



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

August 23, 2023

Noelle Sanfilippo  
Regulatory Affairs Specialist  
Central Garden & Pet Company  
1501 East Woodfield Road, 200W  
Schaumburg, Illinois 60173

Subject: Registration Review Label Amendments Incorporating Mitigation from the Fish and Wildlife Services (FWS) and the National Marine Fisheries Services (NMFS) Biological Opinions on the Effects of Malathion on Endangered and Threatened Species and Designated Critical Habitat  
*Product Name:* Prentox 5 Lb. Malathion Spray  
*EPA Registration Number:* 89459-36  
*Application Dates:* 8/25/2022 and 11/1/2022  
*Decision Numbers:* 587081 and 589928

Dear Noelle Sanfilippo:

The Agency, in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, has completed reviewing all the information submitted with your application to support the Registration Review of the above referenced product in connection with the FWS and NMFS' Biological Opinions on the effects of malathion on federally listed endangered and threatened species and designated critical habitat in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.). The Agency has concluded that your submission is acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40

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CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 12 months from the date of this letter. After 12 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

If you have any questions, please contact Carolyn Smith by phone at (202) 566-2273 or via email at [smith.carolyn@epa.gov](mailto:smith.carolyn@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Kelly Sherman", with a long horizontal flourish extending to the right.

Kelly Sherman  
Chief, Risk Management Implementation Branch 3  
Pesticide Re-evaluation Division  
Office of Pesticide Programs

Enclosure

**ACCEPTED**  
 08/23/2023  
 Under the Federal Insecticide, Fungicide  
 and Rodenticide Act as amended, for the  
 pesticide registered under  
 EPA Reg. No. 89459-36

**MALATHION    GROUP    1B    INSECTICIDE**

**KEEP THIS BOOKLET WITH CONTAINER AT ALL TIMES**



**5 LB. MALATHION SPRAY**

Alternate brand name: Malathion Liquid Concentrate

Kills: Flies, Mosquitoes and other listed pests

For Use on: Gardens, Lawns (Spot Treatments Only), Outdoor Ornamentals and Listed Crops

**ACTIVE INGREDIENT:**

Malathion CAS #121-75-5.....57%

**OTHER INGREDIENTS\*:**.....43%

TOTAL 100%

\*Contains Xylene Range Aromatic Solvent  
 This product contains 5 lbs of malathion per gallon

**KEEP OUT OF REACH OF CHILDREN  
 WARNING — AVISO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand this label, find someone to explain it to you in detail.)

See inside booklet for additional Precautionary Statements, First Aid and complete Directions for Use.

EPA REG. NO. 89459-36  
 EPA EST. NO.

Net Contents:

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS  
WARNING**

Causes substantial but temporary eye injury. Harmful if swallowed. Harmful if absorbed through skin. Do not get in eyes or on clothing. Avoid contact with skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

<b>FIRST AID ORGANOPHOSPHATE</b>	
If swallowed	<ul style="list-style-type: none"> <li>• Immediately call a Poison Control Center or doctor.</li> <li>• Do not induce vomiting unless told to by a Poison Control Center or doctor.</li> <li>• Do not give <b>any</b> liquid to the person.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
If on skin or clothing	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a Poison Control Center or doctor for treatment advice.</li> </ul>
If inhaled	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.</li> <li>• Call a Poison Control Center or doctor for further treatment advice.</li> </ul>
If in eyes	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a Poison Control Center or doctor for treatment advice.</li> </ul>
Have the product container or label with you when calling a poison control center or physician, or going for treatment. You may contact 1-800-248-7763 for information including health concerns, medical emergencies, or pesticide incidents.	
<b>NOTE TO PHYSICIAN:</b> This product is an organophosphate insecticide. If symptoms of cholinesterase inhibition are present, atropine sulfate by injection is antidotal. 2-PAM is also antidotal and may be administered, but only in conjunction with atropine. Contains Petroleum Distillate. May pose an aspiration pneumonia hazard. Gastric lavage may be indicated if product was taken internally.	

**Personal Protective Equipment:**

For all formulations and all use patterns – mixers, loaders, applicators, flaggers and other handlers must wear:

- long sleeved shirt and long pants
- shoes and socks
- chemical resistant gloves (barrier laminate, butyl rubber ≥14 mils, nitrile rubber ≥14 mils, or viton ≥14 mils)
- protective eyewear (goggles, safety glasses, face shield)

For all dip applications - mixers, loaders, and applicators must wear:

- long sleeved shirt and long pants
- shoes and socks
- chemical resistant gloves (barrier laminate, butyl rubber ≥14 mils, nitrile rubber ≥14 mils, or viton ≥14 mils)
- protective eyewear (goggles, safety glasses, face shield)
- chemical resistant apron

For all air blast applications - applicators must wear:

- long sleeved shirt and long pants
- shoes and socks
- chemical resistant gloves (barrier laminate, butyl rubber  $\geq 14$  mils, nitrile rubber  $\geq 14$  mils, or viton  $\geq 14$  mils)
- protective eyewear (goggles, safety glasses, face shield)
- chemical resistant headgear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

### **User Safety Recommendations**

Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

### **Engineering Controls**

Pilots must use an enclosed cockpit in a manner that is consistent with the WPS for Agricultural Pesticides [40 CFR 170.240(d)(6)]. Pilots must wear the PPE required on this labeling for applicators.

### **ENVIRONMENTAL HAZARDS**

This product is toxic to fish and aquatic invertebrates. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. This product may contaminate water through drift of spray in wind. This product has a high potential for runoff after application. Use care when applying in or to an area which is adjacent to any body of water, and do not apply when weather conditions favor drift from target area. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product.

A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from rainfall-runoff.

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

This pesticide is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area. In citrus, stone fruit, pome fruit and tree nuts: Do not apply this product within 3 days prior to bloom, during bloom, or until petal fall is complete. **Protect pollinating insects by following label directions intended to minimize drift and to reduce risk to these organisms.**

Reporting Ecological Incidents: To report ecological incidents, including mortality, injury, or harm to plants and animals, call 1-800-248-7763.

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

### **PHYSICAL OR CHEMICAL HAZARDS**

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

### **DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. For outdoor use only.

For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

### **Agricultural Use Requirements**

Use this product only in accordance with the labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and the handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI). The REI for each crop is listed in the Directions for Use associated with each crop.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls, chemical-resistant gloves, such as barrier laminate, nitrile rubber  $\geq 14$  mils, neoprene rubber  $\geq 14$  mils, or viton  $\geq 14$  mils, shoes plus socks, and protective eyewear.

### **Non-Agricultural Use Requirements**

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, or nurseries. Do not enter or allow others to enter until sprays have dried

### **PESTICIDE RESISTANCE MANAGEMENT**

For resistance management, 5 Lb Malathion Spray contains a Group 1B insecticide. Any insect population may contain individuals naturally resistant to 5 Lb Malathion Spray and other Group 1B insecticides. The resistant individuals may dominate the insect population if this group of insecticides are used repeatedly in the same fields. Appropriate resistance-management strategies should be followed. To delay insecticide resistance, take the following steps:

- Rotate the use of 5 Lb Malathion Spray or other Group 1B insecticides within a growing season or among growing seasons with different groups that control the same pests. Avoid application of more than the maximum use rate or the total number of consecutive sprays.
- Adopt an integrated pest management program for insecticide use that includes scouting, uses historical information related to pesticide use, crop rotation, record keeping and which considers cultural, biological and other chemical control practices.
- Monitor after application for unexpected target pest survival. If the level of survival suggests the presence of resistance, consult with your local university specialist or certified pest

control advisor.

- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or IPM recommendations for the specific site and pest problems in your area.
- For further information or to report suspected resistance, contact Central Garden & Pet Company at 1-800-248-7763.

