



JANET T. MILLS  
GOVERNOR

STATE OF MAINE  
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY  
BOARD OF PESTICIDES CONTROL  
28 STATE HOUSE STATION  
AUGUSTA, MAINE 04333

**BOARD OF PESTICIDES CONTROL**

**January 16, 2019**

**Augusta Civic Center, 76 Community Drive, Kennebec/Penobscot Room, Augusta, Maine**

**AGENDA**

**3:00 - 4:00 PM BOARD MEETING**

**4:00 - 5:00 PM PUBLIC FORUM**

**5:00 - 6:00 PM BOARD MEETING CONTINUED IF NECESSARY**

1. Introductions of Board and Staff

2. Minutes of the November 16, 2018 Board Meeting

Presentation By: Megan Patterson, Director

Action Needed: Amend and/or Approve

3. Request for Financial Support from the Maine Mobile Health Program and the Eastern Maine Development Corporation

Since 1995 the Board has supported a Migrant and Seasonal Farmworker Safety Education program. The Maine Mobile Health Program (MMHP) and Eastern Maine Development Corporation (EMDC) provided training to 421 migrant agricultural workers during the 2018 season. Funding to support this effort in 2019 is being requested in the amount of \$5,360, which is the same amount the Board provided in 2018. The funding has been accounted for in the Board's FY'18 budget.

Presentation By: Chris Huh, Program Manager, Farmworkers Jobs Program, Eastern Maine Development Corporation

Elizabeth Charles McGough, Director of Outreach, Maine Mobile Health Program

Action Needed: Discussion and Determination if the Board Wishes to Fund this Request

MEGAN PATTERSON, DIRECTOR  
32 BLOSSOM LANE, MARQUARDT



PHONE: (207) 287-2731  
WWW.THINKFIRSTSPRAYLAST.ORG

4. Maine Cooperative Extension Request to Extend FIFRA Section 24(c) Registration (ME-130001) Malathion 8 Flowable for Use on Blueberries

Maine Cooperative Extension is requesting to extend §24(c) ME-140001 registration. Gowan Company supports this registration which increases the maximum application rate of Malathion 8 Flowable agricultural insecticide to control spotted wing drosophila (SWD) in blueberries. Gowan Malathion 8 Flowable has been highly effective against SWD in Maine at the higher application rates. In addition, this product offers growers the advantage of very short pre-harvest and re-entry intervals. Available data indicate that residues are expected to be below the established tolerance.

Presentation By: Mary Tomlinson, Pesticides Registrar and Water Quality Specialist

Action Needed: Approve or disapprove the request

5. Maine Cooperative Extension Request to Extend FIFRA Section 24(c) Registration (ME-170001) Malathion 8 Flowable for Use on Caneberries

Maine Cooperative Extension is requesting to extend §24(c) ME-170001 registration. Gowan Company supports this registration which increases the number of allowable applications of Malathion 8 Flowable agricultural insecticide to control SWD in caneberries. Gowan Malathion 8 Flowable has been highly effective against the SWD in Maine caneberries with the extra application. In addition, this product offers growers the advantage of very short pre-harvest and re-entry intervals. Available data indicate that residues are expected to be below the established tolerance.

Presentation By: Mary Tomlinson, Pesticides Registrar and Water Quality Specialist

Action Needed: Approve or disapprove the request

6. Maine Cooperative Extension Request to Extend FIFRA Section 24(c) Registration (ME-170002) Malathion 8 Aquamul for Use on Blueberries

Maine Cooperative Extension is requesting to extend §24(c) ME-170002 registration. Loveland Products, Inc. supports this registration which increases the maximum application rate of Malathion 8 Aquamul to control SWD in blueberries. This request is based on economic considerations and the request is identical to the Gowan Company §24(c) ME-130001.

Presentation By: Mary Tomlinson, Pesticides Registrar and Water Quality Specialist

Action Needed: Approve or disapprove the request

7. Review of Proposed Groundwater Testing for 2019

7 M.R.S. § 607-A, Section 2-A, directs the Board to conduct water residue surveys, for both ground and surface water, to prepare profiles of the kinds and amounts of pesticides present. At the November 2018 Board meeting, Board staff proposed a continuation of past groundwater monitoring efforts. The Board asked that staff provide the Board with the proposed cost, purpose of the testing, and set objectives.

Presentation By: Mary Tomlinson, Registrar and Water Quality Specialist and  
Pam Bryer, Toxicologist

Action Needed: Approve or disapprove funding for the proposed monitoring effort

8. Update on Water Quality Monitoring Activities

7 M.R.S. § 607-A, Section 2-A, directs the Board to conduct water residue surveys, for both ground and surface water, to prepare profiles of the kinds and amounts of pesticides present. In 2018, the Board's staff was involved in surface water and sediment sampling. The staff will update the Board on those activities and the sampling results.

Presentation By: Mary Tomlinson  
Pesticides Registrar and Water Quality Specialist

Action Needed: None—Informational Only

9. Correspondence

- a. Email and article from Jody Spear
- b. Letter from Linda Titus, Ag Matters

10. Other Items of Interest

- a. LD 36 An Act To Change the Composition of the Board of Pesticides Control

11. Schedule of Future Meetings

March 8, 2019, April 19, 2019, and May 24, 2019 are proposed meeting dates. The March meeting will include a hearing on proposed rule amendments.

Adjustments and/or Additional Dates?

12. Adjourn

## NOTES

- The Board Meeting Agenda and most supporting documents are posted one week before the meeting on the Board website at [www.thinkfirstspraylast.org](http://www.thinkfirstspraylast.org).
- Any person wishing to receive notices and agendas for meetings of the Board, Medical Advisory Committee, or Environmental Risk Advisory Committee must submit a request in writing to the Board's office. Any person with technical expertise who would like to volunteer for service on either committee is invited to submit their resume for future consideration.
- On November 16, 2007, the Board adopted the following policy for submission and distribution of comments and information when conducting routine business (product registration, variances, enforcement actions, etc.):
  - *For regular, non-rulemaking business*, the Board will accept pesticide-related letters, reports, and articles. Reports and articles must be from peer-reviewed journals. E-mail, hard copy, or fax should be sent to the Board's office or [pesticides@maine.gov](mailto:pesticides@maine.gov). In order for the Board to receive this information in time for distribution and consideration at its next meeting, all communications must be received by 8:00 AM, three days prior to the Board meeting date (e.g., if the meeting is on a Friday, the deadline would be Tuesday at 8:00 AM). Any information received after the deadline will be held over for the next meeting.
- During rulemaking, when proposing new or amending old regulations, the Board is subject to the requirements of the APA (Administrative Procedures Act), and comments must be taken according to the rules established by the Legislature.



PAUL R. LEPAGE  
GOVERNOR

STATE OF MAINE  
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY  
BOARD OF PESTICIDES CONTROL  
28 STATE HOUSE STATION  
AUGUSTA, MAINE 04333

WALTER E. WHITCOMB  
COMMISSIONER

**BOARD OF PESTICIDES CONTROL**

**November 16, 2018  
9:00 AM**

Room 118 Marquardt Building  
32 Blossom Lane, Augusta, Maine

**DRAFT MINUTES**

Present: Adams, Bohlen, Flewelling, Granger, Jemison, Morrill

1. Introductions of Board and Staff

- The Board, and Staff introduced themselves
- Staff Present: Bryer, Chamberlain, Connors, Couture, Patterson, Pietroski, Tomlinson

2. Minutes of the August 15, 2018 Board Meeting

Presentation By: Megan Patterson, Director

Action Needed: Amend and/or Approve

- Jemison and Connors noted a few grammatical errors in the minutes.
  - **Adams/Granger: Moved and seconded approval of minutes as amended**
  - **In Favor: Unanimous**

3. Review of Potential Rulemaking Concepts

Amendments to the Federal Certification and Training Requirements necessitate amendments to BPC Chapters 10, 31, 32, and 50. Previous Board discussions have indicated necessary amendments to Chapters 26, 27, 28, and 19, as well as the repeal of Chapter 36. The Board will now discuss the amendments.

Presentation By: Megan Patterson, Director

Action Needed: Refine the Rulemaking Concepts and Schedule a Public Hearing

MEGAN PATTERSON, DIRECTOR  
32 BLOSSOM LANE, MARQUARDT BUILDING



PHONE: (207) 287-2731  
WWW.THINKFIRSTSPRAYLAST.ORG

- Patterson explained to the Board that Chapters 10, 31, 32, and 50 are required to be opened for rulemaking because of federal Certification and Training Requirement updates.
- Bohlen inquired what the consequences would be if the Board chose not to adopt some of the federal updates.
- Patterson responded if the Board chose not to implement any of the required items it could mean the BPC would potentially lose their authority as state lead agency, their right to register pesticide products, and to enforce pesticide regulations.
- Patterson went through each item listed in the Rulemaking memo (see attached memo) and discussed them with the Board.
  - **Morrill/Jemison: Moved and seconded approval to move forward with all items on the memo, except for numbers: 2, 14-16, 23, 24, 29, and 30.**
  - **In Favor: Unanimous**

4. Review of Pesticide Self-Service Sign

BPC Chapter 26 Section 7 required that pesticide self-service sales areas include a “Board approved sign informing the public where to obtain additional information.” The Board reviewed various drafts and discussed improvements at the May 18, 2018 and July 13, 2018 meetings. At the August 15, 2018 meeting the Board authorized the staff to hire a graphic designer to improve the layout. The Board will now review the first drafts provided by the graphic designer.

Presentation By: Amanda Couture, Certification & Licensing Specialist

Action Needed: Provide Input

- The Board discussed the three draft signs created by the contracted graphic designer.
- Adams commented that these signs are really targeted to homeowners using pesticides on lawns because there are many individuals who do not realize that they are using a pesticide when they purchase a weed and feed product.
- The Board selected the sign with the ‘insects, weeds, and critters’ wording, and they want the grass clip art from another sign to be moved to that selected template.
  - **Morrill/Adams: Moved and seconded approval of sign as discussed.**
  - **In Favor: Unanimous**

5. Discussion of Board Priorities Staff Planning Session

In recent years, there has been considerable turnover in Board membership and Board staff. Staff is currently juggling the usual tasks of Board operation, but is also working toward full public implementation of the Maine Pesticide Enforcement, Registration and Licensing System (MEPERLS), conducting water quality testing, updating licensing exams, conducting training for the revised Worker Protection Standard, and preparing for adoption of new federal Certification and Training requirements. In addition, the new Certification and Training requirements make it necessary to revise the State Plan and conduct rulemaking. Staff would like input on which future projects are most important to the Board when discretionary staff time arises. Staff held a planning session and discussed potential projects.

Presentation By: Megan Patterson, Director

Action Needed: Provide guidance to the staff on Board priorities

- Patterson stated that historically the Board has met with staff outside of the regular meetings to brainstorm and prioritize issues and projects they would like to take on. This type of planning session has not occurred in some time and Patterson suggested scheduling a time to have one.
- Patterson told the Board staff had met and discussed issues they felt were pertinent to address, such as, water quality, compiling pesticide use data, public outreach, updating the GotPests website, a kiosk for agricultural fairs, the Maine Science Festival, and other items.
- Granger stated that planning, to some extent, will be set by what comes out of the legislature. He added this may be a little premature and difficult in this environment to pin down what we should really be focusing on.
- Patterson responded that rather than respond to what the legislature wants, we should forge ahead around areas where we have noticed emerging issues such as glyphosate outreach, rulemaking, and other areas.
- Morrill asked what this planning session would look like and if Patterson envisioned it as a Board meeting in the morning followed by a planning session.
- Patterson responded that in the past an entire day was devoted to the planning session.
- Bohlen stated that his memory from various rounds of planning sessions was that there was a lot of staff preparation beforehand and information disseminated to the Board members. He added that holding a planning session is not a trivial undertaking and it is not worth doing unless the work is done ahead of time and the Board has some concrete choices in front of them.
- Randlett stated that the planning session needs to be open to the public.
- There was discussion among the Board regarding holding the planning session at a site north of Augusta. The town of Orono and the Black Bear Inn were suggested.
- Tomlinson mentioned the 2019 water quality item needed to be decided before the planning session would be held.
- Bohlen stated he would like to have that as an agenda item for the next Board meeting. He would like to know the purpose of the testing, set objectives for it, and discuss if we are going to obtain some info that will answer a specific question.

## 6. Review of Budget

In early 2017, the Board reviewed the budget with a goal of identifying potential resources that could be allocated to Board priorities. At that time the Board requested ongoing annual updates on the status of the Pesticide Control Fund.

Presentation By: Megan Patterson, Director

Action Needed: None—Informational Only

- Morrill stated it is the goal of the board to have a much more intimate involvement in the budget before it is submitted.
- Patterson stated that the fiscal year for the state runs from July 1<sup>st</sup> to June 30<sup>th</sup> and that is the timeline the submission follows.

- Patterson discussed the details of the budget with the Board. Five permanent positions in the Plant Health division are funded by the BPC budget, and \$20 from each pesticide registration fee goes to help subsidize that.
- Patterson informed the Board that there have been several staff vacancies over the last year so that expense is lower than usual. She added that John Pietroski was recently promoted to Manager of Pesticide Programs. Additionally, the UMaine Cooperative Extension Manual Writer/Pesticide Safety Education Professional position through cooperative extension was vacant through 2018 but has since been filled and those expenses will appear in subsequent budget summaries.
- Bohlen asked about the amount spent on technology and if that amount will be decreasing moving forward.
- Patterson responded that, due to investment in technology, the board's annual operating costs were substantially higher in 2016 and 2017. In 2018 operating costs were lower as technological development was nearing completion. She added that there will be continued costs for hosting the BPC's software system but, due to staffing changes, total operating costs will not be substantially higher than prior to the development effort.
- Bohlen asked why the amount for in-state travel for last year was only \$2,000.
- Patterson explained that state cars for inspectors is located under the 'Rents' column and it is approximately \$12,000. She added that some of those costs are also covered by the federal EPA grant, as well as extra contractual monies for enforcement, water quality, and some other items.
- Morrill asked that, as part of the planning session, the Board receive a wish list of items from staff to fund through the budget. He stated that the list can include anything from technology to items that the staff feels would help them do their job better.
- Flewelling asked if the state of Maine contributed any money into the BPC budget.
- Patterson replied that the state does not contribute money to the BPC budget.

7. Consideration of Consent Agreement with Wise Acres Farm, Kenduskeag

The Board's Enforcement Protocol authorizes staff to work with the Attorney General and negotiate consent agreements in advance on matters not involving substantial threats to the environment or public health. This procedure was designed for cases where there is no dispute of material facts or law, and the violator admits to the violation and acknowledges a willingness to pay a fine to resolve the matter. This case involves using a pesticide in a manner inconsistent with the label, insufficient records, and lack of required information at central information display.

Presentation By: Raymond Connors, Manager of Compliance

Action Needed: Approve/Disapprove the Consent Agreement Negotiated by Staff

- Connors stated that it was determined that the applicator exceeded the maximum rate for the fungicide on strawberries. There were also violations regarding respiratory protection and application records. Connor stated that the owner signed and settled the \$175 consent agreement.
  - **Jemison/Flewelling: Moved and seconded approval of consent agreement.**
  - **In Favor: Unanimous**

8. Consideration of Consect Agreement with Paul Finden and Emily Rogals, Belfast

The Board's Enforcement Protocol authorizes staff to work with the Attorney General and negotiate consent agreements in advance on matters not involving substantial threats to the environment or public health. This procedure was designed for cases where there is no dispute of material facts or law, and the violator admits to the violation and acknowledges a willingness to pay a fine to resolve the matter. This case involves a pesticide application to a property without the property owners' authorization.

Presentation By: Raymond Connors, Manager of Compliance

Action Needed: Approve/Disapprove the Consent Agreement Negotiated by Staff

- Connors explained to the Board that this case originated with a call on October 5, 2018, from a Belfast resident, who suspected his neighbor had applied herbicide to a professional landscape planting that had been done. At that time, the caller stated that they had noticed the damage a couple weeks prior to calling.
- Connors stated that a BPC inspector went to the caller's residence and noted the damage appeared too systematic to be of natural origin. There was damage high up on the trunk to individual trees of multiple species and there were corresponding spots of dead grass behind each damaged tree. The inspector collected soil and foliage samples. Additionally, a plant pathologist from the Maine Forest Service ruled out natural causes for the dead vegetation.
- The inspector also spoke with the abutting property owners, Finden and Rogals, who stated they were organic and had never purchased or used herbicides. Through further investigation, the inspector discovered they had purchased Round-up, on at least four occasions, from a local hardware store.
- Connors told the Board that both the soil and foliage samples tested positive for glyphosate and metabolites of glyphosate.
- Connors added that a consent agreement was mailed and, following receipt of the agreement, Finden requested a meeting with Connors at the BPC office in Augusta. At that time, Finden stated that his wife had sprayed the neighbor's trees due to concerns of the trees growing and eventually shading her gardens and causing icing on the driveway.
- Adams asked what the lab charged per sample. Connors responded that it was about \$300 per sample.
- Granger asked approximately how long after the incident was the soil tested, and if only metabolites were found in it. He added he was interested to learn glyphosate could be detected in the soil that long after the application.
- Connors stated it would have been approximately three months after the application had been made. He added that glyphosate and metabolites were found in both the foliage and the soil but the amount of glyphosate in the soil was a little lower than what was detected in the foliage.
- Jemison commented that glyphosate can have a half-life of up to a year after but it does lose its pesticidal properties.
- Adams stated it is concerning that the individual lied to the inspector about buying and spraying the product initially. He added that the person had also used the product off label and he had no problem at all with levying a \$1500 fine against them.
- Randlett told the Board that the maximum fine that can be assessed in a civil case is \$1500. He added that the inspector did an excellent job going to the hardware store to inquire about purchases of glyphosate. Randlett told the Board the Attorney General did

consider bringing this as a criminal violation but that has to pass a greater burden of proof and they were not sure they could demonstrate that. Randlett added that the complainants may still take further action.

- Morrill commended John Pietroski for doing a great job with this case.
  - **Morrill/Adams: Moved and seconded approval of consent agreement.**
  - **In Favor: Unanimous**

9. Correspondence

- a. Email and article from Jody Spear

10. Other Items of Interest

- a. Updated brochure *Licensing Requirements for Pesticide Applicators in the State of Maine*
  - b. New BPC magnet
  - c. Article *Field Evaluation of Commercially Available Small Unmanned Aircraft Crop Spray Systems*
  - d. Press Release: EPA Announces Changes to Dicamba Registration
  - e. *A National Road Map For Integrated Pest Management* Revised September 2, 2018, USDA, EPA
  - f. Oregon Temporary Rule: Limitations on Pesticides Containing Aminocyclopyrachlor
- Morrill inquired as to why this article was included.
  - Patterson stated as a general interest item because the product use resulted in tree deaths and a lawsuit at the national level.
  - Tomlinson added that the pesticide was used for right-of-way applications and migrated to the roots of desirable trees causing damage.
- g. Chlorpyrifos Court Ruling
    - Ninth Circuit Court Opinion On Petition for Review of an Order of the Environmental Protection Agency—Chlorpyrifos Tolerances
    - Lulac v Wheeler – Petition for Rehearing
    - Summary

11. Schedule of Future Meetings

January 16, 2019 are proposed meeting dates. The January meeting will be at the Agricultural Trades Show and will include a Public Listening Session. There will be a public hearing on March 8, 2019. Additional Board meeting dates are: April 19, 2019 and May 24, 2019

12. Adjourn

- **Flewelling/Granger: Moved and seconded to adjourn at 11:53am.**
- **In Favor: Unanimous**



December 7, 2018

Megan Patterson  
Maine Board of Pesticides Control  
28 State House Station  
Augusta, ME 04333-0028

Dear Ms. Patterson,

The Maine Mobile Health Program (MMHP) and Eastern Maine Development Corporation (EMDC) would like to provide an update to and a request for support from the Maine Board of Pesticides Control of a continued collaborative effort to deliver EPA Worker Protection Standard (WPS) education to Maine’s farmworkers during the 2019 harvest season.

In 2018, through support of the Maine Board of Pesticides Control, MMHP and EMDC collaborated to hire a staff person to deliver WPS trainings. The Pesticide Safety Trainer offered WPS education to a total of 421 farmworkers across the state during the months of June – August, especially among broccoli and blueberry workers and at a variety of diversified farms. Beyond the WPS standard, trainings provided use curricula from the Association of Farmworker Opportunity Programs (AFOP) on occupational safety. A development during the past season included new content in the curriculum for take home exposure called “Limiting Exposure Around Families” which was enhanced to include content focused on pesticide exposure and pregnancy. The table below breaks down, by education topic, important outcomes in 2018 completed by this staff person.

FWs trained in Worker Protection Standard	421
FWs trained in Take Home Exposure	421
Heat Stress Trainings	421

For 2019, the Association of Farmworker Opportunity Programs (AFOP) has committed \$3,333 to EMDC and MMHP in support of WPS training. EMDC and MMHP plan to use these funds to support the staff time for multilingual WPS trainings services to farmworkers across the state. We request from the Maine Board of Pesticides Control a contribution of \$5,360 which we would leverage with the funds from AFOP. The funding from the Board of Pesticides Control will be used to fund the staffing of WPS trainings; including both the hourly wage and the travel required to reach farmworkers, growers and partners. We request that the funding be made directly to MMHP.



improving the health status of minority seasonal workers and their families by providing culturally appropriate care and services.

We thank the Board for its past support and for considering this current proposal. To contact us about this request or our activities, please feel free to contact Chris Huh by email ([chuh@emdc.org](mailto:chuh@emdc.org)) or phone (207-610-1521). We look forward to meeting with the Board to discuss this opportunity.

Best Regards,

A handwritten signature in black ink that reads "Elizabeth Charles McGough".

Elizabeth Charles McGough  
Director of Outreach and Deputy Director  
Maine Mobile Health Program

A handwritten signature in black ink that reads "Chris Huh".

Christopher Huh, MPA  
Program Manager  
Farmworker Jobs Program  
Eastern Maine Development Corporation



STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY

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JANET T. MILLS
GOVERNOR

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STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY

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PAUL R. LE PAGE
GOVERNOR

WALTER E. WHITCOMB
COMMISSIONER

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MEGAN PATTERSON, DIRECTOR
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Wild Blueberry Office Deering Hall University of Maine, Orono 04469

October 19, 2018

Mary E. Tomlinson  
Pesticide Registrar/Water Quality Specialist  
Maine Board of Pesticides Control  
28 State House Station  
Augusta, ME 04333

Dear Mary:

I request that the BPC Board supports the Gowan application for the renewal of the State of Maine 24(c) label for Malation 8 flowable at the 2.5 per acre rate for the spotted wing drosophila, as this rate is required for us to control this destructive pest in our wild blueberry fields. The SWD continues to be a serious threat with indications it is building up earlier in the season, so this label is vital provide it's mode of action to insure that we do not get resistance and are able to maintain control.

I request that the Board of Pesticides control approve a State of Maine 24(c) label for control of the spotted wing drosophila in blueberries and for caneberries in Maine for 2018. I have copied this request to Gowan Company on behalf of the wild blueberry growers in Maine and to Dr. David Handley to request he provide a letter of support for cultivated blueberries and for the caneberries Malathion 24C label for Maine.

