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

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

BOARD OF PESTICIDES CONTROL

February 25, 2022

9:00 AM Board Meeting

Video conference hosted in MS Teams, to join the meeting:
Join on your computer or mobile app
Click here to join the meeting
Or call in (audio only)
+1 207-209-4724 United States, Portland
Phone Conference ID: 957 600 187#

AGENDA

1. Introductions of Board and Staff

2. Minutes of the January 14, 2022 Board Meeting

   Presentation By: Megan Patterson, Director

   Action Needed: Amend and/or approve

3. Report on 2021 Work Accomplished and Request for Funds for Mosquito Monitoring from the Integrated Pest Management Program

   The Integrated Pest Management Program is reporting work accomplished in 2021 and requesting funds to assist with ongoing efforts for mosquito surveillance, identification, and continued outreach around vector-borne diseases.

   Presentation By: Hillary Peterson, DACF IPM Specialist

   Action Needed: Discussion and determination if the Board wishes to fund this request

4. Adaura, LLC Request for 24(c) Registration for GoalTenderTM Herbicide

MEGAN PATTERSON, DIRECTOR
90 BLOSSOM LANE, DEERING BUILDING

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

At the request of Maine Cooperative Extension and broccoli growers, Adaura, LLC supports the Special Local Need [24(c)] Registration ME-22000X and the sub-SLN registration for Nufarm INC ME-22000XB for the use of GoalTenderTM herbicide (oxyfluorfen, EPA Reg. #62719-447 and EPA Reg. #62719-447-71368) for post-emergent weed control on broccoli. Where the number of herbicides available to manage weeds in broccoli is limited, this product remains the only alternative for post-emergence control of broadleaf weeds that escape preemergent herbicide treatment.

Presentation By: Mary Tomlinson, Pesticides Registrar/Water Quality Specialist
Dr. Pam Bryer, Pesticides Toxicologist

Action Needed: Approve/disapprove 24(c) registration request

5. Workshop Session to Review the Rulemaking Record on the Proposed Amendments to Chapters 20 and 41

(*Note: No additional public comments may be accepted at this time.*)

On December 22, 2021 a Notice of Agency Rulemaking Proposal was published in Maine's daily newspapers, opening the comment period on the proposed amendments to Chapters 20 and 41. A public hearing was held on January 14, 2022 by remote meeting on the Microsoft Teams platform and the written comment period closed at 8:00 AM on January 24, 2022. Eight people spoke at the public hearing and eleven written comments were received by the close of the comment period. Three additional comments were received after the close of the comment period. The Board will now review the rulemaking comments and determine how it wishes to proceed with the rulemaking proposals.

Presentation By: Megan Patterson, Director

Action Needed: Discussion and determination on how the Board wishes to proceed with the rulemaking proposals

6. Consideration of a Consent Agreement with Green Shield Pest Solutions of Saco, Maine

On June 3, 1998 the Board amended its Enforcement Protocol to authorize 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 involved an unauthorized pesticide application and failure to positively identify the proper treatment site.

Presentation By: Ray Connors, Manager of Compliance

Action Needed: Amend and/or approve

7. Election of Officers

The Board's statute requires an annual election of officers. The members will choose a chair and vice-chair to serve for the coming year.

Presentation By: Megan Patterson, Director

Action Needed: Nomination and election of officers

8. Other Old and New Business

a. Summary of 2022 Ag Trades Show Activities—Pietroski

b. Executive Order 41 FY 20/21 Proposed Water Quality Project—Bryer

c. Briefing on LD 519 (MAC and Herbicide Use on School Grounds) Report for the Legislature's ACF Committee—Scheduled for February 15, 2022

d. Briefing on LD 264 (PFAS) Report for the Legislature's ACF Committee—Scheduled for February 17, 2022

e. Briefing on LD 524 (Collection of Pesticide Use and Sales Information) Report for the Legislature's ACF Committee—Scheduled for February 24, 2022

f. Other items?

9. Schedule of Future Meetings

April 1, 2022 is the next tentative Board meeting date. The Board will decide whether to change and/or add dates.

The Board will also decide if there is a continuing need to meet remotely.

Adjustments and/or Additional Dates?

10. 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.
- 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. 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.

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COMMISSIONER

BOARD OF PESTICIDES CONTROL

January 14, 2022

9:00 AM Board Meeting
11:00 AM-12:00 PM Public Forum
12:00 Board Meeting Continued As Necessary

MINUTES

- Adams, Bohlen, Flewelling, Granger, Jemison, Morrill, Waterman

1. Introductions of Board and Staff

   - The Board, Staff, and Assistant Attorney General Mark Randlett introduced themselves
   - Staff: Boyd, Bryer, Connors, Couture, Nelson, Patterson, Pietroski, Saucier, Tomlinson

2. Public Hearing on Proposed Rule Amendments to Chapters 20 and 41

   The Board heard testimony on the proposed amendments:

   Chapter 20—Three amendments are proposed:
   1. Define "Perfluoroalkyl and Polyfluoroalkyl Substances" or "PFAS".
   2. Add a requirement for registrants to submit a confidential statement of formula to register their product with the state of Maine.
   3. Add two affidavit requirements; one affidavit that asks registrants to disclose if their pesticide product has ever been stored in a fluorinated high-density polyethylene container and a second affidavit asking registrants to disclose if the formulation of the pesticide product contains any perfluoroalkyl or polyfluoroalkyl substances.

   - Patricia Rupert-Nason, speaking on behalf of the Sierra Club. Rupert-Nason stated that she wanted to make sure the rule included affidavits for inert and active ingredients, as well as any contaminants known to the manufacturer. She stated that she would like the affidavits to be public so people can make informed decisions about what they apply to their land.

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Rupert-Nason added that the next step would be to limit and eliminate PFAS in pesticides. She stated that she was in favor of the definition of PFAS adopted by the Board.

- Karen Reardon, speaking on behalf of Responsible Industry for a Sound Environment, RISE: Reardon stated that she wanted to ensure that the definition accounted for the rich data set that was accessible for pesticides that covered the total impact when used, which was a unique attribute. She said that the EPA planned to release a container leaching study in the first quarter of 2022 that would help inform the rules in mind and she hoped that the Board would not rush to complete rulemaking until they had a full finding of what was happening with high-density polyethylene, HDPE, containers. She added that pesticides were unique in the PFAS conversation and wanted them to still be available for the many important uses for which they are applied.
- Sarah Woodbury, speaking as an advocate for Defend our Health: Woodbury stated that she appreciated the more inclusive definition of PFAS included in the draft rule and that it was important that the consistency of the definition be maintained through all Maine statutes. She added that regarding the review, registration, and submission of the confidential statement of formula, CSF, and affidavits she would like clarification. Woodbury said that she wanted to make sure that actives, inerts, and contaminants were included in the CSF and affidavits. She stated that she knew the CSF was confidential but that the affidavits should be made public information so citizens would know what products contained PFAS. She commented that this could help people regain trust in these products. Woodbury said that she recognized that the resolution specifically called out HDPE containers, but that the Board should use its existing authority to expand upon that to cover storage in any fluorinated container. She urged that the Board require that contaminants be added to the rule because Maine already has PFAS contamination and cleanup will cost millions. Woodbury stated that the Board should make a recommendation to the legislature stating that they supported no use of pesticides containing PFAS or of pesticides stored in HDPE containers. She stated that there was a precedent in federal and state law that allowed the Board to ask for pesticide ingredient information, as well as contaminants. Woodbury reiterated the importance of making the affidavits public.
- Patterson stated that the Board did have the authority in statute to collect active and inert ingredient information. She explained that a CSF is currently collected for all 25b minimum risk pesticides but not for Section 3 products. Patterson clarified that when the rule mentioned collecting a products' CSF that it included both active and inert ingredients.
- Sharon Treat, speaking on behalf of the Institute for Agriculture & Trade Policy, IATP: Treat said that she was also a citizen of Hallowell. She stated that the IATP, based in Minnesota, had been a 501(c)(3) since 1986 and that they work with farmers to back sustainable farming practices. Treat said that she hoped the Board would exercise full authority to protect farms and foods from PFAS, that she appreciated that they would collect inert ingredient information and hoped the Board would also work with other regulatory agencies, like DEP, to get rid of all PFAS sources. She commented that the Board would need to update their policy as new PFAS were discovered and that public disclosure of affidavits should be included in the rule since affidavits were not the formula itself but only whether PFAS was part of the formula. She stated that there was not a law, or anything within FIFRA, to keep the affidavits confidential. Treat said that she would also submit written testimony and that she wanted the Board to make a point to prohibit the registration of pesticides that were found to contain PFAS. Treat said if the affidavits were kept confidential neither farmers, home gardeners nor the public would have the information they needed to avoid PFAS. She suggested that the disclosure to the public should include PFAS contamination during manufacture and that it should also be part of

the affidavit that manufacturers must attest to. Treat said that she agreed with statements made by Woodbury about pesticide containers and that LD 264 specifically mentioned HDPE but there were other plastic containers which were fluorinated and marketed for storage of pesticides. She said that the Board did not need LD 264 to regulate containers and that they should exercise their authority to regulate containers. Treat told the Board that it was important to do this now and not wait for additional legislation.

- Heather Spalding, Deputy Director of MOFGA: Spalding stated that she felt the new rules would help minimize reliance on pesticides and that the legislature initially started out to stop PFAS contamination from aerial spraying, and it morphed into the current resolve language. Spaulding said that the PFAS problem in Maine had been emerging over the past few years and it was a growing issue regarding food in Maine. She added that the PFAS problem was being exacerbated by pesticides that contained PFAS and farmers were losing businesses, land, and health. Spaulding stated that she hoped this rule would help Maine turn off one of the PFAS taps by discovering the extent of PFAS in pesticides. She said that she appreciated that the definition of PFAS proposed by the Board aligned with state law and that the affidavits needed to reference actives, inerts, and contaminants. She stated that the CSF was confidential, but the affidavits should be made public. Spaulding said she appreciated the effort to collect information about whether pesticide storage occurred in HDPE containers but that there were other fluorinated containers that also contained contaminants. She concluded that she looked forward to hearing what the BPC intended to do to stop PFAS contamination in pesticides.

Chapter 41—Two amendments are proposed:

1. Add a new section pertaining to neonicotinoids (dinotefuran, clothianidin, imidacloprid, or thiamethoxam) to restrict registration and prohibit use in outdoor residential landscapes for the purposes of managing pests in turf and ornamental vegetation. Add a clause allowing use for management of invasive invertebrate pests in ornamental vegetation.
2. Add a new section prohibiting the use of chlorpyrifos, except for licensed applicators who obtain a use permit from the Board to apply chlorpyrifos products purchased prior to December 31, 2022.

- Patricia Rupert-Nason said that the chlorpyrifos section looked like a straightforward implementation of the law that was passed and she would like it to stay the same. She added that she had concerns about the proposed neonicotinoid rule. Rupert-Nason stated that there was a crisis in insect populations and diversity and since neonicotinoids were systemic it made them of particular concern and problematic for pollinators because these insecticides ended up in the nectar. Rupert-Nason stated that these specific compounds were especially persistent and could last multiple years in a plant. She said the proposed rule seemed to be much less restrictive than the intent of the law, and that there was an accepted definition for invasive species that generally meant non-native species. Rupert-Nason suggested that it would be more in keeping with the intent of the law to have a specific list of insects included in this exemption and to also include which neonicotinoids were an appropriate treatment. She said that emerald ash borer, EAB, and hemlock wooly adelgid, HWA, were specified in the original legislation and the intent was that these were characteristic species that were worth the trade-off for using neonicotinoids. Rupert-Nason concluded that she wanted the BPC to create a specific list of invasive species and not leave it up to applicators because that was beyond their training.

- Bohlen stated that the Board had concerns about how to recognize when there were new species coming into Maine and how to do that without going through rulemaking every time. He agreed that the language needed work and asked Rupert-Nason's thoughts on how to tighten up the language.
- Rupert-Nason said that it might be a good thing to revisit the rule when new insects emerged, and we should consider if a pest was severe enough to use neonicotinoids and if these chemicals were an effective treatment for the pest. She added that the rule should specify which neonicotinoid could be used for which pest and if there were drawbacks. Rupert-Nason stated that she appreciated the impact of EAB, but that ash was a pollinating tree so it would be worth considering those issues. She said that the Board should target state and federally regulated species and that she would like to see rulemaking undertaken regularly.
- Maine State Representative Nicole Grohowski: Grohowski stated that section six of Chapter 41 was drafted in response to LD 155, which she sponsored. She stated that the legislature recognized that pollinators were in crisis and citizens should not be using these neonicotinoids for cosmetic use. Grohowski told the Board that most of the draft rule language was true to the intent of the resolve, but it deviated in some areas. She said that the approach to handling the invasive pest provision was not what they had intended. She added that they spoke with DACF staff about neonicotinoids that were important for the control of certain invasive species, and they were told neonicotinoids were used for the three insects listed in the resolve. Grohowski said that the purpose of the word 'emerging' meant unknown to us now and emerging at a later date. She said that if they had intended the Board to create a definition they would have said that instead of beginning a list for the Board to build on, and that it was wrong to abdicate the Board's duty in this and put it on applicators. Grohowski said she was not aware of any agency that included native species in their definition of invasives. She added that the resolve used the word 'insect', which was not interchangeable with 'invertebrate'. Grohowski stated that she wanted the Board to reject this proposed section and implement the three invasives listed in the law. She added that the Board could always do emergency rulemaking if something else arose overnight. Grohowski stated that regarding implementation dates, she would like the Board to keep in mind that time was of the essence and they did not need to wait for the products to sell out before implementing the ban. She said that there was a total of 164 products for lawn and ornamental treatment and that reviewing labels takes time, but the Board could start with what they were sure of and implement the ban on those products on April 1, 2022. Grohowski said she would be happy to submit a list that Board staff could double-check and that retailers could then have these products off the shelf in a week. She concluded that she thought there were also technical language issues that could be fixed, but she would submit those issues in writing.
- Anya Fetcher, State Director of Environment Maine: Fetcher stated that thousands of members had spoken up to show their support to pass this bill and she was excited that it had happened. She urged the Board to implement these rules as swiftly as possible. Fetcher stated that this was a very urgent issue and the Board needed to implement this ban before the next growing season. She added that obvious products known to contain one of these neonicotinoids can be found and are out there. Fetcher stated that they would be submitting a list of products that should be taken off the shelf this spring and that this was one real action that could be taken to protect bee populations to ensure backyard gardens and city parks were safe for bees. Regarding the definition for invasive species, Fetcher echoed Grohowski and Rupert-Nason and urged the Board to implement that section in the way the bill initially intended, which was by listing out specific insect pests with the corresponding

neonicotinoid that was effective for their treatment. Fetcher stated that she believed there was rarely a surprise pest found and that they are normally tracked for years. She concluded that she wanted the Board to narrow the scope of the invasive pest list.

- Bohlen stated that the Board was struggling for a way to make management responses to new invasives feasible and said that if they were supposed to create a list they needed ideas on how to pull this together in intelligent ways. He stated that he would love to have ideas on how the Board makes the call on what should be on the list.
- Fetcher responded that she was not an expert, but that neonicotinoids were not necessarily the correct management tool for all invasives and there were alternatives that could be used. She added that the Xerces Society had a lot of information on this topic and the BPC should also look to other states that have implemented similar laws and see what they had done. Fetcher said she was sure there was an initial list out there somewhere and stated that they would submit a suggested list and connect the Board with experts.
- Heather Spalding, Deputy Director of MOFGA; Spalding stated that the chlorpyrifos rule looked good and she was happy that action was being taken, but she was concerned about the invasive definition. She told the Board that she would like the definition to be limited to reflect the intent of the legislature, which was to specify specific emerging pests and specific neonicotinoids that could be used for their treatment. She stated that she was worried about permitting because variances seemed to be regularly approved and she wanted to make sure permitting would not be a fast track to allowing more neonicotinoid use. Spalding stated that the definition of invasive pest should use 'emerging insect pests' rather than 'invertebrate'. She urged the board to act swiftly and said that other states have identified products to come off the shelves and this did not have to be perfect at first but there were products that needed to come out of homeowners' hands immediately. She stated that she was worried about the declining population of insects and MOFGA felt that broader action should be taken but this was an important first step that should be acted on right away. She thanked everyone for the huge effort put into this and said that she hoped that Maine continued to lead on these pesticide policies.
- Jesse O'Brien, on the IPM council for DACF, works with several golf and landscape associations, and on the Portland and South Portland committees where these pesticides have been banned. He stated that he was here speaking on behalf of himself today. O'Brien stated that he would be the first to come to the Board when there was an organic product that really worked well for white grub complexes. O'Brien explained that white grubs were a destructive insect for turf, not just their eating, but also because other animals come in and dig up the lawn to eat the grubs. He said he was thinking of the golf courses that he deals with and he saw this as taking away the chemistries available for use and only leaving them to rely on a few, which was concerning. O'Brien stated that he had thought these products would be made restricted use and not absolutely banned. He suggested that perhaps these products could be made limited use and a person could petition the Board with reasons why the use was necessary. O'Brien said that in South Portland and in Portland a couple of waivers have had to be issued for use of neonicotinoids on athletic fields.

3. <u>Minutes of the November 19, 2021 Board Meeting</u>

Presentation By: Megan Patterson, Director

Action Needed: Amend and/or approve

- **Jemison/Bohlen: Moved and seconded to accept minutes as amended**
- **In Favor: Unanimous**

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

Since 1995 the Board has supported the Migrant and Seasonal Farmworker Safety Education program. The Maine Mobile Health Program (MMHP) and the Eastern Maine Development Corporation (EMDC) provided training to 128 farmworkers during the 2021 season. Funding to support the effort in 2022 is being requested in the amount of $6,432, which is the same funding amount provided by the Board in 2021. The funding has been accounted for in the Board's FY22 budget.

Presentation By: Elizabeth Charles McGough, Director of Outreach and Deputy Director, Maine Mobile Health

Chris Huh, Program Manager, Farmworkers Jobs Program, Eastern Maine Development Corporation

Action Needed: Discussion and determination if the Board wishes to fund this request

- Elizabeth Charles McGough, Director of Outreach and Deputy Director, Maine Mobile Health, MMH, told the Board that the request would come directly from MMH this year.
- Charles McGough told the board that MMH services were again impacted in 2021 by COVID and there were limited numbers because of growers limiting exposure to large groups of their employees. Numbers continue to be below usual attendance but MMH did accommodate every request for education throughout the entire state. Charles McGough stated that MMH had re-hired a previous trainer and hired a second part-time person that speaks English, Spanish and Haitian Creole. They were also able to provide a curriculum to Haitian farmworkers in their native language for the first time last year. She stated that their request for support was in the same amount and they hoped that the Board would continue to assist.
- Morrill mentioned a former Board member's dedication to and interest in the work of the MMH Program.