## PRECAUTIONS

Use only with adequate ventilation. After using this product in stored grain facilities (grain elevators/silos), ventilate thoroughly.

Following best management practices can help reduce risk to terrestrial pollinators. Examples of best management practices include apply pesticides in the evening and at night when pollinators are not foraging and avoiding applications to flowering plants. For additional resources on pollinator best management practices, visit <https://www.epa.gov/pollinator-protection/find-best-management-practices-protect-pollinators>

## RESTRICTIONS

Use on cull piles (including cull dumps, cull piles, fruit dumps, cull fruit and vegetable dumps) is prohibited.

Use as a mosquito larvicide is prohibited.

**Non-ULV Ground Application:** Do not apply by ground within 25 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, wetlands or natural ponds, estuaries, and commercial fish farm ponds). **ULV Ground Application:** Do not apply by ground within 50 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, wetlands or natural ponds, estuaries, and commercial fish farm ponds). This 50 foot buffer is in addition to the full swath displacement upwind that applicators must use at the downwind edge of the field. Applications made by mosquito control districts and other public health officials are exempt from this requirement.

**Non-ULV Aerial Application:** Do not apply within 50 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, wetlands or natural ponds, estuaries, and commercial fish farm ponds). **ULV Aerial Application:** Do not apply within 100 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, wetlands or natural ponds, estuaries, and commercial fish farm ponds). This 100-foot buffer is in addition to the full swath displacement upwind that applicators must use at the downwind edge of the field. Applications made by mosquito control districts and other public health officials are exempt from this requirement.

### Water Protection Statements:

Do not apply within 25 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, wetlands or natural ponds, estuaries and commercial fish farm ponds). Do not apply directly to or allow the product to enter sewers or storm drains, or to any area like a drain or gutter where drainage to sewers, storm drains, water bodies, or aquatic habitat can occur.

Do not allow the product to enter any drain during or after application.

Do not apply directly to impervious horizontal surfaces such as sidewalks, driveways, and patios except as a spot or crack-and-crevice treatment.

Do not apply to vertical surfaces directly above pervious or impervious surfaces that drain into ditches, storm drains, gutters, or surface waters.

Do not apply or irrigate to the point of runoff.

Do not apply this product when soil is saturated, or when a storm event likely to produce runoff from the treated area is forecasted (by NOAA/National Weather Service, or other similar forecasting service) to occur within 48 hours following application.

Any ULV end use product formulated for use for aerial application, other than those with directions for use in Wide Area Mosquito Adulticide applications, must be packaged in closed mixing and loading systems.

## **CHEMIGATION**

Apply Prentox 5 Lb. Malathion Spray (Malathion Liquid Concentrate) only through sprinkler, including center pivot, lateral move end low, side (wheel) roll, traveler, big gun, solid set or hand move irrigation system(s). Do not apply this product through any other type of irrigation system. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water. If you have questions about calibration, contact State Extension Service specialists, equipment manufacturers or other experts. Do not connect an irrigation system used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustment should the need arise.

**CHEMIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS:** Central Garden & Pet does not encourage connecting chemigation systems to public water suppliers. The following information is provided for users who have diligently considered all other application and water supply actions before electing to make such a connection.

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduce-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the flow outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

## **SPRINKLER CHEMIGATION**

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.



Do not apply when wind speed favors drift beyond the area intended for treatment.

Mix in clean supply tank the recommended amount of this product for acreage to be covered, and needed quantity of water.

This product should not be tank-mixed with other pesticides, surfactants or fertilizers unless prior use has shown the combination non-injurious under your conditions of use. Follow precautionary statements and directions for all tank-mix products.

On all crops, use sufficient gallonage of water to obtain thorough and uniform coverage, but not cause runoff or excessive leaching. This will vary depending on equipment, pest problem and shape of crop growth. Application of more or less than optimal quantity of water may result in decreased chemical performance, crop injury or illegal pesticide residues.

Meter this product into the irrigation water uniformly during the period of operation.

Do not overlap application. Follow recommended label rates, application timing and other directions and precautions for crop being treated.

Continuous mild agitation of pesticide mixture may be needed to assure a uniform application, particularly if the supply tank requires a number of hours to empty.

### **Mandatory Spray Drift Management**

#### **Non-Ultra Low Volume (ULV) Aerial Applications**

Do not release spray at a height greater than 10 ft above the ground or vegetative canopy, unless a greater application height is necessary for pilot safety.

Applicators must select nozzle and pressure that deliver medium or coarser droplets in accordance with American Society of Agricultural & Biological Engineers Standard (ASABE S641). If the windspeed is 10 mph or less, applicators must use  $\frac{3}{4}$  swath displacement upwind at the downwind edge of the field.

When the windspeed is between 11-15 mph, applicators must use full swath displacement upwind at the downwind edge of the field.

Do not apply when wind speeds exceed 15 mph at the application site. If the windspeed is greater than 10 mph, the boom length must be 65% or less of the wingspan for fixed wing aircraft and 75% or less of the rotor diameter for helicopters. Otherwise, the boom length must be 75% or less of the wingspan for fixed-wing aircraft and 90% or less of the rotor diameter for helicopters.

Do not apply during temperature inversions.

#### **ULV Aerial Applications**

Do not release spray at a height greater than 10 ft above the ground or vegetative canopy, unless a greater application height is necessary for pilot safety.

Applicators must select nozzle and pressure that deliver fine or coarser droplets in accordance with American Society of Agricultural & Biological Engineers Standard (ASABE S641). Applicators must use a full swath displacement upwind at the downwind edge of the field.

Do not apply when wind speeds exceed 15 mph at the application site. If the windspeed is greater than 10 mph, the boom length must be 65% or less of the wingspan for fixed wing aircraft and 75% or less of the rotor diameter for helicopters. Otherwise, the boom length must be 75% or less of the wingspan for fixed-wing aircraft and 90% or less of the rotor diameter for helicopters.

Do not apply during temperature inversions.

#### **Airblast Applications**

Spray must be directed into the canopy.

Do not apply when wind speeds exceed 10 mph at the application site.

User must turn off outward pointing nozzles at row ends and when spraying outer row.

Do not apply during temperature inversions.

#### **Ground Boom Applications**

Do not release spray at a height greater than 4 ft above the ground or crop canopy.

Applicators must select nozzle and pressure that deliver medium or coarser droplets in accordance with American Society of Agricultural & Biological Engineers Standard 572 (ASABE S572).

Do not apply when wind speeds exceed 10 mph at the application site.

Do not apply during temperature inversions.

### **Buffer Zones to Water Bodies for Non-ULV Application**

**Non-ULV Ground Application (includes ground boom and airblast applications)** Do not apply within 25 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, streams, wetlands, ponds, estuaries, and commercial fish ponds). You must follow the instructions for additional buffer distances beyond the 25 feet, as applicable, per the Endangered Species Protection Bulletin for the area in which you are applying the product. You must obtain a Bulletin no earlier than six months before using this product. To obtain Bulletins, consult <http://www.epa.gov/espp/>, call 1-844-447-3813, or email ESPP@epa.gov.

**NON-ULV Aerial Application:** Do not apply within 50 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, streams, wetlands, ponds, estuaries, and commercial fish ponds). You must follow the instructions for additional buffer distances beyond the 50 feet, as applicable, per the Endangered Species Protection Bulletin for the area in which you are applying the product. You must obtain a Bulletin no earlier than six months before using this product. To obtain Bulletins, consult <http://www.epa.gov/espp/>, call 1-844-447-3813, or email ESPP@epa.gov.

### **Spray Drift Instructions**

Observe the following requirements when spraying in the vicinity of aquatic areas such as, but not limited to lakes; reservoirs; rivers; permanent streams; marshes or natural ponds; estuaries and commercial fish ponds.

**Droplet Size:** Use the largest droplet size consistent with acceptable efficacy. Formation of very small droplets may be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible, and by avoiding excessive spray boom pressure.