Sincerely,

David Yarborough PhD  
Wild Blueberry Specialist  
Professor of Horticulture  
the University of Maine  
5722 Deering Hall Rm. 414  
Orono, ME 04469-5722

Phone: [207-581-2923](tel:207-581-2923)  
TollFree: [800-897-0757](tel:800-897-0757) x 1  
Fax: [207-581-2941](tel:207-581-2941)  
EMail [Davidy@Maine.edu](mailto:Davidy@Maine.edu)  
[www.wildblueberries.maine.edu](http://www.wildblueberries.maine.edu)

CC David Handley, Paul David, Melissa Riesland

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*One of Maine's public universities*

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*The Go To Company*

December 14, 2018

Attn: Mary E. Tomlinson, Pesticide Registrar / Water Quality Specialist  
Maine Department of Agriculture, Conservation, and Forestry  
Maine Board of Pesticide Control  
28 State House Station  
Augusta, ME 04333-0028  
(207) 287-7544

**RE: Gowan Malathion 8 Flowable, EPA Reg. No. 10163-21  
Renewal SLN ME-130001: Spotted Wing Drosophila in Blueberries and  
Renewal SLN ME-170001: Spotted Wing Drosophila in Caneberries**

Dear Ms. Tomlinson,

Gowan Company hereby authorizes support for the renewal of the Section 24(c) Special Local Need for Gowan Malathion 8 Flowable, EPA Reg. No. 10163-21 on blueberries and caneberries. The local conditions with the spotted wing drosophila (SWD) have been previously submitted and still continue to exist. We know that no new products have become available since the original request was submitted. Therefore, we authorize the use of all information currently on file in consideration of this action. Gowan Company commits to supplying the necessary product if this registration is renewed.

We are concerned about the performance of Gowan Malathion 8 Flowable against spotted wing drosophila at the currently labeled rates. Consequently, we are supporting the renewal of the Section 24(c) label request on blueberries with a higher rate, as well as the renewal on caneberries with an additional application. With the approved higher rates, efficacy tests have shown that the growers have achieved necessary control of the pest.

In support of this application, we have enclosed the following:

- 8570-25: EPA SLN Application – Blueberries
- 8570-25: EPA SLN Application – Caneberries
- Revised expiration date on SLN ME-130001 – Blueberries
- Revised expiration date on SLN ME-170001 – Caneberries
- Letter of Support from Dr. David Yarborough, University of Maine – Blueberries and Caneberries

Please contact me if you have any questions regarding this submission.

Respectfully,

Melissa Riesland  
Registration Specialist  
(928) 819-1594  
[mriesland@gowanco.com](mailto:mriesland@gowanco.com)

Enclosures

**FIFRA §24(c) SPECIAL LOCAL NEED REGISTRATION**

**FOR DISTRIBUTION AND USE ONLY WITHIN THE STATE OF MAINE  
FOR CONTROL OF SPOTTED WING DROSOPHILA IN BLUEBERRIES**

**GOWAN MALATHION 8 FLOWABLE**  
AGRICULTURAL INSECTICIDE

EPA Reg. No. 10163-21

SLN No. ME-130001

**This label expires and must not be distributed or used in accordance with this SLN registration after December 31, 20xx.**

ACTIVE INGREDIENT:	<b>% By Wt.</b>
Malathion (O,O-dimethyl phosphorodithioate of diethyl mercaptosuccinate): .....	79.5%
INERT INGREDIENTS .....	20.5%
	TOTAL 100.0%

Contains Petroleum Distillates  
Contains 8 lbs. Malathion per gallon

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

- It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
- Follow all applicable directions, restrictions, Worker Protection Standard (WPS) requirements, and precautions on the EPA registered label for Gowan Malathion 8 Flowable (EPA Reg. No. 10163-21).
- This labeling must be in the possession of the user at the time of pesticide application.

**DIRECTIONS FOR USE**

CROP	REI	RATE (PTS/ACRE)	PEST	RESTRICTIONS
BLUEBERRIES	12 hours	Up to 2.5	Spotted Wing Drosophila	The maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.  Do not exceed a total maximum use rate of malathion from all sources of 5 lbs ai per acre per year.  Do not apply within 1 (one) day of harvest.

**IMPORTANT:** This product is sold subject to the Conditions of Sale and Warranty and Liability Limitations set forth on the container label.

**24(c) REGISTRANT:** Gowan Company  
P.O. Box 5569  
Yuma, AZ 85366-5569

Rev. Date 12/14/18

# GOWAN MALATHION 8 FLOWABLE

## AGRICULTURAL INSECTICIDE

ACTIVE INGREDIENT:		% By Wt.
Malathion (O,O-dimethyl phosphorodithioate of diethyl mercaptosuccinate):	.....	79.5%
INERT INGREDIENTS	.....	20.5%
		TOTAL 100.0%

Contains Petroleum Distillates  
Contains 8 lbs. Malathion per gallon  
**KEEP OUT OF REACH OF CHILDREN**  
**CAUTION**

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

<b>FIRST AID</b> <b>Organophosphate Insecticide</b>	
<b>If swallowed</b>	<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 any liquid to the person.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
<b>If in eyes</b>	<ul style="list-style-type: none"><li>• 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.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If on skin or clothing</b>	<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>
<b>If inhaled</b>	<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>
<b>HOT LINE NUMBER</b>	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact <b>1-888-478-0798</b> for emergency medical treatment information.	
<b>NOTE TO PHYSICIAN</b>	
Malathion upon use may cause cholinesterase inhibition. Atropine is antidotal. May pose an aspiration pneumonia hazard. Contains petroleum distillates.	

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Harmful if swallowed. Avoid breathing of spray mist. Avoid contact with skin.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are barrier laminate, butyl rubber, nitrile, or viton. If you want more options, follow the instructions for category F on an EPA chemical resistance category selection chart.

**Mixers, Loaders, Applicators, Flaggers, and other Handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves
- Shoes plus socks

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.

**NET CONTENTS \_\_\_\_\_ GALLONS**

EPA Reg. No. 10163-21  
EPA Est. No.



Produced For:  
Gowan Company  
P. O. Box 5569  
Yuma, AZ 85366-5569  
800-883-1844

### 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 pesticide is toxic to aquatic organisms, including fish and invertebrates. 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. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

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 on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area.

### DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. 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 its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, and nurseries, and 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 intervals. 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, made out of any waterproof material
- Shoes plus socks

### 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 (WPS) 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.

### PRECAUTIONS AND RESTRICTIONS

In order that pesticide residues on food and forage crops will not exceed tolerances established by the Federal Food and Drug Administration, use only the specified rates and intervals, and do not apply closer to harvest than prescribed.

Unless otherwise specified, apply at the first sign of infestation and repeat as needed observing the use limitations listed for each specified crop in the application tables. Consult your State Agriculture Experiment Station or the State Agricultural Extension Service for additional information as the timing of applications needed will vary with local conditions.

Applications may be made by aircraft or by ground equipment according to the DIRECTIONS FOR DILUTION below. The amount of water needed to treat an acre varies, therefore the following directions are given to cover a broad range of applications.

Buffer Zones for Aerial Application:

When making a Non-ULV application with aerial application equipment, a minimum buffer zone of 25 feet must be maintained along any water body.

Do not use in greenhouses.

### PHYTOTOXICITY ADVISORY STATEMENT

As is common with most emulsifiable concentrate formulations adverse effects, such as spotting or discoloration of the fruit or foliage can occur. Some conditions known to contribute to phytotoxicity include, but are not limited to : high temperatures, poor spray drying conditions, excessive spray runoff, certain spray mixtures, stage of crop development or tank mixes with other pesticides.

### SPRAY DRIFT REQUIREMENTS

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 efficiency. 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 Applications:** Spray should be released at the lowest height consistent with pest control and flight safety. Applications more than 10 feet above the crop canopy should be avoided. 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, the spray boom should be mounted on the aircraft as to minimize drift caused by wingtip or rotor vortices. The minimum practical boom length should be used and 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.

### DIRECTIONS FOR DILUTION

Rates are given in terms of pints of Malathion 8 Flowable per acre.

#### Dilute Application

Field and Row Crops: Use specified rate in 20 to 60 gallons of water per acre.

Trees and Vines: Use specified rate in 100 to 800 gallons of water per acre.

### MIXING DIRECTIONS

Pour specified amount of product into spray tank nearly filled with water. Add balance of water to fill tank. Keep agitator running during filling and spraying operations. If mixture does not mix readily, but tends to separate as an oily layer, do not use as injury to plants may result.

Do not combine with wettable powders unless previous use of the mixture has proven physically compatible and safe to plants. Always thoroughly emulsify this product with at least half of total water before adding wettable powders.

### PREHARVEST INTERVAL

Minimum days between last application and harvest are given in ( ) after each crop name.

### TREES AND VINES

Under heavy pest pressure, use higher rates.

CROP	REI (HRS)	RATE (PTS/ACRE)	PESTS	COMMENTS
APRICOTS (7)	12	1.5	Aphid, Codling moth, European Lecanium scale, Orange tortrix, Soft brown scale, Terrapin scale	The maximum application rate is 1.5 pints of product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
AVOCADOS (7)	48	4.7	Green house thrips, Latania scale, Omnivorous looper, Soft brown scale, Orange tortrix	The maximum application rate is 4.7 pints of product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 30 days.
BLACKBERRIES (1), BOYSENBERRIES (1), DEWBERRIES (1), LOGANBERRIES (1), RASPBERRIES (1)	12	2	Japanese beetle, Leafhoppers, Mites, Thrips	The maximum application rate is 2.0 pints of product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
		2	Aphid, Rose scale	

CROP	REI (HRS)	RATE (PTS/ACRE)	PESTS	COMMENTS
BLUEBERRIES (1)	12	1.25	Aphids, Blueberry maggot, Blueberry tip borer, Cherry fruitworm, Cranberry fruitworm, Japanese beetle, Plum curculio, Leafrollers, Sharp-nosed leafhopper, White Tussock moth	The maximum application rate is 1.25 pints of product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 5 days.
CHERRIES (3)	12	1.75	Black cherry aphid, Bud moth, Cherry fruit fly, Fruittree leafroller, Lesser peach twig borer, Forbes and San Jose scale	For Lesser peach twig borer, apply to trunk and scaffold limbs at 21 day intervals beginning with emergence (Do not exceed 4 applications per year). May cause injury on certain varieties of sweet cherries in the Northeast. The maximum application rate is 1.75 pints of product per acre; the maximum number of applications per year is 4; and the minimum retreatment interval is 3 days.
CITRUS [GRAPEFRUIT, LEMONS, LIMES, ORANGES, TANGELOS, TANGERINES [Mandarin or Mandarin Oranges, Tangors, and other hybrids of tangerines with other citrus] (7)	72	CA: 7.5 All Other States: 4.5	Aphids, Black scale (single and off-brooded), California red scale, Citricola scale, Orange worm, Purple scale, Soft scale, Thrips, Yellow scale	Do not apply when trees are in bloom. FOR CALIFORNIA: The maximum application rate is 7.5 pints of product per acre; the maximum number of applications per year is 1. ALL OTHER STATES: The maximum application rate is 4.5 pints of product per acre; the maximum number of applications per year is 1.
		CA: 1 - 7.5 All Other States: 1 - 4.5	Mediterranean fruit fly	
KUMQUATS (7)	48	4.5	Aphids, Black scale (single and off-brooded), California red scale, Citricola scale, Orange worm, Purple scale, Soft scale, Thrips, Yellow scale	Do not apply when trees are in bloom. The maximum application rate is 4.5 pints product per acre; the maximum number of applications per year is 1.
CURRENTS (1)	12	1.25	Japanese beetle, Mites	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 3; the minimum retreatment interval is 7 days.
GOOSEBERRIES (3)	12	2	Currant aphid, Imported currantworm	The maximum application rate is 2.0 pints product per acre; the maximum number of applications per year is 3; the minimum retreatment interval is 7 days.
FIGS (5)	12	1.5	Dried fruit beetles, Vinegar flies	Apply with 1 - 2 gallons sulfured molasses per acre. The maximum application rate is 1.5 pints product per acre; the maximum number of applications per year is 2; the minimum retreatment interval is 5 days.
GRAPES (3)	72 girdling and tying 24 other activities	1.88	Drosophila, European fruit lecanium, Grape leafhopper, Japanese beetle, Leafhopper, Mealybug, Spider mites, Terrapin scale	Injury may occur to grape berries when applications are made after bloom. The maximum application rate is 1.88 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 14 days.
GUAVA (2) (Not Registered for Use in California)	12	.75 - 1.25	Fruit flies	Apply with 1 pound partially hydrolyzed yeast protein or enzymatic yeast hydrolyzate. The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 13; and the minimum retreatment interval is 3 days.
MANGO (1) (Not Registered for Use in California)	12	0.9375	Fruit flies	The maximum application rate is 0.9375 pints product per acre; the maximum number of applications per year is 10; and the minimum retreatment interval is 7 days.
PASSION FRUIT (3) (Not Registered for Use in California)	12	1	Fruit flies	The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 8; and the minimum retreatment interval is 7 days.
MACADAMIA NUTS (1)	12	0.94	Green Stink bug	The maximum application rate is 0.94 pints product per acre; the maximum number of applications per year is 6; and the minimum retreatment interval is 7 days.

CROP	REI (HRS)	RATE (PTS/ACRE)	PESTS	COMMENTS
NECTARINES (7)	24	3	Black cherry aphid, Black peach aphid, Green peach aphid, Japanese beetle, Rusty plum aphid	May be mixed with spray oil for dormant and delayed dormant applications. Follow spray oil manufacturer's directions. The maximum application rate is 3.0 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
PEACHES (7)	24	1.25	Cottony peach scale, Lesser peach tree borer, Plum curculio, Oriental fruit moth, San Jose scale, Terrapin scale	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 11 days.
PECANS (7)	24	2.5	Aphid, Mites, Pecan bud moth, Pecan leaf casebearer, Pecan nut casebearer, Pecan phylloxera	The maximum application rate is 2.5 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
WALNUTS (7)	24	1.5 - 2.5	Aphid, Mites, Walnut husk fly	The maximum application rate is 2.5 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.

#### FIELD AND ROW CROPS

Under heavy pest pressure, use higher rates.

CROP	REI (HRS)	RATE (PTS/ACRE)	PESTS	COMMENTS
ALFALFA, BIRDSFOOT TREFOIL, CLOVER, LESPEDEZA, VETCH (0)	12	1 - 1.25	Alfalfa weevil larvae, Aphids, Armyworms, Clover leaf weevil, Grasshoppers, Lygus bugs, Pea aphid, Potato leafhoppers, Spider mites, Spittlebug, Vetch bruchid	Use higher rate for Armyworm control. Apply to alfalfa in bloom only in the evening or early morning when bees are not working in the fields or are not hanging on the outside of hives. The maximum application rate is 1.25 pints product per acre; the maximum number of applications is 2 per cutting; and the minimum retreatment interval is 14 days.
<b>LEAFY VEGETABLES (EXCEPT BRASSICA VEGETABLES) CROP GROUPING:</b> AMARANTH (LEAFY AMARANTH, CHINESE SPINACH, TAMPALA) (7), ARRUGULA (ROQUETTE) (7), CELTUCE (7), CHERVIL (7), CHRYSANTHEMUM-Edible-leafed, Garland (7), CORN SALAD (7), DOCK (SORREL) (7), FLORENCE FENNEL (7), ORACH (7), PURSLANE-Garden and Winter (7) (Not Registered for Use in California)	12 24	1 - 1.25	Aphids	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
DANDELIONS (7)	24	1.25	Aphids	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
PARSLEY (7)	24	1.5	Aphids	The maximum application rate is 1.5 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
SWISS CHARD (14) (Not Registered for Use in California)	12	1.0	Aphids	The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
CELERY (7)	24	1.0 - 1.5	Aphids, spider mite	The maximum application rate is 1.5 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.

CROP	REI (HRS)	RATE (PTS/ACRE)	PESTS	COMMENTS
LETTUCE, FIELD HEAD (14)	24	1.88	Aphids, Alfalfa loopers, Leafhoppers, Mites	The maximum application rate is 1.88 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 6 days.
LETTUCE, FIELD LEAF (14)	24	1.88	Aphids, Alfalfa loopers, Leafhoppers, Mites	The maximum application rate is 2.0 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 5 days.
ENDIVE, FIELD (7)	24	1.25	Aphids, Alfalfa loopers, Leafhoppers, Mites	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
SPINACH (7)	12	1.0	Aphids	The maximum application rate is 1.0-5 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
BEETS, Table (7)	12	1.25	Aphids, Beet armyworm, Blister beetles, Flea beetles	Do not use on Sugar Beets. The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
<b>COLE CROPS</b> (Brassica (cole) Leafy Vegetable crop group: BROCCOLI (2), BROCCOLI RAAB (RAPINI) (2), BRUSSELS SPROUTS (2), CAULIFLOWER (2), CAVALO BROCCOLO (2), CHINESE BROCCOLI (2), CHINESE MUSTARD CABBAGE (7), MIZUNA (7), MUSTARD SPINACH (7), RAPE GREENS (7)	48	1.25	Aphids, Cabbage loopers, Flea beetles, Imported cabbage worms	The maximum application rate is 1.25 2-0 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
CABBAGE (7)	48	1.25	Aphids, Cabbage loopers, Flea beetles, Imported cabbage worms	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 6; and the minimum retreatment interval is 7 days.
CHINESE CABBAGE (BOK CHOY, NAPA) (7)	48	1.25	Aphids, Cabbage loopers, Flea beetles, Imported cabbage worms	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
COLLARDS (7)	12	1	Aphids, Cabbage loopers, Flea beetles, Imported cabbage worms	The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
KALE (7), MUSTARD GREENS (7),	12	1	Aphids, Cabbage loopers, Flea beetles, Imported cabbage worms	The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 5 days.
KOHLRABI (7)	24	1.25	Aphids, Cabbage loopers, Flea beetles, Imported cabbage worms	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
CORN-Field (7)	72 hours for detasseling 12 hours for all other activities	0.61	Aphids, Corn rootworm adults, Sap beetles, Thrips, Young grasshoppers	<b>CAUTION:</b> Injury may occur in whorl and silk stages. The maximum application rate is 0.61 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
COTTON (7)	48	2.5	Aphids, Brown cotton leafworm, Cotton leaf perforator, Leafhoppers, Spider mites, Whitefly, Boll weevils, Cotton fleahoppers, Fall armyworms, Grasshoppers, Garden webworms and Lygus	Do not graze or feed forage to livestock. The maximum application rate is 2.5 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
CUCUMBERS (1)	24	1.75	Aphids, Cucumber beetles, Cutworms, Darkling ground beetles, Leafhoppers, Pickleworm, Spider mites, Squash vine borer, Thrips	Do not apply unless plants are dry. For vine borer apply- to stems and vines at base of plant. The maximum application rate is 1.75 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.

CROP	REI (HRS)	RATE (PTS/ACRE)	PESTS	COMMENTS
SQUASH, Summer (1)	24	1.75	Aphids, Cucumber beetles, Cutworms, Darkling ground beetles, Leafhoppers, Pickleworm, Spider mites, Squash vine borer, Thrips	The maximum application rate is 1.75 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
SQUASH, Winter (1)	12	1 <sup>3</sup> / <sub>4</sub>	Aphids, Cucumber beetles, Cutworms, Darkling ground beetles, Leafhoppers, Pickleworm, Spider mites, Squash vine borer, Thrips	The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
EGGPLANT (3)	12	1.56	Aphids, Spider mites, Lace bugs	The maximum application rate is 1.56 pints product per acre; the maximum number of applications per year is 4; and the minimum retreatment interval is 5 days.
FLAX (52)	12	0.5	Grasshoppers	The maximum application rate is 0.5 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
GARLIC (3),	24	1.56	Aphids, Thrips	The maximum application rate is 1.56 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
LEEKs (3), SHALLOTS (3)	24	1 - 1.56	Aphids, Thrips	The maximum application rate is 1.56 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
GRASSES (Forage, Hay) (0)	12	1 – 1.25	Aphids, Grasshoppers, Leafhoppers	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 1.
HOPS (10) (Not Registered for Use in California)	12	0.63	Aphids	The maximum application rate is 0.63 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
HORSERADISH (7), PARSNIPS (7), SALSIFY (7)	24	1.25	Aphids, Diamondback moths, Flea beetles, Leafhoppers	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
RADISHES (7)	12	1	Aphids, Diamondback moths, Flea beetles, Leafhoppers	The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
MUSHROOMS (1) (Not Registered for Use in California)	12	1.7	Phorid flies, Sciarid flies	Apply in 130 gallons of water per acre, or 1 tablespoon per 3 gallons of water per 1000 square foot bed. Make thorough application as soon as possible after picking. The maximum application rate is 1.7 pints product per acre; the maximum number of applications per year is 4; and the minimum retreatment interval is 3 days.
OKRA (1) (Not Registered for Use in California)	12	1.2	Aphids, Japanese beetles	The maximum application rate is 1.2 pints product per acre; the maximum number of applications per year is 5; and the minimum retreatment interval is 7 days.
ONIONS- Bulb and Green (3)	12	1.56	Thrips	The maximum application rate is 1.56 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
		1.5	Onion maggots	
PEAS, DRIED (3)	12	1	Aphids, Pea weevils	Do not graze or feed forage to livestock. Dried peas can be treated by ground and foliar applications only. The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
PEAS, GREEN (3)	12	1	Aphids, Pea weevils	Do not graze or feed forage to livestock. Green peas can be treated by ground, foliar and aerial applications. The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.

CROP	REI (HRS)	RATE (PTS/ACRE)	PESTS	COMMENTS
PEPPERMINT (7), SPEARMINT (7)	12	0.94	Adult flea beetles, Leafhoppers	The maximum application rate is 0.94 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
PEPPERS (Field) (3)	12	1.5	Aphids, Pepper maggots	The maximum application rate is 1.5 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 5 days.
POTATOES (0)	12	1	False chinch bugs, Leafhoppers, Mealybugs	The maximum application rate is 1.5 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
		1.5	Aphids, Blister beetles	
RICE-Domestic, Grain or Wild (7)	12	1.25	Rice leaf miners, Rice stink bugs	Do not apply Propanil within 15 days of Malathion treatment. 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. The maximum application rate is 1.25 4-5 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
RUTABAGAS (7)	12	1	Aphids	The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
SMALL GRAINS (BARLEY) (7)	12	1 – 1.25	Armyworms, English grain aphids, Grasshoppers, Greenbugs	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
SMALL GRAINS (OATS, RYE, WHEAT[spring and summer]) (7)	12	1	Armyworms, English grain aphids, Grasshoppers, Greenbugs	The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
SORGHUM-Grain (7)	12	1.0	Greenbugs	Do not graze or feed forage to livestock. The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
STRAWBERRIES (3)	12	1.5 - 2	Aphids, Field crickets, Lygus bugs, Potato leafhoppers, Spider mites, Spittlebugs, Strawberry leafrollers, Strawberry root weevils, Thrips, Whiteflies	The maximum application rate is 2.0 pints product per acre; the maximum number of applications per year is 4; and the minimum retreatment interval is 7 days.
SWEET CORN (Field) (5)	72 detassling 12 other activities	1	Japanese beetles	<b>CAUTION:</b> Injury may occur in whorl and silk stages. The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 5; and the minimum retreatment interval is 5 days.
SWEET POTATOES (3)	12	1 – 1.5	Leafhoppers	The maximum application rate is 1.5 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
		1.5	Morning Glory leafminers	
TOMATOES (Field) (1)	12	1.5	Aphids, Spider mites, Drosophila flies	Apply a full coverage application to fruit and foliage. The maximum application rate is 1.5 pints product per acre; the maximum number of applications per year is 4; and the minimum retreatment interval is 5 days.
WATERCRESS (7)	12	1	Aphids	The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 5; and the minimum retreatment interval is 3 days.