    - **Morrill/Jemison: Moved and seconded to fund this request**
    - **In Favor: Unanimous**

5. Medical Advisory Committee Interim Report on Herbicide Use at Schools and Human Health

At the July 16, 2021, meeting, the Board reviewed pesticide-related bills enacted by the Maine Legislature. LD 519—An Act to Protect Children from Exposure to Toxic Chemicals, directed the Board to convene the Medical Advisory Committee (MAC) to assess the human health impacts of herbicide use on school grounds. At the same meeting, the Board agreed that the MAC should take up the LD 519 directive to evaluate the potential impact of herbicides used on school grounds on human health. Following three meetings of the MAC, staff have prepared an interim report incorporating commentary from MAC members. This report has been reviewed by MAC members and includes recommended next steps approved by MAC members. Staff will provide an overview of the report for Board consideration, discussion, and approval/disapproval. LD 519 required submission of a report by February 1, 2022.

Presentation By:	Megan Patterson, Director Dr. Pam Bryer, Toxicologist
Action Needed:	Approve/disapprove submission of the interim report to the Maine Legislature Agriculture, Conservation and Forestry Committee

- Patterson stated that LD 519 directed the Board to convene the MAC and staff needed Board approval or disapproval of the report that was requested to be submitted by February 1, 2022. She stated that the MAC met three times before voting for a number of final recommendations for inclusion in the report, which included reviewing existing rules and ensuring that IPM is mandatory. Patterson pointed out that after a review of the current rule it was determined that IPM was already required. She added that it was still important that all schools understand IPM is a requirement. Patterson stated other recommendations from the MAC included reviewing specific chemicals in a risk assessment and evaluating herbicide use for legality since a few products submitted with use records were not labeled for use on school grounds. She stated that this last point would require additional education for the school IPM coordinators. The MAC also voted unanimously to recommend that staff survey other states about pesticide use on school grounds and voted unanimously to submit an interim report to the legislature in order to allow time for completion of a risk assessment.

    - **Flewelling/Jemison: Moved and seconded approval of the interim report to the Maine Legislature Agriculture, Conservation and Forestry Committee**

- Waterman stated that he chaired the MAC and had to lodge a dissent from the conclusion that this topic needed more study. He thanked MAC members and all of those that worked to gather and compile the information they had but thought the process was overshooting the mark assigned to the MAC. Waterman stated that the MAC was assigned to ‘evaluate underlying and potential effects on human health’ and that the legislature had already banned glyphosate and dicamba on school grounds. He said that his first concern was that there was a definite detrimental effect of spraying herbicides on school grounds, and his second concern was that they were overlooking the tenet of ‘think first spray last’. Waterman stated that he believed there were no good reasons to spray on school grounds and that the reasoning behind the use of herbicide application to reduce injury on sports fields was not compelling. He said that his advice would be to

send a much briefer report to the legislature emphasizing the points he made and would vote against sending this report on.

- Bohlen asked if there was any mention of dissent in the report.
- Patterson stated that the minutes were included in the report, except for the December minutes, which had not yet been approved by the MAC members as they had not met again, but these minutes would be provided to the ACF Committee. She added that the report tried to focus on unanimous, consensus recommendations as is typical for MAC reports.
- Lebelle, Hicks, MAC member, told the Board that she was impressed with the way the report came together but would like to add a section of things left to be done to evaluate risk and which were the less risky herbicides labeled for use on school grounds.
- Bohlen and Jemison stated that they had not read the report and were not in a position to vote and would abstain.
- Flewelling commented that the report was well written and thanked staff for all of the work that was put into writing it.
- Morrill thanked staff for their work and said that the report was very well written.
- The Board voted on the motion to submit the interim report to the Maine Legislature Agriculture, Conservation and Forestry Committee.

    - **In Favor: Adams Flewelling, Granger, Morrill**
    - **Against: Waterman**
    - **Abstained: Bohlen, Jemison**

6. Other Old and New Business

a. LD 264 Final Report

b. LD 524 Final Report

c. Executive Order 41 FY 20/21 Listening Session and Final Report

d. Staff Update on the Contract for Testing Center Exam Administration

- Patterson said that staff would be moving from offering exams solely in the Augusta office to contracting with a company to administer exams throughout the state five days a week and some nights and weekends.
- Pietroski thanked Randlett, Patterson, and the commissioner's office for all of the help with the exam contract. He added that exams will be offered in six locations throughout the state.

e. CropLife Article on First U.S. T-30 Drone Approval Granted

f. Organization for Economic Co-operation and Development Literature Review on Unmanned Aerial Spray Systems in Agriculture

7. Schedule of Future Meetings

February 18, 2022, and April 1, 2022, are tentative Board meeting dates. The Board will decide whether to change and/or add dates.

8. Adjourn

- **Morrill/Jemison: Moved and seconded to adjourn at 11:40 AM**
- **In Favor: Unanimous**

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
PLANT HEALTH PROGRAM
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

To: Board of Pesticides Control
From: Hillary Peterson, Integrated Pest Management Specialist
Re: Request for Funding
Date: February 18, 2022

The Department of Agriculture, Conservation and Forestry (DACF) based in Augusta, Maine and the Maine Medical Center Research Institute (MMCRI) based in Portland, Maine are two of the major mosquito surveillance agencies in Maine. Adult and larval mosquito surveillance data from all over the state has been collected for almost twenty years. Mosquito surveillance is important for early detection of vector borne diseases such as Eastern equine encephalitis, West Nile virus, Jamestown Canyon virus, and more. The DACF IPM Program monitors mosquitos at approximately six sites per summer (early July through the end of September) in Kennebec and Waldo counties, including in Farmingdale, Augusta, Palermo, and Unity Twp. Mosquitoes are collected, sorted, identified and submitted for disease testing at State of Maine Health and Environmental Testing Laboratory (HETL) weekly, and data is entered into a secure database online for further analysis. In 2015, a mapping project was initiated by the Department of Agriculture, Conservation and Forestry to optimize the efficiency and effectiveness of surveillance of *Culiseta melanura*, the primary vector of Eastern equine encephalitis (EEE). In 2019, the habitat map was revised to include new site coordinates and updated geospatial data.

The Integrated Pest Management Program is requesting funds to assist with ongoing efforts for mosquito surveillance and identification, and continued outreach around vector-borne diseases. Assistant will be available to perform additional tasks for BPC if mosquito activity is low due to weather or other unforeseen factors. The temporary hire will also be involved with a funded grant for biological control of Swallowwort, providing early-season funds towards the position.

The IPM program is requesting a total budget of $11,182.00 for the 2022 program. Please see the following page for a breakdown of costs.

GARY FISH, STATE HORTICULTURIST
90 BLOSSOM LANE, DEERING BUILDING

PHONE: (207) 287-7545
WEB: WWW.MAINE.GOV/HORT

Budget Request:

Item	Rate / hr	Salary plus temp staffing fee	Hours / Week	# Weeks	Total Hours	Total $
Summer field and lab assistant	$15.00	$18.57	40	14	560	$ 10,399.20
Item	**Cost / mile**	**Distance (miles)**	**# Trips**	**Total Miles**		
Mileage	$0.45	145	12	1740		$ 783.00
					Total	**$ 11,182.20**

Breakdown of Summer Temp Position:

Project Responsibility	Hours / Week	Start Date	End Date	# Weeks	Pay / Hr	Temp Fee / Hr	Total Pay / Hr	Total Budget for Position	State of Funding
Swallowwort	40	5/9/2022	6/19/2022	6	$15.00	$3.57	$18.57	$4,456.80	Available from Grant
Mosquito (occasional Swallowwort)	20	6/20/2022	9/23/2022	14	$15.00	$3.57	$18.57	$5,199.60	Need to request from BPC
BPC Staffing Work	20	6/20/2022	9/23/2022	14	$15.00	$3.57	$18.57	$5,199.60	Need to request from BPC

Sincerely,

Hillary Peterson,
IPM Entomologist
Maine Department of Agriculture, Conservation and Forestry

2021 Mosquito Monitoring Report

Results of Mosquito Trapping Conducted in the Field Season of 2021

State of Maine
Department of Agriculture, Conservation, and Forestry
Division of Animal and Plant Health IPM Program

Results of Mosquito Monitoring Conducted by Maine Department of Agriculture, Conservation and Forestry IPM Program - 2021

Two types of traps were used. At each site, 10 resting boxes (RB) and/or one CO2-baited CDC mini light trap (LT) were deployed. Traps were deployed at 6 sites:

Site Name	Town	County	State	Trap Type
Jamie's Pond	Farmingdale	Kennebec	Maine	RB
Viles Arboretum	Augusta	Kennebec	Maine	RB + LT
Garcelon WMA	Augusta	Kennebec	Maine	RB + LT
Iron Ore Point	Palermo	Waldo	Maine	RB
Beech Pond	Palermo	Waldo	Maine	RB
Unity Plantation	Unity Twp	Waldo	Maine	RB

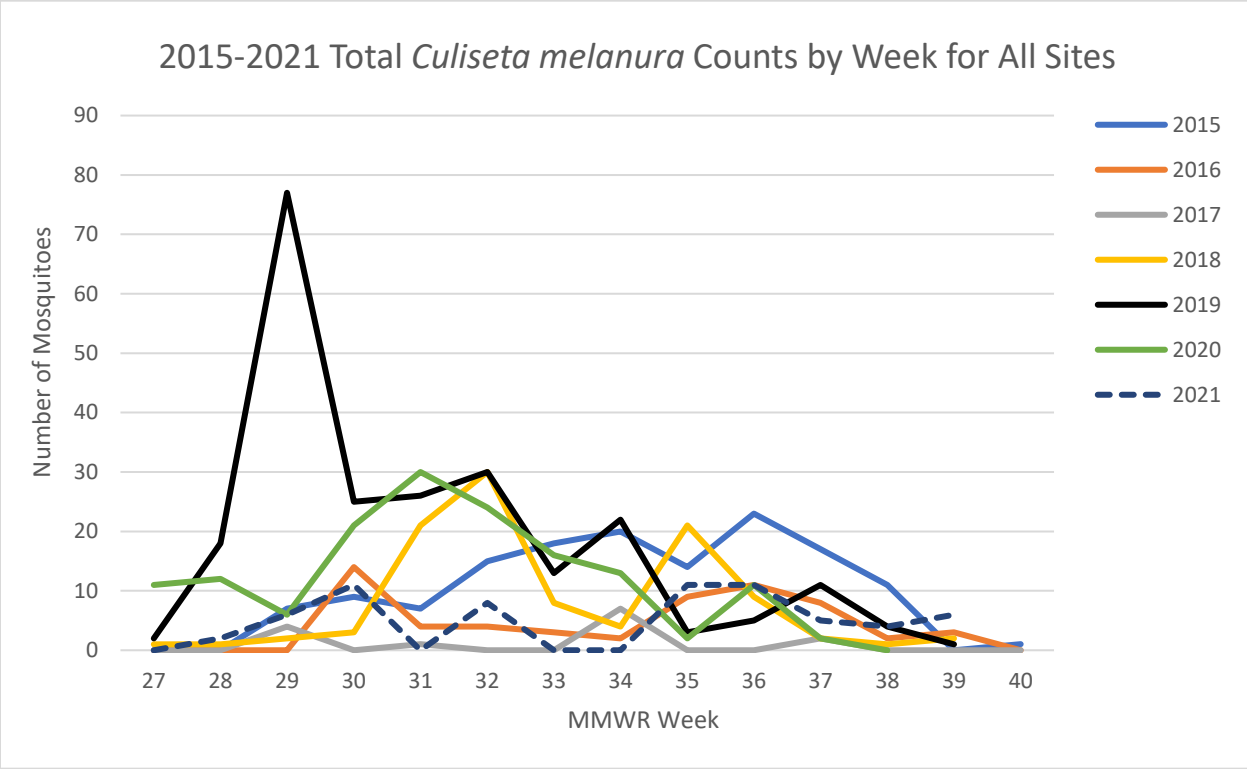
- Mosquitoes were collected, sorted, identified and submitted for disease testing at State of Maine Health and Environmental Testing Laboratory (HETL) weekly from 7/06/21 through 9/30/21. None of the samples were found to be positive for West Nile Virus, Eastern equine encephalitis (EEE) virus or Zika virus in 2021.

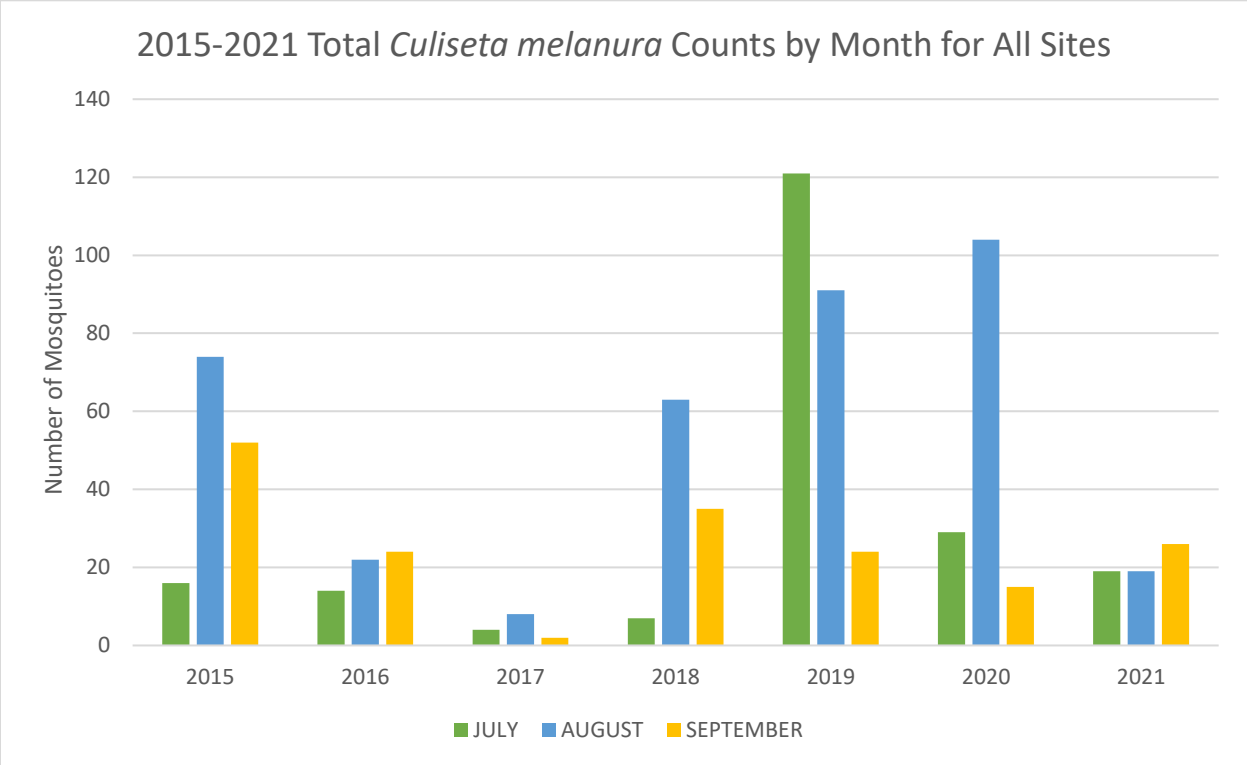
- Labor: summer temporary staff member (Autumn St.Pierre): 15 weeks (@ $15.00/hr) to deploy traps and service sites weekly for the entire season.

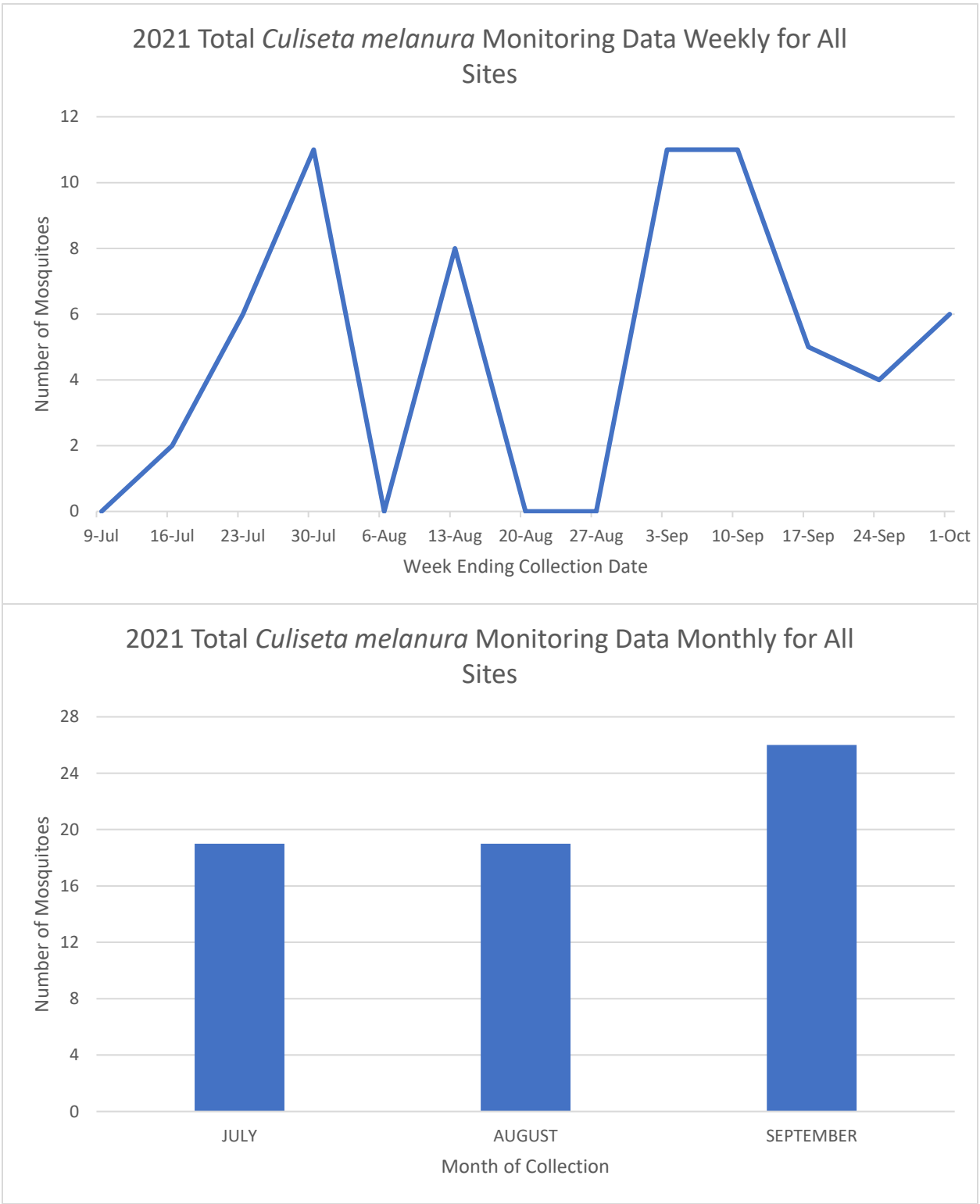
- Resting boxes are used to collect primarily *Culiseta spp*. mosquitoes, which are important vectors of EEE. The *Culiseta spp*. were found at five of the six sites we monitored with the highest numbers at two of the six sites. The numbers of *Culiseta spp*. collected at each weekly visit from July 1st through Sept 30th, 2021, from the 10 resting boxes deployed at each of these sites are shown below.

