYE, CORN, BARLEY AND OATS:

For the protection of stored grain such as wheat, oats, corn, rye, or barley against confused flour beetle, granary weevil, rice weevil, saw-toothed grain beetle, flat grain beetle, red flour beetle, rusty grain beetle, lesser grain borer, Indian meal moth and grain mites, apply as follows:

WHEAT, RYE AND CORN	10 mL/1000 kg in 10 to 20 L water
BARLEY	12 mL/1000 kg in 10 to 20 L water
OATS	17 mL/1000 kg in 10 to 20 L water

Grain treated with MALATHION 85 E should not be offered for sale until seven (7) days after treatment. To protect stored grain from attack by Indian meal moth, apply MALATHION 85 E to the surface of clean or uninfested grain at the rate of 295 mL in 5 - 10 L of water per 100 m² of grain surface area. Apply spray evenly over the surface of the grain and rake to a depth of 15 cm. Apply immediately after grain is loaded into storage. Any of the standard spray applicators on the market which can be calibrated to deliver a known volume of liquid are suitable for applying MALATHION 85 E.

For small amounts of grain in farm storage, where special application equipment is not available, any type of low pressure sprayer holding 5 L or more can be used. The spray can be applied to the grain stream as the grain is being elevated into storage. The first step would be to test spray in a tank of water to determine the rate at which the sprayer is discharging - then regulate the flow of grain to get the proper amount of spray.

STORAGE

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

Keep in original container during storage. Isomalathion, a toxic metabolite of malathion, forms when malathion product is stored at elevated temperatures or for extended periods of time.

Malathion product must be stored in a cool (< 23°C) dry, well ventilated place away from seed, fertilizer or other pesticides. Do not use after the expiry date given on the container label.

DISPOSAL

1. Triple-or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instructions 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 the 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.