**OUTDOOR ORNAMENTALS**

Note: Before treating a large number of ornamental plants with Gowan Malathion 8 Flowable alone or as a tank mixture with any other material, make a test application on a few plants and observe for 7-10 days prior to treating large areas to reduce the possibility of plant injury.

CROP	REI (HRS)	RATE	PESTS	COMMENTS
FLOWERS, SHADE TREES and SHRUBS	12	1 pint in 100 gals of water as a dilute spray	Aphids, Euonymus scales, European pine shoot moths, Four-lined leaf bugs, Japanese beetle adults, Lace scales, Mealybugs, Millipedes, Oyster shell scales, Potato leafhoppers, Rose leafhoppers, Scurfy scales, Spider mites, Springtails, Sowbugs, Tarnished plant bugs, Thrips, Whiteflies	<b>CAUTION:</b> Avoid use on certain ferns including Boston, Maidenhair and Pteris, as well as some species of Crassula and Canaetri Juniper. For Oyster shell, Fletch, Juniper, Oak kermes and Pine needle scales apply when scale crawlers have settled on foliage. The maximum number of applications per year is 2; and the minimum retreatment interval is 10 days.
		1.25 pints in 100 gals of water as a dilute spray	Azalea scales, Bagworms, Birch leafminers, Boxwood leafminers, Fletch scales, Florida-red scales, Juniper scales, Magnolia scales, Oak kermes, Pine leaf scales, Tent caterpillars	
		1.6 pints in 100 gals of water	Black scale crawlers, Monterey pine scales	
		2 pints in 100 gals of water	Pine needle scales, Wax scales	

**SLASH PINE, PINE SEED ORCHARDS, and CHRISTMAS TREE PLANTATIONS**

CROP	REI (HRS)	PESTS	RATE	COMMENTS
SLASH PINE, and PINE SEED ORCHARDS	12	Slash pine flower thrips, European pine sawfly	For ground application, mix 0.4 gallons of Malathion 8 Flowable in 100 gallons of water.	Apply 3/4 gallon of the mixture per tree on the smallest flowering trees. Mist blowers or airblast sprays may be used. The maximum application rate is 3.2 pints product per acre; the maximum number of applications per year/growing season is 2; and the minimum retreatment interval is 7 days.
			For air application, mix 0.4 gallons of Malathion 8 Flowable in at least 10 gallons of water.	Apply a minimum of 10 gallons of mixture per acre. Make two applications, the first when female flowers are in twig bud stage, the second one week prior to maximum flower receptivity to pollen. The maximum application rate is 3.2 pints product per acre; the maximum number of applications per year/growing season is 2; and the minimum retreatment interval is 7 days.
CHRISTMAS TREE PLANTATIONS	12	Slash pine flower thrips, European pine sawfly	For ground application, mix 0.4 gallons of Malathion 8 Flowable in 100 gallons of water.	Apply 3/4 gallon of the mixture per tree on the smallest flowering trees. Mist blowers or airblast sprays may be used. The maximum application rate is 3.2 pints product per acre; the maximum number of applications per year is 2.
			For air application, mix 0.4 gallons of Malathion 8 Flowable in at least 10 gallons of water.	Apply a minimum of 10 gallons of mixture per acre. Make two applications, the first when female flowers are in twig bud stage, the second one week prior to maximum flower receptivity to pollen. The maximum application rate is 3.2 pints product per acre; the maximum number of applications per year is 2.

## MOSQUITO CONTROL

### AROUND THE OUTSIDE OF BUILDINGS

Around lower outside foundations of homes, yards - spot treatment only, out-door garbage cans, and garbage dumps: Apply 0.2439 gallons of Malathion 8 Flowable undiluted per 1000 sq. ft. on painted surfaces. Apply 0.2439 gallons of Malathion 8 Flowable undiluted per 1000 sq. ft. on unpainted surfaces.

### CULL FRUIT AND VEGETABLE DUMP

Around cull fruit and vegetable dumps: Apply 6.857 pounds of Malathion 8 Flowable undiluted per 1000 sq. ft. on painted surfaces. Apply 2 gallons of Malathion 8 Flowable undiluted per 1000 sq. ft. on unpainted surfaces.

### APPLICATION THROUGH IRRIGATION SYSTEMS - CHEMIGATION

Apply this product only through sprinkler, including center pivot, lateral move, end tow side (wheel) roll, traveler, big gun, solid set, or hand move, or drip (including surface and subsurface) irrigation systems. 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 nonuniform distribution of treated water.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) 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 adjustments should the need arise.

Mix in clean supply tank the specified 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 noninjurious 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 stage 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 specified 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.

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

### CHEMIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS

Note: Gowan Company does not encourage connecting chemigation systems to public water supplies. The following information is provided for users who have diligently considered all other application and water supply options before electing to make such a connection.

Public water systems 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 reduced-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.

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 shutdown.

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 (FOLIAR SPRAY USES)

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.

### DRIP (INCLUDING SURFACE AND SUBSURFACE) 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.

## STORAGE AND DISPOSAL

DO NOT CONTAMINATE water, food or feed by storage or disposal.

**PESTICIDE STORAGE:** Gowan Malathion 8 Flowable should be stored in the original unopened container in a secure, dry place. Do not contaminate with other pesticides or fertilizers. The product should never be heated above 55°C (131°F), and should not be stored for long periods of time at a temperature in excess of 25°C (77°F).

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

**CONTAINER DISPOSAL:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying. 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 1/4 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. After cleaning, if recycling is not available, puncture and dispose of in a sanitary landfill.

FOR 24-HOUR EMERGENCY ASSISTANCE (SPILL, LEAK OR FIRE), CALL CHEMTREC® (800) 424-9300

For other product information, contact Gowan Company or see Material Safety Data Sheet.

### NOTICE OF CONDITIONS OF SALE AND WARRANTY AND LIABILITY LIMITATIONS

Important: Read the entire Directions for Use and Notice of Conditions of Sale and Warranty and Liability Limitations before using this product. If terms are not acceptable return the unopened container for a full refund.

Our directions for use of this product are based on tests believed to be reliable. However, it is impossible to eliminate all risk associated with the use of this product. Crop injury, inadequate performance, or other unintended consequences may result due to soil or weather conditions, off target movement, presence of other materials, method of use or application, and other factors, all of which are beyond the control of Gowan Company. All such risks shall be assumed by the Buyer and User.

Gowan Company warrants that this product conforms to the specifications on the label when used in strict conformance with Direction for Use, subject to the above stated risk limitations. GOWAN COMPANY MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

TO THE FULLEST EXTENT PERMITTED BY LAW, GOWAN COMPANY'S EXCLUSIVE LIABILITY FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT WHETHER IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, OR ANY OTHER LEGAL THEORY IS STRICTLY LIMITED TO THE PURCHASE PRICE PAID OR REPLACEMENT OF PRODUCT, AT GOWAN COMPANY'S SOLE DISCRETION.

Chemtrec® is a registered trademark of American Chemistry Council, Inc.

02-R0915

## 1 Identification

### · Product identifier

· Trade name: **GOWAN MALATHION 8 FLOWABLE**

**EPA Registration No.: 10163-21**

· CAS Number: Active Ingredient: Malathion (79.5%), CAS:121-75-5

· Relevant identified uses of the substance or mixture and uses advised against

· Sector of Use Agriculture

· Application of the substance / the mixture Agricultural insecticide

### · Details of the supplier of the safety data sheet

· Manufacturer/Supplier:

Gowan Company

P.O. Box 5569

Yuma, Arizona 85366-5569

(928) 783-8844

· Information department: [sds@gowanco.com](mailto:sds@gowanco.com)

· Emergency telephone number:

Chemtrec® Emergency Telephone 24 - Hours: (Spills, leak or fire) Inside U.S. & Canada: (800) 424-9300

Outside the U.S. & Canada: +011 (703) 527-3887

For medical emergency (Prosar® ): (888) 478-0798

## 2 Hazard(s) identification

### · Classification of the substance or mixture



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

### · Label elements

· GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms



GHS07

· Signal word: Warning

· Hazard-determining components of labeling:

malathion (ISO)

· Hazard statements

Harmful if swallowed.

· Precautionary statements

Wash thoroughly after handling.

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

If swallowed: Call a poison center/doctor if you feel unwell.

Rinse mouth.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· Hazard description: Harmful if swallowed. Avoid breathing of spray mist. Avoid contact with skin.

(Contd. on page 2)

# Safety Data Sheet

acc. to OSHA

Printing date 07/01/2015

Reviewed on 07/01/2015

**Trade name: GOWAN MALATHION 8 FLOWABLE**  
**EPA Registration No.: 10163-21**

(Contd. of page 1)

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



**HAZARD INDEX:**

4 Severe Hazard  
 3 Serious Hazard  
 2 Moderate Hazard  
 1 Slight Hazard  
 0 Minimal Hazard

· **HMIS-ratings (scale 0 - 4)**



**HAZARD INDEX:**

4 Severe Hazard  
 3 Serious Hazard  
 2 Moderate Hazard  
 1 Slight Hazard  
 0 Minimal Hazard

· **Other hazards**

· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable in US.
- **vPvB:** Not applicable in US.

### 3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

121-75-5	malathion (ISO) 	79.5%
71-36-3	butan-1-ol 	3.1%

### 4 First-aid measures

· **Description of first aid measures**

· **General information:**

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

You may also contact 1-888-478-0798 for emergency medical treatment information.

· **After inhalation:**

- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-

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- mouth if possible.
  - Call poison control center or doctor for further treatment advice.
- **After skin contact:**
  - Take off contaminated clothing.
  - Rinse skin immediately with plenty of water for 15-20 minutes.
  - Call a poison control center or doctor for treatment advice.
- **After eye contact:**
  - Hold eye open and rinse slowly and gently with water for 15-20 minutes.
  - Remove contact lenses, if present, after first 5 minutes, then continue rinsing eyes.
  - Call a poison control center or doctor for treatment advice.
- **After swallowing:**
  - Immediately call a poison control center or doctor.
  - Do not induce vomiting unless told to do so by the poison control center or doctor.
  - Do not give any liquid to the person.
  - Do not give anything by mouth to an unconscious person.
- **Information for doctor:**
  - **Most important symptoms and effects, both acute and delayed** Unknown
  - **Indication of any immediate medical attention and special treatment needed**  
 Malathion upon use may cause cholinesterase inhibition. Atropine is antidotal. May pose an aspiration pneumonia hazard. Contains petroleum distillates.

## \* 5 Fire-fighting measures

- **Extinguishing media**
  - **Suitable extinguishing agents:**  
 CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**
  - Carbon monoxide (CO)
  - Carbon dioxide (CO<sub>2</sub>)
  - Sulphur dioxide (SO<sub>2</sub>)
  - Phosphorus trioxide
  - Methyl mercaptan
  - Hydrogen sulfide
  - Dimethyl sulfide
- **Advice for firefighters**
  - Containers in fire may burst or explode from excessive heat. Stay well back from fire area. Vapors may travel along floor to ignition source and flash back.
  - **Protective equipment:** Wear self-contained respiratory protective device.

## \* 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  - Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.
- **Reference to other sections**
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

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## 7 Handling and storage

### · Handling:

#### · Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

Harmful if swallowed. Avoid breathing of spray mist. Avoid contact with skin.

· **Information about protection against explosions and fires:** Keep ignition sources away - Do not smoke.

### · Conditions for safe storage, including any incompatibilities

#### · Storage:

##### · Requirements to be met by storerooms and receptacles:

Store in a cool, dry, well-ventilated area.

The product should never be heated above 55°C (131°F), and should not be stored for long periods of time at a temperature in excess of 25°C (77°F).

· **Information about storage in one common storage facility:** Store away from foodstuffs.

· **Further information about storage conditions:** None.

· **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

### · Control parameters

#### · Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· **Additional information:** Harmful if swallowed. Avoid breathing of spray mist. Avoid contact with skin.

### · Exposure controls

#### · Personal protective equipment:

##### · General protective and hygienic measures:

• 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.

##### · Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

##### · Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

##### · Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

##### · Body protection:

Handlers must wear:

- Long-sleeved shirt and long pants

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- Chemical-resistant gloves
- Shoes plus socks

## 9 Physical and chemical properties

### · Information on basic physical and chemical properties

#### · General Information

##### · Appearance:

- Form: Liquid
- Color: Light amber
- Odor: Mercaptan
- Odour threshold: Not determined.

· pH-value: Not determined.

#### · Change in condition

- Melting point/Melting range: Undetermined.
- Boiling point/Boiling range: > 149 °C (> 300 °F)

· Flash point: Not applicable.

· Flammability (solid, gaseous): Not applicable.

#### · Ignition temperature:

- Decomposition temperature: Not determined.

· Auto igniting: Product is not self-igniting.

· Danger of explosion: Product does not present an explosion hazard.

#### · Explosion limits:

- Lower: Not determined.
- Upper: Not determined.

· Vapor pressure: Not determined.

· Density at 20 °C (68 °F): 1.21 g/cm<sup>3</sup> (10.097 lbs/gal)

- Relative density: Not determined.
- Vapour density: Not determined.
- Evaporation rate: Not determined.

#### · Solubility in / Miscibility with

- Water: Dispersible.

· Partition coefficient (n-octanol/water): Not determined.

#### · Viscosity:

- Dynamic: Not determined.
- Kinematic: Not determined.

· Other information: No further relevant information available.

## 10 Stability and reactivity

### · Reactivity

- Chemical stability: Stable under normal conditions

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- **Thermal decomposition / conditions to be avoided:**  
 No decomposition if used according to specifications.  
 Excessive heat
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** Excessive heat.
- **Incompatible materials:** Strong oxidizers
- **Hazardous decomposition products:**  
 Carbon monoxide (CO)  
 Carbon dioxide  
 Sulfur dioxide  
 Phosphorus trioxide  
 Methyl mercaptan  
 Hydrogen sulfide  
 Dimethyl sulfide  
 No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

Oral	LD50	5400 mg/kg (rat) Male
Dermal	LD50	>2000 mg/kg (rat)
Inhalative	LC50/4 h	>5.2 mg/l (rat)

· **Primary irritant effect:**

- **on the skin:** Slightly irritating
- **on the eye:** Slight irritation
- **Sensitization:** Sensitization possible through skin contact.

· **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:  
 Harmful  
 Irritant

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

121-75-5	malathion (ISO)	3
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· **NTP (National Toxicology Program)**

None of the ingredients are listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients are listed.

## 12 Ecological information

· **Toxicity**

This pesticide is toxic to aquatic organisms, including fish and invertebrates. 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

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- runoff that contains this product.
- **Aquatic toxicity:** No further relevant information available.
  - **Persistence and degradability** No further relevant information available.
  - **Behavior in environmental systems:**
    - **Bioaccumulative potential** No further relevant information available.
    - **Mobility in soil** No further relevant information available.
  - **Ecotoxicological effects:**
    - **Remark:** Very toxic for fish
  - **Additional ecological information:**
    - **General notes:**  
Do not apply 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.
  - **Results of PBT and vPvB assessment**
    - **PBT:** Not applicable.
    - **vPvB:** Not applicable.
  - **Other adverse effects** No further relevant information available.

## \* 13 Disposal considerations

- **Waste treatment methods**
  - **Recommendation:**  
To avoid wastes, use all materials in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste facility or pesticide disposal program (often such programs are run by state or local governments or by industry).
- **Uncleaned packagings:**
  - **Recommendation:**  
Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying. 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 1/4 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. After cleaning, if recycling is not available, puncture and dispose of in a sanitary landfill.

## \* 14 Transport information

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>                           | <p style="margin: 0;">Void</p> <p style="margin: 0;">UN3082</p>   |
| <ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>ADR</b></li> <li>· <b>IMDG</b></li> <li>· <b>IATA</b></li> </ul> | <p style="margin: 0;">3082 Environmentally hazardous substances, liquid, n.o.s. (malathion (ISO))</p> <p style="margin: 0;">ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (malathion (ISO)), MARINE POLLUTANT</p> <p style="margin: 0;">ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (malathion (ISO))</p> |

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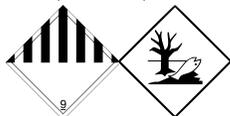
Reviewed on 07/01/2015

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· **Transport hazard class(es)**

· **ADR, IMDG, IATA**



· **Class** 9 Miscellaneous dangerous substances and articles  
 · **Label** 9

· **Packing group**

· **ADR, IMDG, IATA** III

· **Environmental hazards:** Product contains environmentally hazardous substances: malathion (ISO)

· **Marine pollutant:** Yes  
 Symbol (fish and tree)

· **Special marking (ADR):** Symbol (fish and tree)

· **Special marking (IATA):** Symbol (fish and tree)

· **Special precautions for user**

Warning: Miscellaneous dangerous substances and articles

· **Danger code (Kemler):** 90

· **EMS Number:** F-A,S-F

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable

· **Transport/Additional information:**

· **Quantity limitations** On passenger aircraft/rail: No limit  
 On cargo aircraft only: No limit

· **ADR**

· **Excepted quantities (EQ)** Code: E1  
 Maximum net quantity per inner packaging: 30 ml  
 Maximum net quantity per outer packaging: 1000 ml

· **IMDG**

· **Limited quantities (LQ)** 5L  
 Code: E1  
 Maximum net quantity per inner packaging: 30 ml  
 Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":**

US DOT:  
 For packages <30 Ga.: NOT REGULATED  
 For packages ≥ 30 Ga.: UN3082, Environmentally hazardous substances, liquid, n.o.s. (malathion (ISO)), 9, III

## 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

EPA /FIFRA Information:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals.

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· **SARA Title III**

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

All ingredients are listed.

· **TSCA (Toxic Substances Control Act):**

None of the ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients are listed.

· **TLV (Threshold Limit Value established by ACGIH)**

121-75-5 malathion (ISO)

A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients are listed.

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**

Not applicable

· **Signal word:**

(US EPA) CAUTION

· **Hazard-determining components of labeling:**

malathion (ISO)

· **Hazard statements**

Harmful if swallowed.

· **Precautionary statements**

Wash thoroughly after handling.

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

If swallowed: Call a poison center/doctor if you feel unwell.

Rinse mouth.

Dispose of contents/container in accordance with local/regional/national/international regulations.

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· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing SDS:** Supply Chain

· **Contact:** sds@gowanco.com

· **Date of preparation / last revision** 07/01/2015 / 4

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Flam. Liq. 3: Flammable liquids, Hazard Category 3

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

Aquatic Acute 1: Hazardous to the aquatic environment - Acute Hazard, Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1

· **\* Data compared to the previous version altered.**



STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY

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JANET T. MILLS
GOVERNOR

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STATE OF MAINE
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PAUL R. LE PAGE
GOVERNOR

WALTER E. WHITCOMB
COMMISSIONER

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Putting Knowledge to Work with the People of Maine

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[www.umext.maine.edu](http://www.umext.maine.edu)

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A Member of the University of Maine System



*The Go To Company*

December 14, 2018

Attn: Mary E. Tomlinson, Pesticide Registrar / Water Quality Specialist  
Maine Department of Agriculture, Conservation, and Forestry  
Maine Board of Pesticide Control  
28 State House Station  
Augusta, ME 04333-0028  
(207) 287-7544

**RE: Gowan Malathion 8 Flowable, EPA Reg. No. 10163-21  
Renewal SLN ME-130001: Spotted Wing Drosophila in Blueberries and  
Renewal SLN ME-170001: Spotted Wing Drosophila in Caneberries**

Dear Ms. Tomlinson,

Gowan Company hereby authorizes support for the renewal of the Section 24(c) Special Local Need for Gowan Malathion 8 Flowable, EPA Reg. No. 10163-21 on blueberries and caneberries. The local conditions with the spotted wing drosophila (SWD) have been previously submitted and still continue to exist. We know that no new products have become available since the original request was submitted. Therefore, we authorize the use of all information currently on file in consideration of this action. Gowan Company commits to supplying the necessary product if this registration is renewed.

We are concerned about the performance of Gowan Malathion 8 Flowable against spotted wing drosophila at the currently labeled rates. Consequently, we are supporting the renewal of the Section 24(c) label request on blueberries with a higher rate, as well as the renewal on caneberries with an additional application. With the approved higher rates, efficacy tests have shown that the growers have achieved necessary control of the pest.

In support of this application, we have enclosed the following:

- 8570-25: EPA SLN Application – Blueberries
- 8570-25: EPA SLN Application – Caneberries
- Revised expiration date on SLN ME-130001 – Blueberries
- Revised expiration date on SLN ME-170001 – Caneberries
- Letter of Support from Dr. David Yarborough, University of Maine – Blueberries and Caneberries

Please contact me if you have any questions regarding this submission.

Respectfully,

Melissa Riesland  
Registration Specialist  
(928) 819-1594  
[mriesland@gowanco.com](mailto:mriesland@gowanco.com)

Enclosures



The Go To Company

P.O. Box 5569 ▲ Yuma, AZ 85366-5569 ▲ Phone (928) 783-8844 ▲ FAX (928) 343-9255

FIFRA §24(c) REGISTRATION  
EPA SLN No.: ME-170001

**SPECIAL LOCAL NEED REGISTRATION**

**FOR DISTRIBUTION AND USE ONLY WITHIN THE STATE OF MAINE  
FOR CONTROL OF SPOTTED WING DROSOPHILA IN CANEBERRIES**

# GOWAN MALATHION 8 FLOWABLE

**AGRICULTURE INSECTICIDE  
EPA Reg. No. 10163-21**

**This label expires and must not be distributed or used in accordance with this SLN registration  
after December 31, 20xx.**

ACTIVE INGREDIENT:	<b>% By Wt.</b>
Malathion (O,O-dimethyl phosphorodithioate of diethyl mercaptosuccinate): .....	79.5%
INERT INGREDIENTS .....	20.5%
	<b>TOTAL 100.0%</b>

Contains Petroleum Distillates  
Contains 8 lbs. Malathion per gallon

## KEEP OUT OF REACH OF CHILDREN CAUTION

- It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
- Follow all applicable directions, restrictions, Worker Protection Standard (WPS) requirements, and precautions on the EPA registered label for Gowan Malathion 8 Flowable (EPA Reg. No. 10163-21).
- This labeling must be in the possession of the user at the time of pesticide application.

### DIRECTIONS FOR USE

CROP	REI	RATE (PTS/ACRE)	PEST	RESTRICTIONS
BLACKBERRIES (1), BOYSENBERRIES (1), DEWBERRIES (1), LOGANBERRIES (1), RASPBERRIES (1)	12 hours	Up to 2	Spotted Wing Drosophila	The maximum application rate is 2.0 pints of product per acre; the maximum number of applications per year is 4; and the minimum retreatment interval is 7 days.  Do not exceed a total maximum use rate of malathion from all sources of 8 lbs. ai per acre per year.  Do not apply within 1 (one) day of harvest.