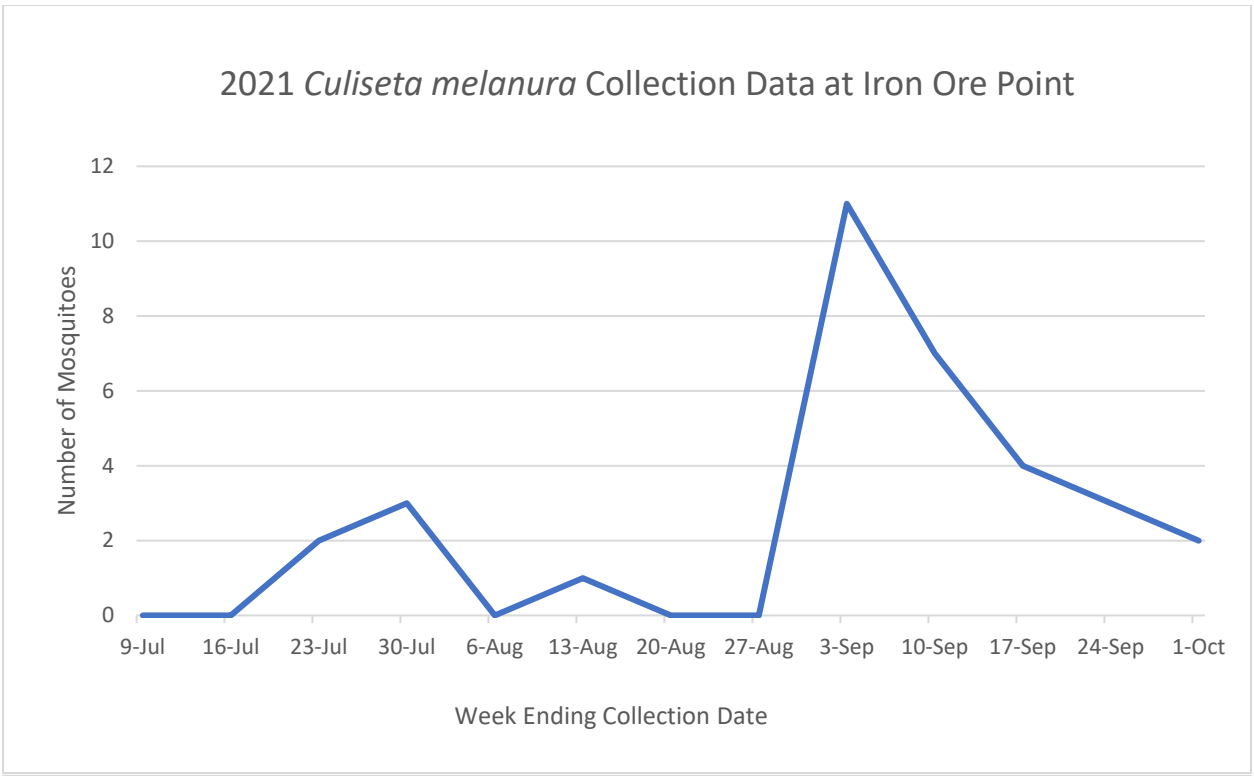
- The total number of mosquito species per site collected at each weekly visit from July 1st through Sept 30th, 2021, from the 10 resting boxes deployed at each of these sites, and the 2 light traps at two of the sites, are shown below. The light traps were deployed at two of the sites from Aug 10th to Sep 30th.

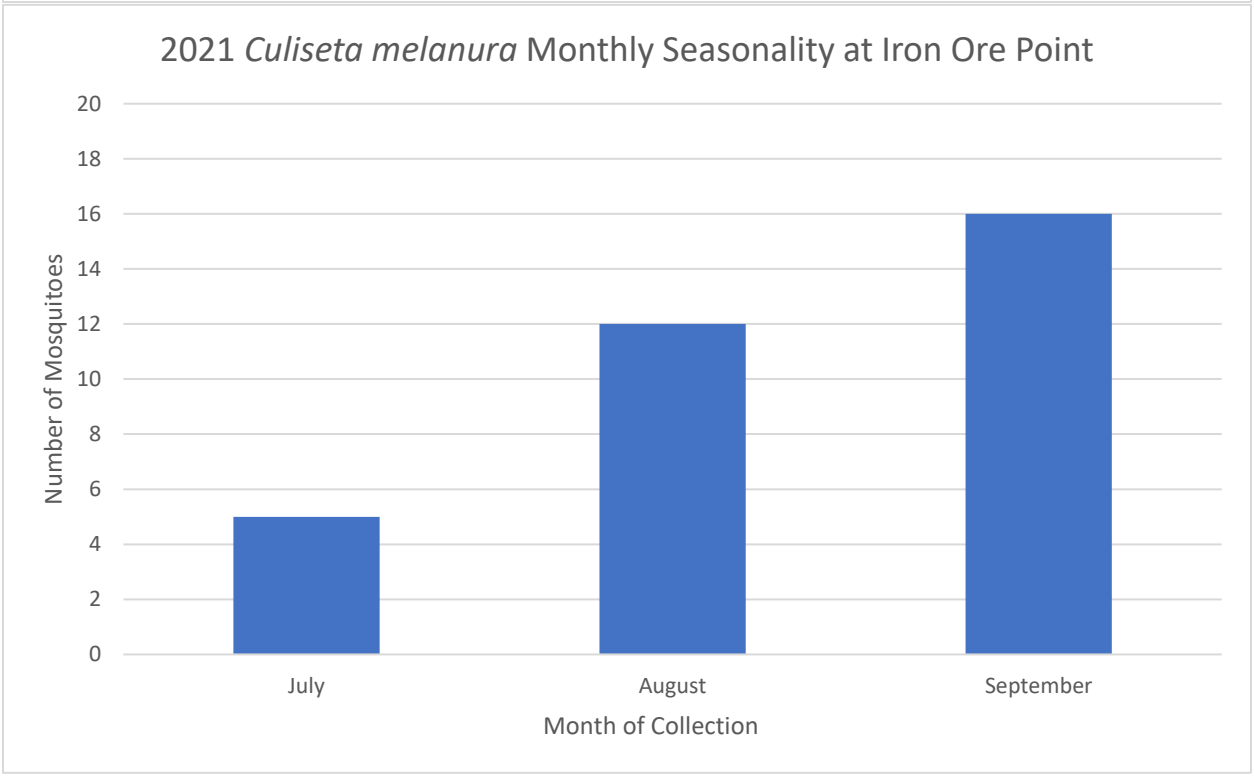
- Please note the absence of data for MMWR weeks 32, 34, and 35. There were unforeseen circumstances where no one was available, and the data was not able to be collected from sites those weeks.

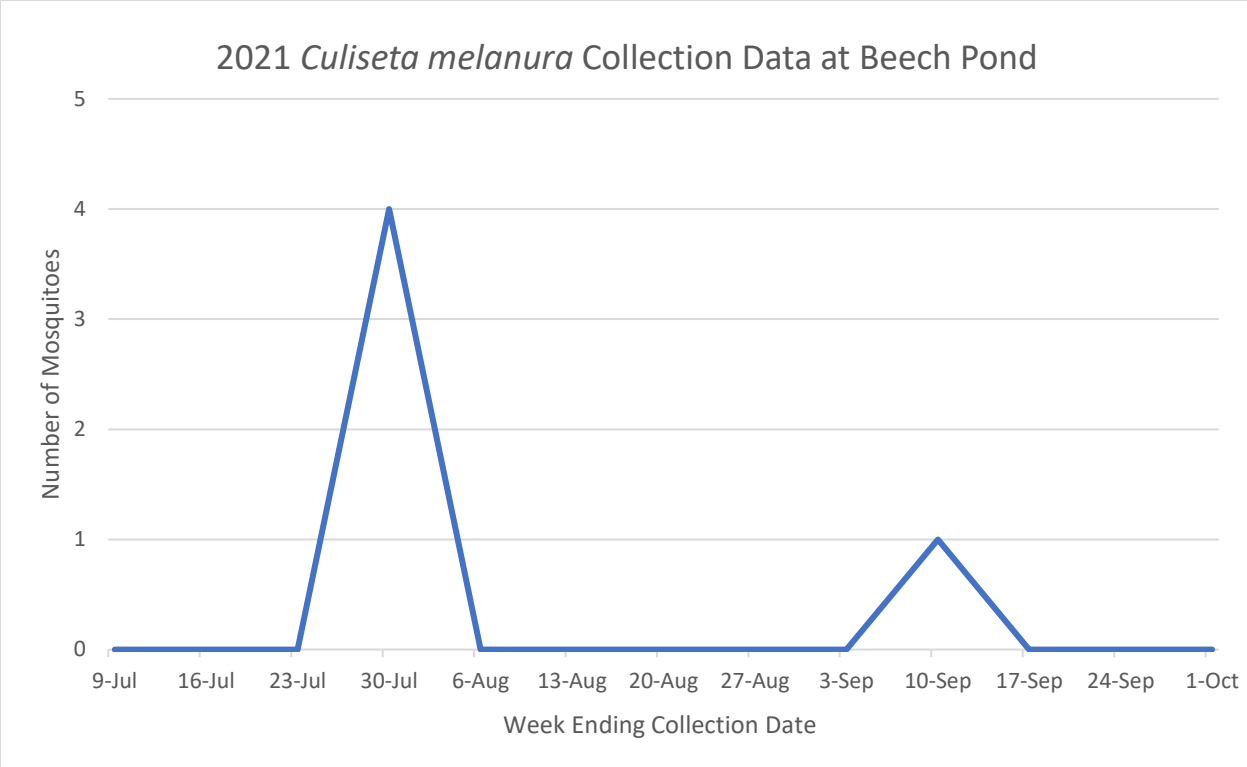

2015-2021 Total Culiseta melanura Counts by Week for All Sites
Number of Mosquitoes
MMWR Week
2015
2016
2017
2018
2019
2020
2021

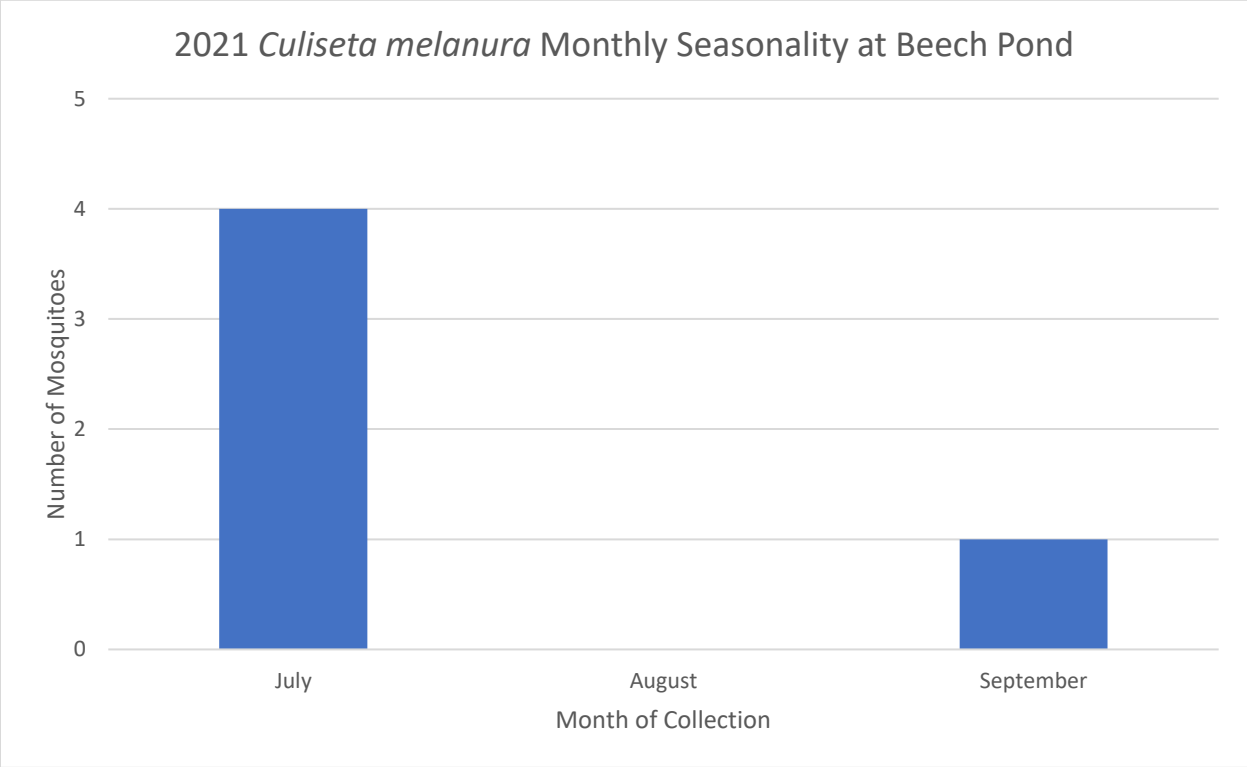

2015-2021 Total Culiseta melanura Counts by Month for All Sites
Number of Mosquitoes
JULY
AUGUST
SEPTEMBER

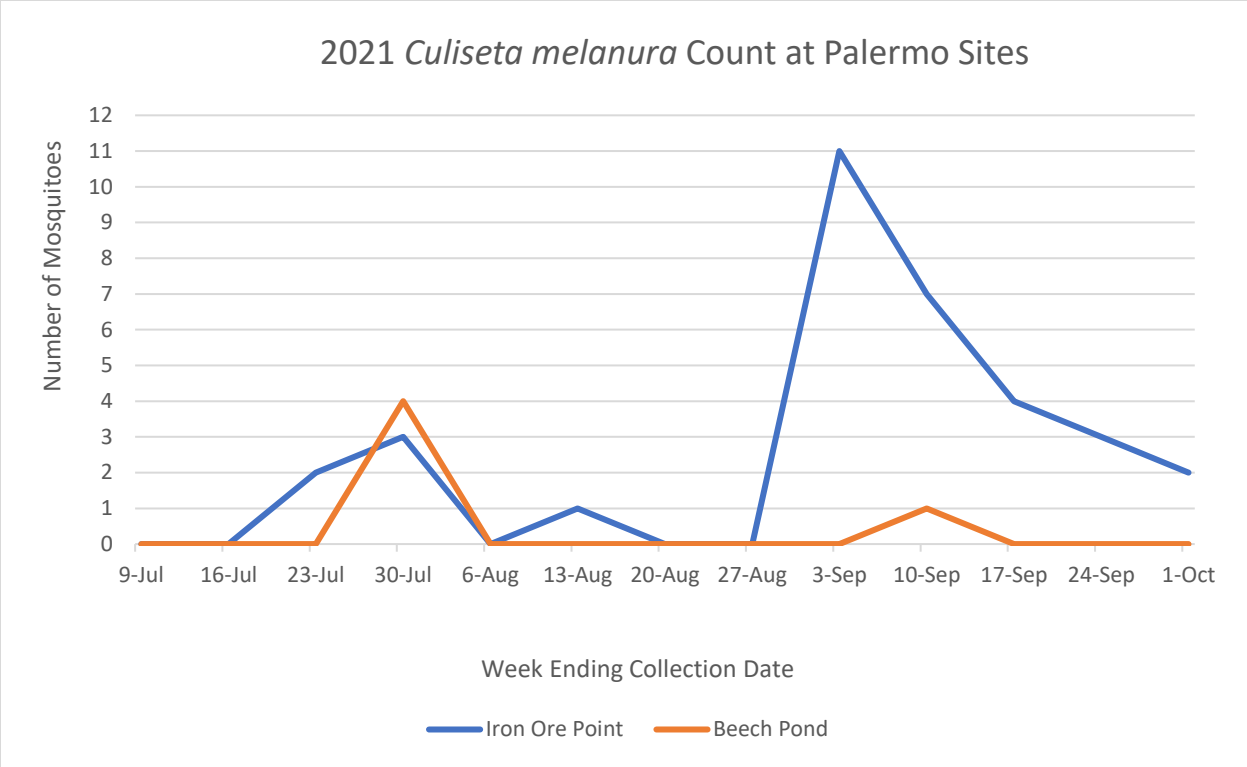

2021 Total *Culiseta melanura* Monitoring Data Weekly for All Sites
Number of Mosquitoes
0
2
4
6
8
10
12
9-Jul
16-Jul
23-Jul
30-Jul
6-Aug
13-Aug
20-Aug
27-Aug
3-Sep
10-Sep
17-Sep
24-Sep
1-Oct
Week Ending Collection Date
2021 Total *Culiseta melanura* Monitoring Data Monthly for All Sites
Number of Mosquitoes
0
4
8
12
16
20
24
28
JULY
AUGUST
SEPTEMBER
Month of Collection