For groundboom and aerial applications, use only medium or coarser spray nozzles according to ASAE (S572) definition for standard nozzles, or a volume mean diameter (VMD) of 300 microns or greater for spinning atomizer nozzles. In conditions of low humidity and high temperatures, applicators should use a coarser droplet size.

**Wind Direction and Speed:** Make aerial or ground applications when the wind velocity favors on target product deposition (approximately 3 to 10 mph). Do not apply when wind velocity exceeds 15 mph. Avoid applications when wind gusts approach 15 mph. For all non-aerial applications, wind speed must be measured adjacent to the application site on the upwind side, immediately prior to application.

**Temperature Inversion:** Do not make aerial or ground applications into areas of temperature inversions.

Inversions are characterized by stable air and increasing temperatures with increasing distance above the ground. Mist or fog may indicate the presence of an inversion in humid areas. Where permissible by local regulations, the applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.

In conditions of low humidity and high temperatures, applicators should use a coarser droplet size.

**Additional Requirements for Ground Application:** For groundboom applications, apply with nozzle height no more than 4 feet above the ground or crop canopy.

For airblast applications, turn off outward pointing nozzles at row ends and when spraying the outer two rows. To minimize spray loss over the top in orchard applications, spray must be directed into the canopy.

**Additional Requirements for Aerial Applications:** For aerial applications, mount the spray boom on the aircraft as to minimize drift caused by wingtip or rotor vortices. Use the minimum practical boom length and it must not exceed 75% of wing span or 90% rotor diameter.

Aerial applicators must consider flight speed and nozzle orientation in determining droplet size.

When applications are made with a cross-wind, the swath will be displaced downwind. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind. Release spray at the lowest height consistent with pest control and flight safety. Avoid applications more than 10 feet above the crop canopy.

ALL RESTRICTIONS, PRECAUTIONS AND DIRECTIONS ON THIS LABEL MUST BE FOLLOWED.

### Endangered Species Protection Requirements:

It is a Federal offense to use any pesticide in a manner that results in an unauthorized “take” (e.g., kill or otherwise harm) of an endangered species and certain threatened species under the Endangered Species Act section 9. When using this product, you must follow the measures contained in the Endangered Species Protection Bulletin for the area in which you are applying the product. You must obtain a Bulletin no earlier than six months before using this product. To obtain Bulletins, consult <http://www.epa.gov/espp/>, call 1-844-447-3813 or email [ESPP@epa.gov](mailto:ESPP@epa.gov). You must use the Bulletin valid for the month in which you will apply the product.

Following best management practices can help reduce risk to terrestrial pollinators. Examples of best management practices include applying pesticides in the evening and at night when pollinators are not foraging and checking to confirm hive locations before spraying. For additional resources on pollinator best management practices, visit <https://www.epa.gov/pollinator-protection/find-best-management-practices-protect-pollinators>.

Managed pollinator protection plans are developed by states/tribes to promote communications between growers, landowners, farmers, beekeepers, pesticide users, and other pest management professionals to reduce exposure of bees to pesticides. If available, visit state plans for additional information on how to protect pollinators.

Reporting Ecological Incidents: To report ecological incidents, including mortality, injury, or harm to plants and animals, call 1-800-248-7763.

How to Report Bee Kills. It is recommended that users contact both the state lead agency and the U.S. Environmental Protection Agency to report bee kills due to pesticide application. Bee kills can be reported to EPA at [beekill@epa.gov](mailto:beekill@epa.gov). To contact your state lead agency, see the current listing of state pesticide regulatory agencies at the National Pesticide Information Center’s website: [http://npic.orst.edu/reg/state\\_agencies.html](http://npic.orst.edu/reg/state_agencies.html).

### CROP USE SITES

For use only by federal, state, tribal or local government officials responsible for insect control or by persons certified in the appropriate category or otherwise authorized by the state or tribal lead pesticide regulatory Agency to perform grasshopper/Mormon Cricket, Beet Leafhopper or Boll Weevil control applications, or by persons under their supervision, or as allowed by state regulations for persons treating private property.

Apply to agricultural sites in a minimum of 30 gallons of water by ground equipment or 5 gallons of water by air equipment unless otherwise specified. Best results are obtained with uniform coverage. Use higher rate when foliage is heavy or infestation is severe.

### VEGETABLES

Crop	Pests	Maximum Single Application Rate (lb ai/A)	Actual Rate/A	Maximum Number Applications Per Year	Minimum Application Interval (days)	Minimum Preharvest Interval (days)	Restricted Entry Interval (days)	Restrictions/Remarks
Beets (Garden)	Aphids, Leafhoppers	Non-ULV Aerial, Groundboom 1.25	1.5 - 2 pt	2	7	7	12 hrs	Do not apply within 7 days of harvest if tops are to be used as food or feed. Do not apply to sugar beets.
Broccoli	Aphids, Cabbage loopers, Imported cabbageworms	Non-ULV Aerial, Groundboom 1.25	1-2 pt	2	7	2	2	
Brussels Sprouts	Aphids	Non-ULV Aerial, Groundboom 1.25	1-2 pt	2	7	7	2	
Cabbage	Aphids, Cabbage loopers, Imported cabbageworms		1-2 pt	3	7	7	2	To kill caterpillars on summer and fall plantings, begin when

	Diamondback moths, Webworms	Non-ULV Aerial, Groundboom 1.25	2 pt					true leaves appear. On other plantings, and to kill other insects, begin when insects appear. Do not apply more than 3 applications per year
Cauliflower	Diamondback moths	Non-ULV Aerial, Groundboom 1.25	2 pt	2	7	2	2	
	Aphids		1-2 pt					
Celery	Aphids, Spider mites	Non-ULV Aerial, Groundboom 1.5	1.5 pt	2	7	7	24 hrs	To be applied to fresh leaves and stalks only. Do not use on crops grown for seed and oil.
Collards	Aphids	Non-ULV Aerial, Groundboom 1.0	1.5 pt	3	7	7	12 hrs	To kill caterpillars on summer and fall plantings, begin when true leaves appear. On other plantings, and to kill other insects, begin when insects appear.
	Harlequin cabbage bugs		1 pt					
Corn (Sweet)	Japanese beetles	Non-ULV Aerial, Groundboom 1.0	1.6 pt	3	5	5	3 days for detasseling 12 hrs for all other activities	Injury may occur in the whorl or to the silks. Do not apply more than 3 times per year.
Corn (Sweet)	Japanese beetles	ULV Aerial 0.61	1 pt	3	5	5	3 days for detasseling 12 hrs for all other activities	Injury may occur in the whorl or to the silks. Do not apply more than 3 times per year.
Cucumber	Aphids, Pickleworms, Spider mites	Non-ULV Aerial, Groundboom 1.75	1.5-2 pt	2	7	1	24 hrs	Do not apply to cucumbers unless plants are dry.
	Squash vine borers		2.8 pt					
	Cucumber beetles, Leafminers		2 pt					
Dandelion	Aphids	Non-ULV Aerial, Groundboom 1.25	1.5-2 pt	2	7	7	24 hrs	Do not apply more than 2 times per year.
Parsley	Aphids	Non-ULV Aerial, Airblast 1.5	1.5-2 pt	2	7	7	24 hrs	
Parsnip	Aphids	Non-ULV Aerial, Airblast 1.25	1.5-2 pt	2	7	7	24 hrs	Do not apply more than 2 times per year.
Swiss Chard	Aphids	Non-ULV Aerial, Groundboom 1.0	1.6 pt	2	7	14	12 hrs	
Watercress	Aphids	Non-ULV Aerial, Groundboom 1.25 (foliar ground)	1.5-2 pt	5	3	3	24 hrs (if Max App rate is 1.25)	Do not apply when water is on the field. Do not irrigate until 24 hours after application
		1.0 (aerial)					12 hrs (if Max App Rate is 1.0)	
Eggplant	Aphids, Spider mites	Non-ULV Aerial, Groundboom 1.56	1 pt	4	5	3	12 hrs	Do not apply more than 4 times per year.
	Lacebugs		2.5 pt					
Endive	Aphids, Spider mites	Non-ULV Aerial, Groundboom 1.25	1.5-2 pt	2	7	7	24 hrs	
Garlic, Shallots	Aphids, Thrips	Non-ULV Aerial, Groundboom 1.56	1.5-2 pt	2	7	3	24 hrs	Do not apply more than 2 times per year.
Hops	Aphids, Spider mites	Non-ULV Aerial, Airblast 0.63	1 pt	2	7	10	12 hrs	Do not apply more than 2 times per year.
Kale	Aphids, Cabbage loopers, Imported cabbageworms	Non-ULV Aerial, Airblast 1.0	1-1.6 pt	3	5	7	12 hrs	To kill caterpillars on summer and fall plantings, begin when true leaves appear. On other plantings, and to kill other insects, begin when insects appear.
	Webworm, Diamondback moths		1.6 pt					
Kohlrabi	Aphids	Non-ULV Aerial, Airblast 1.25	1-2 pt	2	7	3	24 hrs	
	Cabbage loopers, Diamondback moths, Imported cabbageworms, Webworms		2 pt					
Leeks	Aphids	Non-ULV Airblast, Groundboom 1.56	1.5-2 pt	2	7	3	24 hrs	
	Onion maggot flies		2.5 pt					
	Thrips							
Lettuce	Aphids, Leafhoppers, Spider mites	Non-ULV Airblast, Groundboom 1.88	2 pt	2	6 (Head) 5 (Leaf)	14	24 hrs	
	Cabbage loopers		3 pt					
Melons	Aphids, Spider mites		1.5 pt	2	7	1	12 hrs	