**IMPORTANT:** This product is sold subject to the Conditions of Sale and Warranty and Liability Limitations set forth on the container label.

**24(c) REGISTRANT:** Gowan Company  
P.O. Box 5569  
Yuma, AZ 85366-5569

# GOWAN MALATHION 8 FLOWABLE

## AGRICULTURAL INSECTICIDE

ACTIVE INGREDIENT:	% By Wt.
Malathion (O,O-dimethyl phosphorodithioate of diethyl mercaptosuccinate): .....	79.5%
INERT INGREDIENTS .....	20.5%
	TOTAL 100.0%

Contains Petroleum Distillates  
Contains 8 lbs. Malathion per gallon  
**KEEP OUT OF REACH OF CHILDREN**  
**CAUTION**

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

<b>FIRST AID</b> <b>Organophosphate Insecticide</b>	
<b>If swallowed</b>	<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 any liquid to the person.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
<b>If in eyes</b>	<ul style="list-style-type: none"><li>• 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.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If on skin or clothing</b>	<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>
<b>If inhaled</b>	<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>
<b>HOT LINE NUMBER</b>	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact <b>1-888-478-0798</b> for emergency medical treatment information.	
<b>NOTE TO PHYSICIAN</b>	
Malathion upon use may cause cholinesterase inhibition. Atropine is antidotal. May pose an aspiration pneumonia hazard. Contains petroleum distillates.	

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

Harmful if swallowed. Avoid breathing of spray mist. Avoid contact with skin.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Some materials that are chemical-resistant to this product are barrier laminate, butyl rubber, nitrile, or viton. If you want more options, follow the instructions for category F on an EPA chemical resistance category selection chart.

**Mixers, Loaders, Applicators, Flaggers, and other Handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves
- Shoes plus socks

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.

**NET CONTENTS \_\_\_\_\_ GALLONS**

EPA Reg. No. 10163-21  
EPA Est. No.



Produced For:  
Gowan Company  
P. O. Box 5569  
Yuma, AZ 85366-5569  
800-883-1844

### 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 pesticide is toxic to aquatic organisms, including fish and invertebrates. 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. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

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 on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area.

### DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. 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 its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, and nurseries, and 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 intervals. 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, made out of any waterproof material
- Shoes plus socks

### 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 (WPS) 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.

### PRECAUTIONS AND RESTRICTIONS

In order that pesticide residues on food and forage crops will not exceed tolerances established by the Federal Food and Drug Administration, use only the specified rates and intervals, and do not apply closer to harvest than prescribed.

Unless otherwise specified, apply at the first sign of infestation and repeat as needed observing the use limitations listed for each specified crop in the application tables. Consult your State Agriculture Experiment Station or the State Agricultural Extension Service for additional information as the timing of applications needed will vary with local conditions.

Applications may be made by aircraft or by ground equipment according to the DIRECTIONS FOR DILUTION below. The amount of water needed to treat an acre varies, therefore the following directions are given to cover a broad range of applications.

Buffer Zones for Aerial Application:

When making a Non-ULV application with aerial application equipment, a minimum buffer zone of 25 feet must be maintained along any water body.

Do not use in greenhouses.

### PHYTOTOXICITY ADVISORY STATEMENT

As is common with most emulsifiable concentrate formulations adverse effects, such as spotting or discoloration of the fruit or foliage can occur. Some conditions known to contribute to phytotoxicity include, but are not limited to : high temperatures, poor spray drying conditions, excessive spray runoff, certain spray mixtures, stage of crop development or tank mixes with other pesticides.

### SPRAY DRIFT REQUIREMENTS

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 efficiency. 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 Applications:** Spray should be released at the lowest height consistent with pest control and flight safety. Applications more than 10 feet above the crop canopy should be avoided. 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, the spray boom should be mounted on the aircraft as to minimize drift caused by wingtip or rotor vortices. The minimum practical boom length should be used and 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.

### DIRECTIONS FOR DILUTION

Rates are given in terms of pints of Malathion 8 Flowable per acre.

#### Dilute Application

Field and Row Crops: Use specified rate in 20 to 60 gallons of water per acre.

Trees and Vines: Use specified rate in 100 to 800 gallons of water per acre.

### MIXING DIRECTIONS

Pour specified amount of product into spray tank nearly filled with water. Add balance of water to fill tank. Keep agitator running during filling and spraying operations. If mixture does not mix readily, but tends to separate as an oily layer, do not use as injury to plants may result.

Do not combine with wettable powders unless previous use of the mixture has proven physically compatible and safe to plants. Always thoroughly emulsify this product with at least half of total water before adding wettable powders.

### PREHARVEST INTERVAL

Minimum days between last application and harvest are given in ( ) after each crop name.

### TREES AND VINES

Under heavy pest pressure, use higher rates.

CROP	REI (HRS)	RATE (PTS/ACRE)	PESTS	COMMENTS
APRICOTS (7)	12	1.5	Aphid, Codling moth, European Lecanium scale, Orange tortrix, Soft brown scale, Terrapin scale	The maximum application rate is 1.5 pints of product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
AVOCADOS (7)	48	4.7	Green house thrips, Latania scale, Omnivorous looper, Soft brown scale, Orange tortrix	The maximum application rate is 4.7 pints of product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 30 days.
BLACKBERRIES (1), BOYSENBERRIES (1), DEWBERRIES (1), LOGANBERRIES (1), RASPBERRIES (1)	12	2	Japanese beetle, Leafhoppers, Mites, Thrips	The maximum application rate is 2.0 pints of product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
		2	Aphid, Rose scale	

CROP	REI (HRS)	RATE (PTS/ACRE)	PESTS	COMMENTS
BLUEBERRIES (1)	12	1.25	Aphids, Blueberry maggot, Blueberry tip borer, Cherry fruitworm, Cranberry fruitworm, Japanese beetle, Plum curculio, Leafrollers, Sharp-nosed leafhopper, White Tussock moth	The maximum application rate is 1.25 pints of product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 5 days.
CHERRIES (3)	12	1.75	Black cherry aphid, Bud moth, Cherry fruit fly, Fruittree leafroller, Lesser peach twig borer, Forbes and San Jose scale	For Lesser peach twig borer, apply to trunk and scaffold limbs at 21 day intervals beginning with emergence (Do not exceed 4 applications per year). May cause injury on certain varieties of sweet cherries in the Northeast. The maximum application rate is 1.75 pints of product per acre; the maximum number of applications per year is 4; and the minimum retreatment interval is 3 days.
CITRUS [GRAPEFRUIT, LEMONS, LIMES, ORANGES, TANGELOS, TANGERINES [Mandarin or Mandarin Oranges, Tangors, and other hybrids of tangerines with other citrus] (7)	72	CA: 7.5 All Other States: 4.5	Aphids, Black scale (single and off-brooded), California red scale, Citricola scale, Orange worm, Purple scale, Soft scale, Thrips, Yellow scale	Do not apply when trees are in bloom. FOR CALIFORNIA: The maximum application rate is 7.5 pints of product per acre; the maximum number of applications per year is 1. ALL OTHER STATES: The maximum application rate is 4.5 pints of product per acre; the maximum number of applications per year is 1.
		CA: 1 - 7.5 All Other States: 1 - 4.5	Mediterranean fruit fly	
KUMQUATS (7)	48	4.5	Aphids, Black scale (single and off-brooded), California red scale, Citricola scale, Orange worm, Purple scale, Soft scale, Thrips, Yellow scale	Do not apply when trees are in bloom. The maximum application rate is 4.5 pints product per acre; the maximum number of applications per year is 1.
CURRENTS (1)	12	1.25	Japanese beetle, Mites	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 3; the minimum retreatment interval is 7 days.
GOOSEBERRIES (3)	12	2	Currant aphid, Imported currantworm	The maximum application rate is 2.0 pints product per acre; the maximum number of applications per year is 3; the minimum retreatment interval is 7 days.
FIGS (5)	12	1.5	Dried fruit beetles, Vinegar flies	Apply with 1 - 2 gallons sulfured molasses per acre. The maximum application rate is 1.5 pints product per acre; the maximum number of applications per year is 2; the minimum retreatment interval is 5 days.
GRAPES (3)	72 girdling and tying 24 other activities	1.88	Drosophila, European fruit lecanium, Grape leafhopper, Japanese beetle, Leafhopper, Mealybug, Spider mites, Terrapin scale	Injury may occur to grape berries when applications are made after bloom. The maximum application rate is 1.88 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 14 days.
GUAVA (2) (Not Registered for Use in California)	12	.75 - 1.25	Fruit flies	Apply with 1 pound partially hydrolyzed yeast protein or enzymatic yeast hydrolyzate. The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 13; and the minimum retreatment interval is 3 days.
MANGO (1) (Not Registered for Use in California)	12	0.9375	Fruit flies	The maximum application rate is 0.9375 pints product per acre; the maximum number of applications per year is 10; and the minimum retreatment interval is 7 days.
PASSION FRUIT (3) (Not Registered for Use in California)	12	1	Fruit flies	The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 8; and the minimum retreatment interval is 7 days.
MACADAMIA NUTS (1)	12	0.94	Green Stink bug	The maximum application rate is 0.94 pints product per acre; the maximum number of applications per year is 6; and the minimum retreatment interval is 7 days.

CROP	REI (HRS)	RATE (PTS/ACRE)	PESTS	COMMENTS
NECTARINES (7)	24	3	Black cherry aphid, Black peach aphid, Green peach aphid, Japanese beetle, Rusty plum aphid	May be mixed with spray oil for dormant and delayed dormant applications. Follow spray oil manufacturer's directions. The maximum application rate is 3.0 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
PEACHES (7)	24	1.25	Cottony peach scale, Lesser peach tree borer, Plum curculio, Oriental fruit moth, San Jose scale, Terrapin scale	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 11 days.
PECANS (7)	24	2.5	Aphid, Mites, Pecan bud moth, Pecan leaf casebearer, Pecan nut casebearer, Pecan phylloxera	The maximum application rate is 2.5 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
WALNUTS (7)	24	1.5 - 2.5	Aphid, Mites, Walnut husk fly	The maximum application rate is 2.5 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.

#### FIELD AND ROW CROPS

Under heavy pest pressure, use higher rates.

CROP	REI (HRS)	RATE (PTS/ACRE)	PESTS	COMMENTS
ALFALFA, BIRDSFOOT TREFOIL, CLOVER, LESPEDEZA, VETCH (0)	12	1 - 1.25	Alfalfa weevil larvae, Aphids, Armyworms, Clover leaf weevil, Grasshoppers, Lygus bugs, Pea aphid, Potato leafhoppers, Spider mites, Spittlebug, Vetch bruchid	Use higher rate for Armyworm control. Apply to alfalfa in bloom only in the evening or early morning when bees are not working in the fields or are not hanging on the outside of hives. The maximum application rate is 1.25 pints product per acre; the maximum number of applications is 2 per cutting; and the minimum retreatment interval is 14 days.
<b>LEAFY VEGETABLES (EXCEPT BRASSICA VEGETABLES) CROP GROUPING:</b> AMARANTH (LEAFY AMARANTH, CHINESE SPINACH, TAMPALA) (7), ARRUGULA (ROQUETTE) (7), CELTUCE (7), CHERVIL (7), CHRYSANTHEMUM-Edible-leafed, Garland (7), CORN SALAD (7), DOCK (SORREL) (7), FLORENCE FENNEL (7), ORACH (7), PURSLANE-Garden and Winter (7) (Not Registered for Use in California)	12 24	1 - 1.25	Aphids	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
DANDELIONS (7)	24	1.25	Aphids	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
PARSLEY (7)	24	1.5	Aphids	The maximum application rate is 1.5 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
SWISS CHARD (14) (Not Registered for Use in California)	12	1.0	Aphids	The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
CELERY (7)	24	1.0 - 1.5	Aphids, spider mite	The maximum application rate is 1.5 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.

CROP	REI (HRS)	RATE (PTS/ACRE)	PESTS	COMMENTS
LETTUCE, FIELD HEAD (14)	24	1.88	Aphids, Alfalfa loopers, Leafhoppers, Mites	The maximum application rate is 1.88 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 6 days.
LETTUCE, FIELD LEAF (14)	24	1.88	Aphids, Alfalfa loopers, Leafhoppers, Mites	The maximum application rate is 2.0 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 5 days.
ENDIVE, FIELD (7)	24	1.25	Aphids, Alfalfa loopers, Leafhoppers, Mites	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
SPINACH (7)	12	1.0	Aphids	The maximum application rate is 1.0-5 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
BEETS, Table (7)	12	1.25	Aphids, Beet armyworm, Blister beetles, Flea beetles	Do not use on Sugar Beets. The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
<b>COLE CROPS</b> (Brassica (cole) Leafy Vegetable crop group: BROCCOLI (2), BROCCOLI RAAB (RAPINI) (2), BRUSSELS SPROUTS (2), CAULIFLOWER (2), CAVALO BROCCOLO (2), CHINESE BROCCOLI (2), CHINESE MUSTARD CABBAGE (7), MIZUNA (7), MUSTARD SPINACH (7), RAPE GREENS (7)	48	1.25	Aphids, Cabbage loopers, Flea beetles, Imported cabbage worms	The maximum application rate is 1.25 2-0 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
CABBAGE (7)	48	1.25	Aphids, Cabbage loopers, Flea beetles, Imported cabbage worms	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 6; and the minimum retreatment interval is 7 days.
CHINESE CABBAGE (BOK CHOY, NAPA) (7)	48	1.25	Aphids, Cabbage loopers, Flea beetles, Imported cabbage worms	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
COLLARDS (7)	12	1	Aphids, Cabbage loopers, Flea beetles, Imported cabbage worms	The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
KALE (7), MUSTARD GREENS (7),	12	1	Aphids, Cabbage loopers, Flea beetles, Imported cabbage worms	The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 5 days.
KOHLRABI (7)	24	1.25	Aphids, Cabbage loopers, Flea beetles, Imported cabbage worms	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
CORN-Field (7)	72 hours for detasseling 12 hours for all other activities	0.61	Aphids, Corn rootworm adults, Sap beetles, Thrips, Young grasshoppers	<b>CAUTION:</b> Injury may occur in whorl and silk stages. The maximum application rate is 0.61 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
COTTON (7)	48	2.5	Aphids, Brown cotton leafworm, Cotton leaf perforator, Leafhoppers, Spider mites, Whitefly, Boll weevils, Cotton fleahoppers, Fall armyworms, Grasshoppers, Garden webworms and Lygus	Do not graze or feed forage to livestock. The maximum application rate is 2.5 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
CUCUMBERS (1)	24	1.75	Aphids, Cucumber beetles, Cutworms, Darkling ground beetles, Leafhoppers, Pickleworm, Spider mites, Squash vine borer, Thrips	Do not apply unless plants are dry. For vine borer apply- to stems and vines at base of plant. The maximum application rate is 1.75 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.

CROP	REI (HRS)	RATE (PTS/ACRE)	PESTS	COMMENTS
SQUASH, Summer (1)	24	1.75	Aphids, Cucumber beetles, Cutworms, Darkling ground beetles, Leafhoppers, Pickleworm, Spider mites, Squash vine borer, Thrips	The maximum application rate is 1.75 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
SQUASH, Winter (1)	12	1 <sup>3</sup> / <sub>4</sub>	Aphids, Cucumber beetles, Cutworms, Darkling ground beetles, Leafhoppers, Pickleworm, Spider mites, Squash vine borer, Thrips	The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
EGGPLANT (3)	12	1.56	Aphids, Spider mites, Lace bugs	The maximum application rate is 1.56 pints product per acre; the maximum number of applications per year is 4; and the minimum retreatment interval is 5 days.
FLAX (52)	12	0.5	Grasshoppers	The maximum application rate is 0.5 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
GARLIC (3),	24	1.56	Aphids, Thrips	The maximum application rate is 1.56 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
LEEKs (3), SHALLOTS (3)	24	1 - 1.56	Aphids, Thrips	The maximum application rate is 1.56 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
GRASSES (Forage, Hay) (0)	12	1 – 1.25	Aphids, Grasshoppers, Leafhoppers	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 1.
HOPS (10) (Not Registered for Use in California)	12	0.63	Aphids	The maximum application rate is 0.63 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
HORSERADISH (7), PARSNIPS (7), SALSIFY (7)	24	1.25	Aphids, Diamondback moths, Flea beetles, Leafhoppers	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
RADISHES (7)	12	1	Aphids, Diamondback moths, Flea beetles, Leafhoppers	The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
MUSHROOMS (1) (Not Registered for Use in California)	12	1.7	Phorid flies, Sciarid flies	Apply in 130 gallons of water per acre, or 1 tablespoon per 3 gallons of water per 1000 square foot bed. Make thorough application as soon as possible after picking. The maximum application rate is 1.7 pints product per acre; the maximum number of applications per year is 4; and the minimum retreatment interval is 3 days.
OKRA (1) (Not Registered for Use in California)	12	1.2	Aphids, Japanese beetles	The maximum application rate is 1.2 pints product per acre; the maximum number of applications per year is 5; and the minimum retreatment interval is 7 days.
ONIONS- Bulb and Green (3)	12	1.56	Thrips	The maximum application rate is 1.56 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
		1.5	Onion maggots	
PEAS, DRIED (3)	12	1	Aphids, Pea weevils	Do not graze or feed forage to livestock. Dried peas can be treated by ground and foliar applications only. The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
PEAS, GREEN (3)	12	1	Aphids, Pea weevils	Do not graze or feed forage to livestock. Green peas can be treated by ground, foliar and aerial applications. The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.

CROP	REI (HRS)	RATE (PTS/ACRE)	PESTS	COMMENTS
PEPPERMINT (7), SPEARMINT (7)	12	0.94	Adult flea beetles, Leafhoppers	The maximum application rate is 0.94 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
PEPPERS (Field) (3)	12	1.5	Aphids, Pepper maggots	The maximum application rate is 1.5 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 5 days.
POTATOES (0)	12	1	False chinch bugs, Leafhoppers, Mealybugs	The maximum application rate is 1.5 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
		1.5	Aphids, Blister beetles	
RICE-Domestic, Grain or Wild (7)	12	1.25	Rice leaf miners, Rice stink bugs	Do not apply Propanil within 15 days of Malathion treatment. 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. The maximum application rate is 1.25 4-5 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
RUTABAGAS (7)	12	1	Aphids	The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 3; and the minimum retreatment interval is 7 days.
SMALL GRAINS (BARLEY) (7)	12	1 – 1.25	Armyworms, English grain aphids, Grasshoppers, Greenbugs	The maximum application rate is 1.25 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
SMALL GRAINS (OATS, RYE, WHEAT[spring and summer]) (7)	12	1	Armyworms, English grain aphids, Grasshoppers, Greenbugs	The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
SORGHUM-Grain (7)	12	1.0	Greenbugs	Do not graze or feed forage to livestock. The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
STRAWBERRIES (3)	12	1.5 - 2	Aphids, Field crickets, Lygus bugs, Potato leafhoppers, Spider mites, Spittlebugs, Strawberry leafrollers, Strawberry root weevils, Thrips, Whiteflies	The maximum application rate is 2.0 pints product per acre; the maximum number of applications per year is 4; and the minimum retreatment interval is 7 days.
SWEET CORN (Field) (5)	72 detassling 12 other activities	1	Japanese beetles	<b>CAUTION:</b> Injury may occur in whorl and silk stages. The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 5; and the minimum retreatment interval is 5 days.
SWEET POTATOES (3)	12	1 – 1.5	Leafhoppers	The maximum application rate is 1.5 pints product per acre; the maximum number of applications per year is 2; and the minimum retreatment interval is 7 days.
		1.5	Morning Glory leafminers	
TOMATOES (Field) (1)	12	1.5	Aphids, Spider mites, Drosophila flies	Apply a full coverage application to fruit and foliage. The maximum application rate is 1.5 pints product per acre; the maximum number of applications per year is 4; and the minimum retreatment interval is 5 days.
WATERCRESS (7)	12	1	Aphids	The maximum application rate is 1.0 pints product per acre; the maximum number of applications per year is 5; and the minimum retreatment interval is 3 days.

**OUTDOOR ORNAMENTALS**

Note: Before treating a large number of ornamental plants with Gowan Malathion 8 Flowable alone or as a tank mixture with any other material, make a test application on a few plants and observe for 7-10 days prior to treating large areas to reduce the possibility of plant injury.

CROP	REI (HRS)	RATE	PESTS	COMMENTS
FLOWERS, SHADE TREES and SHRUBS	12	1 pint in 100 gals of water as a dilute spray	Aphids, Euonymus scales, European pine shoot moths, Four-lined leaf bugs, Japanese beetle adults, Lace scales, Mealybugs, Millipedes, Oyster shell scales, Potato leafhoppers, Rose leafhoppers, Scurfy scales, Spider mites, Springtails, Sowbugs, Tarnished plant bugs, Thrips, Whiteflies	<b>CAUTION:</b> Avoid use on certain ferns including Boston, Maidenhair and Pteris, as well as some species of Crassula and Canaetri Juniper. For Oyster shell, Fletch, Juniper, Oak kermes and Pine needle scales apply when scale crawlers have settled on foliage. The maximum number of applications per year is 2; and the minimum retreatment interval is 10 days.
		1.25 pints in 100 gals of water as a dilute spray	Azalea scales, Bagworms, Birch leafminers, Boxwood leafminers, Fletch scales, Florida-red scales, Juniper scales, Magnolia scales, Oak kermes, Pine leaf scales, Tent caterpillars	
		1.6 pints in 100 gals of water	Black scale crawlers, Monterey pine scales	
		2 pints in 100 gals of water	Pine needle scales, Wax scales	

**SLASH PINE, PINE SEED ORCHARDS, and CHRISTMAS TREE PLANTATIONS**

CROP	REI (HRS)	PESTS	RATE	COMMENTS
SLASH PINE, and PINE SEED ORCHARDS	12	Slash pine flower thrips, European pine sawfly	For ground application, mix 0.4 gallons of Malathion 8 Flowable in 100 gallons of water.	Apply 3/4 gallon of the mixture per tree on the smallest flowering trees. Mist blowers or airblast sprays may be used. The maximum application rate is 3.2 pints product per acre; the maximum number of applications per year/growing season is 2; and the minimum retreatment interval is 7 days.
			For air application, mix 0.4 gallons of Malathion 8 Flowable in at least 10 gallons of water.	Apply a minimum of 10 gallons of mixture per acre. Make two applications, the first when female flowers are in twig bud stage, the second one week prior to maximum flower receptivity to pollen. The maximum application rate is 3.2 pints product per acre; the maximum number of applications per year/growing season is 2; and the minimum retreatment interval is 7 days.
CHRISTMAS TREE PLANTATIONS	12	Slash pine flower thrips, European pine sawfly	For ground application, mix 0.4 gallons of Malathion 8 Flowable in 100 gallons of water.	Apply 3/4 gallon of the mixture per tree on the smallest flowering trees. Mist blowers or airblast sprays may be used. The maximum application rate is 3.2 pints product per acre; the maximum number of applications per year is 2.
			For air application, mix 0.4 gallons of Malathion 8 Flowable in at least 10 gallons of water.	Apply a minimum of 10 gallons of mixture per acre. Make two applications, the first when female flowers are in twig bud stage, the second one week prior to maximum flower receptivity to pollen. The maximum application rate is 3.2 pints product per acre; the maximum number of applications per year is 2.