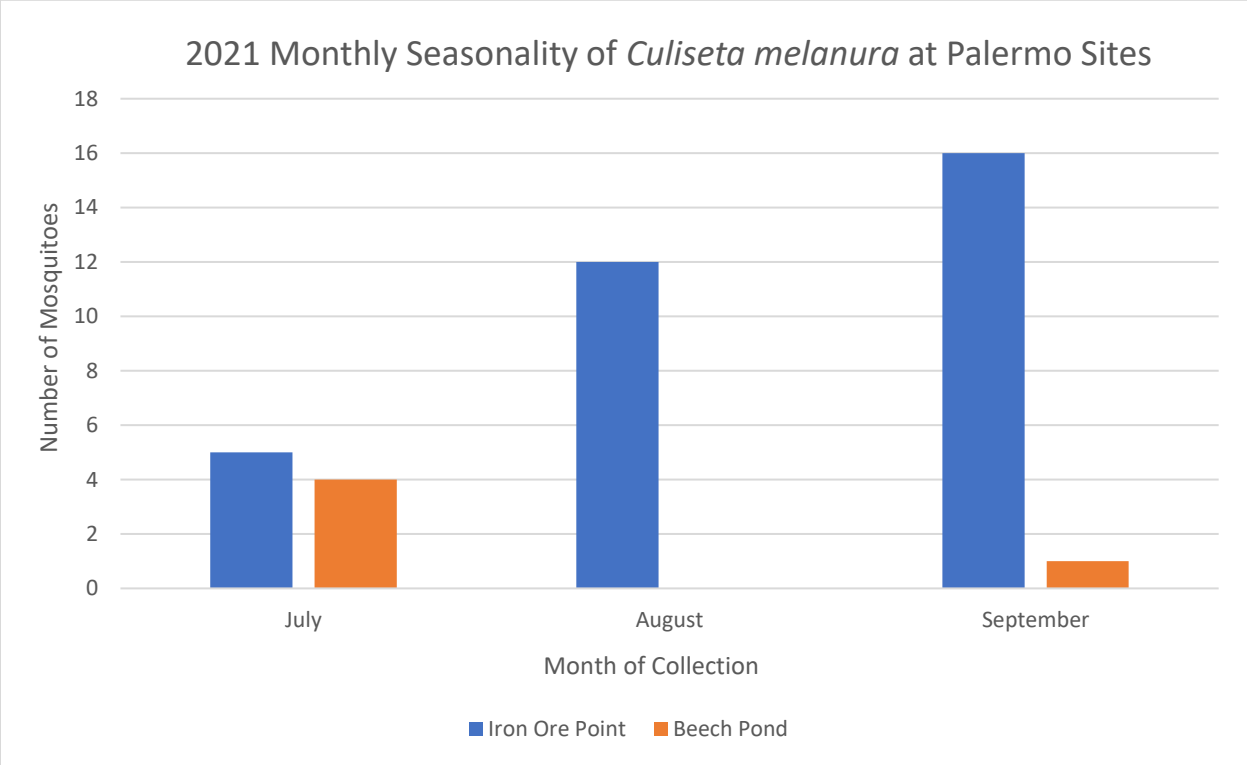

2021 *Culiseta melanura* Collection Data at Iron Ore Point
Number of Mosquitoes
0
2
4
6
8
10
12
9-Jul
16-Jul
23-Jul
30-Jul
6-Aug
13-Aug
20-Aug
27-Aug
3-Sep
10-Sep
17-Sep
24-Sep
1-Oct
Week Ending Collection Date

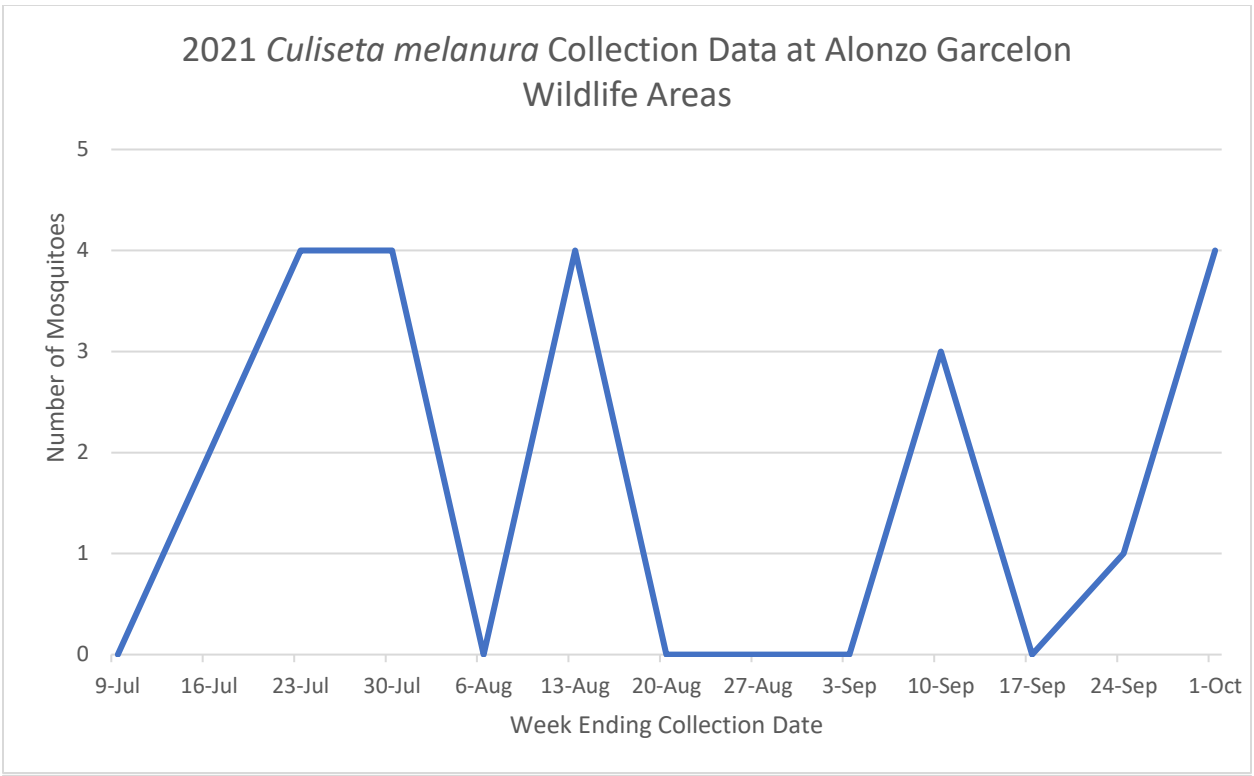

2021 *Culiseta melanura* Monthly Seasonality at Iron Ore Point
Number of Mosquitoes
0
2
4
6
8
10
12
14
16
18
20
July
August
September
Month of Collection

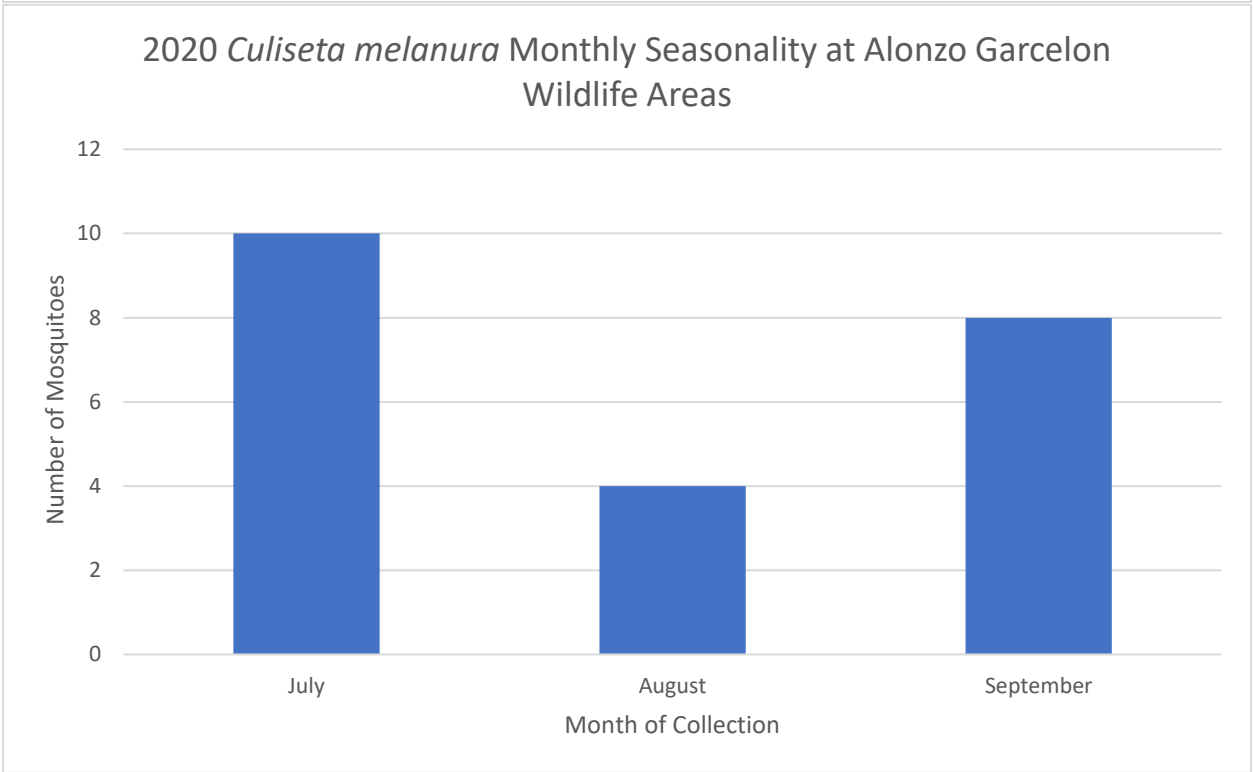

2021 *Culiseta melanura* Collection Data at Beech Pond
Number of Mosquitoes
0
1
2
3
4
5
9-Jul
16-Jul
23-Jul
30-Jul
6-Aug
13-Aug
20-Aug
27-Aug
3-Sep
10-Sep
17-Sep
24-Sep
1-Oct
Week Ending Collection Date

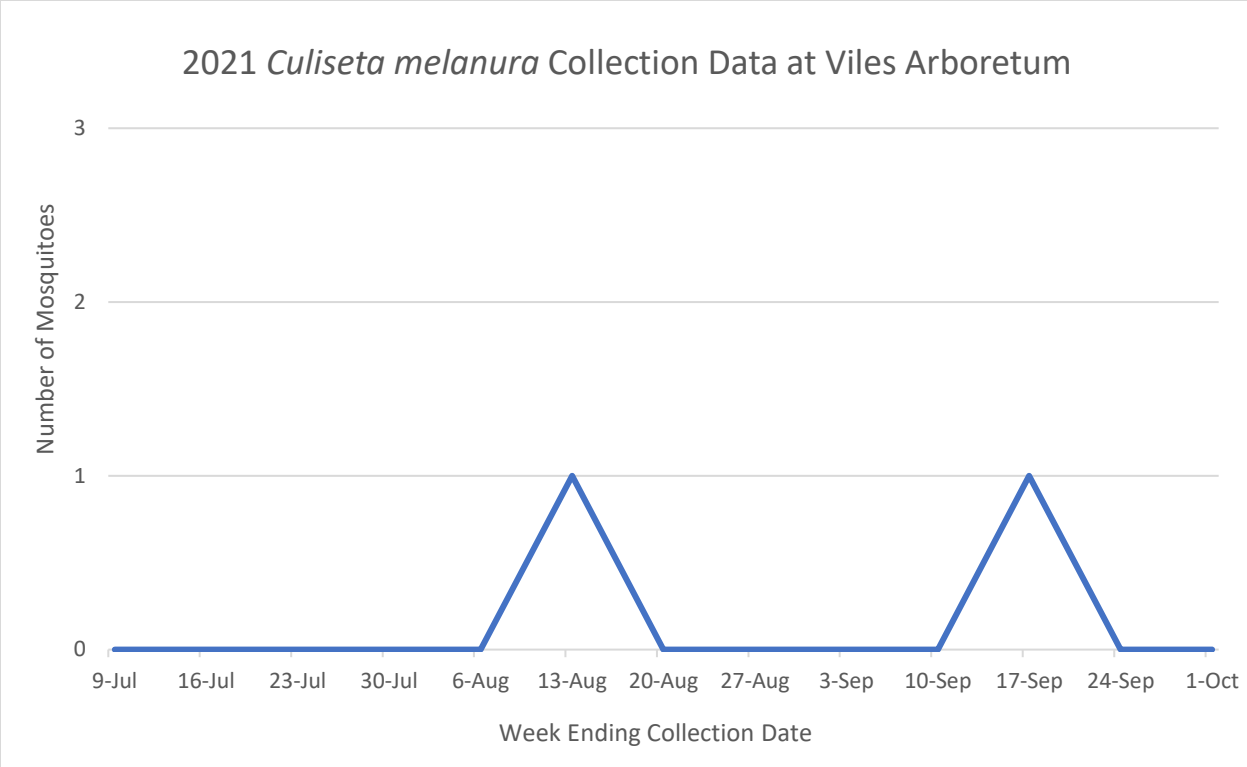

2021 *Culiseta melanura* Monthly Seasonality at Beech Pond
Number of Mosquitoes
0
1
2
3
4
5
July
August
September
Month of Collection

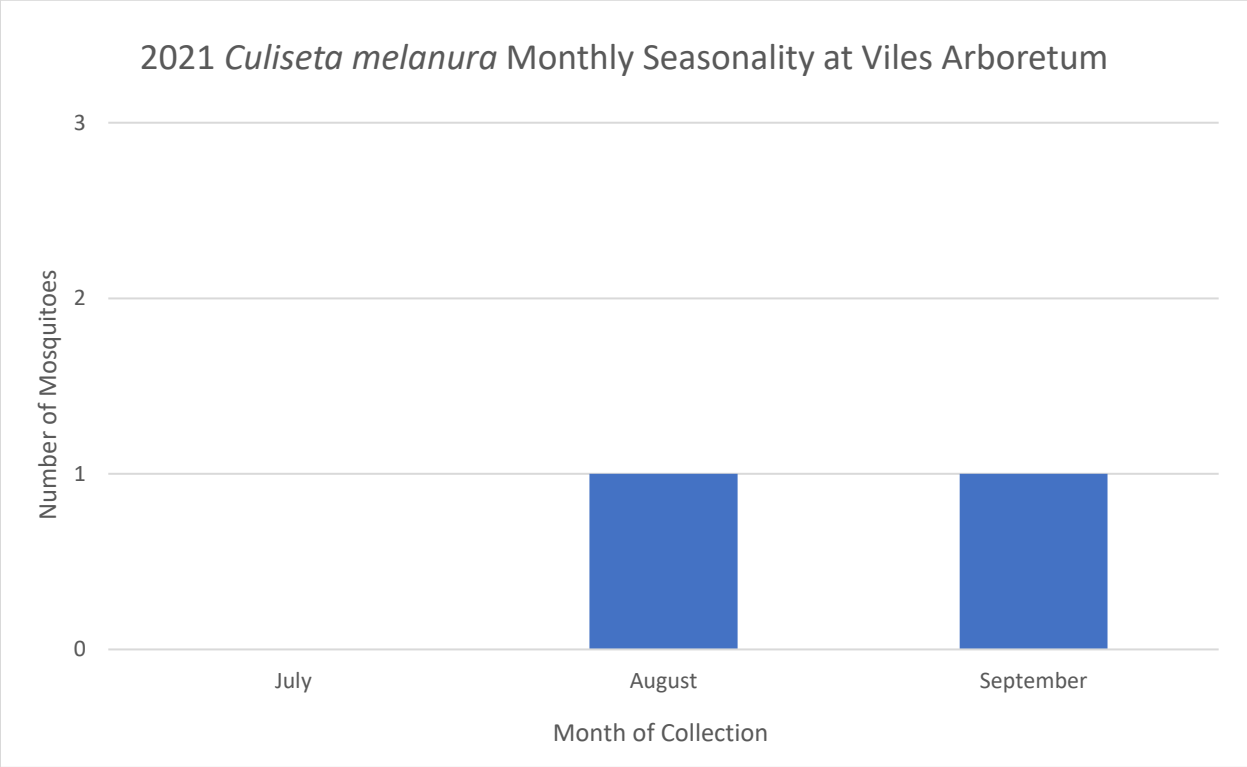

2021 *Culiseta melanura* Count at Palermo Sites
Number of Mosquitoes
12
11
10
9
8
7
6
5
4
3
2
1
0
9-Jul
16-Jul
23-Jul
30-Jul
6-Aug
13-Aug
20-Aug
27-Aug
3-Sep
10-Sep
17-Sep
24-Sep
1-Oct
Week Ending Collection Date
Iron Ore Point
Beech Pond

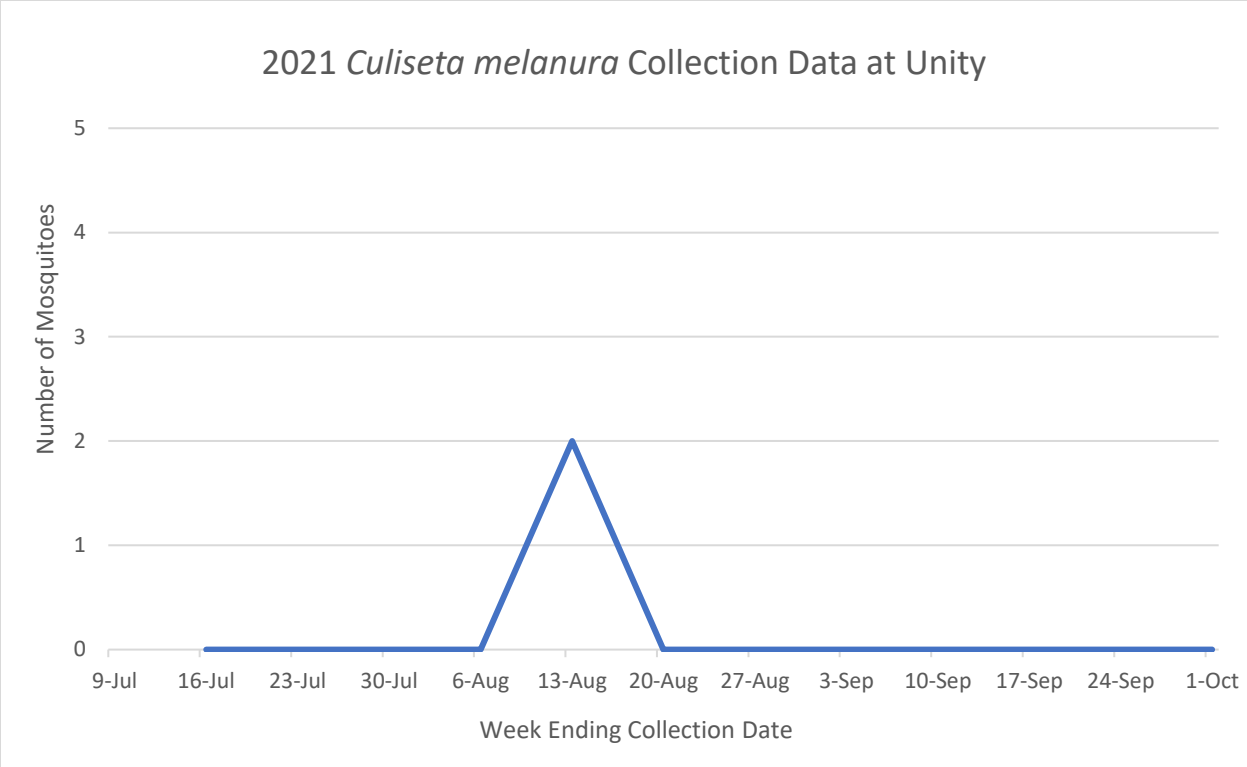

2021 Monthly Seasonality of *Culiseta melanura* at Palermo Sites
Number of Mosquitoes
18
16
14
12
10
8
6
4
2
0
July
August
September
Month of Collection
Iron Ore Point
Beech Pond