(Cantaloupe, Casaba, Crenshaw, Honey Balls, Honey Dew Melons, Muskmelons, Persian Melons and hybrids of these)	Cucumber beetles	Non-ULV Aerial, Groundboom 1.0	1.6 pt					Do not apply to melons unless plants are dry.
	Leafminers		1.5 pt					
	Leafhoppers							
	Pickleworms							
	Squash vine borers		1.6 pt					
Watermelons	Aphids, Spider mites	Non-ULV Aerial, Groundboom 1.0	1.6pt	2	7	1	12 hrs	Do not apply to melons unless plants are dry.
	Cucumber beetles		1.6 pt					
	Leafminers		1.6 pt					
	Leafhoppers		1.6pt					
	Pickleworms		1.6 pt					
	Squash vine borers		1.6 pt					
Mushrooms	Mites, Phorid and Sciarid flies	1.7	2.5 pt in 130 gal water; or 2 TBS in 3 gal water per 1,000 sq ft of bed	4	3	1	12 hrs	Make thorough applications as soon after picking as possible. Repeat applications as necessary, usually twice a week.
Mustard Greens	Aphids, Cabbage loopers, Imported cabbageworms	Non-ULV Aerial, Airblast 1.0	1.6 pt	3	5	7	12 hrs	To kill caterpillars on summer and fall plantings, begin when true leaves appear. On other plantings, and to kill other insects, begin when insects appear.
	Flea beetles		1.5 pt					
Okra	Aphids	Non-ULV Aerial, Groundboom 1.2	1.5-1.92 pt	4	7	1	12 hrs	Make no application after pods start to form. Do not apply for then 4 times per year.
	Japanese beetles		1.92 pt					
Onions (Bulb and Green)	Onion maggots	Non-ULV Aerial, Groundboom 1.56	1.5-2.5 pt	2	7	3	12 hrs	
	Onion thrips		1.5-2 pt					
Peas (Green)	Aphids	Non-ULV Aerial, Groundboom 1.0	1.5 pt	2	7	3	12 hrs	Grazing/feeding of treated crop foliage is prohibited.
	Grasshoppers		1.6 pt					
	Leafhoppers		1.25-1.6 pt					
Peas (Dried)	Aphids	Non-ULV Aerial, Groundboom 1.0	1.5 pt	2	7	3	12 hrs	Grazing/feeding of treated crop foliage is prohibited.
	Grasshoppers		1.6 pt					
	Leafhoppers		1.25-1.6 pt					
Peppermint, Spearmint	Aphids, Flea beetles, Leafhoppers, Spider mites	0.84	1.5 pt	3	7	7	12 hrs	
Peppers (Bell)	Aphids	Non-ULV Aerial, Groundboom 1.56	1-2.5 pt	2	5	3	12 hrs	
	Pepper maggots		2.5 pt					
Potatoes (White)	Aphids, Grasshoppers, Leafhoppers	Non-ULV Aerial, Groundboom 1.56	2 pt	2	7	0	12 hrs	
	False chinch bugs		1.5 pt					
	Mealybugs		2-2.5 pt					
Pumpkins	Aphids, Pickleworms, Spider mites	Non-ULV Aerial, Groundboom 1.0	1.6 pt	2	7	1	12 hrs	Do not apply to pumpkins unless plants are dry.
	Leafhoppers		1.5 pt					
	Cucumber beetles, Squash vine borers		1.6 pt					
Radish	Aphids	Non-ULV Aerial, Groundboom 1.0	1.5 pt	2	7	7	12 hrs	Do not apply more than 2 times per year.
Horseradish	Aphids	Non-ULV Aerial, Airblast 1.25	1.5-2 pt	2	7	7	24 hrs	Do not apply more than 2 times per year.
Rice	Rice leafminers	Non-ULV Aerial, Groundboom 1.25	2 pt	2	7	7	12 hrs	Broadcast use only over intermittently flooded areas. Application may not be made around bodies of water where fish or shellfish are grown and/or harvested commercially. Make first application shortly after the first blades appear on the surface of the water and repeat as necessary.
	Rice stink bugs		1-1.5 pt					A 24-hour holding time is required before floodwaters may be released after treatment to rice.
								Broadcast use only over intermittently flooded areas. Application may not be made around bodies of water where fish or shellfish are grown and/or harvested commercially. Apply by airplane in 2 gallons

								<p>of water per acre during the early milk and dough stage of growing rice. Repeat application as necessary.</p> <p>A 24-hour holding time is required before floodwaters may be released after treatment to rice.</p> <p>This is a ULV application and must be in a closed mixing and loading system.</p>
Rice	Rice leafminersU		1 pt					<p>Broadcast use only over intermittently flooded areas. Application may not be made around bodies of water where fish or shellfish are grown and/or harvested commercially. first application shortly after the first blades appear on the surface of the water and repeat as necessary.</p> <p>A 24-hour holding time is required before floodwaters may be released after treatment to rice.</p>
	Rice stink bugs	ULV Aerial 0.61	1 pt	2	7	7	12 hrs	<p>Broadcast use only over intermittently flooded areas. Application may not be made around bodies of water where fish or shellfish are grown and/or harvested commercially. Apply by airplane in 2 gallons of water per acre during the early milk and dough stage of growing rice. Repeat application as necessary.</p> <p>A 24-hour holding time is required before floodwaters may be released after treatment to rice.</p> <p>This is a ULV application and must be in a closed mixing and loading system.</p>
Rutabaga	Aphids	Non-ULV Aerial, Groundboom 1.0	1.5 pt	2	7	7	12 hrs	Do not apply more than 2 times per year.
Spinach	Aphids, Leafhoppers	Non-ULV Aerial, Groundboom 1.0	1.6 pt	2	7	7	12 hrs	
Squash (Summer)	Aphids, Leafminers, Spider mites, Pickleworms	Non-ULV Aerial, Groundboom 1.75	2 pt	3	7	1	24 hrs	Do not apply to squash unless plants are dry.
	Cucumber beetles, Squash vine borers		2.8 pt					
Squash (Winter)	Aphids, Leafminers, Spider mites, Pickleworms	Non-ULV Aerial, Groundboom 1.0	1.6 pt	3	7	1	12 hrs	Do not apply to squash unless plants are dry.
	Cucumber beetles, Squash vine borers		1.6pt					
Strawberries	Aphids, Spider mites	Non-ULV Aerial, Groundboom 2.0	1.5 pt	4	7	3	12 hrs	
	Field crickets, Lygus bugs, Spittlebugs, Thrips		1.5-3 pt					
	Potato leafhoppers, Strawberry leafrollers, Strawberry root weevils, Whiteflies		1.5-2.5 pt					
Sweet Potatoes	Leafhoppers	Non-ULV Aerial, Groundboom 1.56	1.5-2 pt	2	7	0	12 hrs	
	Morninglory leafminers		2.5 pt					
Tomatoes	Aphids	Non-ULV Aerial, Groundboom 1.56	1.5 pt	4	5	1	12 hrs	
	Drosophila		2.5 pt					
	Spider mites		1.5 pt					
	Armyworms, Fruitworms (California only)		2.25 qt					
Turnip	Aphids, Cabbage loopers, Imported Cabbageworms	Non-ULV Aerial, Groundboom 1.25	1-2 pt	2	5 (turnip greens) 7 (turnip root)	1	12 hrs	To kill caterpillars on summer and fall plantings, begin when true leaves appear. On other plantings, and to kill other insects, begin when insects appear. Do not apply more than 2 times per year.