## MOSQUITO CONTROL

### AROUND THE OUTSIDE OF BUILDINGS

Around lower outside foundations of homes, yards - spot treatment only, out-door garbage cans, and garbage dumps: Apply 0.2439 gallons of Malathion 8 Flowable undiluted per 1000 sq. ft. on painted surfaces. Apply 0.2439 gallons of Malathion 8 Flowable undiluted per 1000 sq. ft. on unpainted surfaces.

### CULL FRUIT AND VEGETABLE DUMP

Around cull fruit and vegetable dumps: Apply 6.857 pounds of Malathion 8 Flowable undiluted per 1000 sq. ft. on painted surfaces. Apply 2 gallons of Malathion 8 Flowable undiluted per 1000 sq. ft. on unpainted surfaces.

### APPLICATION THROUGH IRRIGATION SYSTEMS - CHEMIGATION

Apply this product only through sprinkler, including center pivot, lateral move, end tow side (wheel) roll, traveler, big gun, solid set, or hand move, or drip (including surface and subsurface) irrigation systems. 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 nonuniform distribution of treated water.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) 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 adjustments should the need arise.

Mix in clean supply tank the specified 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 noninjurious 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 stage 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 specified 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.

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

### CHEMIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS

Note: Gowan Company does not encourage connecting chemigation systems to public water supplies. The following information is provided for users who have diligently considered all other application and water supply options before electing to make such a connection.

Public water systems 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 reduced-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.

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 shutdown.

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 (FOLIAR SPRAY USES)

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.

### DRIP (INCLUDING SURFACE AND SUBSURFACE) 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.

## STORAGE AND DISPOSAL

DO NOT CONTAMINATE water, food or feed by storage or disposal.

**PESTICIDE STORAGE:** Gowan Malathion 8 Flowable should be stored in the original unopened container in a secure, dry place. Do not contaminate with other pesticides or fertilizers. The product should never be heated above 55°C (131°F), and should not be stored for long periods of time at a temperature in excess of 25°C (77°F).

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

**CONTAINER DISPOSAL:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying. 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 1/4 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. After cleaning, if recycling is not available, puncture and dispose of in a sanitary landfill.

FOR 24-HOUR EMERGENCY ASSISTANCE (SPILL, LEAK OR FIRE), CALL CHEMTREC® (800) 424-9300

For other product information, contact Gowan Company or see Material Safety Data Sheet.

### NOTICE OF CONDITIONS OF SALE AND WARRANTY AND LIABILITY LIMITATIONS

Important: Read the entire Directions for Use and Notice of Conditions of Sale and Warranty and Liability Limitations before using this product. If terms are not acceptable return the unopened container for a full refund.

Our directions for use of this product are based on tests believed to be reliable. However, it is impossible to eliminate all risk associated with the use of this product. Crop injury, inadequate performance, or other unintended consequences may result due to soil or weather conditions, off target movement, presence of other materials, method of use or application, and other factors, all of which are beyond the control of Gowan Company. All such risks shall be assumed by the Buyer and User.

Gowan Company warrants that this product conforms to the specifications on the label when used in strict conformance with Direction for Use, subject to the above stated risk limitations. GOWAN COMPANY MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

TO THE FULLEST EXTENT PERMITTED BY LAW, GOWAN COMPANY'S EXCLUSIVE LIABILITY FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT WHETHER IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, OR ANY OTHER LEGAL THEORY IS STRICTLY LIMITED TO THE PURCHASE PRICE PAID OR REPLACEMENT OF PRODUCT, AT GOWAN COMPANY'S SOLE DISCRETION.

Chemtrec® is a registered trademark of American Chemistry Council, Inc.

02-R0915

## 1 Identification

### · Product identifier

· Trade name: **GOWAN MALATHION 8 FLOWABLE**

**EPA Registration No.: 10163-21**

· CAS Number: Active Ingredient: Malathion (79.5%), CAS:121-75-5

· Relevant identified uses of the substance or mixture and uses advised against

· Sector of Use Agriculture

· Application of the substance / the mixture Agricultural insecticide

### · Details of the supplier of the safety data sheet

· Manufacturer/Supplier:

Gowan Company

P.O. Box 5569

Yuma, Arizona 85366-5569

(928) 783-8844

· Information department: [sds@gowanco.com](mailto:sds@gowanco.com)

· Emergency telephone number:

Chemtrec® Emergency Telephone 24 - Hours: (Spills, leak or fire) Inside U.S. & Canada: (800) 424-9300

Outside the U.S. & Canada: +011 (703) 527-3887

For medical emergency (Prosar® ): (888) 478-0798

## 2 Hazard(s) identification

### · Classification of the substance or mixture



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

### · Label elements

· GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms



GHS07

· Signal word: Warning

· Hazard-determining components of labeling:

malathion (ISO)

· Hazard statements

Harmful if swallowed.

· Precautionary statements

Wash thoroughly after handling.

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

If swallowed: Call a poison center/doctor if you feel unwell.

Rinse mouth.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· Hazard description: Harmful if swallowed. Avoid breathing of spray mist. Avoid contact with skin.

(Contd. on page 2)

# Safety Data Sheet

acc. to OSHA

Printing date 07/01/2015

Reviewed on 07/01/2015

**Trade name: GOWAN MALATHION 8 FLOWABLE**  
**EPA Registration No.: 10163-21**

(Contd. of page 1)

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



**HAZARD INDEX:**

4 Severe Hazard  
3 Serious Hazard  
2 Moderate Hazard  
1 Slight Hazard  
0 Minimal Hazard

· **HMIS-ratings (scale 0 - 4)**



**HAZARD INDEX:**

4 Severe Hazard  
3 Serious Hazard  
2 Moderate Hazard  
1 Slight Hazard  
0 Minimal Hazard

· **Other hazards**

· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable in US.
- **vPvB:** Not applicable in US.

### 3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

121-75-5	malathion (ISO) ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Acute Tox. 4, H302; Skin Sens. 1, H317	79.5%
71-36-3	butan-1-ol ⚠ Flam. Liq. 3, H226; ⚠ Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; STOT SE 3, H335-H336	3.1%

### 4 First-aid measures

· **Description of first aid measures**

· **General information:**

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

You may also contact 1-888-478-0798 for emergency medical treatment information.

· **After inhalation:**

- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-

(Contd. on page 3)

# Safety Data Sheet

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**Trade name: GOWAN MALATHION 8 FLOWABLE**  
**EPA Registration No.: 10163-21**

(Contd. of page 2)

- mouth if possible.
  - Call poison control center or doctor for further treatment advice.
- **After skin contact:**
  - Take off contaminated clothing.
  - Rinse skin immediately with plenty of water for 15-20 minutes.
  - Call a poison control center or doctor for treatment advice.
- **After eye contact:**
  - Hold eye open and rinse slowly and gently with water for 15-20 minutes.
  - Remove contact lenses, if present, after first 5 minutes, then continue rinsing eyes.
  - Call a poison control center or doctor for treatment advice.
- **After swallowing:**
  - Immediately call a poison control center or doctor.
  - Do not induce vomiting unless told to do so by the poison control center or doctor.
  - Do not give any liquid to the person.
  - Do not give anything by mouth to an unconscious person.
- **Information for doctor:**
  - **Most important symptoms and effects, both acute and delayed** Unknown
  - **Indication of any immediate medical attention and special treatment needed**  
 Malathion upon use may cause cholinesterase inhibition. Atropine is antidotal. May pose an aspiration pneumonia hazard. Contains petroleum distillates.

## \* 5 Fire-fighting measures

- **Extinguishing media**
  - **Suitable extinguishing agents:**  
 CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**
  - Carbon monoxide (CO)
  - Carbon dioxide (CO<sub>2</sub>)
  - Sulphur dioxide (SO<sub>2</sub>)
  - Phosphorus trioxide
  - Methyl mercaptan
  - Hydrogen sulfide
  - Dimethyl sulfide
- **Advice for firefighters**
  - Containers in fire may burst or explode from excessive heat. Stay well back from fire area. Vapors may travel along floor to ignition source and flash back.
  - **Protective equipment:** Wear self-contained respiratory protective device.

## \* 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  - Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.
- **Reference to other sections**
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.

(Contd. on page 4)

# Safety Data Sheet

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**Trade name: GOWAN MALATHION 8 FLOWABLE**  
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See Section 13 for disposal information.

(Contd. of page 3)

## 7 Handling and storage

### · Handling:

#### · Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

Harmful if swallowed. Avoid breathing of spray mist. Avoid contact with skin.

· **Information about protection against explosions and fires:** Keep ignition sources away - Do not smoke.

### · Conditions for safe storage, including any incompatibilities

#### · Storage:

##### · Requirements to be met by storerooms and receptacles:

Store in a cool, dry, well-ventilated area.

The product should never be heated above 55°C (131°F), and should not be stored for long periods of time at a temperature in excess of 25°C (77°F).

· **Information about storage in one common storage facility:** Store away from foodstuffs.

· **Further information about storage conditions:** None.

· **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

### · Control parameters

#### · Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· **Additional information:** Harmful if swallowed. Avoid breathing of spray mist. Avoid contact with skin.

### · Exposure controls

#### · Personal protective equipment:

##### · General protective and hygienic measures:

• 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.

##### · Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

##### · Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

##### · Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

##### · Body protection:

Handlers must wear:

- Long-sleeved shirt and long pants

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**Trade name: GOWAN MALATHION 8 FLOWABLE**  
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- Chemical-resistant gloves
- Shoes plus socks

## 9 Physical and chemical properties

### · Information on basic physical and chemical properties

#### · General Information

##### · Appearance:

- Form: Liquid
- Color: Light amber
- Odor: Mercaptan
- Odour threshold: Not determined.

· pH-value: Not determined.

#### · Change in condition

- Melting point/Melting range: Undetermined.
- Boiling point/Boiling range: > 149 °C (> 300 °F)

· Flash point: Not applicable.

· Flammability (solid, gaseous): Not applicable.

#### · Ignition temperature:

- Decomposition temperature: Not determined.

· Auto igniting: Product is not self-igniting.

· Danger of explosion: Product does not present an explosion hazard.

#### · Explosion limits:

- Lower: Not determined.
- Upper: Not determined.

· Vapor pressure: Not determined.

· Density at 20 °C (68 °F): 1.21 g/cm<sup>3</sup> (10.097 lbs/gal)

- Relative density: Not determined.
- Vapour density: Not determined.
- Evaporation rate: Not determined.

#### · Solubility in / Miscibility with

- Water: Dispersible.

· Partition coefficient (n-octanol/water): Not determined.

#### · Viscosity:

- Dynamic: Not determined.
- Kinematic: Not determined.

· Other information: No further relevant information available.

## 10 Stability and reactivity

### · Reactivity

- Chemical stability: Stable under normal conditions

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US

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**Trade name: GOWAN MALATHION 8 FLOWABLE**  
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- **Thermal decomposition / conditions to be avoided:**  
 No decomposition if used according to specifications.  
 Excessive heat
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** Excessive heat.
- **Incompatible materials:** Strong oxidizers
- **Hazardous decomposition products:**  
 Carbon monoxide (CO)  
 Carbon dioxide  
 Sulfur dioxide  
 Phosphorus trioxide  
 Methyl mercaptan  
 Hydrogen sulfide  
 Dimethyl sulfide  
 No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

Oral	LD50	5400 mg/kg (rat) Male
Dermal	LD50	>2000 mg/kg (rat)
Inhalative	LC50/4 h	>5.2 mg/l (rat)

- **Primary irritant effect:**
  - **on the skin:** Slightly irritating
  - **on the eye:** Slight irritation
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**  
 The product shows the following dangers according to internally approved calculation methods for preparations:  
 Harmful  
 Irritant

- **Carcinogenic categories**

· <b>IARC (International Agency for Research on Cancer)</b>		
121-75-5	malathion (ISO)	3

· <b>NTP (National Toxicology Program)</b>		
None of the ingredients are listed.		

· <b>OSHA-Ca (Occupational Safety &amp; Health Administration)</b>		
None of the ingredients are listed.		

## 12 Ecological information

- **Toxicity**  
 This pesticide is toxic to aquatic organisms, including fish and invertebrates. 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

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**Trade name: GOWAN MALATHION 8 FLOWABLE**  
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- runoff that contains this product.
- **Aquatic toxicity:** No further relevant information available.
  - **Persistence and degradability** No further relevant information available.
  - **Behavior in environmental systems:**
    - **Bioaccumulative potential** No further relevant information available.
    - **Mobility in soil** No further relevant information available.
  - **Ecotoxicological effects:**
    - **Remark:** Very toxic for fish
  - **Additional ecological information:**
    - **General notes:**  
Do not apply 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.
  - **Results of PBT and vPvB assessment**
    - **PBT:** Not applicable.
    - **vPvB:** Not applicable.
  - **Other adverse effects** No further relevant information available.

## \* 13 Disposal considerations

- **Waste treatment methods**
  - **Recommendation:**  
To avoid wastes, use all materials in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste facility or pesticide disposal program (often such programs are run by state or local governments or by industry).
- **Uncleaned packagings:**
  - **Recommendation:**  
Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying. 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 1/4 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. After cleaning, if recycling is not available, puncture and dispose of in a sanitary landfill.

## \* 14 Transport information

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>                           | <p>Void<br/>UN3082</p>   |
| <ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>ADR</b></li> <li>· <b>IMDG</b></li> <li>· <b>IATA</b></li> </ul> | <p>3082 Environmentally hazardous substances, liquid, n.o.s. (malathion (ISO))<br/>           ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (malathion (ISO)), MARINE POLLUTANT<br/>           ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (malathion (ISO))</p> |

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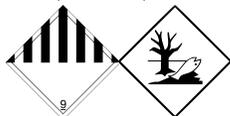
Reviewed on 07/01/2015

**Trade name: GOWAN MALATHION 8 FLOWABLE**  
**EPA Registration No.: 10163-21**

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· **Transport hazard class(es)**

· **ADR, IMDG, IATA**



· **Class** 9 Miscellaneous dangerous substances and articles  
 · **Label** 9

· **Packing group**

· **ADR, IMDG, IATA** III

· **Environmental hazards:** Product contains environmentally hazardous substances: malathion (ISO)

· **Marine pollutant:** Yes  
 Symbol (fish and tree)

· **Special marking (ADR):** Symbol (fish and tree)

· **Special marking (IATA):** Symbol (fish and tree)

· **Special precautions for user**

Warning: Miscellaneous dangerous substances and articles

· **Danger code (Kemler):** 90

· **EMS Number:** F-A,S-F

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable

· **Transport/Additional information:**

· **Quantity limitations** On passenger aircraft/rail: No limit  
 On cargo aircraft only: No limit

· **ADR**

· **Excepted quantities (EQ)** Code: E1  
 Maximum net quantity per inner packaging: 30 ml  
 Maximum net quantity per outer packaging: 1000 ml

· **IMDG**

· **Limited quantities (LQ)** 5L  
 Code: E1  
 Maximum net quantity per inner packaging: 30 ml  
 Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":**

US DOT:  
 For packages <30 Ga.: NOT REGULATED  
 For packages ≥ 30 Ga.: UN3082, Environmentally hazardous substances, liquid, n.o.s. (malathion (ISO)), 9, III

## 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

EPA /FIFRA Information:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals.

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US

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Reviewed on 07/01/2015

**Trade name: GOWAN MALATHION 8 FLOWABLE**  
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· **SARA Title III**

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

All ingredients are listed.

· **TSCA (Toxic Substances Control Act):**

None of the ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients are listed.

· **TLV (Threshold Limit Value established by ACGIH)**

121-75-5 malathion (ISO)

A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients are listed.

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**

Not applicable

· **Signal word:**

(US EPA) CAUTION

· **Hazard-determining components of labeling:**

malathion (ISO)

· **Hazard statements**

Harmful if swallowed.

· **Precautionary statements**

Wash thoroughly after handling.

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

If swallowed: Call a poison center/doctor if you feel unwell.

Rinse mouth.

Dispose of contents/container in accordance with local/regional/national/international regulations.

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# Safety Data Sheet

acc. to OSHA

Printing date 07/01/2015

Reviewed on 07/01/2015

**Trade name: GOWAN MALATHION 8 FLOWABLE**  
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· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing SDS:** Supply Chain

· **Contact:** sds@gowanco.com

· **Date of preparation / last revision** 07/01/2015 / 4

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Flam. Liq. 3: Flammable liquids, Hazard Category 3

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

Aquatic Acute 1: Hazardous to the aquatic environment - Acute Hazard, Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1

· **\* Data compared to the previous version altered.**



**STATE OF MAINE**  
**DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY**  
**BOARD OF PESTICIDES CONTROL**  
 28 STATE HOUSE STATION  
 AUGUSTA, MAINE 04333

**JANET T. MILLS**  
**GOVERNOR**

To: Board of Pesticides Control Members  
 From: Mary Tomlinson, Pesticides Registrar/Water Quality Specialist  
 RE: Extension of EPA SLN ME-170002 Loveland Malathion 8 Aquamul, EPA Reg. No. 34704-474, for use at a higher rate on blueberries to control spotted wing drosophila (SWD)  
 Date: January 4, 2018

\*\*\*\*\*

Dr. David Yarborough, Wild Blueberry Specialist at the University of Maine Cooperative Extension is requesting the SLN approved in 2017 be extended to 2023.

The request to approve an extension for SLN ME-170002 Malathion 8 Aquamul, EPA Reg. No. 34704-474, manufactured by Loveland Products, Inc., is based on economic considerations. The product is reported to be less expensive than the Gowan brand, thus, reducing costs to Maine growers. The SLN is for the same rate as Gowan SLN ME-130001. Under Maine law, when two pesticides meet the requirements, the Board may not demonstrate preference for one over the other.

Enclosed are supporting documents for your consideration to extend the SLNs through December 31, 2023. Please let me know if you have any questions.

- Letters of request from David Yarborough, Wild Blueberry Specialist, Maine Cooperative Extension
- Letter of support from Tonya Dumas, Loveland Products Inc
- Draft Loveland Malathion 8 Aquamul SLN label
- Loveland Malathion 8 Aquamul Section 3 label
- Loveland Malathion 8 Aquamul SDS

**MEGAN PATTERSON, DIRECTOR**  
 32 BLOSSOM LANE, MARQUARDT BUILDING



PHONE: (207) 287-2731  
 WWW.THINKFIRSTSPRAYLAST.ORG



Wild Blueberry Office Deering Hall University of Maine, Orono 04469

October 24, 2018

Mary E. Tomlinson  
Pesticide Registrar/Water Quality Specialist  
Maine Board of Pesticides Control  
28 State House Station  
Augusta, ME 04333

Dear Mary:

The BPC Board needs to renew the State of Maine 24(c) label for MALATHION 8 AQUAMUL with the higher use rates for spotted wing drosophila, as this is the approach that we need to take to control it in our wild blueberry fields in Maine. This pest continues to be a serious threat, so it is essential that we have the insecticides available with different modes of action to rotate in order to prevent pesticide resistance from occurring. The Loveland product has the advantage of being less expensive than the competitor, so its registration also provides an economic advantage for this additional cost of production. This is especially critical in this time of low prices to the grower and so will enable Maine blueberry growers to remain economically competitive with Canadian and cultivated blueberries.

I request that the Board of Pesticides control renew the State of Maine 24(c) label for MALATHION 8 AQUAMUL for control of the spotted wing drosophila in blueberries in Maine for 2018. I have provided a request to the Loveland Company on behalf of the wild blueberry growers in Maine.

Sincerely,

David Yarborough PhD  
Wild Blueberry Specialist  
Professor of Horticulture  
the University of Maine  
5722 Deering Hall Rm. 414  
Orono, ME 04469-5722

Phone: [207-581-2923](tel:207-581-2923)  
TollFree: [800-897-0757](tel:800-897-0757) x 1  
Fax: [207-581-2941](tel:207-581-2941)

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[www.wildblueberries.maine.edu](http://www.wildblueberries.maine.edu)

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January 4, 2019

Mary E. Tomlinson  
Pesticide Registrar/Water Quality Specialist  
Maine Board of Pesticides Control  
28 State House Section  
Augusta, ME 04333

Subject: EPA Reg No 34704-474-Malathion 8 Aquamul

Dear Ms. Tomlinson,

Please find enclosed an application for a 24c for Malathion Aquamul for the control of Spotted Wing Drosophila on Blueberries. Loveland is submitting this application per the request of the Cooperative Extension and Blueberry growers in Maine.

Loveland Products, Inc. and Main Blueberry Growers request approval of this request as soon as possible. Thank you for your cooperation. Should you have any questions, or need additional documents, please contact me at 970-685-3558 or email me at [tonya.dumas@nutrien.com](mailto:tonya.dumas@nutrien.com).

Sincerely

A handwritten signature in blue ink that reads "Tonya Dumas".

Tonya Dumas  
Senior Advisor  
Loveland Products, Inc.  
PO Box 1286  
Greeley, CO 80632  
Phone: (970)685-3558  
Email: [tonya.dumas@nutrien.com](mailto:tonya.dumas@nutrien.com)

FIFRA SECTION 24(c) SPECIAL LOCAL NEED (SLN) LABEL  
FOR DISTRIBUTION AND USE ONLY WITHIN THE STATE OF MAINE

MALATHION 8 AQUAMUL  
Loveland Products, Inc.

EPA REG. NO. 34704-474

EPA SLN NO. ME-170002

This label expires and must not be distributed or used after \_\_\_\_\_, 20\_\_.

**DIRECTIONS FOR USE**

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

**This SLN label and the EPA registered product label must be in the possession of user at the time of pesticide application.**

Follow all applicable directions, restrictions, Worker Protection Standard requirements, and precautions on this Special Local Need (SLN) and on the EPA-registered label for Malathion 8 Aquamul (EPA Reg. No. 34704-474).

**BLUEBERRIES**

Pests controlled	Rate in pt/A (lb ai/A)	Directions	Pre-Harvest Interval (PHI)
Spotted Wing Drosophila	Up to 2.5 (2.5)	<ul style="list-style-type: none"><li>The maximum application rate is 2.5 lbs AI/A (2.5 pts /A Malathion 8 Aquamul); and the maximum number of applications per year is 2.</li><li>Do not exceed a total maximum use rate of malathion from all sources of 5.0 lbs AI/A per season.</li><li>The minimum retreatment interval is 7 days.</li><li>The Restricted Entry Interval (REI) is 12 hrs.</li></ul>	1 Day

**IMPORTANT:** This product is sold subject to the Conditions of Sale and Warranty and Liability Limitations set forth on the container label.

**SLN Registrant:**  
Loveland Products, Inc.  
PO Box 1286  
Greeley, CO 80632-1286





PEEL FILM HERE ↑

# MALATHION 8 AQUAMUL

Organophosphate Insecticide

**FOR INSECT CONTROL ON LISTED ORNAMENTALS, FRUIT AND NUT TREES  
AND VEGETABLE PLANTS.**

<b>ACTIVE INGREDIENT:</b> .....	<b>% BY WT.</b>
Malathion (O,O-Dimethyl phosphorodithioate of diethyl mercaptosuccinate) .....	81.8%
<b>OTHER INGREDIENTS:</b> .....	<u>18.2%</u>
<b>TOTAL</b>	<b>100.0%</b>

Contains 8.0 pounds of Malathion per gallon.