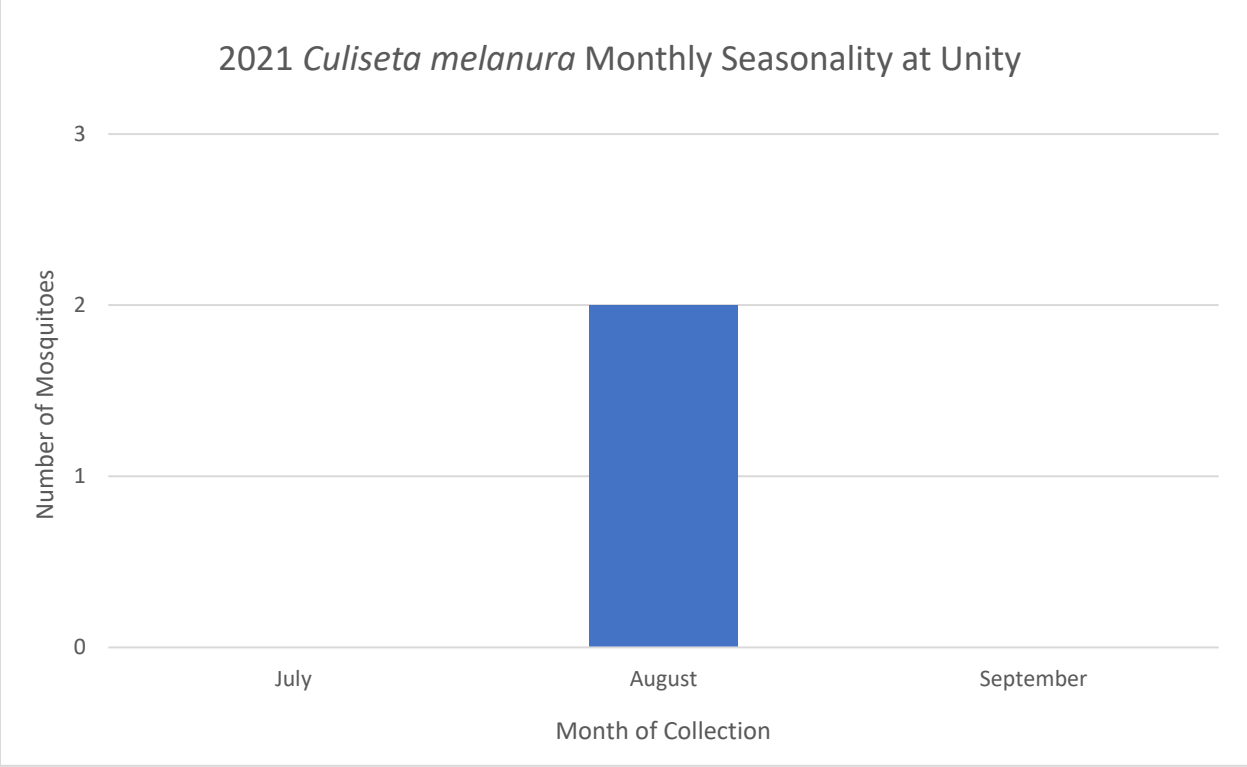

2021 *Culiseta melanura* Collection Data at Alonzo Garcelon Wildlife Areas
Number of Mosquitoes
0
1
2
3
4
5
9-Jul
16-Jul
23-Jul
30-Jul
6-Aug
13-Aug
20-Aug
27-Aug
3-Sep
10-Sep
17-Sep
24-Sep
1-Oct
Week Ending Collection Date

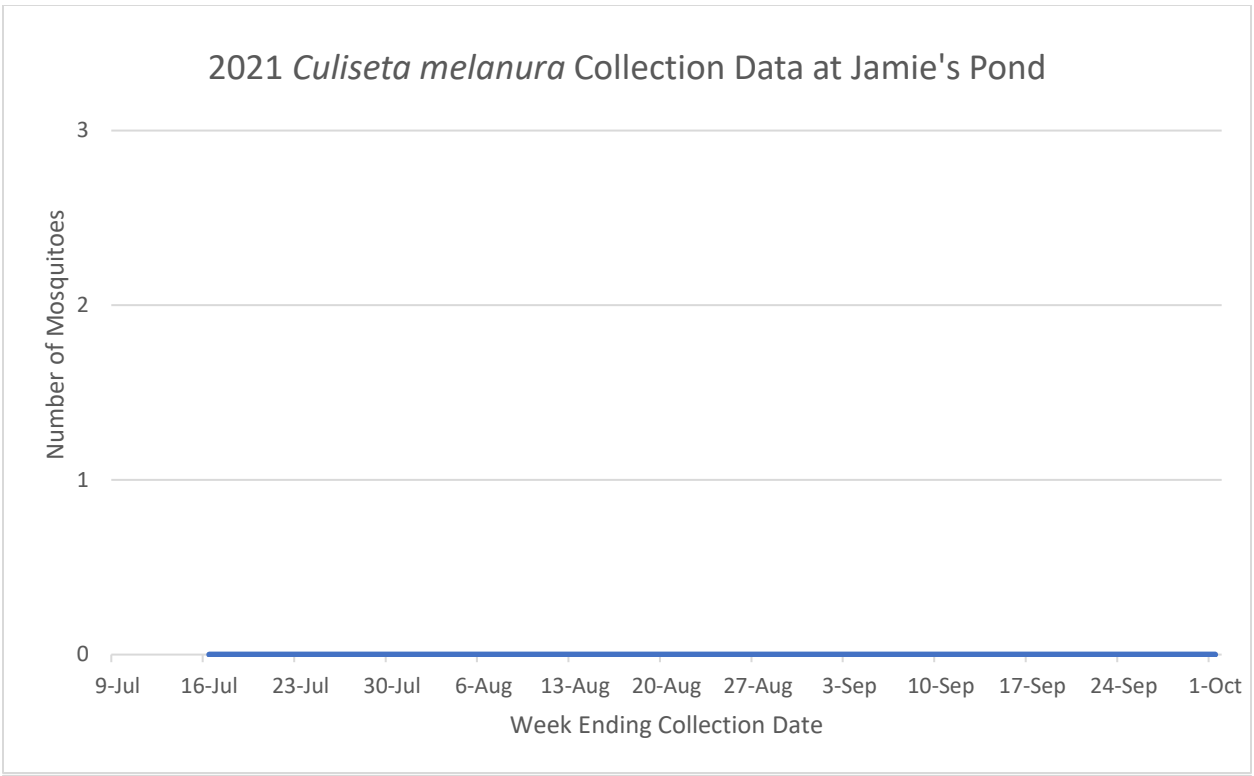

2020 *Culiseta melanura* Monthly Seasonality at Alonzo Garcelon Wildlife Areas
Number of Mosquitoes
0
2
4
6
8
10
12
July
August
September
Month of Collection

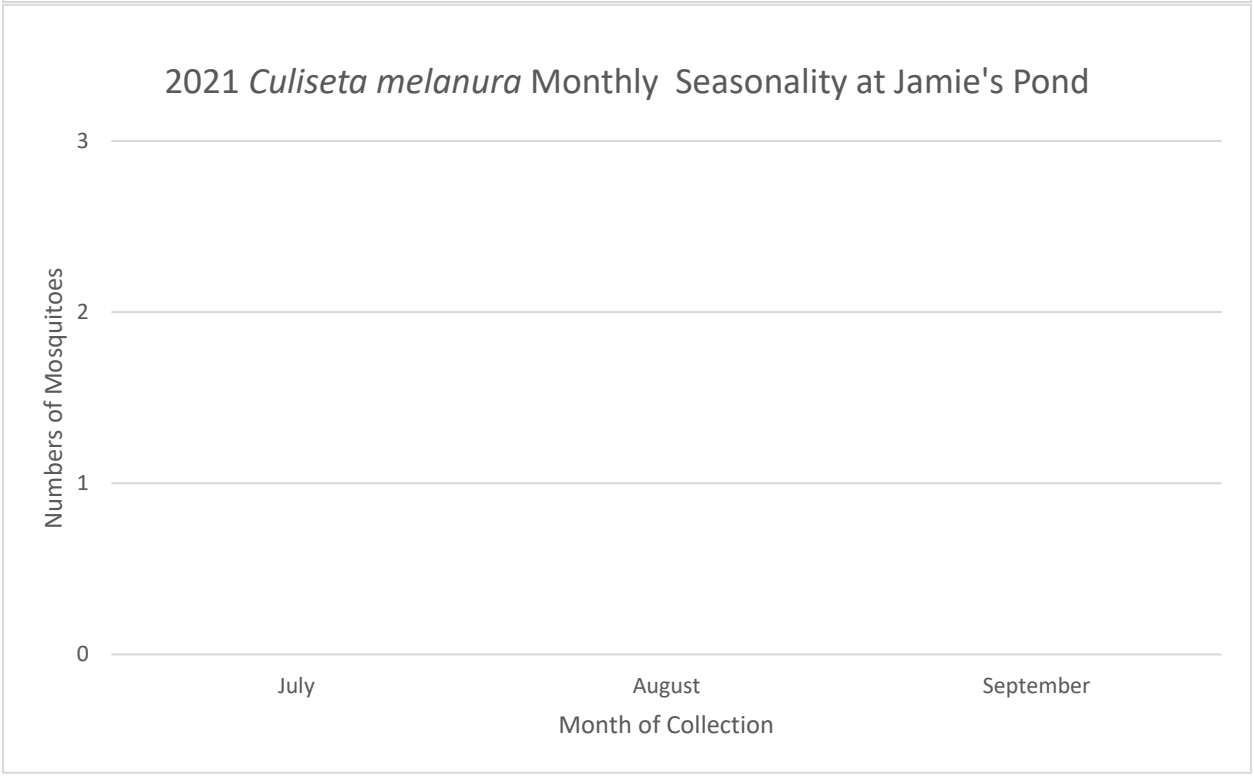

2021 *Culiseta melanura* Collection Data at Viles Arboretum
Number of Mosquitoes
3
2
1
0
9-Jul
16-Jul
23-Jul
30-Jul
6-Aug
13-Aug
20-Aug
27-Aug
3-Sep
10-Sep
17-Sep
24-Sep
1-Oct
Week Ending Collection Date

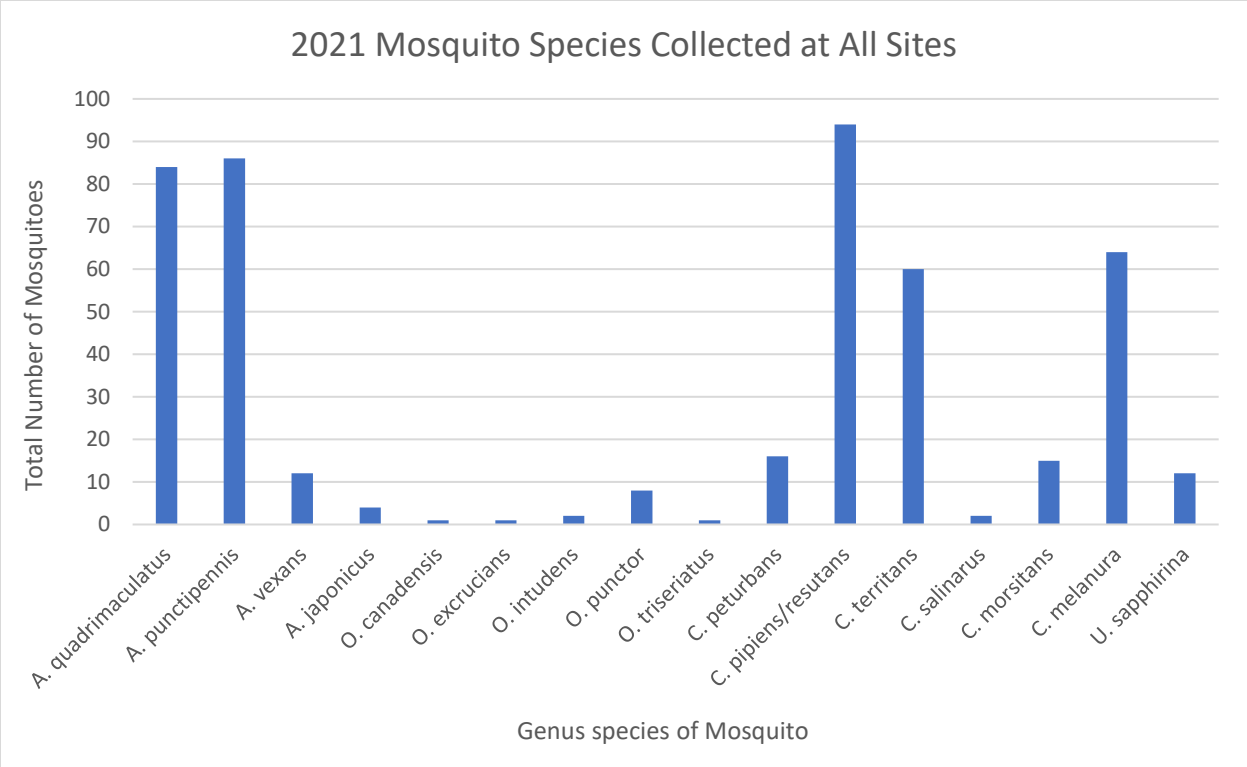

2021 *Culiseta melanura* Monthly Seasonality at Viles Arboretum
Number of Mosquitoes
3
2
1
0
July
August
September
Month of Collection

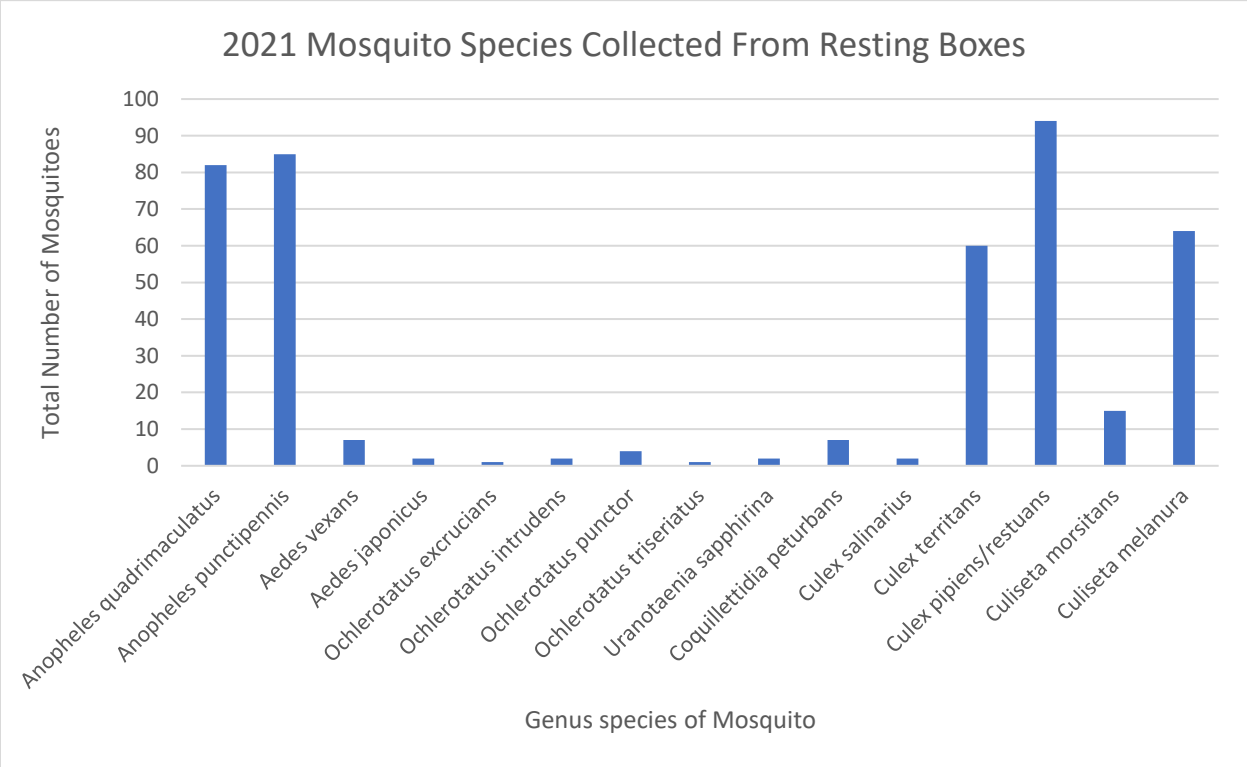

2021 *Culiseta melanura* Collection Data at Unity
Number of Mosquitoes
5
4
3
2
1
0
9-Jul
16-Jul
23-Jul
30-Jul
6-Aug
13-Aug
20-Aug
27-Aug
3-Sep
10-Sep
17-Sep
24-Sep
1-Oct
Week Ending Collection Date

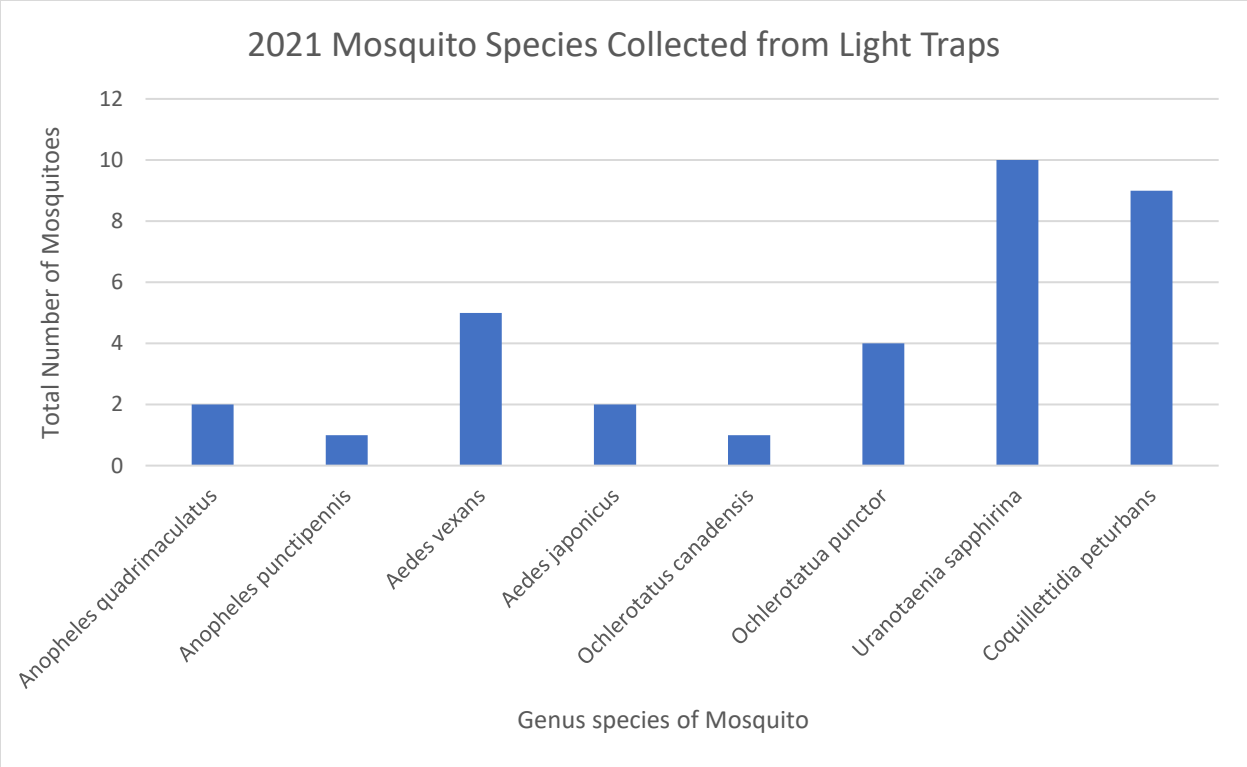

2021 *Culiseta melanura* Monthly Seasonality at Unity
Number of Mosquitoes
3
2
1
0
July
August
September
Month of Collection