## FRUIT AND NUT

Crops	Pests	Maximum Single Application Rate (lb i/A)	Actual Rate/A	Maximum Number Applications Per Year	Minimum Application Interval (days)	Minimum Preharvest Interval (days)	Restricted Entry Interval (days)	Restrictions/Remarks
Apricots	Aphids, Codling moths, European fruit lecaniums, Orange tortrix, Soft brown scales, Terrapin scales	Non-ULV Aerial, Airblast 1.5	2.4 pt	2	7	6	12 hrs	The rate for use on apricots is based on a standard of 300 gallons per acre dilute spray for mature trees. Do not apply this product within 3 days prior to bloom, during bloom, or until petal fall is complete.
Avocado	Greenhouse thrips, Latania scales, Omnivorous loopers, Orange tortrix, Soft brown scales	Non-ULV Aerial, Airblast 4.7	7.5 pt	2	30	7	2	The rate for use on avocado is based on a standard of 500 gallons per acre dilute spray for mature trees.
Blackberry, Boysenberry, Dewberry, Gooseberries, Loganberry, Raspberry	Aphids, Rose scale chafers, Japanese beetle, Leafhoppers, Mites, Thrips	Non-ULV Aerial, Groundboom 2.0	3 pt	3	7	1	12 hrs	The rate for use on brambles are based on a standard of 200 gallons per acre dilute spray.
Blueberries (high bush and low bush)	Blueberry maggots	Non-ULV Aerial, Groundboom 1.25	1 pt/A + 1.5 qt Staley's Sauce Base No. 7 or any protein hydrolysate bait	3	5	1	12 hours	Apply in 100 gal of water per acre.
	Cranberry fruitworms		2 pt					Make first application at egg hatch and repeat applications every 5 days until a total of 3 applications have been made.
	Japanese beetles		1.5 pt					The rates for use on blueberries are based on a standard of 200 gallons per acre dilute spray. Make application when first berries turn blue and at 10 day intervals for a total of 3 applications. The rates for use on blueberries are based on a standard of 200 gallons per acre dilute spray.
Blueberries (high bush and low bush)	Blueberry maggots	ULV Aerial 0.77	1.2 pt	3	10	1	12 hrs	Apply in 100 gal of water per acre.
	Cranberry fruitworms							Make first application at egg hatch and repeat applications every 5 days until a total of 3 applications have been made.
	Japanese beetles							The rates for use on blueberries are based on a standard of 200 gallons per acre dilute spray. Make application when first berries turn blue and at 10 day intervals for a total of 3 applications. The rates for use on blueberries are based on a standard of 200 gallons per acre dilute spray.
Cherry, Sweet	Black cherry aphids, Fruittree leafrollers	ULV Aerial 1.22	1.9 pt	4	3	3	12 hrs	Apply by aircraft only. The rates for use on cherries are based on a standard of 400 gallons per acre dilute spray for mature trees. Do not apply more than 8 lbs of actual MALATHION per acre to cherry trees. Injury may occur on certain varieties of sweet cherries, particularly in the Northwest. Do not apply this product within 3 days prior to bloom, during bloom, or until petal fall is complete.
Cherry, Tart	Black cherry aphids, Fruittree leafrollers	ULV Aerial 1.22	1.9pt	4	3	3	12 hrs	Apply by aircraft only. The rates for use on cherries are based on a standard of 400 gallons per acre dilute spray for mature trees. Do not apply more than 8 lbs of actual MALATHION per acre to cherry trees. Do not apply this product within 3 days prior to bloom, during bloom, or until petal fall is complete.



Cherry, (Sweet and Tart)	Black cherry aphids, Fruittree leafrollers	Non-ULV Aerial, Airblast 1.75	1.9 pt	4	3	3	12 hrs	The rates for use on cherries are based on a standard of 400 gallons per acre dilute spray for mature trees. Do not apply more than 8 lbs of actual MALATHION per acre to cherry trees. Do not apply this product within 3 days prior to bloom, during bloom, or until petal fall is complete
Citrus Grapefruit Lemon Lime Orange Tangerine Tangelo	Black scales (single and off-brooded), California red scales, Citricola scales, Purple scales, Soft brown scales, Tangelo Yellow scales	Non-ULV Aerial, Airblast 4.5 (Not in FL) or 1.5	1-1.5 pt/100 gal 2 pt/100 gal	1 or 3	NA or 30	7 7	72 hrs or 12 hrs	Do not apply this product within 3 days prior to bloom, during bloom, or until petal fall is complete.  The rate for use on citrus is based on a standard of 500 gallons per acre dilute spray for mature trees.
	Florida purple scales, Florida red scales							Apply in 200 gallons of water per acre. Do not apply when trees are in bloom.
	Citrus red mites, Thrips		2.4 pt					
	Black scales (single and off-brooded), California red scales, Citricola scales, Purple scales, Soft brown scales, Tangelo Yellow scales	CA Only: Non-ULV Aerial, Airblast 7.5 (No Aerial application) or 1.5	1-1.5 pt/100 gal	1 or 3	NA or 30	7 7	72 hrs 12 hrs	Application of malathion is limited to 1 application at 7.5 lb ai/A OR 3 applications at 1.5 lbs ai/A. If the 7.5 lb ai/A rate is used in any one year, no additional applications of malathion are allowed. Do not apply this product within 3 days prior to bloom, during bloom, or until petal fall is complete.  The rate for use on citrus is based on a standard of 500 gallons per acre dilute spray for mature trees.
Florida purple scales, Florida red scales		2 pt/100 gal						Apply in 200 gallons of water per acre. Do not apply this product within 3 days prior to bloom, during bloom, or until petal fall is complete.
Citrus red mites, Thrips		2.4 pt						
Citrus Grapefruit	Black scales (single and off-brooded), California red scales, Citricola scales, Purple scales, Soft brown scales, Tangelo Yellow scales	ALL STATES OTHER THAN CA: ULV Aerial 0.175	0.28 pt	3	7	7	12 hrs	Do not apply per than 3 applications per year. Do not apply this product within 3 days prior to bloom, during bloom, or until petal fall is complete.
	Florida purple scales, Florida red scales		0.28 pt					
	Citrus red mites, Thrips		0.28 pt					
Citrus Grapefruit Lemon Limes Oranges Tangerines Tangelos	Black scales (single and off-brooded), California red scales, Citricola scales, Purple scales, Soft brown scales, Tangelo Yellow scales	ULV Aerial 0.175	0.28 pt	3	7	7	12 hrs	Do not apply this product within 3 days prior to bloom, during bloom, or until petal fall is complete.
	Florida purple scales, Florida red scales		0.28 pt					
	Citrus red mites, Thrips		0.28 pt					
Kumquat	Black scales (single and off-brooded), California red scales, Citricola scales, Purple scales, Soft brown scales, Tangelo Yellow scales	Non-ULV Aerial, Groundboom 4.5	1-1.5 pt/100 gal	1	NA	7	2	Apply in 200 gallons of water per acre. Do not apply this product within 3 days prior to bloom, during bloom, or until petal fall is complete.
	Florida purple scales, Florida red scales		2 pt/100 gal					
	Citrus red mites, Thrips		2.5 pt					
Kumquat	Black scales (single and off-brooded), California red scales, Citricola scales, Purple scales, Soft brown scales, Tangelo Yellow scales	ULV Aerial 0.175	0.28 pt	2	7	7	12 hrs	Apply in 200 gallons of water per acre. Do not apply this product within 3 days prior to bloom, during bloom, or until petal fall is complete.