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

**For Additional Precautionary Statements, Complete First Aid, Directions for Use, Storage  
and Disposal and Other Use Information, See Inside This Label Booklet.**

**EPA REG. NO. 34704-474**

120815 V1D 01Y16

FORMULATED FOR  
LOVELAND PRODUCTS, INC.®, P.O. BOX 1286, GREELEY, COLORADO 80632-1286

EPA EST. NO. 34704-MS-002



NET CONTENTS 2.5 GAL (9.46 L)



**GROUP 1 B INSECTICIDE**

# MALATHION 8 AQUAMUL

**Organophosphate Insecticide**

**FOR INSECT CONTROL ON LISTED ORNAMENTALS, FRUIT AND NUT TREES  
AND VEGETABLE PLANTS.**

<b>ACTIVE INGREDIENT:</b> .....	<b>% BY WT.</b>
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and Disposal and Other Use Information, See Inside This Label Booklet.**

**EPA REG. NO. 34704-474**

120815 V1D 01Y16

FORMULATED FOR  
LOVELAND PRODUCTS, INC.®, P.O. BOX 1286, GREELEY, COLORADO 80632-1286

<b>FIRST AID</b>	
<b>If swallowed:</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have a person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If in eyes:</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15 to 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>
<b>If inhaled:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>If on skin or clothing:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15 to 20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<p><b>NOTE TO PHYSICIAN:</b> This product may cause cholinesterase inhibition. Atropine is antidotal. 2-PAM may be effective as an adjunct to atropine.</p> <p><b>FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-866-944-8565.</b></p> <p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p>	

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Harmful if swallowed, inhaled, or absorbed through the skin. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Avoid breathing spray mist or vapor. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are barrier laminate, butyl rubber, nitrile rubber, and viton. If you want more options, follow the instructions for category (F) on an EPA chemical resistance category selection chart.

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

- Long sleeved shirt and long pants,
- Shoes plus socks,
- Chemical resistant gloves made of barrier laminate or butyl rubber, nitrile rubber, or viton  $\geq$  14 mils.

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.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. See engineering controls for additional requirements.

#### 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.

### 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.

### ENVIRONMENTAL HAZARDS

This pesticide is toxic to aquatic organisms, including fish and invertebrates. 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. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

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. To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters.

This pesticide is highly toxic to bees exposed to direct treatment on blooming crops or weeds. **Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area.**

**For commercial, industrial, and institutional use products packaged in containers equal or greater than 5.0 gallons or 50.0 pounds:**

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

Do not use or store near heat or open flame. This product is incompatible with other chemicals (e.g. oxidizing agents).

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. 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 its 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 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 (REI). 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,
- Shoes plus socks,
- Chemical-resistant gloves made of any waterproof material.

## 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.**

## PRECAUTIONS AND RESTRICTIONS

**BUFFER ZONES FOR AERIAL APPLICATION:** When making a non-ULV application with aerial application equipment, a minimum buffer zone of 25 feet must be maintained along any water body.

### SPRAY DRIFT REQUIREMENTS

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 Applications** – Spray should be released at the lowest height consistent with pest control and flight safety. Applications more than 10 feet above the crop canopy should be avoided. For groundboom applications, apply with nozzle height no more than 4 feet above the ground or crop canopy.

**Additional Requirements for Aerial Applications** – For aerial applications, the spray boom should be mounted on the aircraft as to minimize drift caused by wingtip or rotor vortices. The minimum practical boom length should be used and 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.

## APPLICATION THROUGH IRRIGATION SYSTEMS – CHEMIGATION

Apply this product only through sprinkler, including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move; flood (basin); furrow; border or drip (trickle) irrigation systems. 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, you should 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 adjustments should the need arise. Mix in clean supply tank the recommended amount of this product for acreage to be covered, and needed quantity of water.

Do not tank mix this product with other pesticides, surfactants or fertilizers unless prior use has shown the combination noninjurious under your conditions of use.

Follow precautionary statements and directions for all tank-mixed 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 stage 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 specified 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.

#### **CHEMIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS**

Note: Loveland Products, Inc. does not encourage connecting chemigation systems to public water supplies. The following information is provided for users who have diligently considered all other application and water supply options 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, reduced-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.

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 (FOLIAR SPRAY USES)**

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.

#### **FLOOD (BASIN), FURROW AND BORDER CHEMIGATION (SOIL DRENCH USES)**

Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential for water source contamination from backflow if water flow stops.

Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:

- a. 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.
- b. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- c. 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.
- d. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- e. 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.
- f. 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.

#### **DRIP (TRICKLE) CHEMIGATION (SOIL DRENCH USES)**

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.

## APPLICATIONS

Use rates and use directions as noted below. Use higher rate when foliage is heavy or infestation is severe. Apply when pests first appear. Apply the following specified rates in sufficient water to thoroughly cover 1 acre. By ground, apply using a minimum of 10.0 gallons of water per acre and by air apply using a minimum of 2.0 gallons of water per acre (standard is 100 gallons of water for thorough coverage sprays). Do not apply orchard rates in less than 10.0 gallons of water per acre.

Crop	Pest	Rate Pts/A	Directions	Pre-Harvest Interval (PHI) (days)
Alfalfa Birdsfoot Trefoil Clover Lespedeza Vetch	Aphids Armyworm Clover leaf weevil Grasshoppers Leafhopper Spider mites	1.25	Apply to alfalfa in bloom only in the evening or early morning when bees are not working in the fields or are not hanging on the outside of hives. The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications is 2/ cutting; and the minimum retreatment interval is 14 days. Do not apply more than a total of 2.5 lbs of malathion per acre per calendar year.	0
Apricots	Aphids Codling moth Orange tortrix Soft brown scale Terrapin scale	1.5	Full coverage spray. The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.5 lbs A/A (1.5 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	6
Asparagus	Asparagus beetle Thrips	1.25	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.5 lbs of malathion per acre per calendar year.	1
Avocados	Green house thrips Latania scale Omnivorous looper Orange tortrix Soft brown scale	4.0 to 4.7	The Restricted Entry Interval (REI) is 48 hrs. The maximum application rate is 4.7 lbs A/A (4.7 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 30 days. Do not apply more than a total of 9.4 lbs of malathion per acre per calendar year.	7
Barley	Aphids Cereal leaf beetle Grasshoppers Greenbugs	1.25	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.5 lbs of malathion per acre per calendar year.	7
Beets (Garden) Do not apply to Sugar Beets	Aphids	1.0 to 1.25	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.75 lbs of malathion per acre per calendar year.	7
Blackberries Boysenberries Dewberries Gooseberries Loganberries Raspberries	Aphids Rose scale Japanese beetle Leafhoppers Mites Thrips	2.0 1.0 to 2.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 2.0 lbs A/A (2.0 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 6.0 lbs of malathion per acre per calendar year.	1
Blueberries	Cherry fruitworm Cranberry fruitworm Japanese beetle Plum curculio Sharpnose leafhopper	1.25	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 5 days. Do not apply more than a total of 3.75 lbs of malathion per acre per calendar year.	1

Crop	Pest	Rate Pts/A	Directions	Pre-Harvest Interval (PHI) (days)
Broccoli Broccoli Raab (Rapini) Brussels Sprouts Cauliflower Chinese Broccoli Cavalo Broccolo Mizuna Mustard Spinach Rape Greens	Aphids Cabbage looper Flea beetle Imported cabbageworm	1.25	The Restricted Entry Interval (REI) is 48 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.5 lbs of malathion per acre per calendar year.	2
Cabbage	Aphids Cabbage looper Flea beetle Imported cabbageworm	1.25	The Restricted Entry Interval (REI) is 48 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 6; and the minimum retreatment interval is 7 days. Do not apply more than a total of 7.5 lbs of malathion per acre per calendar year.	7
Cabbage, Chinese (Bok Choy, Napa) Cabbage Chinese Mustard	Aphids Cabbage looper Flea beetle Imported cabbageworm	1.25	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.5 lbs of malathion per acre per calendar year.	7
Carrots, roots	Aphids Leafhoppers	1.0 to 1.25	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.5 lbs of malathion per acre per calendar year.	7
Celery	Aphids Spider mites	1.0 to 1.5	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.5 lbs A/A (1.5 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	7
Cherries (sweet & tart)	Black cherry aphid Bud moth Cherry fruit fly Forbes scale Fruit tree leafroller Lesser peach tree borer San jose scale	1.75	May injure foliage of varieties such as Brooks, Tulare, Coral and some others. The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.75 lbs A/A (1.75 pts Malathion 8 Aquamul); the maximum number of applications/year is 4; and the minimum retreatment interval is 3 days. Do not apply more than a total of 7.0 lbs of malathion per acre per calendar year.	3
Chestnuts	Mites	2.0 to 2.5	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 2.5 lbs A/A (2.5 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 7.5 lbs of malathion per acre per calendar year.	2
Citrus (Grapefruit, Lemons, Limes, Oranges, Tangerines, Tangelos)	Aphids Black scale California red scale Citricola scale Florida red & Mediterranean fruit fly Purple scale Soft scale Thrips Yellow scale	CA: 7.5 pts or 1.5 pts; All other states: 4.5 pts or 1.5 pts	Do not apply during full bloom. <b>California Only:</b> At the maximum application rate of 7.5 lbs A/A (7.5 pts Malathion 8 Aquamul), the Restricted Entry Interval (REI) is 72 hrs and the maximum number of applications/year is 1; <b>OR</b> at the maximum application rate of 1.5 lbs A/A (1.5 pts Malathion 8 Aquamul) the REI is 24 hrs, the maximum number of applications/year is 3, the minimum application interval is 30 days and the minimum preharvest interval is 7 days. Do not apply more than a total of 7.5 lbs of malathion per acre per calendar year. <b>All States other than CA:</b> At the maximum application rate of 4.5 lbs A/A (4.5 pts Malathion 8 Aquamul), the Restricted Entry Interval (REI) is 72 hrs and the maximum number of applications/year is 1; <b>OR</b> at the maximum application rate of 1.5 lbs A/A (1.5 pts Malathion 8 Aquamul) the REI is 12 hrs, the maximum number of applications/year is 3, the minimum application interval is 30 days and the minimum preharvest interval is 7 days. Do not apply more than a total of 4.5 lbs of malathion per acre per calendar year.	7

Crop	Pest	Rate Pts/A	Directions	Pre-Harvest Interval (PHI) (days)
Collards	Aphids Cabbage looper Flea beetle Imported cabbageworm	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	7
Corn (field)	Aphids Cereal leaf beetle Corn earworm Corn rootworm-adults Grasshoppers Sap beetle Thrips	1.0	For corn earworm, apply to silks as soon as they appear. The Restricted Entry Interval (REI) is 72 hrs for detasseling, and 12 hrs for all other activities. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.0 lbs of malathion per acre per calendar year.	7
Corn, Sweet	Japanese beetles	1.0	The Restricted Entry Interval (REI) is 72 hrs for detasseling, and 12 hrs for all other activities. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 5 days. Do not apply more than a total of 2.0 lbs of malathion per acre per calendar year.	5
Cotton	Aphids Boll weevil Cotton leaf perforator Cotton leafworm Fall armyworm Fleahopper Garden webworm Grasshopper Leafhoppers Lygus bug Mites Thrips White Flies	1.5 to 2.5	The Restricted Entry Interval (REI) is 48 hrs. The maximum application rate is 2.5 lbs A/A (2.5 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 7.5 lbs of malathion per acre per calendar year.	7
Cucumbers	Aphids Pickworm Spider mites Thrips Cucumber beetle	1.0 to 1.75    1.75	Do not apply unless plants are dry. The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.75 lbs A/A (1.75 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.5 lbs of malathion per acre per calendar year.	1
Currants	Currant aphid Imported currantworm Japanese beetle Mites	1.25  1.0 to 1.25	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.75 lbs of malathion per acre per calendar year.	1
Dandelions	Aphids	1.0 to 1.25	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.5 lbs of malathion per acre per calendar year.	7
Eggplant	Aphids Spider mite Lace bugs	0.75 to 1.56  1.56	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.56 lbs A/A (1.56 pts Malathion 8 Aquamul); the maximum number of applications/year is 4; and the minimum retreatment interval is 5 days. Do not apply more than a total of 6.24 lbs of malathion per acre per calendar year.	3

Crop	Pest	Rate Pts/A	Directions	Pre-Harvest Interval (PHI) (days)
Endive	Aphids Mites	1.0 to 1.25	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.5 lbs of malathion per acre per calendar year.	7
Figs	Dried fruit beetle Vinegar flies	2.0 pts plus 2.0 gals unsulfurized molasses as a bait spray	At the maximum application rate of 2.0 lbs A/A (2.0 pts Malathion 8 Aquamul), the Restricted Entry Interval (REI) is 24 hrs. The maximum number of applications/year is 2, and the minimum application interval is 5 days; OR at the maximum application rate of 1.5 lbs A/A (1.5 pts Malathion 8 Aquamul), the Restricted Entry Interval (REI) is 12 hrs. The maximum number of applications/year is 2, and the minimum application interval is 5 days. Do not apply more than a total of 4.0 lbs of malathion per acre per calendar year.	5
Flax	Grasshoppers	0.5	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 0.5 lb A/A (0.5 pt Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 1.5 lbs of malathion per acre per calendar year.	52
Garlic	Aphids Thrips	1.0 to 1.5	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.56 lbs A/A (1.56 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 4.68 lbs of malathion per acre per calendar year.	3
Grapes	Drosophila Japanese beetle Leafhopper Mealybugs Spider mite Terrapin scale	1.88	May cause injury to foliage on some varieties. The Restricted Entry Interval (REI) is 72 hrs for girdling and tying, and 24 hrs for all other activities. The maximum application rate is 1.88 lbs A/A (1.88 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 14 days. Do not apply more than a total of 3.76 lbs of malathion per acre per calendar year.	3
Grass Hay Grasses	Aphids Armyworms Grasshoppers Leafhoppers	1.25	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 1. Do not apply more than a total of 1.25 lbs of malathion per acre per calendar year.	0
Guava	Fruit flies	0.75 pt + 1.0 lb partially hydrolyzed yeast protein or enzymatic yeast hydrolyzate	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 13; and the minimum retreatment interval is 3 days. Do not apply more than a total of 16.25 lbs of malathion per acre per calendar year.	2
Hops	Aphids	0.63	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 0.63 lb A/A (0.63 pt Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 1.89 lbs of malathion per acre per calendar year.	10
Horseradish	Aphids	1.0 to 1.25	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.75 lbs of malathion per acre per calendar year.	7
Kale	Aphids Cabbage looper Flea Beetle Imported cabbageworm	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 5 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	7

Crop	Pest	Rate Pts/A	Directions	Pre-Harvest Interval (PHI) (days)
Kohlrabi	Aphids Cabbage looper Flea Beetle Imported cabbageworm	1.25	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.5 lbs of malathion per acre per calendar year.	7
Kumquats	Aphids Black scale California red scale Citricola scale Florida red scale Florida purple scale Soft scale Thrips Yellow scale	4.5	Do not apply during full bloom. The Restricted Entry Interval (REI) is 48 hrs. The maximum application rate is 4.5 lbs A/A (4.5 pts Malathion 8 Aquamul); the maximum number of applications/year is 1; and the minimum retreatment interval is 30 days. Do not apply more than a total of 4.5 lbs of malathion per acre per calendar year.	7
	Mediterranean fruit fly	1.0 to 4.5		
Leeks	Aphids Thrips	1.0 to 1.56	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.56 lbs A/A (1.56 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.12 lbs of malathion per acre per calendar year.	3
Lettuce	Aphids Leafhoppers	1.25 to 1.88	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.88 lbs A/A (1.88 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 6 days for head and 5 days for leaf. Do not apply more than a total of 3.76 lbs of malathion per acre per calendar year.	14
	Cabbage looper Mites	1.88		
Macadamia Nuts	Green stink bug	0.94	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 0.94 lb A/A (0.94 pt Malathion 8 Aquamul); the maximum number of applications/year is 6; and the minimum retreatment interval is 7 days. Do not apply more than a total of 5.64 lbs of malathion per acre per calendar year.	1
Mango	Fruit flies	0.75 pt + 1.0 lb partially hydrolyzed yeast protein or enzymatic yeast hydrolyzate	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 0.9375 lb A/A (0.9375 pt Malathion 8 Aquamul); the maximum number of applications/year is 10; and the minimum retreatment interval is 7 days. Do not apply more than a total of 9.375 lbs of malathion per acre per calendar year.	1
Melons (other than watermelon)	Aphids Cucumber beetle Pickworm Spider mites Thrips	1.0	Do not apply unless plants are dry. The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.0 lbs of malathion per acre per calendar year.	1
Mustard Greens	Aphids Cabbage looper Flea beetle Imported cabbageworm	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 5 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	7

Crop	Pest	Rate Pts/A	Directions	Pre-Harvest Interval (PHI) (days)
Nectarines	Aphids (Black cherry, Black peach, Green peach, Rusty plum) Japanese beetle Mites (European red, Two-spotted)	2.5 to 3.0	Full coverage spray. The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 3.0 lbs A/A (3.0 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 9.0 lbs of malathion per acre per calendar year.	7
	Cottony peach scale Lesser peach tree borer Oriental fruit moth Plum curculio Terrapin scale	3.0		
Oats	Aphids Cereal leaf beetle Grasshoppers Greenbugs	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.0 lbs of malathion per acre per calendar year.	7
Okra	Aphids Japanese beetle	1.2	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.2 lbs A/A (1.2 pts Malathion 8 Aquamul); the maximum number of applications/year is 5; and the minimum retreatment interval is 7 days. Do not apply more than a total of 6.0 lbs of malathion per acre per calendar year.	1
Onions (bulb and green)	Onion thrips	1.0 to 1.56	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.56 lbs A/A (1.56 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.12 lbs of malathion per acre per calendar year.	3
	Onion maggots	1.56		
Papaya	Aphids Mealybugs	1.25	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 8; and the minimum retreatment interval is 3 days. Do not apply more than a total of 10.0 lbs of malathion per acre per calendar year.	1
Parsley	Aphids	1.0 to 1.5	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.5 lbs A/A (1.5 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	7
Parsnips	Aphids	1.0 to 1.25	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.75 lbs of malathion per acre per calendar year.	7
Passion Fruit	Fruit flies	0.75 pt + 1.0 lb partially hydrolyzed yeast protein or enzymatic yeast hydrolyzate	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 8; and the minimum retreatment interval is 7 days. Do not apply more than a total of 8.0 lbs of malathion per acre per calendar year.	3

Crop	Pest	Rate Pts/A	Directions	Pre-Harvest Interval (PHI) (days)
Peaches	Aphids (Green peach, Black cherry, Black peach, Rusty plum) Japanese beetle Mites (European red, Two-spotted)	2.5 to 3.0	Full coverage spray. The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 3.0 lbs A/A (3.0 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 11 days. Do not apply more than a total of 9.0 lbs of malathion per acre per calendar year.	7
	Cottony peach scale Lesser peach tree borer Oriental fruit moth Plum curculio Terrapin scale	3.0		
Peas	Aphids Pea weevil	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.0 lbs of malathion per acre per calendar year.	3
Pecans	Aphids Mites Pecan bud moth Pecan leaf casebearer Pecan nut casebearer Pecan phylloxera	2.5	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 2.5 lbs A/A (2.5 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 5.0 lbs of malathion per acre per calendar year.	7
Peppers	Aphids	0.75 to 1.5	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.56 lbs A/A (1.56 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 5 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	3
	Pepper maggots	1.5		
Peppermint Spearmint	Aphids Flea beetle - adults Leafhoppers Spider mites	0.94	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 0.94 lb A/A (0.94 pt Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.82 lbs of malathion per acre per calendar year.	7
Pineapples	Mealybugs	2.0	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 2.0 lbs A/A (2.0 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 6.0 lbs of malathion per acre per calendar year.	7
Potatoes	Aphids False chinch bugs Leafhoppers Mealybugs	1.0 to 1.5	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.56 lbs A/A (1.56 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	0
Pumpkins	Aphids Cucumber beetle Pickleworms Spider mites Thrips	1.0	Do not apply unless plants are dry. The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.0 lbs of malathion per acre per calendar year.	1
Radishes	Aphids	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	7

Crop	Pest	Rate Pts/A	Directions	Pre-Harvest Interval (PHI) (days)
Rice	Rice leafminers Rice stink bugs	1.25	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. The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.5 lbs of malathion per acre per calendar year.	7
Rutabagas	Aphids	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	7
Rye	Aphids Cereal leaf beetles Grasshoppers Greenbugs	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	7
Salsify (including tops)	Aphids	1.0 to 1.25	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.75 lbs of malathion per acre per calendar year.	7
Shallots	Aphids Thrips	1.0 to 1.5	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.56 lbs A/A (1.56 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	3
Sorghum, Grain	Greenbugs	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.0 lbs of malathion per acre per calendar year.	7
Spinach	Aphids	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.0 lbs of malathion per acre per calendar year.	7
Squash	Aphids Cucumber beetles Pickleworms Spider mites Thrips	Summer: 1.75; Winter: 1.0	Do not apply unless plants are dry. <b>For Summer Squash</b> , the Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.75 lbs A/A (1.75 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 5.25 lbs of malathion per acre per calendar year. <b>For Winter Squash</b> , the Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	1
Strawberries	Aphids Field crickets Lygus bugs Potato leafhoppers Spider mites Spittle bugs Strawberry leafroller Strawberry root weevil Thrips Whitely	1.0 to 2.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 2.0 lbs A/A (2.0 pts Malathion 8 Aquamul); the maximum number of applications/year is 4; and the minimum retreatment interval is 7 days. Do not apply more than a total of 8.0 lbs of malathion per acre per calendar year.	3

Crop	Pest	Rate Pts/A	Directions	Pre-Harvest Interval (PHI) (days)
Sweet Potatoes	Leafhoppers	1.0 to 1.56	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.56 lbs AI/A (1.56 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.12 lbs of malathion per acre per calendar year.	0
	Leafminers, morningglory	1.56		
Swiss Chard	Aphids	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb AI/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.0 lbs of malathion per acre per calendar year.	14
Tomatoes	Aphids	1.0 to 1.56	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.56 lbs AI/A (1.56 pts Malathion 8 Aquamul); the maximum number of applications/year is 4; and the minimum retreatment interval is 5 days. Do not apply more than a total of 6.24 lbs of malathion per acre per calendar year.	1
	Spider mites Armyworms Drosophila Fruit worms Tomato russet mites	1.56		
Turnips	Aphids Cabbage loopers Flea beetles Imported cabbageworms	1.25	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs AI/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 5 days for greens and 7 days for roots. Do not apply more than a total of 3.75 lbs of malathion per acre per calendar year.	1
Walnuts	Aphids Mites Walnut husk fly	2.5	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 2.5 lbs AI/A (2.5 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7. Do not apply more than a total of 7.5 lbs of malathion per acre per calendar year.	7
Watercress	Aphids	1.0 to 1.25	At the maximum application rate of 1.25 lbs AI/A (1.25 pts Malathion 8 Aquamul), the Restricted Entry Interval (REI) is 24 hrs. The maximum number of applications/year is 5, and the minimum application interval is 3 days; OR at the maximum application rate of 1.0 lb AI/A (1.0 pt Malathion 8 Aquamul), the Restricted Entry Interval (REI) is 12 hrs. The maximum number of applications/year is 5, and the minimum application interval is 3 days. Do not apply more than a total of 6.25 lbs of malathion per acre per calendar year.	3
Watermelon	Aphids Cucumber beetle Leafhopper Pickworms Spider mites	1.5	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.5 lbs AI/A (1.5 pts Malathion 8 Aquamul); the maximum number of applications/year is 4; and the minimum retreatment interval is 7 days. Do not apply more than a total of 6.0 lbs of malathion per acre per calendar year.	1
Wheat (spring & summer)	Aphids Cereal leaf beetles Grasshoppers Greenbugs	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb AI/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.0 lbs of malathion per acre per calendar year.	7

### OUTDOOR ORNAMENTALS

Precaution: Before treating a large number of ornamental plants with Malathion 8 Aquamul alone or as a tank mixture with any other material, make a test application on a few plants and observe 7 to 10 days prior to treating large areas to reduce the possibility of plant injury.