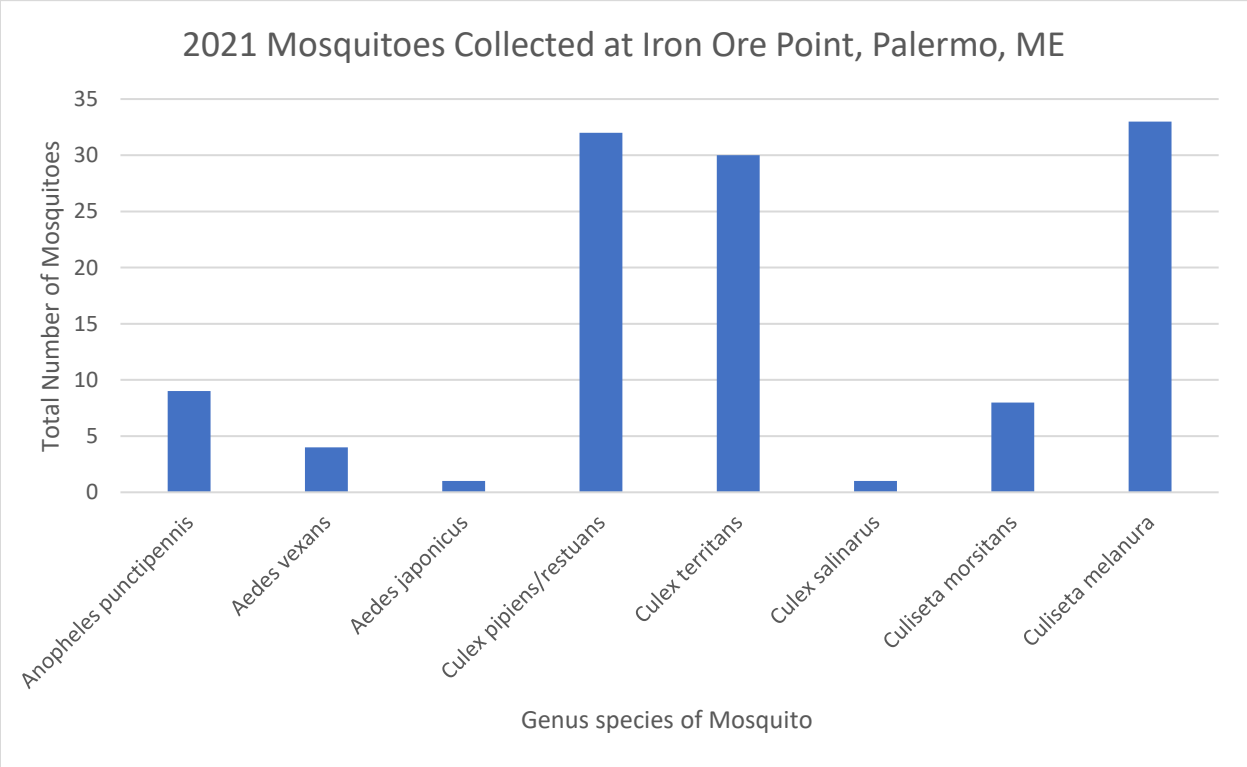

2021 *Culiseta melanura* Collection Data at Jamie's Pond
Number of Mosquitoes
3
2
1
0
9-Jul
16-Jul
23-Jul
30-Jul
6-Aug
13-Aug
20-Aug
27-Aug
3-Sep
10-Sep
17-Sep
24-Sep
1-Oct
Week Ending Collection Date

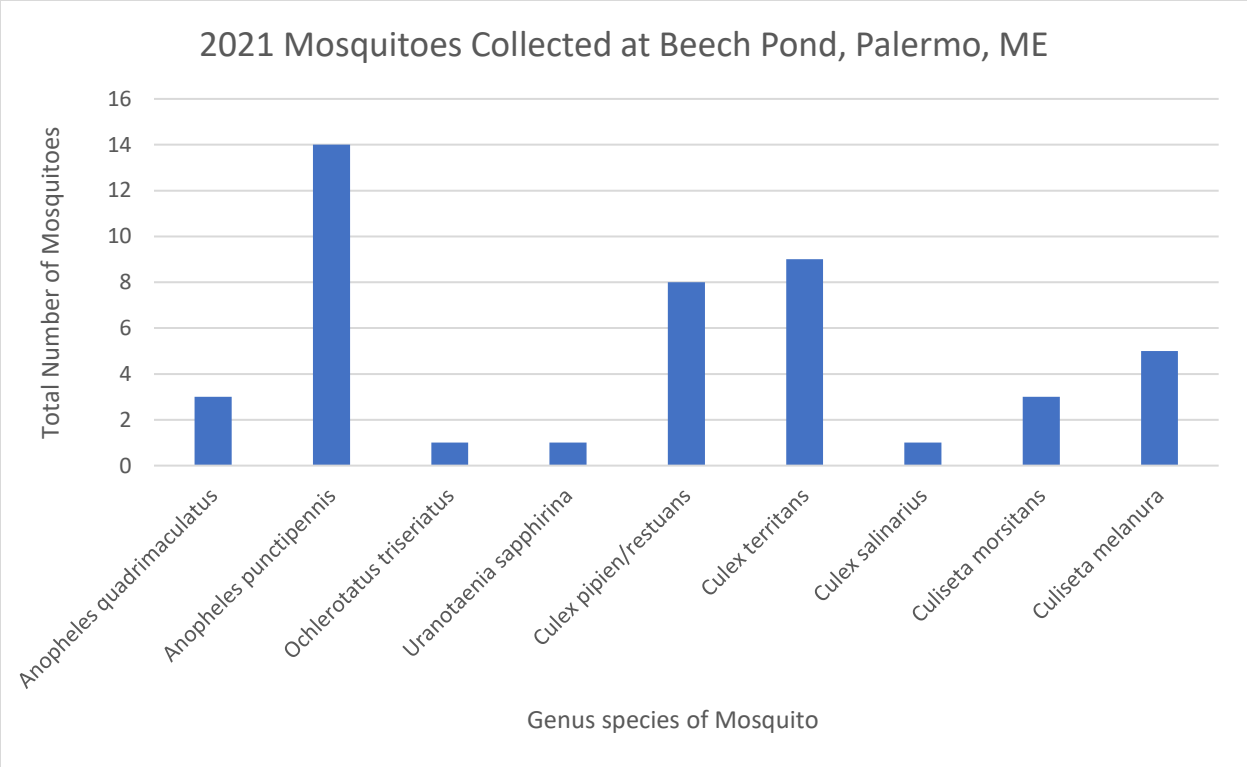

2021 *Culiseta melanura* Monthly Seasonality at Jamie's Pond
Numbers of Mosquitoes
3
2
1
0
July
August
September
Month of Collection

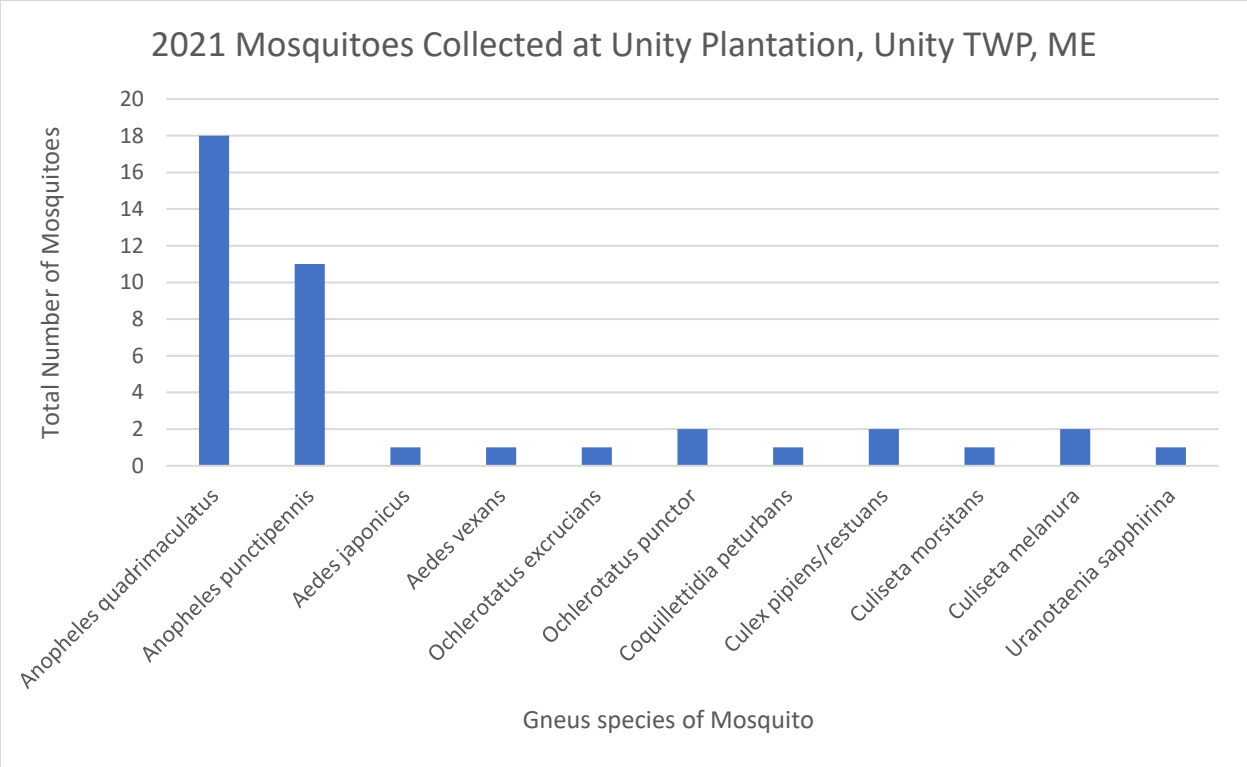

2021 Mosquito Species Collected at All Sites
Total Number of Mosquitoes
100
90
80
70
60
50
40
30
20
10
0
A. quadrimaculatus
A. punctipennis
A. vexans
A. japonicus
O. canadensis
O. excrucians
O. intudens
O. punctor
O. triseriatus
C. peturbans
C. pipiens/resutans
C. territans
C. salinarus
C. morsitans
C. melanura
U. sapphirina
Genus species of Mosquito

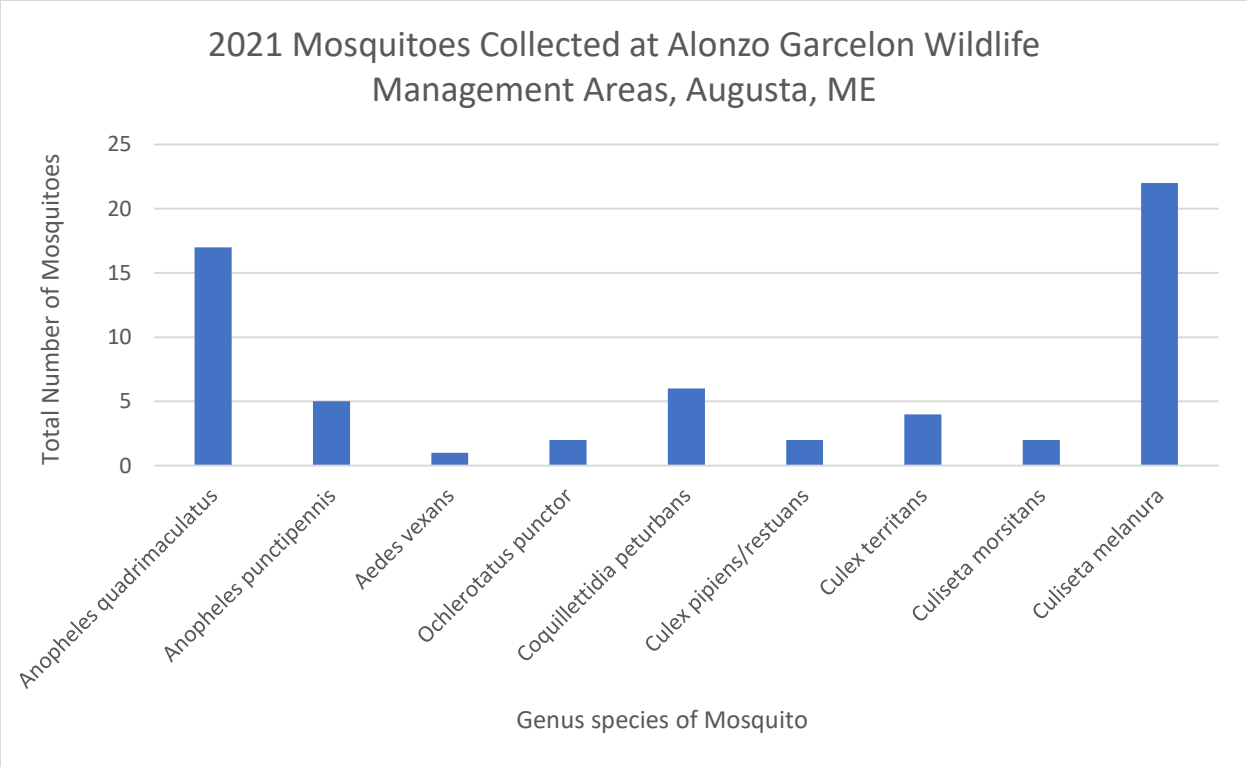

2021 Mosquito Species Collected From Resting Boxes
Total Number of Mosquitoes
100
90
80
70
60
50
40
30
20
10
0
Anopheles quadrimaculatus
Anopheles punctipennis
Aedes vexans
Aedes japonicus
Ochlerotatus excrucians
Ochlerotatus intrudens
Ochlerotatus punctor
Ochlerotatus triseriatus
Uranotaenia sapphirina
Coquillettidia peturbans
Culex salinarius
Culex territans
Culex pipiens/restuans
Culiseta morsitans
Culiseta melanura
Genus species of Mosquito

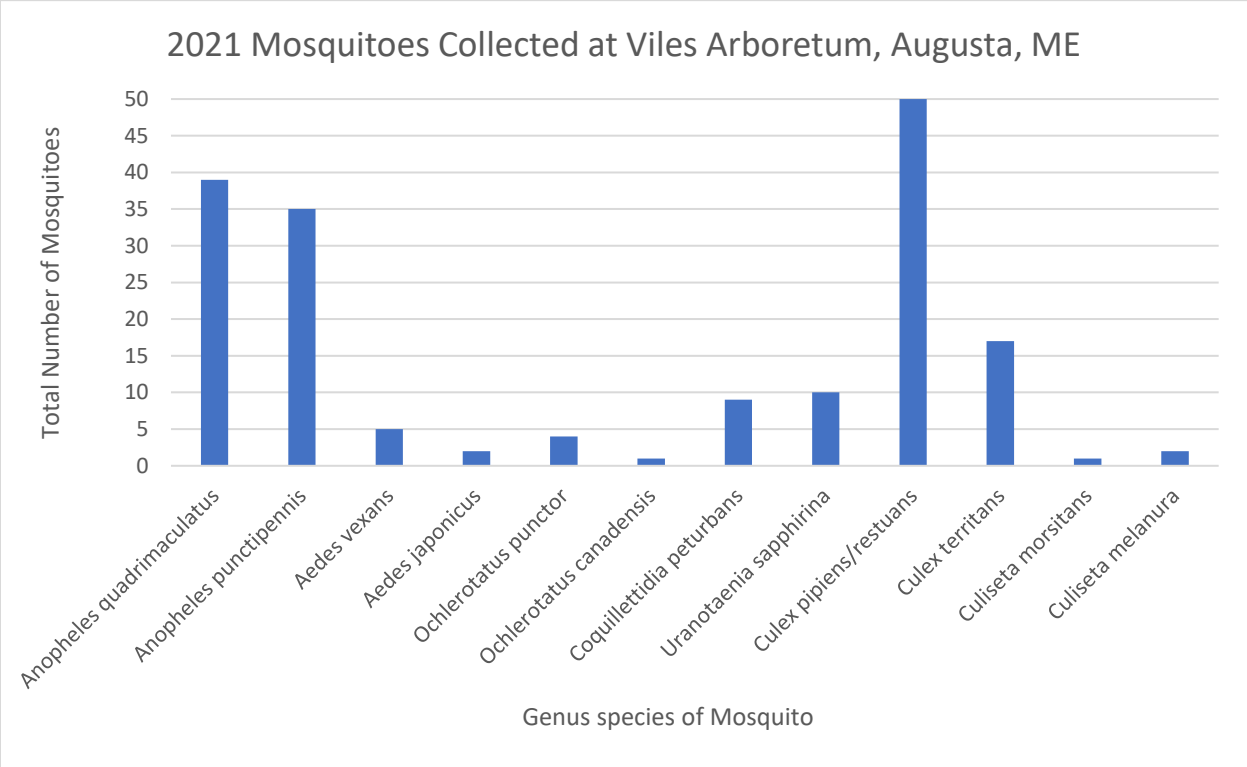

2021 Mosquito Species Collected from Light Traps
Total Number of Mosquitoes
12
10
8
6
4
2
0
Anopheles quadrimaculatus
Anopheles punctipennis
Aedes vexans
Aedes japonicus
Ochlerotatus canadensis
Ochlerotatua punctor
Uranotaenia sapphirina
Coquillettidia peturbans
Genus species of Mosquito