	Florida purple scales, Florida red scales		0.28 pt					
	Citrus red mites, Thrips		0.28 pt					
Currants	Japanese beetles	Non-ULV Aerial, Groundboom, 1.25	2 pt	2	7	1	12 hrs	The rates for use on currants are based on a standard of 200 gallons per acre dilute spray. Do not apply more than 2 times per year.
Figs	Dried fruit beetles, Vinegar flies	Non-ULV Aerial 2.0  Non-ULV Airblast 1.5	3.2 pt + 1-2 gal unsulfured molasses	2	5	5	24 hrs	
			2.4 pt + 1-2 gal unsulfured molasses				12 hrs	
Grapes	Leafhoppers, Spider mites	Non-ULV Aerial, Airblast 1.88	3 pt	2	14	3	3 days for girdling and tying;  24 hrs for all other activities	The rates for use on grapes are based on a standard of 200 gallons per acre dilute spray. Injury may occur on grapes of Almeria, Cardinal, Italia and Ribier varieties when sprays containing MALATHION are applied after clusters appear.
	European fruit lecaniums		1.5 pt/100 gal				Make full coverage applications when newly hatched nymphs are migrating over vines, usually shortly after bloom.	
	Mealybugs		1.5 pt				Apply in 50-100 gal water per acre.	
Grape Vines (Over- wintering on nursery stock only)	Grape phylloxera	DIP 3 pt/200 gallons of water	3 pt/200 gallons of water	1	NA	NA	NA	Remove excess soil from the roots and dip in the MALATHION solution. Submerge the entire root system for 5 minutes. Keep the solution agitated at all times. Apply by ground application only. Do not apply by ground equipment within 25 feet of aquatic habitats (such as, but not limited to, lakes reservoirs, rivers, permanent streams, wetlands or natural ponds, estuaries and commercial fish farm ponds). Do not apply more than two applications per year. Minimum retreatment interval is 7 days.
Macadamia Nut	Green stink bugs	Non-ULV Aerial, Airblast 0.94	1.5	6	7	1	12 hrs	Do not apply more than 3.75 lbs of actual MALATHION per acre to macadamia nut trees.
Nectarines	Spider mites	Non-ULV Aerial, Airblast 3.0	3-4.4 pt	2	7	7	24 hrs	The rate for use on nectarines is based on a standard of 300 gallons per acre dilute spray for mature trees. MALATHION may cause fruit spotting on nectarines. Do not apply this product within 3 days prior to bloom, during bloom, or until petal fall is complete. Do not apply more than 2 times per year.
	Plum curculios		4.8 pt					
Papaya	Aphids	Non-ULV Aerial, Airblast 1.25	1.5-2 pt/100 gal	8	3	1	12 hrs	
Peaches	Black cherry aphids, Black peach aphids, European red mites, Green peach aphids, Rusty plum aphids, Japanese beetles, Spider mites	Non-ULV Aerial, Airblast 3.0	3 pt	2	11	7	24 hrs	The rates for use on peaches are based on a standard of 300 gallons per acre dilute spray for mature trees. Do not apply more than 9 pounds of actual MALATHION per acre to peach trees. Do not apply this product within 3 days prior to bloom, during bloom, or until petal fall is complete. Do not apply more than two applications per year.
	Oriental fruit moths, Plum curculios		3 qt					
	Cottony peach scales, European fruit lecaniums, Terrapin scales		2 pt/100 gal					

Pecans	Aphids, Spider mites, Walnut aphids, Pecan Phylloxera, Pecan nut casebearers, Walnut husk flies	Non-ULV Aerial, Airblast 2.5	4.0 pt	2	7	7	24 hrs	Do not apply this product within 3 days prior to bloom, during bloom, or until petal fall is complete. repeat as necessary.  Apply after first generation eggs begin to hatch.  Application rates are based on a standard dilution rate of 500 (ground) gallons of water/A for mature trees 25-35 feet high.
Walnuts	Aphids, European red mites, Walnut aphids	Non-ULV Aerial, Airblast 2.5	1.5-3 pt	3	7	7	24 hrs	Do not apply this product within 3 days prior to bloom, during bloom, or until petal fall is complete. Apply in 500 gal of water per acre using conventional ground sprayer or air-carrier type sprayer.
	Walnut husk flies		1.5-3 pt					Apply with conventional sprayer. For bait sprays, combine Staley's Sauce Base No. 2 or No. 7 or any protein hydrolysate bait at the rate of 2 qt per acre with MALATHION.
	3-4 pt		Apply in 500 gal of water per acre with air-carrier type sprayer. For bait sprays, combine Staley's Sauce Base No. 2 or No. 7 or any protein hydrolysate bait at the rate of 2 qt per acre with MALATHION.					

### FIELD CROPS AND PASTURE AND RANGE GRASSES

Alfalfa	Alfalfa weevil larvae, Aphids, Grasshoppers Lygus bugs, Potato leafhoppers, Spider mites, Spittlebugs, Stink bugs	Non-ULV Aerial or Ground Boom 1.25	1.5-2 pt	2 per cutting	14	0	12 hrs	Do not apply to alfalfa in bloom. Do not apply more than 2 applications per year. Apply when day temperature is expected to be above 65° F and when 50-70% of leaves show damage.
	Armyworms		2 pt					
	Clover leaf weevils		1.5 pt					
	Vetch bruchids		2 pt					
Alfalfa	Alfalfa weevil larvae, Aphids, Grasshoppers Lygus bugs, Potato leafhoppers, Spider mites, Spittlebugs, Stink bugs	ULV Aerial 0.61	1 pt	2 per cutting	14	0	12 hrs	Do not apply to alfalfa in bloom. Do not apply more than 2 applications per year. Apply when day temperature is expected to be above 65° F and when 50-70% of leaves show damage.
	Armyworms							
	Clover leaf weevils							
	Vetch bruchids							
Clover	Alfalfa weevil larvae, Aphids, Grasshoppers, Lygus bugs, Potato leafhoppers, Spider mites, Spittlebugs	Non-ULV Aerial, Groundboom 1.25	1.5-2 pt	2 per cutting	14	0	12 hrs	Do not apply to clover in bloom. Do not apply more than 4 applications per year.
	Armyworms		2 pt					
	Clover leaf weevils		1.5 pt					
Clover	Alfalfa weevil larvae, Aphids, Grasshoppers, Lygus bugs, Potato leafhoppers, Spider mites, Spittlebugs	ULV Aerial 0.61	1 pt	2 per cutting	14	0	12 hrs	Do not apply to clover in bloom. Do not apply more than 4 applications per year.
	Armyworms		1 pt					
	Clover leaf weevils		1 pt					
Corn (Field)	Aphids, Corn earworms, Corn rootworm adults, Grasshoppers, Sap beetles, Thrips	Non-ULV Aerial, Groundboom 1.0	1.5 pt	2	7	7	3 days for detasseling 12 hrs for all other activities	To kill corn earworm and sap beetles, begin treatments when 10% of the ears show silk. Repeat applications at 7 day intervals for a total of 2 applications.  Injury may occur in the whorl and silk stages with MALATHION.
	Armyworms		1.5 pt					
Corn (Field)	Aphids, Corn earworms, Corn rootworm adults, Grasshoppers, Sap beetles, Thrips	ULV Aerial 0.61	1 pt	2	7	7	3 days for detasseling 12 hrs for all other activities	To kill corn earworm and sap beetles, begin treatments when 10% of the ears show silk. Repeat applications at 7 day intervals for a total of 2 applications.  Injury may occur in the whorl and silk stages with MALATHION.
	Armyworms		1 pt					
Cotton	Brown cotton leafworms, Cotton aphids, Cotton leafworms, Cotton leaf perforators, Desert spider	Non-ULV Aerial, Groundboom 2.5	0.5-2 pt	2	7	7	2	Consult local agricultural authorities for exact time of application.