Crop	Rate	Pests	Comments
Ornamental Herbaceous Plants Ornamental and/or Shade Trees Ornamental Woody Shrubs	1.0 pt in 100 gals of water as a dilute spray	Aphids Euonymus scales European pine shoot moth Four-lined leaf bug Japanese beetle adults Lace scale Mealybugs Millipedes Oyster shell scale Potato leafhopper Rose leafhopper Scurfy scale Spider mites Springtails Sowbugs Tarnished plant bug Thrips Whiteflies	IMPORTANT: Avoid use on certain ferns including Boston, Maidenhair and Pteris, as well as some species of Crassula and Canaetri Juniper. For Oyster shell, Fletch, Juniper, Oak kermes and Pine needle scales, apply when scale crawlers have settled on foliage.  The Restricted Entry Interval (REI) is 12 hrs. Maximum of 2 applications/year/growing cycle; 10 day minimum retreatment interval; maximum single application rate 2.5 lbs AI/100 gals.
	1.25 pts in 100 gals of water as a dilute spray	Azalea scale Bagworm Birch leafminer Boxwood leafminer Fletch scale Florida-red scale Juniper scale Magnolia scale Oak kermes Pine leaf scale Tent caterpillar	
	1.6 pts in 100 gals of water	Black scale crawler Monterey pine scale	
	2.5 pts in 100 gals of water	Pine needle scale Wax scale	
Slash Pine Pine Seed Orchards and Christmas Tree Plantations	For ground application, mix 3.2 pts of Malathion 8 Aquamul in 100 gals of water	European pine sawfly Slash pine flower thrips	Apply 6.0 pts of the mixture/tree on the smallest flowering trees. Mist blowers or airblast sprays may be used. The Restricted Entry Interval (REI) is 12 hrs. Maximum of 2 applications/year/ growing cycle; 10 day minimum retreatment interval; maximum single application rate 3.2 lbs AI/100 gals.
	For air application, mix 3.2 pts of Malathion 8 Aquamul in at least 10.0 gals of water		Apply a minimum of 5.0 gals of mixture/acre. Make 2 applications, the first when female flowers are in twig bud stage, the second one week prior to maximum flower receptivity to pollen.

### SMALL GRAIN STORAGE FACILITIES (Grain Elevators/Silos)

Only for use in storage facilities being prepared to store corn, wheat, rye, oats, and barley grain. For a residual wall, floor, and machinery spray in grain elevators/silos prior to loading grain, apply 5.0 pints per 25.0 gallons of water making thorough application. Before applying spray, clean grain elevators/silos thoroughly. Remove and burn all sweeping as debris. Do not apply directly to grain. REI = 12 hours. The maximum single application rate is 0.6 pound active ingredient per 1000 square feet. The maximum number of applications is 1 per storage period.

## FLY CONTROL

Amount of Spray	Amount Malathion 8 Aquamul	Directions for Use
1.0 gal	1.2 fl oz	For use around the lower foundation of homes and as a spot treatment only on yards. Apply spray at rate of 1.0 gal/1000 sq ft on painted surfaces and 2.0 gals/1000 sq ft on unpainted surfaces where flies alight or congregate.
10.0 gals	12.0 fl oz	
100 gals	7.5 pts	

**For Bait Sprays** - add the following sugar or unsulfurized molasses/corn syrup.

Amount of Spray	Amount of Sugar	Amount of Unsulfurized Molasses/ Corn Syrup
1.0 gal	0.5 cup	4.0 fl oz
10.0 gals	2.0 lbs	26.0 fl oz
100 gals	20.0 lbs	2.0 gals

## STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Malathion 8 Aquamul should be stored in the original unopened container in a secure, dry place. Do not contaminate with other pesticides or fertilizers. The product should never be heated above 55 °C (131 °F), and should not be stored for long periods of time at a temperature in excess of 25 °C (77 °F). Store in a cool, dry, well-ventilated area. Store separately from strong alkalis and strong oxidizers. Keep container tightly closed when not in use.

**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).

**CONTAINER DISPOSAL: Nonrefillable container.** Do not reuse or refill this container. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying.

**For containers up to 5 gallons: 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.

**For containers greater than 5 gallons or 50 pounds: Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 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. If not recycled, then puncture and dispose of in a sanitary landfill. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

**For refillable containers:** Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container.

### *Storage & Disposal cont'd.:*

Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

**For help with any spill, leak, fire or exposure involving this material, call day or night CHEMTREC – 1-800-424-9300.**

### **CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY BEFORE BUYING OR USING THIS PRODUCT.**

read the entire Directions for Use and the following Conditions of Sale and Limitation of Warranty and Liability. By buying or using this product, the buyer or user accepts the following Conditions of Sale and Limitation of Warranty and Liability, which no employee or agent of LOVELAND PRODUCTS, INC. or the seller is authorized to vary in any way.

Follow the Directions for Use of this product carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop or other plant injury, ineffectiveness, or other unintended consequences may result from such risks as weather or crop conditions, mixture with other chemicals not specifically identified in this product's label, or use of this product contrary to the label instructions, all of which are beyond the control of LOVELAND PRODUCTS, INC. and the seller. The buyer or user of this product assumes all such inherent risks.

Subject to the foregoing inherent risks, LOVELAND PRODUCTS, INC. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use when the product is used in strict accordance with such Directions for Use under normal conditions of use. EXCEPT AS WARRANTED IN THIS LABEL AND TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THIS PRODUCT IS SOLD "AS IS," AND LOVELAND PRODUCTS, INC. MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ELIGIBILITY OF THIS PRODUCT FOR ANY PARTICULAR TRADE USAGE.

IN THE UNLIKELY EVENT THAT BUYER OR USER BELIEVES THAT LOVELAND PRODUCTS, INC. HAS BREACHED A WARRANTY CONTAINED IN THIS LABEL AND TO THE EXTENT REQUIRED BY APPLICABLE LAW, BUYER OR USER MUST SEND WRITTEN NOTICE OF ITS CLAIM TO THE FOLLOWING ADDRESS: LOVELAND PRODUCTS, INC., ATTENTION: LAW DEPARTMENT, P.O. BOX 1286, GREELEY, CO 80632-1286.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE BUYER'S OR USER'S EXCLUSIVE REMEDY FOR ANY INJURY, LOSS, OR DAMAGE RESULTING FROM THE HANDLING OR USE OF THIS PRODUCT, INCLUDING BUT NOT LIMITED TO CLAIMS OF BREACH OF WARRANTY OR CONTRACT, NEGLIGENCE, STRICT LIABILITY, OR OTHER TORTS, SHALL BE LIMITED TO ONE OF THE FOLLOWING, AT THE ELECTION OF LOVELAND PRODUCTS, INC. OR THE SELLER: DIRECT DAMAGES NOT EXCEEDING THE PURCHASE PRICE OF THE PRODUCT OR REPLACEMENT OF THE PRODUCT. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, LOVELAND PRODUCTS, INC. AND THE SELLER SHALL NOT BE LIABLE TO THE BUYER OR USER OF THIS PRODUCT FOR ANY CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES, OR DAMAGES IN THE NATURE OF A PENALTY.

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

**1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER**

- 1.1 **PRODUCT IDENTIFIER:**  
**TRADE NAME:** MALATHION 8 AQUAMUL
- 1.2 **RECOMMENDED USE:** GROUP 1B INSECTICIDE – FOR INSECT CONTROL
- 1.3 **SUPPLIER DETAILS:**  
 LOVELAND PRODUCTS, INC.  
 P.O. Box 1286 • Greeley, CO 80632-1286
- 1.4 **24 Hour Emergency Phone:** 1-800-424-9300 - **Medical Emergencies:** 1-866-944-8565 – **Product Information:** 1-888-574-2878 (LPI-CUST)  
**U.S. Coast Guard National Response Center:** 1-800-424-8802

**2. HAZARDS IDENTIFICATION**

**2.1 Classification of the substance or mixture**

**Classification according to 29 CFR 1910.1200**

Acute Toxicity - Oral	Category 4	H302
Acute Toxicity - Dermal	Category 4	H312
Sensitization – Skin	Category 1	H317
Eye Damage/Irritation	Category 2B	H320
Acute Toxicity – Inhalation	Category 4	H332
Specific Target Organ Toxicity (Single Exposure)	Category 2	H371
Specific Target Organ Toxicity (Repeated Exposure)	Category 2	H373
Aquatic Toxicity	Category 2	H401
Combustible Liquid	Category 4	H227

**2.2 Label elements**



- Signal word: **WARNING**
- Hazard Statement: H302 – Harmful if swallowed.  
 H312 – Harmful in contact with skin.  
 H317 – May cause an allergic skin reaction.  
 H320 – Causes eye irritation.  
 H332 – Harmful if inhaled.  
 H371 – May cause damage to organs.  
 H373 – May cause damage to organs through prolonged or repeated exposure.  
 H401 – Toxic to aquatic life.  
 H227 – Combustible liquid.
- Precautionary Statement: P260 – Do not breathe dust/fume/gas/mist/vapors/spray.  
 P262 – Do not get in eyes, on skin, or on clothing.  
 P264 – Wash thoroughly after handling.
- (Prevention): P270 – Do not eat, drink or smoke when using this product.  
 P280 – Wear protective gloves/eye protection/face protection.  
 P210 – Keep away from heat/sparks/open flames/hot surfaces – No smoking.  
 P102 – Keep out of reach of children.



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Precautionary Statement:

P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
P330 – Rinse mouth.

P302+P312: IF ON SKIN: Call a POISON CENTER or doctor/physician if you feel unwell.

P352 – Wash with soap and water.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

(Response):

P101 – If medical advice is needed, have the product container or label at hand.

P362 – Take off contaminated clothing and wash before reuse.

P333+P313 – If skin irritation or rash occurs: Get medical advice/attention.

P337 – If eye irritation persists: Get medical advice/attention.

P363 – Wash contaminated clothing before reuse.

P370 – In case of fire: Use dry chemical, carbon dioxide, foam, water spray or fog to extinguish.

P391 – Collect spillage.

Precautionary Statement:

(Storage):

P403+P235 – Store in a well-ventilated place. Keep cool.

### 2.3 Other hazards

Cholinesterase inhibitor.

## 3. COMPOSITION, INFORMATION ON INGREDIENTS

### 3.1 Substances

### 3.2 Mixtures

#### Classification according to 29 CFR 1910.1200

Chemical Name:	CAS No.	Classification	Concentration [%]
Malathion	121-75-5	Oral tox. 4; H302 Dermal tox. 4; H312 Sens. Skin. 1; H317	81.80
*Other ingredients	n/a	Eye Dam/Irrit. 2B; H320 Inh. tox. 4; H332 STOT-SE 2; H371 STOT-RE 2; H373 Aquatic tox. 2; H401	18.20

\*Ingredients not specifically listed are non-hazardous or are to be considered proprietary or confidential business information per 29 CFR 1910.1200(i)

## 4. FIRST AID MEASURES

### 4.1 Description of First Aid Measures

General Advice: Get medical attention if symptoms occur.

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 center or doctor for treatment advice.

If swallowed:

Call a poison control center 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 the poison control center or doctor. Do not give anything by mouth to an unconscious person.

If on skin or clothing:

Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

If inhaled:

Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.



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### 4.2 Most Important Symptoms and Effects, Acute and Delayed

Symptoms: Eyes: Causes eye irritation.  
Oral: Harmful if swallowed.  
Dermal: Harmful in contact with skin.

### 4.3 Immediate Medical Attention and Special Treatment

Treatment: Treat symptomatically. Symptoms may be delayed.

**FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-866-944-8565**

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.

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## 5. FIRE FIGHTING MEASURES

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### 5.1 EXTINGUISHING MEDIA:

Suitable Extinguishing Media: Use medium appropriate to surrounding fire. Dry chemical, carbon dioxide (CO<sub>2</sub>), alcohol foam, foam, water spray or fog.

### 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.

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## 6. ACCIDENTAL RELEASE MEASURES

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### 6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

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

### 6.2 ENVIRONMENTAL PRECAUTIONS

Environmental Precautions:

This pesticide is toxic to aquatic organisms, including fish and invertebrates. 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. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. 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. To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters.

This pesticide is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area.

### 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.



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## 7. HANDLING AND STORAGE

### 7.1 PRECAUTIONS FOR SAFE HANDLING:

Advice on Safe Handling:

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing 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.

### 7.2 CONDITIONS FOR SAFE STORAGE:

Requirements for Storage Areas and Containers:

Product should be stored in the original unopened container in a secure dry place. Do not contaminate other pesticides or fertilizers. Product should never be heated above 55°C (131°F), and should not be stored for long periods of time at temperatures in excess of 25°C (77°F). 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) TLVs

Components	Type	Value
Malathion	TLV	1 mg/m <sup>3</sup> (IFV: Measured as inhalable fraction and vapor)
	TLV	

##### U.S. Workplace Exposure Level (OSHA) PELs

Components	Type	Value
Malathion	TLV	15 mg/m <sup>3</sup> (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 vapors and spray mists. Provide eyewash station and safety shower.

#### Individual Protection Measures:

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

Skin Protection: Long-sleeved shirt and long pants. Chemical-resistant gloves. Shoes plus socks.

Respiratory Protection: In case of inadequate ventilation or risk of inhalation of mists or vapors, use suitable respiratory equipment such as MSHA/NIOSH TC-84A with NIOSH equipped N, R, or P class filter media. Wear respiratory protection during operations where spraying or misting occurs. 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.



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### 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 APPEARANCE :	Liquid
ODOR:	Mild petroleum.
ODOR THRESHOLD:	No data available.
COLOR:	Straw to amber-colored.
pH:	3.69 (10% v/v)
MELTING POINT / FREEZING POINT:	No data available
BOILING POINT:	No data available
FLASH POINT:	198.5°F/ 92.5°C (TCC).
FLAMMABILITY (solid, gas):	No data available.
UPPER / LOWER FLAMMABILITY OR EXPLOSIVE LIMITS:	No data available.
VAPOR PRESSURE:	No data available.
SOLUBILITY:	Soluble.
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):	1.19 g/ml
DENSITY:	9.89 lbs./gal / 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 data available. Will not polymerize.

#### 10.4 CONDITIONS TO AVOID

Keep away from heat or flame.

#### 10.5 INCOMPATIBLE MATERIALS

Strong bases and oxidizers. This product can corrode iron, steel, tin plate and copper. Rapidly hydrolyzed at pH >7.0

#### 10.6 HAZARDOUS DECOMPOSITION PRODUCTS

Volatile, toxic compounds such as dimethyl sulfide, sulfur dioxide, carbon monoxide, and phosphorus pentoxide may be released in a fire situation.

### 11 TOXICOLOGICAL INFORMATION

#### 11.3 LIKELY ROUTES OF EXPOSURE

Eye contact. Skin absorption. Skin contact. Inhalation.

LC<sub>50</sub> (rat): > 5.1 mg/L (4 HR)

LD<sub>50</sub> Oral (rat): > 550 mg/kg

LD<sub>50</sub> Dermal (rat): > 2,000 mg/kg

Acute Toxicity Estimates: No data available

Skin Irritation (rabbit): Mild irritant.

Eye Irritation (rabbit): Causes moderate eye irritation.

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

Aspiration: No data available.

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

Interactive Effects: None known



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## 12 ECOLOGICAL INFORMATION

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### 12.3 ECOTOXICITY

The product is toxic to fish and aquatic invertebrates. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Information below is based on the technical ingredient Malathion.

#### Ecotoxicological Data

	Species	Test Results
Malathion	Oncorhynchus mykiss	0.18 mg/L – 96-hour LC <sub>50</sub>
	Daphnia magna	0.72 µg/L – 96-hour EC <sub>50</sub>
	Bees	0.38 µg/bee – LD <sub>50</sub> acute oral
	Bees	0.27 µg/bee – LD <sub>50</sub> 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.

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## 13 DISPOSAL CONSIDERATIONS

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### 13.1 WASTE TREATMENT METHODS

Wastes may be disposed of on site or at an approved waste disposal facility. Triple rinse (or equivalent), adding rinse water to spray tank. Offer container for recycling or dispose of in a sanitary landfill or by other procedures approved by appropriate authorities. Recycling decontaminated containers is the best option of container disposal. The Agricultural Container Recycling Council (ACRC) operates the national recycling program. To contact your state and local ACRC recycler visit the ACRC web page at <http://www.acrecycle.org>. Do not contaminate water, food or feed by storage or disposal.

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## 14 TRANSPORT INFORMATION

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### 14.3 LAND TRANSPORT

DOT Shipping Description: 12.5 GALLONS AND LESS: NOT REGULATED BY DOT

DOT Shipping Description: GREATER THAN 12.5 GALLONS: RQ UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (MALATHION), 9, III ERG GUIDE 171

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



**SAFETY DATA SHEET**

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**15 REGULATORY INFORMATION**

**15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS**

**NFPA & HMIS Hazard Ratings:**

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

**SARA Hazard Notification/Reporting**

<b>SARA Title III Hazard Category:</b>	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) 81.8%.

RCRA Waste Code: Not listed.

CA Proposition 65: **WARNING:** This product contains chemicals known to the State of California to cause cancer or birth defects or other reproductive harm..

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

**CAUTION**

Harmful if swallowed, inhaled, or absorbed through skin.

Causes moderate eye irritation

Avoid contact with skin, eyes, or clothing.

Avoid breathing spray mist or vapor.

Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

**16 OTHER INFORMATION**

**SDS STATUS:** Section 15 revised.

**PREPARED BY:** Registrations and Regulatory Affairs

**REVIEWED BY:** Environmental Health and Safety

**EPA REG. NO.:** 34704-474

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**STATE OF MAINE**  
**DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY**  
**BOARD OF PESTICIDES CONTROL**  
28 STATE HOUSE STATION  
AUGUSTA, MAINE 04333

**JANET T. MILLS**  
GOVERNOR

To: Maine Board of Pesticides Control  
From: Mary Tomlinson, Pesticides Registrar/Water Quality Specialist  
RE: Proposal for 2019 Statewide Groundwater Monitoring Program  
Date: January 7, 2019

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## Background

Since 1994, the Maine Board of Pesticides Control (BPC) has conducted groundwater monitoring in accordance with the State of Maine Generic State Management Plan for Pesticides and Groundwater (State Plan).<sup>1</sup> These monitoring efforts are designed to assess the presence of pesticide residues in groundwater in areas determined to potentially be most at risk of pesticide contamination.

Further, the Board has a statutory charge under 7 M.R.S. §607-A. REVIEW OR REREGISTRATION 2-A, to “conduct a water residue survey at least once every 6 years to establish a representative sample of a number of wells or bodies of water, selected at random, in areas of possible contamination or at other locations to be described by the board, for the purpose of testing these waters and preparing a profile of the kinds and amounts of pesticides present. [ 2005, c. 620, §7 (NEW) .]”

Monitoring conducted under Maine’s statewide pesticides and groundwater monitoring program indicated that pesticide contamination does occur in drinking water in domestic wells near active pesticide use sites. The number of wells typically sampled was approximately 150, until 1994 when 50 wells were sampled. Of the ~150 wells sampled, the percent of wells with positive detections ranged between 9%-24% until 2014 when 68% of the 50 wells sampled tested positive for pesticides. The increase in detections was partially a function of newer technology which allowed lower detection limits and analysis of 90-plus pesticides compared to a maximum of seven pesticides analyzed in previous years. The reduced sample size may also have affected the percent of detections.

BPC testing has found two instances where contamination exceeded established health advisory levels. In 1994, an ant control product was misused by a homeowner. In 2014, a well was steeply down-gradient and within 90 feet of a corn crop where a narrow drainage ditch along the drive directed the runoff to the wellhead.

The statewide groundwater monitoring program is critical to identifying and addressing emerging contaminants in the state. For example, the high detection rate of hexazinone in 1994 led to the development of the Hexazinone Statewide Management Plan resulting in the use-restriction on hexazinone (no longer in effect), identification of best management practices, and educational outreach to reduce groundwater contamination.

**MEGAN PATTERSON, DIRECTOR**  
32 BLOSSOM LANE, MARQUARDT BUILDING



PHONE: (207) 287-2731  
WWW.THINKFIRSTSPRAYLAST.ORG

## Study Objective

In accordance with State Plan, the objectives of this study are to:

- Assess the occurrence of pesticides in private drinking water wells associated with an active agricultural field throughout the state of Maine.
- To determine trends in agricultural pesticides detected in groundwater collected from private drinking water wells associated with an active agricultural field.

## Sampling Plan

- Samples will be drawn across the state from 200 randomly-selected domestic wells located within ¼ mile down gradient of an active agricultural pesticide use site during February and March. An equal number of samples will be collected from each inspector region. A larger number of samples would be required to estimate an average concentration of contaminants, but cost and personnel constraints currently make this level of sampling prohibitive. However, 200 wells will provide a  $\pm 6-7\%$  confidence level in terms of the probability of contamination compared to a 10-12% confidence level with 100 wells.
- Ten field duplicates and 10 field blanks will be collected for quality control and quality assurance purposes. The number of duplicates and blanks are collected on a 5% basis or one in 20 samples which will be distributed equally across all five inspector regions.
- All historical samples from the 2014 statewide groundwater monitoring will be incorporated as part of the 200 samples to assess trends in groundwater contamination over time. Any historical sites no longer viable for sampling will be replaced with new randomly selected sites.
- Samples will be shipped to Montana Analytical Laboratory, an accredited lab with a current Quality Assurance Project Plan (QAPP). The QAPP is required by the Environmental Protection Agency (EPA) as part of the Cooperative Agreement between the EPA and Maine and is also required under the State Plan. The analysis method employed will be the “Universal Method for the Determination of Polar Pesticides in Water Using Solid Phase Extraction and Liquid Chromatography/Mass Spectrometry/ Mass Spectrometry” and analyzes for 102 pesticides.

## Estimated Project Cost

The estimated cost for analysis and shipping of 220 samples is \$91,000. Montana Analytical Laboratory offers a 20% discount on six or more samples which reduces the cost to approximately \$73,400.

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## Reference

Maine Board of Pesticides Control. *State of Maine Generic State Management Plan for Pesticides and Groundwater*. 1994, Rev 1998, Rev 2006.