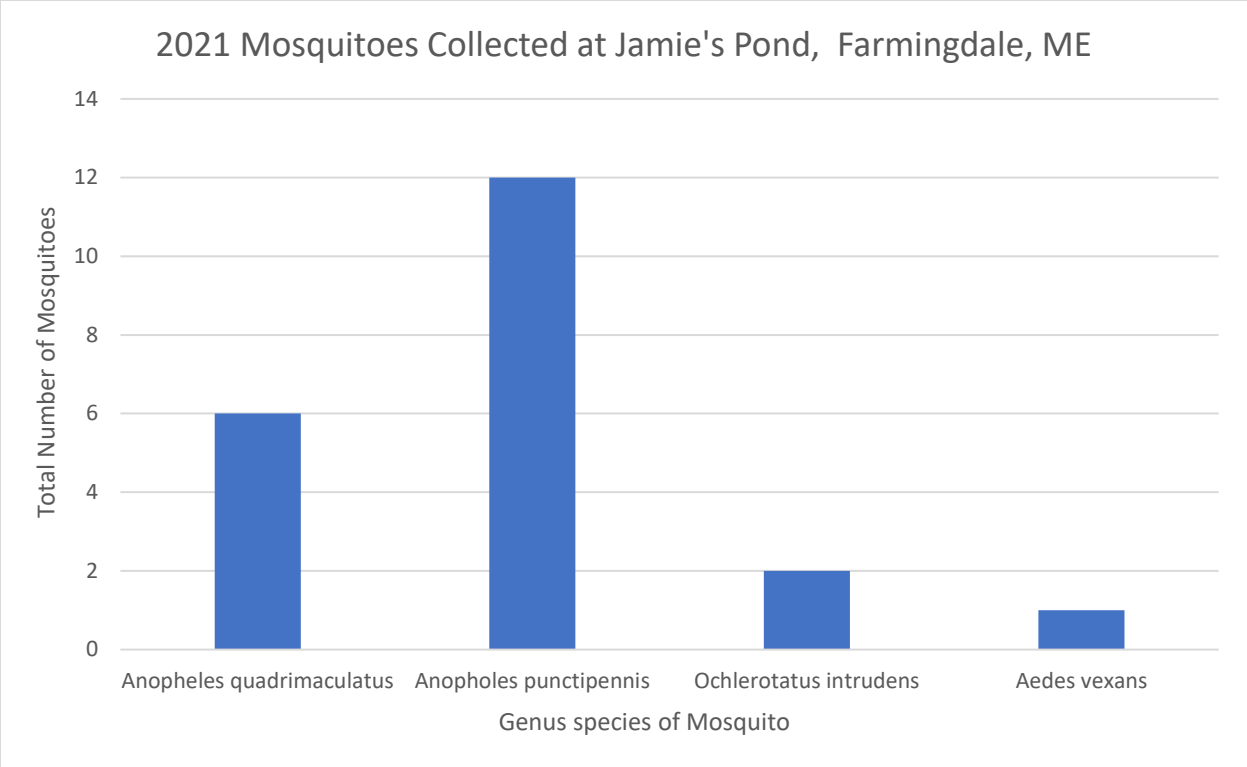

2021 Mosquitoes Collected at Iron Ore Point, Palermo, ME
Total Number of Mosquitoes
35
30
25
20
15
10
5
0
Anopheles punctipennis
Aedes vexans
Aedes japonicus
Culex pipiens/restuans
Culex territans
Culex salinarus
Culiseta morsitans
Culiseta melanura
Genus species of Mosquito

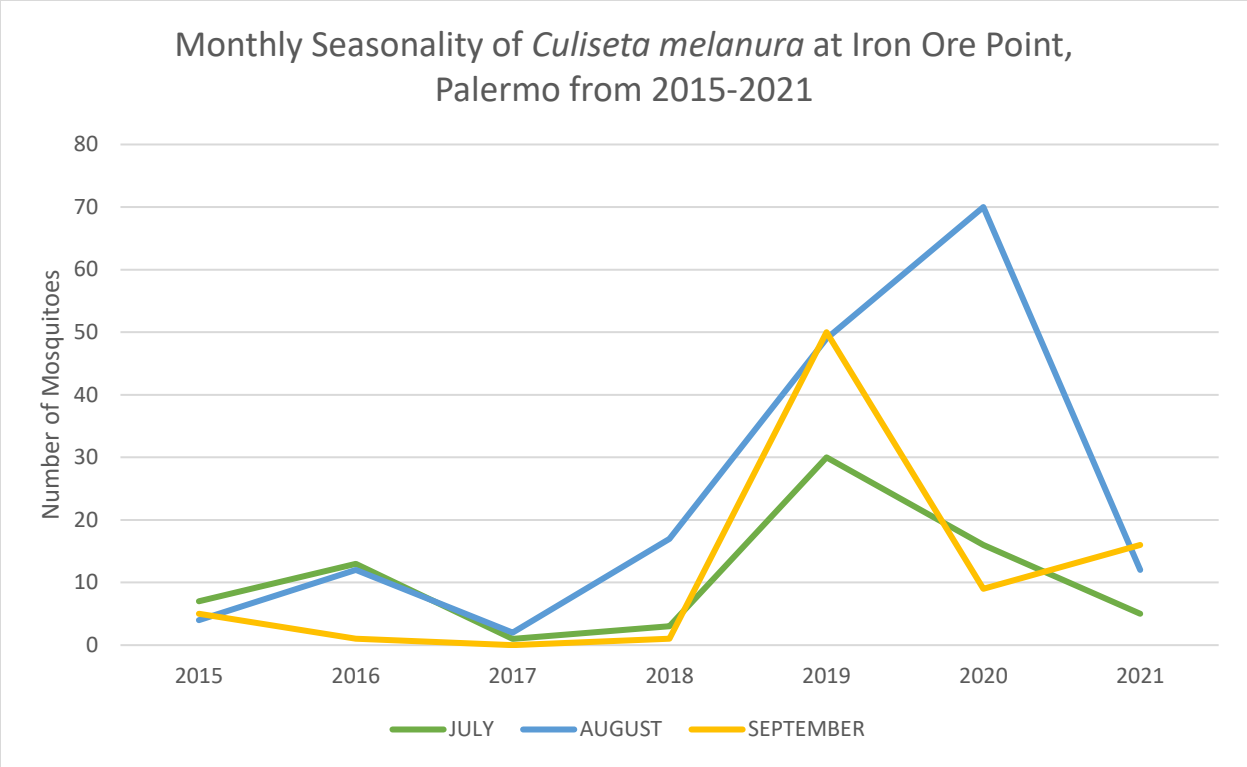

2021 Mosquitoes Collected at Beech Pond, Palermo, ME
Total Number of Mosquitoes
16
14
12
10
8
6
4
2
0
Anopheles quadrimaculatus
Anopheles punctipennis
Ochlerotatus triseriatus
Uranotaenia sapphirina
Culex pipien/restuans
Culex territans
Culex salinarius
Culiseta morsitans
Culiseta melanura
Genus species of Mosquito

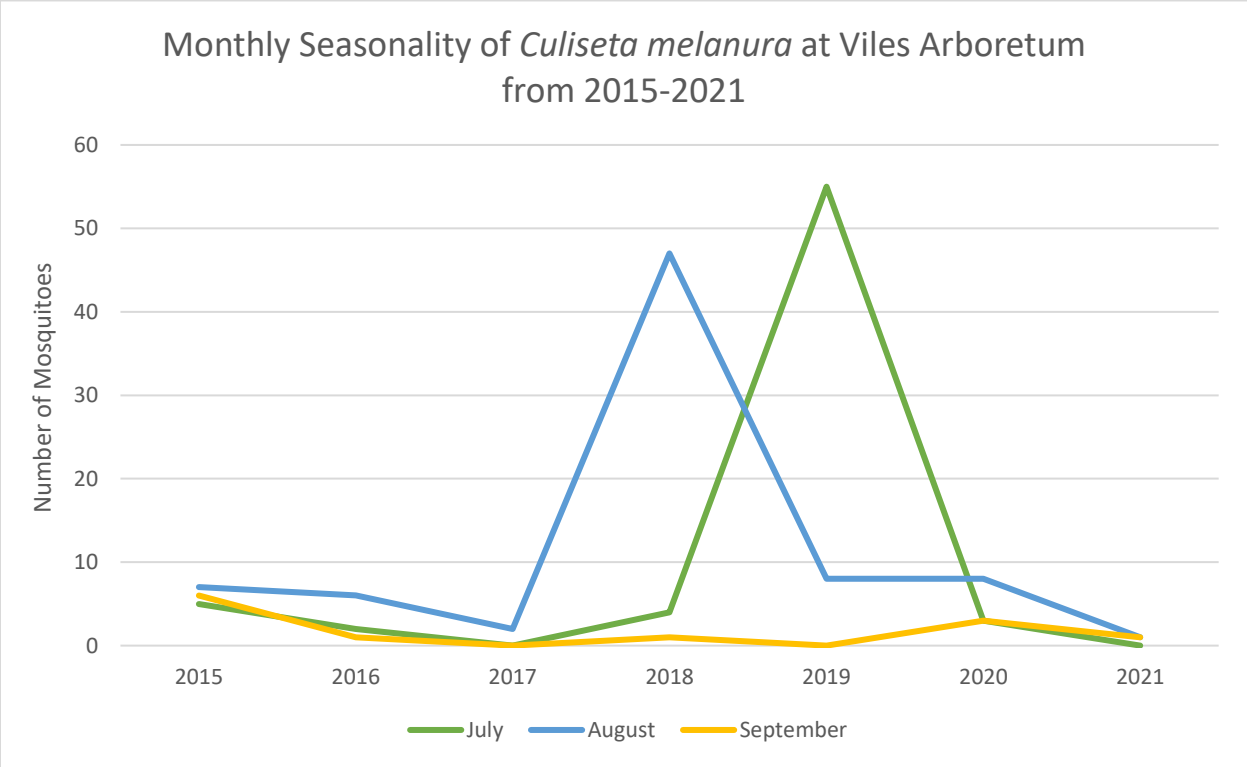

2021 Mosquitoes Collected at Unity Plantation, Unity TWP, ME
Total Number of Mosquitoes
20
18
16
14
12
10
8
6
4
2
0
Anopheles quadrimaculatus
Anopheles punctipennis
Aedes japonicus
Aedes vexans
Ochlerotatus excrucians
Ochlerotatus punctor
Coquillettidia peturbans
Culex pipiens/restuans
Culiseta morsitans
Culiseta melanura
Uranotaenia sapphirina
Gneus species of Mosquito

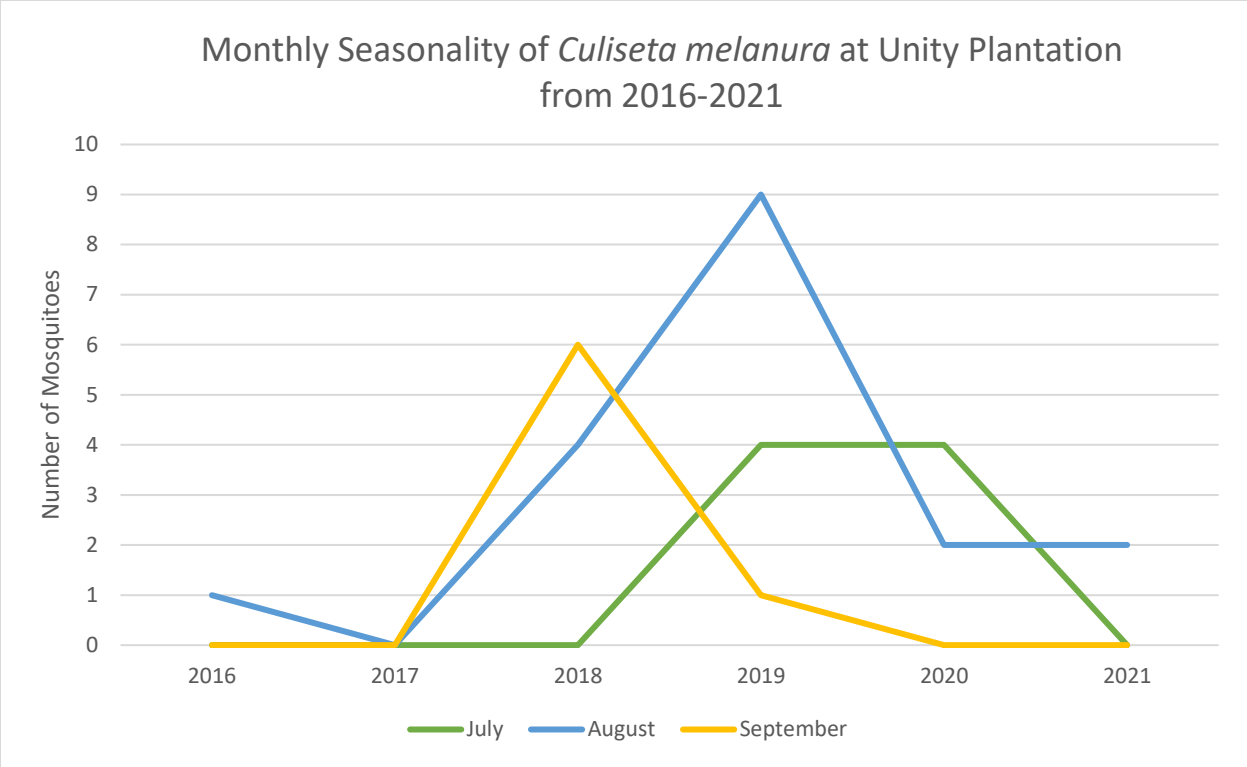

2021 Mosquitoes Collected at Alonzo Garcelon Wildlife Management Areas, Augusta, ME
Total Number of Mosquitoes
25
20
15
10
5
0
Anopheles quadrimaculatus
Anopheles punctipennis
Aedes vexans
Ochlerotatus punctor
Coquillettidia peturbans
Culex pipiens/restuans
Culex territans
Culiseta morsitans
Culiseta melanura
Genus species of Mosquito

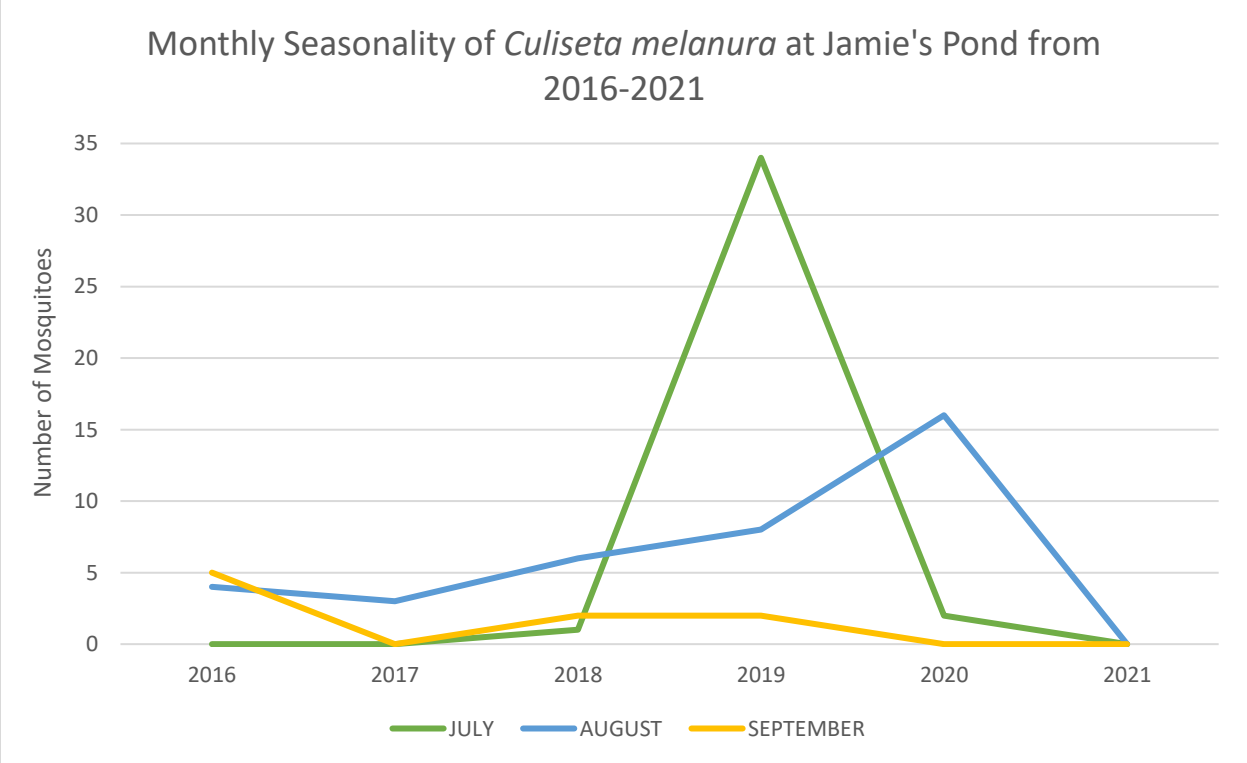

2021 Mosquitoes Collected at Viles Arboretum, Augusta, ME
Total Number of Mosquitoes
50
45
40
35
30
25
20
15
10
5
0
Anopheles quadrimaculatus
Anopheles punctipennis
Aedes vexans
Aedes japonicus
Ochlerotatus punctor
Ochlerotatus canadensis
Coquillettidia peturbans
Uranotaenia sapphirina
Culex pipiens/restuans
Culex territans
Culiseta morsitans
Culiseta melanura
Genus species of Mosquito