	mites, Leafhoppers, Lygus bugs, Thrips, Whiteflies							Grazing/feeding of treated crop foliage is prohibited.
	Boll weevils		2-4 pt					Do not apply more than 2 times per year.
	Aphids, Cotton fleahoppers, Spider mites		1-1.5 pt					
	Fall armyworms, Garden webworms, Grasshoppers		1.5-3 pt					
Cotton	Brown cotton leafworms, Cotton aphids, Cotton leafworms, Cotton leaf perforators, Desert spider mites, Leafhoppers, Lygus bugs, Thrips, Whiteflies	ULV Aerial 1.22	1.9 pt	2	7	7	2	Consult local agricultural authorities for exact time of application.  Grazing/feeding of treated crop foliage is prohibited.  Do not apply more than 2 times per year.
	Boll weevils		1.9 pt					
	Aphids, Cotton fleahoppers, Spider mites		1.9 pt					
	Fall armyworms, Garden webworms, Grasshoppers		1.9 pt					
Grasses (Barnyardgrass, Canarygrass, Fescue, Orchardgrass, Red top, Timothy, Yellow foxtail)	Cereal leaf beetles	Non-ULV Aerial, Groundboom 1.25	1-1.5 pt	1 per cutting	NA	0	12 hrs	Do not apply more than 4 times per year. 14-day minimum retreatment interval.
Grasses (Barnyardgrass, Canarygrass, Fescue, Orchardgrass, Red top, Timothy, Yellow foxtail)	Cereal leaf beetles	ULV Aerial 0.61	1 pt	1 per cutting	NA	0	12 hrs	Do not apply more than 4 times per year. 14-day minimum retreatment interval.
Pasture and Rangeland	Aphids, Grasshoppers, Leafhoppers	ULV Aerial 0.92 0.61	1.5 pt	1 per cutting	NA	12 hrs		ULV applications only – use closed mixing and loading systems. ULV Ground Application – Do not apply within 50 feet of aquatic habitats, such as, but not limited to, lakes, reservoirs, rivers, streams, wetlands, ponds, estuaries, and commercial fish ponds). This 50 foot buffer is in addition to the full swath displacement upwind that applications must use at the downwind edge of the field. Applications made by mosquito control districts and other public health officials are exempt from his requirement. Higher rate is for grasshoppers only. Pasture: Do not apply more than 2 times per year with a 30 day retreatment interval. Rangeland: Outside of government programs, limit use to spot treatment only for grasshoppers.
	Armyworms		1 pt					
Small Grains (Barley)	Cereal leaf beetles	Non-ULV Aerial, Groundboom 1.25	1-1.5 pt	2	7	7	12 hrs	
	English grain aphids, Grasshoppers, Greenbugs		1.5 pt					
	Winter grain mite		2 pt					
Small Grains (Barley)	Cereal leaf beetles	Aerial ULV .061	1 pt	2	7	7	12 hrs	
	English grain aphids, Grasshoppers, Greenbugs							
	Winter grain mite							
Small Grains (Oats, Wheat)	Cereal leaf beetles	Non-ULV Aerial, Groundboom 1.0	1-1.5 pt	2	7	7	12 hrs	
	English grain aphids, Grasshoppers, Greenbugs		1.5 pt					
	Winter grain mite		1.6 pt					
Small Grains (Oats, Wheat)	Cereal leaf beetles	ULV Aerial 0.61	1 pt	2	7	7	12 hrs	
	English grain aphids, Grasshoppers, Greenbugs		1 pt					
	Winter grain mite		1 pt					
Small Grains (Rye)	Cereal leaf beetles	Non-ULV Aerial, Groundboom 1.0	1-1.5 pt	2	7	7	12 hrs	Do not apply more than 2 times per year.
	English grain aphids, Grasshoppers, Greenbugs		1.5 pt					
	Winter grain mites		1.6 pt					
Small Grains (Rye)	Cereal leaf beetles	ULV Aerial 0.61	1 pt	1	NA	7	12 hrs	
	English grain aphids, Grasshoppers, Greenbugs		1 pt					
	Winter grain mites		1 pt					

Sorghum	Greenbugs	Non-ULV Aerial, Groundboom 1.0	1.5 pt	2	7	7	12 hrs	Grazing/feeding of treated crop foliage is prohibited.
Sorghum	Greenbugs	ULV Aerial 0.61	1 pt	2	7	7	12 hrs	Grazing/feeding of treated crop foliage is prohibited.
Vetch	Omnivorous leaf tiers, Pea aphids, Vetch bruchids	Non-ULV Aerial, Groundboom 1.25	1.5-2 pt	1 per cutting	14	0	12 hrs	Do not apply more than 1 time per cutting and 2 times per year

### STORED GRAIN FACILITIES (Grain Elevators, Silos)

Non-ULV Hand-held sprayer application of Residual Spray Before Storing Barley, Corn, Oats, Rye or Wheat. This use reflects spraying the walls and floor of an empty storage bin prior to loading grain. Do not apply directly to grain.

PESTS	RATE	DIRECTIONS
Cereal Leaf Beetles, Confused Flour Beetles, Flat Grain Beetles, Granary Weevils, Indian Meal Moths, Lesser Grain Borers, Maize Weevils, Red Flour Beetles, Rice Weevils, Rusty Grain Beetles, Saw-toothed Grain Beetles	0.6 lbs ai/1,000 ft 8 pints/25 gal water	Before applying spray, clean elevators thoroughly. Remove and burn all sweeping and debris. For a residual wall, floor and machinery spray in grain elevators before loading grain, make a thorough application. One application per storage period. 12 hr REI.

### FLY AND MOSQUITO CONTROL - Outdoor Use Only

Apply as a coarse spray in a two-foot wide or less band from the base of a manmade structure and up to two feet on wall surfaces. Do not apply more than 4 applications per year. Minimum retreatment interval is 7 days.

Pests	Rate	Directions For Use
Adult flies	Straight Sprays: 5 Tablespoons + 1 gal water OR 1 cup + 2½ gal water OR 1 quart + 12 gals water	Apply as a spray at the rate of 1 gallon per 1,000 sq ft on painted surfaces and 2 gal per 1,000 sq ft on unpainted surfaces where flies alight or congregate, such as on fences and around garbage cans. Repeat applications as necessary. Avoid applying oil-based formulations to valuable ornamental plants as injury may occur.
Mosquito adults	1 part to 28 parts water, fuel oil or diesel oil	Spray lower outside building foundations, shrubs, low trees and lawn areas (Spot treatment only). Do not apply as a broadcast treatment to residential lawns.