STATE OF MAINE  
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY  
BOARD OF PESTICIDES CONTROL  
28 STATE HOUSE STATION  
AUGUSTA, MAINE 04333

JANET T. MILLS  
GOVERNOR

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To: Board of Pesticides Control Members  
From: Mary Tomlinson, Pesticides Registrar/Water Quality Specialist  
RE: Water Quality Program Update for 2018: Penobscot Bay Project  
Date: January 7, 2015

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The Maine Board of Pesticides Control (BPC) Quality Management Plan was updated and approved by the Environmental Protection Agency (EPA).

In 2014, the BPC was tasked by the Maine Legislature to assess the potential impacts of pesticides on marine invertebrates. The 2014-2015 Gulf of Maine (GOM) Project was implemented and the results indicated pesticides had an unlikely appreciable impact on Maine's lobster fishery. The BPC intended to continue its monitoring effort as resources allowed.

In partial fulfillment of the BPC 2017 GOM report, "Update to the Maine Board of Pesticides Control Assessment Relative to the Risks of Pesticides to Maine Invertebrates", the Penobscot Bay Project was conducted in 2018. This project was limited in scope and focused on seven freshwater streams feeding the Penobscot River to determine the presence or absence of pesticides used in residential areas. The marine waters of Northern Bay, the northern-most reach of the Bagaduce River, was also included due to the opportunity to partner with The Corning School of Ocean Studies, Maine Maritime Academy (MMA) which is studying the declining clam population in the bay.

BPC staff collected nine surface water grab samples from seven locations and nine sediment samples from eight locations in the Bangor region, Castine region, and Bucksport during mid-September. MMA deployed a Polar Organic Chemical Integrative Sampler (POCIS) in Northern Bay, for a total of 22 days, late August into September. Two of the nine sediment samples were collected north of the POCIS site due to limited access to the shore and the need for fine sediments. Site locations and results are displayed in the table below.

Samples were sent to Montana Analytical Laboratory for analysis of pesticides and sediment samples were sent to the University of Maine Analytical Laboratory for analysis of total organic carbon and particle size.

### Surface Water Preliminary Results

Surface water grab samples were analyzed for 104 pesticides using the Montana Universal method with a separate analysis required for glyphosate. Eight pesticides were detected in samples from all sites (Table 1). Atrazine and two degradates were the most frequently detected pesticide and all were below the reporting limit. Atrazine and deethyl atrazine were detected in the first Stillwater River sample, but not in the duplicate sample. This is not surprising given that detection limits are 0.0022 and 0.0017 parts per billion (ppb) respectively. Imidacloprid exceeded the chronic Aquatic Life Benchmark (ALB) for invertebrates, 0.01 ppb. This ALB is derived from a life-cycle test with the most sensitive invertebrates (usually with midge, scud, or daphnids). There were no other exceedances.

MEGAN PATTERSON, DIRECTOR  
32 BLOSSOM LANE, MARQUARDT BUILDING



PHONE: (207) 287-2731  
WWW.THINKFIRSTSPRAYLAST.ORG

**Table 1. Surface water grab sample results.**

Site	Atrazine ng/g (ppb) RL 0.0022	Deethyl atrazine ng/g (ppb) RL 0.0017	Hydroxy atrazine ng/g (ppb) RL 0.0040	Hexazinone ng/g (ppb) RL 0.0015	Imazapyr ng/g (ppb) RL 0.0035	Imidacloprid ng/g (ppb) RL 0.0018	Metolachlor ESA ng/g (ppb) RL 0.0050	Prometon ng/g (ppb) RL 0.0010
Sucker Brook (Hampden)			Q		0.0036			
Kenduskeag Stream at Gomez Park (Bangor)		Q					0.015	
Kenduskeag Stream at Gomez Park (Bangor) (Blank)								
Mill Stream (Bucksport)				Q				
Penjajawock Stream at Evergreen Woods (Bangor)			Q			Q		
Kenduskeag Stream at Valley Ave. (Bangor)		Q	Q				0.064	
Stillwater River (Orono)	Q	Q						
Stillwater River (Orono) (Duplicate)								
Unnamed stream (Castine)					Q	0.058		0.004 6

RL = Reporting limit

Q = Present at less than reporting limit

The surface water POCIS samples were analyzed for 102 pesticides. Six pesticides were detected (Table 2). Further analysis on these results will be conducted by MMA.

**Table 2. POCIS sample results.**

Site	Atrazine ng/pocis	Deethyl atrazine ng/pocis	Hexazinone ng/pocis	Metolachlor ESA ng/pocis	Prometon ng/pocis	Simazine ng/pocis
Northern Bay 1	4.5	1.2	0.27	1.4	0.12	0.53
Northern Bay 2	5.4	1.3	0.25	1.9	0.12	0.52
Northern Bay 3	4.7	1.2	0.27	1.7	0.13	0.57

## Sediment Preliminary Results

Sediment samples were analyzed for 15 pyrethroids. Bifenthrin was detected in samples from all sites, but only in eight of nine samples (Table 3). Cyfluthrin, cypermethrin, and deltamethrin were only detected in the Stillwater River sample. Pyrethroid detections by site in parts per billion (ppb) are displayed in the table below. Results have not yet been normalized for organic carbon; therefore, results are not comparable from site to site.

**Table 3. Sediment sample results.**

Site	Bifenthrin (ppb) RL 0.045	Cyfluthrin (ppb) RL 0.20	Cypermethrin (ppb) RL 0.20	Deltamethrin (ppb) RL 0.40
Sucker Brook (Hampden)	0.27	ND	ND	ND
Kenduskeag Stream at Gomez Park (Bangor)	0.81	ND	ND	ND
Mill Stream (Bucksport)	0.33	ND	ND	ND
Penjajawock Stream at Evergreen Woods (Bangor)	0.18	ND	ND	ND
Kenduskeag Stream at Valley Ave. (Bangor)	0.77	ND	ND	ND
Stillwater River (Orono)	0.26	0.31	0.36	0.47
Northern Bay	ND	ND	ND	ND
Northern Bay (duplicate)	0.76	ND	ND	ND
Unnamed stream (Castine)	0.058	ND	ND	ND

RL = Reporting limit

It is important to bear in mind that the data presented here is the raw data and has not been analyzed; therefore, no valid comparisons among sites and no conclusions may be drawn.

**From:** jody spear  
**Sent:** Wednesday, November 14, 2018 2:29 PM  
**To:** Patterson, Megan L <Megan.L.Patterson@maine.gov>  
**Subject:** [EXTERNAL SENDER] cancellation of friday's meeting?

Hi Megan,  
Herewith, a link to an article by Caius Rommens, developer of the GM potato, to supplement what I sent last week.  
Given the snow forecast for Friday, with roads too dangerous for traveling, I'm guessing you'll cancel the meeting. If so, will the next meeting take place in January, as scheduled?

Jody

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<https://www.independentsciencenews.org/health/hidden-health-dangers-former-agbiotech-insider-gmo-crops/>

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# Hidden Health Dangers: A Former Agbiotech Insider Wants His GMO Crops Pulled

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 [independentsciencenews.org/health/hidden-health-dangers-former-agbiotech-insider-gmo-crops/](https://independentsciencenews.org/health/hidden-health-dangers-former-agbiotech-insider-gmo-crops/)

By Caius Rommens

Genetic engineering isn't everyone's childhood dream. Even I didn't care for it when I started studying biology at the University of Amsterdam, but my professor explained it was an acquired taste and the best option for a good job. So, I suppressed my doubts and learned to extract DNA from plants, recombine the DNA in test tubes, reinsert the fusions into plant cells, and use hormones to regenerate new plants.

People say that love is blind, but I started loving what I did blindly. Or, perhaps, what started as an acquired taste soon became a dangerous addiction. Genetic engineering became part of me.

After I received my PhD, I went to the University of California in Berkeley to help develop a new branch of genetic engineering. I isolated several disease resistance genes from wild plants, and demonstrated, for the first time, that these genes could confer resistance to domesticated plants. Monsanto liked my work and invited me to lead its new disease control program in St. Louis in 1995.

I should not have accepted the invitation. I knew, even then, that pathogens cannot be controlled by single genes. They evolve too quickly around any barrier to infection. It takes about two to three decades for insects and plants to overcome a resistance gene, but it takes only a few years, at most, for pathogens to do the same.



GMO White Russet Potato

I did accept the invitation, though, and the next six years became a true boot camp in genetic engineering. I learned to apply many tricks about how to change the character of plants and I learned to stop worrying about the consequences of such changes.

In 2000, I left Monsanto and started an independent biotech program at [J.R. Simplot Company](#) in Boise, Idaho. Simplot is one of the largest potato processors in the world. It was my goal to develop GMO potatoes that would be admired by farmers, processors, and consumers. Genetic engineering had become an obsession by then, and I created at least 5,000 different GMO versions each year—more than any other genetic engineer. All these potential varieties were propagated, grown in greenhouses or the field, and evaluated for agronomic, biochemical, and molecular characteristics.

The almost daily experience I suppressed was that none of my modifications improved potato's vigor or yield potential. In contrast, most GMO varieties were stunted, chlorotic, mutated, or sterile, and many of them died quickly, like prematurely-born babies.

Despite all my quiet disappointments, I eventually combined three new traits into potatoes: disease resistance (for farmers), no tuber discoloration (for processors), and reduced food-carcinogenicity (for consumers).

It was as hard for me to consider that my GMO varieties might be corrupted as it is for parents to doubt the perfection of their children. Our assumption was that GMOs are safe. But my pro-biotech filter eventually wore thin and finally shattered entirely.

I identified some minor mistakes and had my first doubts about the products of my work. I wanted to re-evaluate our program and slow it down, but it was too little too late. Business leaders were involved now. They saw dollar signs. They wanted to expand and speed-up the program, not slow it down.

I decided to quit in 2013. It was painful to leave behind the major part of my adult life.

The true scope of my errors became obvious to me only after I had relocated to a small farm in the mountains of the Pacific Northwest. By this time Simplot had announced the regulatory approval of my GMO varieties. As the company began to plan for quiet introductions in American and Asian markets, I was breeding plants and animals independently, using conventional methods. And since I still felt uncomfortable about my corporate past, I also re-evaluated the about two hundred patents and articles that I had published in the past, as well as the various petitions for deregulation.

Not so much biased anymore, I easily identified major mistakes.

*"With the mistake your life goes in reverse.  
Now you can see exactly what you did  
Wrong yesterday and wrong the day before  
And each mistake leads back to something worse."*  
(James Fenton)

For instance, we had silenced three of potato's most conserved genes, assuming that the three genetic changes would each have one effect only. It was a ludicrous assumption because all gene functions are interconnected. Each change had indeed caused a ripple effect. It should have been clear to me that silencing the 'melanin gene' PPO would have numerous effects, including an impairment of potatoes' natural stress-tolerance response. Similarly, asparagine and glucose are among the most basic compounds of a plant, so why did I believe I could silence the ASN and INV genes involved in the formation of these compounds? And why did nobody question me?

Another strange assumption was that I had felt able to predict the absence of unintentional long-term effects on the basis of short-term experiments. It was the same assumption that chemists had used when they commercialized DDT, Agent Orange, PCBs, rGBH, and so on.

The GMO varieties I created are currently released under innocuous names, such as Innate, Hibernate, and White Russet. They are described as better and easier-to-use than normal potatoes and to contain fewer bruises, but the reality is different. The GMO potatoes are likely to accumulate at least two toxins that are absent in normal potatoes, and newer versions (Innate 2.0) additionally lost their sensory qualities when fried. Furthermore, the GMO potatoes contain at least as many bruises as normal potatoes, but these undesirable bruises are now concealed.

There are many more issues, and some of them could have been identified earlier if they had not been covered-up by misleading statistics in the petitions for deregulation. How could I have missed the issues? How could I have trusted the statisticians? How could the USDA have trusted them? My re-evaluation of the data clearly shows that the GMO varieties are seriously compromised in their yield potential and in their ability to produce normal tubers.

Unfortunately, most GMO potatoes end-up as unlabeled foods that are indistinguishable from normal foods. Consumer groups would have to carry out PCR tests to determine if certain products, including fries and chips, contain or lack the GMO material.

Given the nature of the potato industry, the most common potato varieties, such as Russet Burbank and Ranger Russet, will soon be contaminated with GMO stock.

I have now summarized the new conclusions of this past work (without disclosing company secrets—I am bound by confidentiality agreements) in a book, entitled 'Pandora's Potatoes.' This book, which is now [available on Amazon](#), explains why I renounce my work at Simplot and why the GMO varieties should be withdrawn from the market. It is a warning and a call for action: a hope that others will step forward with additional evidence, so that the public, with its limited financial means, has a chance to counter the narrow-mindedness of the biotech industry.

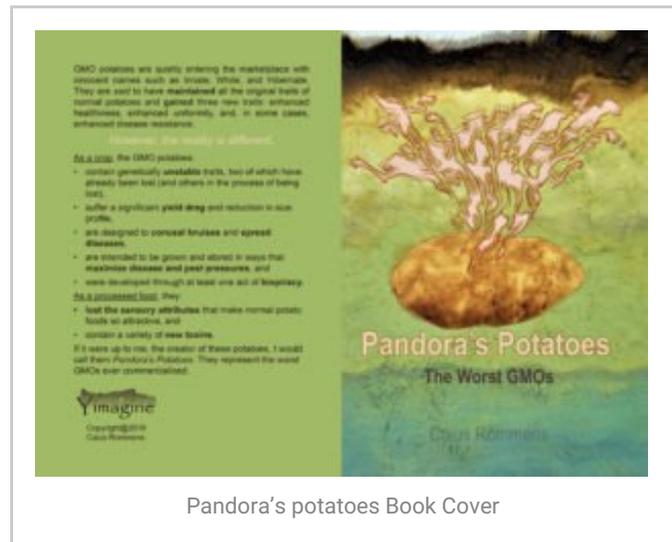
My book describes the many hidden issues of GMO potatoes, but *GMO potatoes are not the exception*. They are the rule. I could just as well have written (and may write) about the experimental GMO varieties we developed at Monsanto, which contains [an antifungal protein that I now recognize as allergenic](#), about [the disease resistance that caused insect sensitivity](#), or about anything else in genetic engineering.

On May 3rd 2018 the columnist Michael Gerson wrote in the Washington Post:

"Anti-GMO is anti-science." His statement was echoed by Mitch Daniels, his colleague, who added, "[It] isn't just anti-science. It's immoral." But these two columnists are not scientists. They don't understand the level of bias and self-deception that exists among genetic engineers. Indeed, anyone who is pro-science should understand that science is meant to study nature, not to modify it—and certainly not to predict, in the face of strong evidence, the absence of unintended effects.

The real anti-science movement is not on the streets. It is, as I discovered, in the laboratories of corporate America.

*If this article was useful to you please consider sharing it with your networks.*





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**Linda Titus**

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November 12, 2018

To the Honorable Members of the Board of Pesticide Control,

I work with hundreds of Maine growers of Specialty Crops with food safety, GAP audits, and the Produce Safety Rule.

I myself do not have a pesticide license, however part of my work involves educating growers about the laws of Maine and FSMA's Produce Safety Rule. I stumbled upon the fact that Maine's Chapters 10 and 50 require growers to document their use of sanitizers for maintaining the quality of wash water and for cleaning food contact surfaces.

This has come as a surprise to many people, including state food inspectors. A restaurant might use the same sanitizer to wash their produce and food contact surfaces and not have to document use. However if you are a farmer, you do.

I understand that there always exists the option of conducting rulemaking to change the applicability of these regulations and that you are about to conduct rulemaking which will require the opening of Chapter 50 as well as Chapter 10 **and I would like to begin that process.**

The Board of Pesticides Control's regulations are clear about record keeping for pesticides (including sanitizers) used by commercial agricultural producers. If soap is not registered in Maine as a pesticide, its use in routine cleaning would not need to be included in pesticide use records.

I believe there is some confusion because certain uses do not require licensing.

1. BPC issued a policy in 2014 pertaining to agricultural uses of pesticides which states:

*For the purpose of determining the requirement for a private applicator of general use pesticide license (Agricultural Basic) per 22 MRS 1471-D (2-D), "food production" will include treatments beginning with the growing media*

*and ending when the plant or plant product is transferred out of the grower's control.*

*This includes, but is not limited to:*

- *soil or other growing medium applications*
- *seed treatments*
- *foliar or root treatments*
- *soil, root or stem injections*
- *smoke, mist, fumigant or total release fogger applications to greenhouses or hoop houses, when food plants are present*
- *post-harvest treatments, such as dips, fumigation, produce rinsing with a disinfectant, etc.*

Therefore the agricultural use of sanitizers on containers, benches and other surfaces, in and of themselves, would not require a license. However, under this policy, use of sanitizers for post-harvest treatment would require, at minimum, an agricultural basic license.

2. BPC Chapter 10 includes the following language, pertaining solely to commercial applicators, which may have caused further confusion:

Ch 10 §2(I) "*Commercial applicator*" means any person, unless exempted in I(4) hereunder, whether or not the person is a private applicator with respect to some uses, who:

*(4) The following classes of applicators are exempt from commercial certification/licensing requirements. Applications not listed below must be performed under the direct on-site supervision of a licensed commercial applicator Master and/or Operator.*

*(b) Persons applying general use antimicrobial products by hand or with non-powered equipment to interior or exterior surfaces and furnishings of buildings during the course of routine cleaning procedures.*

This language provides the exemption that allows restaurants, kitchens, delis, etc. to conduct routine cleaning (possibly using sanitizers and disinfectants) without needing to employ licensed commercial applicators to do so.

3. BPC Chapter 10 also includes definitions for agricultural pesticide application and commercial agricultural producer, which helps explain the applicability of Chapter 50 record keeping requirements.

Ch 10 § 2(B) "*Agricultural pesticide application*" means any application of a pesticide upon an agricultural commodity which is performed by or for a commercial agricultural producer.

Ch 10 § 2(H) *“Commercial agricultural producer” means, for the purposes of Chapter 50, any person who produces an agricultural commodity for commercial purposes.*

4. Chapter 50 describes *the types of records and reports which commercial applicators, commercial agricultural producers, limited/restricted use pesticide dealers, spray contracting firms and monitors must maintain and submit to the Board.*

Ch 50 §1(A)(I) *Commercial agricultural producers and commercial applicators shall maintain pesticide application records consistent with paragraph II below for a period of two years from the date of application.*

*(II) Pesticide application records shall include, at a minimum:*

- a. Site information including town and location, crop or site treated, target organism, customer (where applicable); and*
  - i. for broadcast applications, size of treated area (when completed);*
  - ii. for volumetric applications as described on the label, the volume treated;*
  - iii. for non-broadcast applications (such as spot treatments, crack and crevice or stump treatments) a practical description of the scope or extent of the application (such as number of trees, stumps or rooms treated).*
- b. Application information. For each distinct site, records must include date and time of application(s), brand name of pesticide(s) applied, EPA registration number(s), active ingredient(s), restricted entry interval(s) and/or ventilation period(s) (where applicable), method of application (type of equipment), dilution agent(s) (other than water), the applicator's name and certification number (where applicable) and spray contracting firm (where applicable).*
- c. Rate information. For each distinct site, application rate information must be maintained as follows:*
  - i. Restricted Use Pesticides. For restricted use pesticides, applicators shall record the total amount of pesticide applied (undiluted).*
  - ii. General Use Pesticides. For general use pesticides, applicators shall record:*
    - (1) rate information as described in (i.) above; or*
    - (2) the mix ratio and the total mix applied; or*

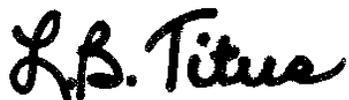
(3) *the mix ratio and the mix per unit area applied.*

The definition of commercial agricultural producer in Ch 10 and the summary of applicability in Ch 50 make no reference to licensure requirements. Further, they do not specifically exempt certain types of applications made to agricultural commodities. So, even if the agricultural producer was not required, for some reason, to hold an agricultural basic license—they would still be required to record the use of sanitizers for post-harvest treatment.

I have spoken to Maine Organic Farmers and Gardeners Association, the Maine Vegetable and Small Fruit Growers and some Pomological Society members and they have expressed interest in supporting this change. I realize the process make take as long as a year. Please let me know next steps and I will follow through.

Lastly, I wish to acknowledge Megan Patterson's assistance with pulling this information together.

Sincerely,

A handwritten signature in black ink that reads "L.B. Titus". The letters are cursive and connected, with a prominent loop on the "L" and a long tail on the "s".

CC: Lisa Turner, President of MVSFGA  
Dave Colson, MOFGA  
Joel Gilbert, Maine Pomological Society  
Ellen MacAdam, Orchardist  
Marilyn Meyerhans, Orchardist



# 129th MAINE LEGISLATURE

## FIRST REGULAR SESSION-2019

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Legislative Document

No. 36

H.P. 37

House of Representatives, January 9, 2019

### **An Act To Change the Composition of the Board of Pesticides Control**

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Reference to the Committee on Agriculture, Conservation and Forestry suggested and ordered printed.

A handwritten signature in cursive script that reads "Robert B. Hunt".

ROBERT B. HUNT  
Clerk

Presented by Representative PLUECKER of Warren.  
Cosponsored by Representatives: BERRY of Bowdoinham, DUNPHY of Old Town, HALL of Wilton, HICKMAN of Winthrop, INGWERSEN of Arundel, MAXMIN of Nobleboro, O'NEIL of Saco, Senator: BLACK of Franklin.

1 **Be it enacted by the People of the State of Maine as follows:**

2 **Sec. 1. 22 MRSA §1471-B, sub-§1**, as amended by PL 2011, c. 119, §1 and  
3 affected by §2 and amended by c. 657, Pt. W, §5, is further amended to read:

4 **1. Board established.** The Board of Pesticides Control is established by Title 5,  
5 section 12004-D, subsection 3, within the Department of Agriculture, Conservation and  
6 Forestry. Except as provided in this chapter, the board must be composed of 7 members,  
7 appointed by the Governor, subject to approval by the joint standing committee of the  
8 Legislature having jurisdiction over agricultural matters and confirmation by the Senate.  
9 To provide the knowledge and experience necessary for carrying out the duties of the  
10 board, the board must consist of the following members: one person with practical  
11 experience and knowledge regarding the agricultural use of chemicals; one person who  
12 has practical experience and knowledge regarding the use of chemicals in forest  
13 management; one person from the medical community; a scientist from the University of  
14 Maine System having practical experience and expertise in integrated pest management;  
15 one commercial applicator; and 2 persons appointed to represent the public. The 2  
16 members appointed to represent the public must have a demonstrated interest in  
17 environmental protection and represent different geographic areas of the State. The term  
18 must be for 4 years, except that of the initial appointees, 2 ~~shall~~ serve 4-year terms, 2  
19 ~~shall~~ serve 3-year terms, 2 ~~shall~~ serve 2-year terms and one ~~shall serve~~ serves a one-year  
20 term. Any vacancy must be filled by an appointment for the remainder of the unexpired  
21 term.

22 **Sec. 2. Application.** This Act does not require the terms of members serving on  
23 the Department of Agriculture, Conservation and Forestry, Board of Pesticides Control  
24 on the effective date of this Act to be terminated.

25 **SUMMARY**

26 This bill restores the requirement that the 2 public members of the Department of  
27 Agriculture, Conservation and Forestry, Board of Pesticides Control have a demonstrated  
28 interest in environmental protection. The change does not require the termination of the  
29 terms of current members of the board.