## OUTDOOR ORNAMENTALS

Ornamental and/or shade trees, ornamental herbaceous plants, ornamental non-flowering plants, ornamental woody shrubs and vines, pine seed orchards, uncultivated non-agricultural areas, and Christmas tree plantations.

Spot treatment only. Do not apply more than two applications per year. Minimum retreatment interval is 10 days.

**For Christmas Tree Plantations:** Aerial application is prohibited. Do not apply more than two applications per year. Minimum retreatment interval is 7 days.

**For Pine Seed Orchard Use:** For use in slash pine seed orchards in Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina and Texas only. Malathion may be used to control thrips from mid-December to mid-March. Do not apply more than two applications per year. Minimum retreatment interval is 7 days. Do not apply by ground within 25 feet or by air within 50 feet of aquatic habitats such as, but not limited to, lakes, reservoirs, rivers, permanent streams, wetlands, or natural ponds, estuaries and commercial fish farm ponds). For aerial applications, do not release spray at a height greater than 10 ft above the ground or vegetative canopy, unless a greater application height is necessary for pilot safety. Applicators must use ½ swath displacement upwind at the down wind edge of the field. Do not apply when the wind speed is greater than 10 mph. Applications are required to select the nozzle and pressure that deliver medium or coarser droplets (per ASABE S572 for ground and ASABE S641 for aerial). Do not apply during temperature inversions.

Injury may occur on Ferns, Hickory, Viburnum, Lantana, Crassula and Canareti Juniper following the use of PRENTOX 5 LB MALATHION SPRAY. Slight injury has also been reported on Boston, Pteris, and Maidenhair Ferns, Petunias, Small-Leaf Spirea, White Pine and Maples. Under extreme heat, drought and disease conditions, the emulsifiable concentrates may cause slight damage to elms. For small areas, mix the appropriate amount of this product per gallon of water and apply with hand-pump sprayer.

Pests	Rate	Remark
Aphids, Spider Mites	1½ pts per 100 gals OR 2 teaspoons per gal	Maximum 2 applications per year/growing cycle. 10 day minimum retreatment interval. 12 hour REI
Bagworms, Birch leafminers, Boxwood leafminers	2 pts per 100 gal OR 2 teaspoons per gal	Maximum 2 applications per year/growing cycle. 10 day minimum retreatment interval. 12 hour REI
European pine shoot moths, Four-lined leaf bugs, Japanese beetle adults, Potato leafhoppers, Rose leafhoppers, Tarnished plant bugs, Thrips	1.5 pts per 100 gal OR 2 teaspoons per gal	Maximum 2 applications per year/growing cycle. 10 day minimum retreatment interval. 12 hour REI
Lace bugs	1 pt per 100 gal OR 2 teaspoons per gal	Maximum 2 applications per year/growing cycle. 10 day minimum retreatment interval. 12 hour REI
Mealybugs, Whiteflies	1.5 pts per 100 gal OR 2 teaspoons per gal	Maximum 2 applications per year/growing cycle. 10 day minimum retreatment interval. 12 hour REI
Oak kermes	2 pts per 100 gals OR 2 teaspoons per gal	Apply when scale crawlers have settled on foliage. Maximum 2 applications per year/growing cycle. 10 day minimum retreatment interval. 12 hour REI
Tent caterpillars	2 pts per 100 gal OR 2 teaspoons per gal	Maximum 2 applications per year/growing cycle. 10 day minimum retreatment interval. 12 hour REI
Oyster shell scales	1 pt per 100 gal. OR 2 teaspoons per gal	Apply when scale crawlers have settled on foliage. Maximum 2 applications per year/growing cycle. 10 day minimum retreatment interval. 12 hour REI
Euonymus scales, Scurfy scales	1.5 pts per 100 gal OR 2 teaspoons per gal	Maximum 2 applications per year/growing cycle. 10 day minimum retreatment interval. 12 hour REI
Azalea scales, Magnolia scales, Pine leaf scales	2 pts per 100 gals OR 2 teaspoons per gal	Maximum 2 applications per year/growing cycle. 10 day minimum retreatment interval. 12 hour REI
Fletcher scales	2 pts per 100 gals OR 2 teaspoons per gal	Apply when scale crawlers have settled on foliage. Maximum 2 applications per year/growing cycle. 10 day minimum retreatment interval. 12 hour REI
Florida red scales, Juniper scales	2 pts per 100 gals OR 2 teaspoons per gal	Apply when scale crawlers have settled on foliage. Maximum 2 applications per year/growing cycle. 10 day minimum retreatment interval. 12 hour REI
Black scale crawlers, Soft brown scales	2.25 pts per 100 gal OR 2 teaspoons per gal	Maximum 2 applications per year/growing cycle. 10 day minimum retreatment interval. 12 hour REI
Monterey pine scales	2.5 pts per 100 gal. OR 2 teaspoons per gal	Maximum 2 applications per year/growing cycle. 10 day minimum retreatment interval. 12 hour REI
Pine needle scales	4 pts per 100 gal OR 4 teaspoons per gal	Maximum 2 applications per year/growing cycle. 10 day minimum retreatment interval. 12 hour REI
Wax scales	4 pts per 100 gal OR 4 teaspoons per gal	Apply in spring when crawlers are active. Repeat 1 or 2 full coverage applications at 10 day intervals. Maximum 2 applications per year/growing cycle. 10 day minimum retreatment interval. 12 hour REI

## OUTDOOR USE SITES

Application equipment limited to hand-pump sprayers, hose-end sprayers, and sprinkler cans.

Do not apply more than two applications per year.

Minimum retreatment interval is 10 days.

Sites	Pests	Rate	Remarks
Gardens	Millipedes, Sawbugs, Springtails	1 tsp/gal of water	Apply as a spot treatment at a rate of 1.2 fluid ounces per square foot of soil where insects congregate. Repeat at a 10 day interval.
Lawns (spot treatment only)	Ant mounds – <b>Do not use on Fire Ants or Harvester Ants</b>	1½ pts/100 gals of water (1.44 tsp/gallon of water)	Spray ant hills thoroughly so that they are well soaked. For other small ants in flower beds, lawns, around trees, spray lightly in the infested areas. Repeat in 10 days if ants return. Do not allow people or pets to enter treated areas until sprays have dried.

## STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited.

**PESTICIDE STORAGE:** Store in the original unopened container in a secure dry place. Do not contaminate with other pesticides or fertilizers. Do not heat the product above 55° C (131° F), and do not store for long periods of time at a temperature in excess of 25° C (77° F). Store in cool, dry area. If container is damaged, stop any leaks by repositioning the container or by patching or otherwise repairing the leaks. Take care to avoid contact with pesticide and wear protective gear. On cleanup of spilled liquids, wear protective equipment as required to prevent contact with the product or its vapors. Cover the spilled areas with generous amounts of absorbent material, such as clay, diatomaceous earth, sand or sawdust. Sweep the contaminated absorbent onto a shovel and put the sweepings into a salvage drum. Apply liquid household bleach to contaminated area. Scrub thoroughly using long handled brush. Let stand for 15 minutes. Wash area thoroughly with water. Place leaking container into a similar drum or glass container. Mark the container with name of product, ingredient statement, precautionary statements, and signal word. Contact us for replacement label. Do not store, use, pour or spill near heat or open flame.

**PESTICIDE DISPOSAL:** To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

**[Residential Use Product] CONTAINER HANDLING:** Nonrefillable container. Do not reuse or refill this container. If empty: Place in trash or offer for recycling if available. If partly filled: Call your local solid waste agency for disposal instructions. Never place unused product down any indoor or outdoor drain.

**[Occupational Use Product]** Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying. **[5 gallons or under]** Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **[over 5 gallons]** Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

Then, offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other approved state and local procedures.

(Optional text below)



NOTICE: This product can expose you to malathion which is known to the State of California to cause cancer. For more information, visit [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

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