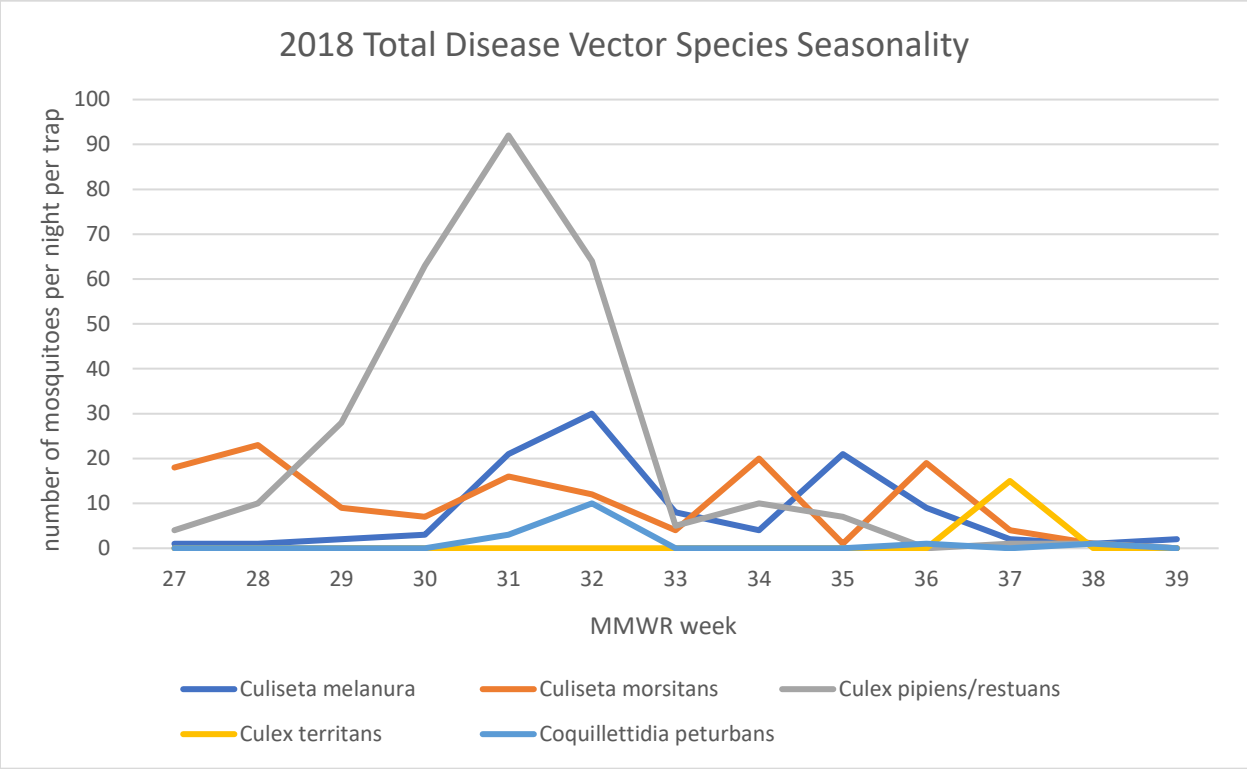

2021 Mosquitoes Collected at Jamie's Pond, Farmingdale, ME
Total Number of Mosquitoes
14
12
10
8
6
4
2
0
Anopheles quadrimaculatus
Anopholes punctipennis
Ochlerotatus intrudens
Aedes vexans
Genus species of Mosquito

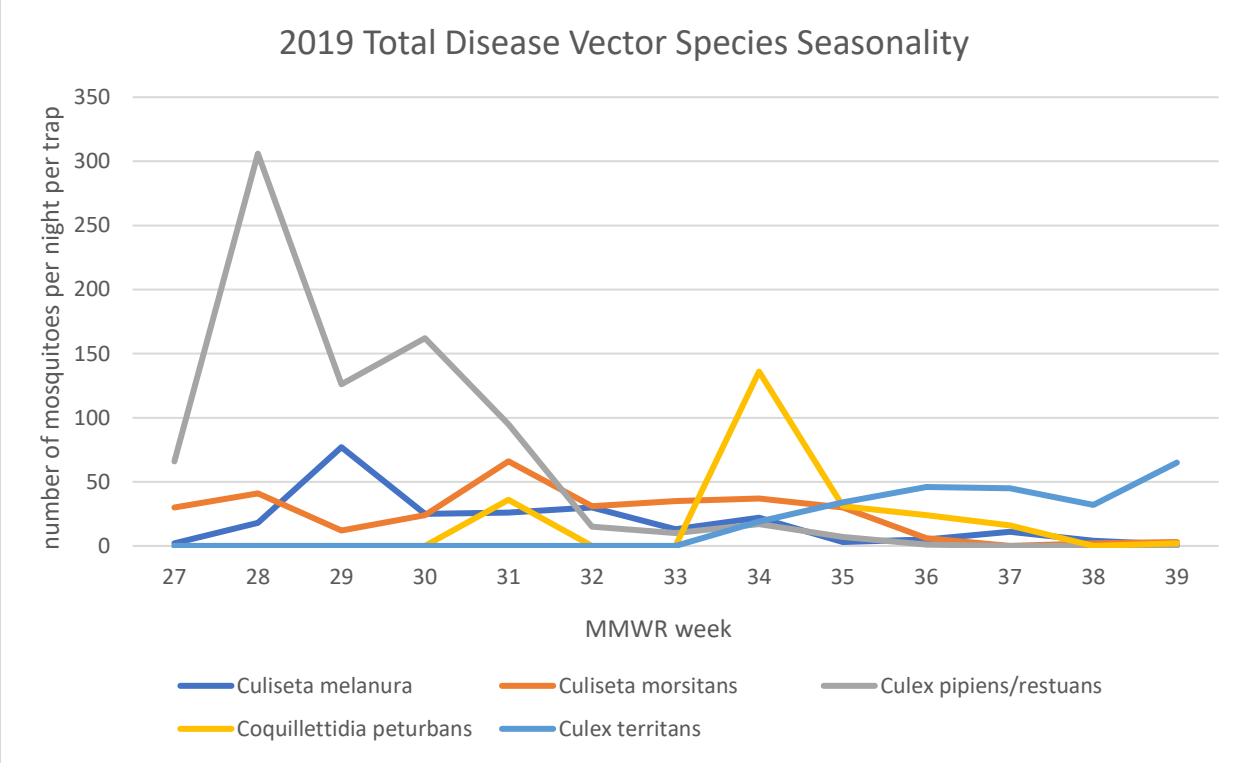

Monthly Seasonality of *Culiseta melanura* at Iron Ore Point, Palermo from 2015-2021
Number of Mosquitoes
80
70
60
50
40
30
20
10
0
2015
2016
2017
2018
2019
2020
2021
JULY
AUGUST
SEPTEMBER

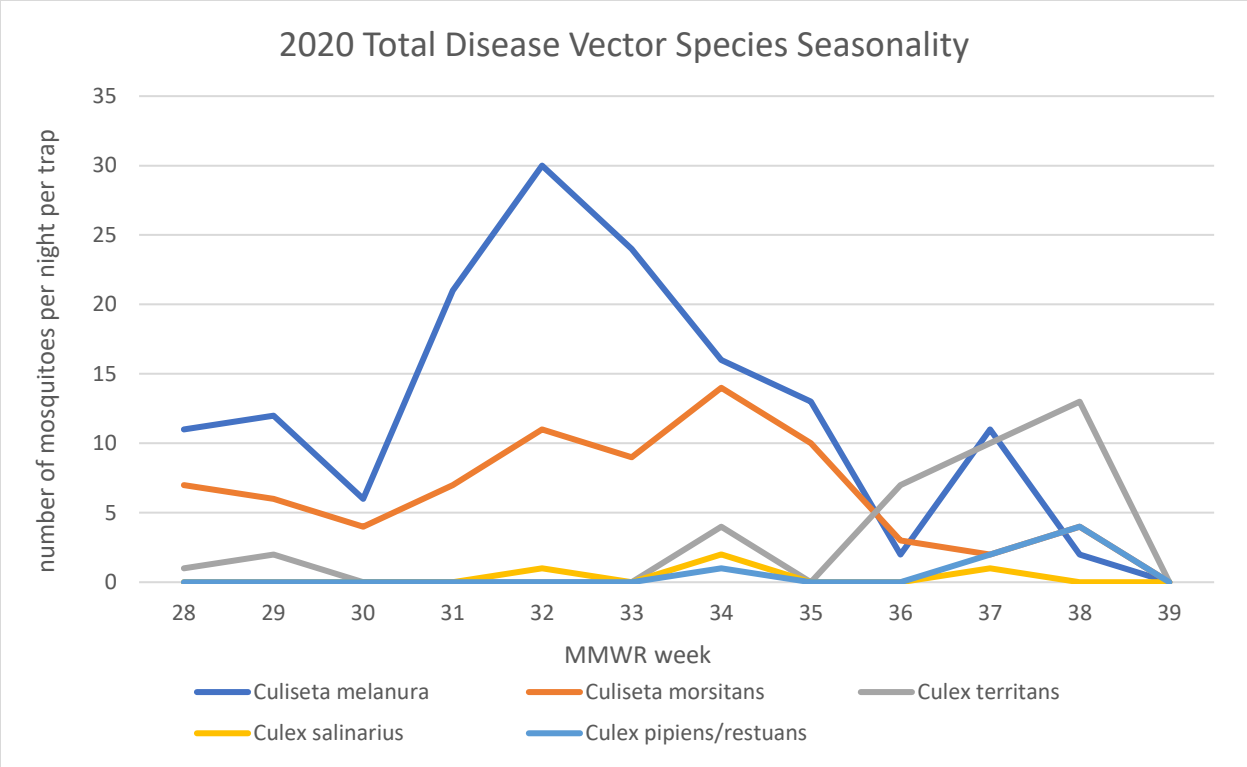

Monthly Seasonality of *Culiseta melanura* at Viles Arboretum from 2015-2021
Number of Mosquitoes
60
50
40
30
20
10
0
2015
2016
2017
2018
2019
2020
2021
July
August
September

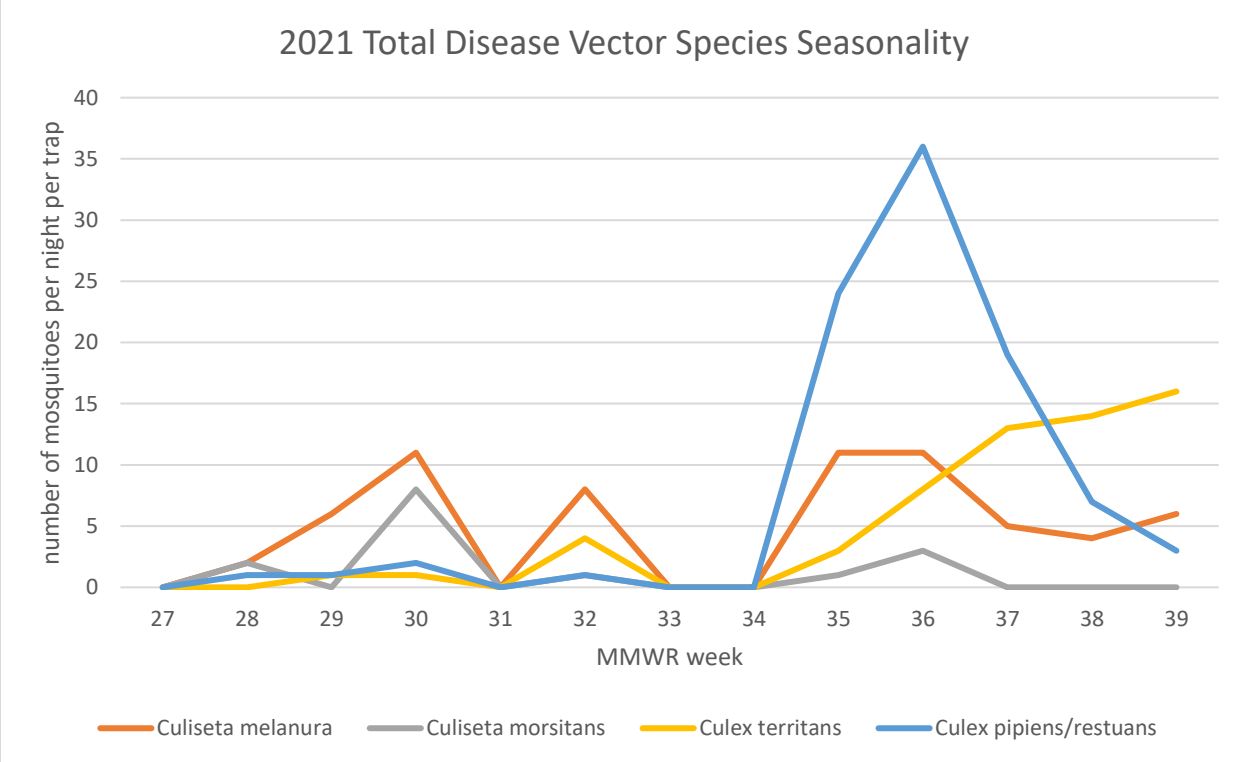

Monthly Seasonality of *Culiseta melanura* at Unity Plantation from 2016-2021
Number of Mosquitoes
10
9
8
7
6
5
4
3
2
1
0
2016
2017
2018
2019
2020
2021
July
August
September


Monthly Seasonality of *Culiseta melanura* at Jamie's Pond from 2016-2021
Number of Mosquitoes
35
30
25
20
15
10
5
0
2016
2017
2018
2019
2020
2021
JULY
AUGUST
SEPTEMBER


2018 Total Disease Vector Species Seasonality
number of mosquitoes per night per trap
100
90
80
70
60
50
40
30
20
10
0
27
28
29
30
31
32
33
34
35
36
37
38
39
MMWR week
Culiseta melanura
Culiseta morsitans
Culex pipiens/restuans
Culex territans
Coquillettidia peturbans


2019 Total Disease Vector Species Seasonality
number of mosquitoes per night per trap
350
300
250
200
150
100
50
0
27
28
29
30
31
32
33
34
35
36
37
38
39
MMWR week
Culiseta melanura
Culiseta morsitans
Culex pipiens/restuans
Coquillettidia peturbans
Culex territans

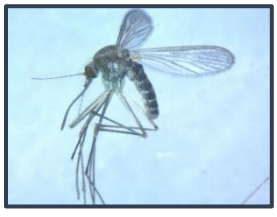

2020 Total Disease Vector Species Seasonality
number of mosquitoes per night per trap
35
30
25
20
15
10
5
0
28
29
30
31
32
33
34
35
36
37
38
39
MMWR week
Culiseta melanura
Culiseta morsitans
Culex territans
Culex salinarius
Culex pipiens/restuans


2021 Total Disease Vector Species Seasonality
number of mosquitoes per night per trap
40
35
30
25
20
15
10
5
0
27
28
29
30
31
32
33
34
35
36
37
38
39
MMWR week
Culiseta melanura
Culiseta morsitans
Culex territans
Culex pipiens/restuans

25	6/26/2021
26	7/3/2021
27	7/10/2021
28	7/17/2021
29	7/24/2021
30	7/31/2021
31	8/7/2021
32	8/14/2021
33	8/21/2021
34	8/28/2021
35	9/4/2021
36	9/11/2021
37	9/18/2021
38	9/25/2021
39	10/2/2021
40	10/9/2021

MMWR Weeks for 2021 Field Season

Report prepared by Autumn St.Pierre, DACF, October 2021



Draft Job Description

2022 Field Technician for Mosquito and Swallowwort Biocontrol Project

BRIEF JOB DESCRIPTION: The Maine Department of Agriculture, Conservation and Forestry (DACF) has a temporary need for a seasonal laboratory and field assistant to assist with two projects on a 40 hour per week basis. The first project involves assisting in a project working to successfully introduce and establish *Hypena opulenta* as a classical biological control agent for managing the severely invasive black swallowwort (*Cynanchum louiseae*) in Maine. The second project involves mosquito trapping and testing activities for the Maine statewide mosquito monitoring program as described in DACF's "Plan for the Protection of the Public Health from Mosquito-borne Diseases". Additionally, there will be opportunities to assist the staff of the Maine Board of Pesticides Control with various tasks. The successful candidate will assist in selecting sites and servicing mosquito traps weekly, assist in mosquito identification, properly handle and label specimens using cold-chain protocol, keep records and manage data. Field sites for both projects extend from Ogunquit to Unity, Maine, and will involve driving up to 1.5 hours at a time. Work will be based in Augusta, Maine.

KNOWLEDGE/SKILLS/ABILITIES: Education and experience in biology, with priority given to experience and training in insect identification and/or plant identification; Project management & implementation, including record-keeping, time management, and ability to communicate with superiors and collaborating laboratories with routine sample drop off dates and times; Ability to use Microsoft Office applications including Word, Excel, and Outlook, with priority given if able to conduct simple data analyses within spreadsheets (simple formulas, creating graphs, copying graphs and tables from Excel to Word) and comfort writing technical reports; Comfort with field and laboratory conditions, including handling live insects (specifically mosquitos and caterpillars), ability to conduct good recordkeeping while in the field (data sheets will be provided), ability to traverse uneven ground while carrying approximately 15-20lbs of equipment (field sites are within the woods), ability to drive to coordinate locations and follow instructions to find remote field sites, comfort with handling dry ice, and experience with use of a dissection microscope. Assistant will be trained in identification and field skills where lacking.

MINIMUM QUALIFICATIONS: Candidates must have a valid driver's license and be at least 18 years of age.

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

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

Memorandum

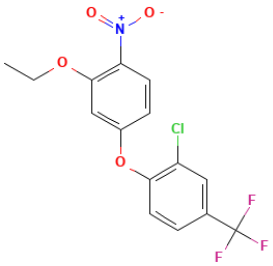
To: Board of Pesticides Control

From: Pamela J. Bryer, Ph.D. | Pesticides Toxicologist | Maine Board of Pesticides Control

Subject: Goal Tender FIFRA 24(c) Special Local Need registration

Date: February 18, 2022

Oxyfluorfen, the active ingredient in Goal Tender, is an herbicide that has been in use since the late 1970's. It works as a contact herbicide that inhibits a cellular enzyme leading to damage of the cell membrane. It is in Group 14 of the Herbicide Resistance Action Committee Mode of Action Classification (2021 Edition).[1] It is immobile in soil and, depending on circumstances, is considered to be moderately persistent to persistent. Laboratory studies indicate low toxicity to mammals, honeybees, some sediment-dwelling organisms, and some algae. Moderate toxicity is seen for birds, earthworms, fish, some sediment-dwelling organisms, some aquatic invertebrates, and some algae. High toxicity was seen for acute exposures to aquatic plants and aquatic invertebrates.



Exposed applicators have found the product is an irritant to eyes, skin, and occasionally respiratory tract tissues. Data from the California Pesticide Illness Surveillance Program provides an example of a human exposure incident; a group of agricultural workers entered a field 30 minutes following application (a violation of the 24-hour restricted entry interval (REI)) and nine out of 15 experienced symptoms of chemical conjunctivitis, eye irritation, tingling and itching of the skin, nausea, dizziness, headache, and vomiting.[2]

The WHO Recommended Classification of Pesticides by Hazard identifies oxyfluorfen as unlikely to present an acute hazard in normal use.[3]

Risks associated with oxyfluorfen:
Managing risk with pesticides is largely a function of controlling exposure. Current-use pesticides often degrade quickly and reach low or non-detectable concentrations by the time the treated commodity reaches the market. This document explores if there are currently ongoing exposures of oxyfluorfen and how use on broccoli might add to those exposures.

MEGAN PATTERSON, DIRECTOR
90 BLOSSOM LANE, MARQUARDT BUILDING

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

Current occurrences in the marketplace:
USDA testing routinely includes oxyfluorfen as part of the Pesticide Data Program (PDP). Out of 141,238 samples tested 106 samples have tested positive for oxyfluorfen which is 0.1% of all tests.[4] The highest detection found to date is 0.011 ppm. The only violative tests occurred when the active ingredient was found on crops lacking established tolerances. Detections have been made on cilantro, celery, spinach, rice, raisins, green onions, and mustard greens, none of the detections exceeded the established tolerances. The current tolerance for broccoli is 0.05 ppm.[5] The PDP testing has included over 7,400 samples of broccoli and cauliflower, none of the samples contained detectable concentrations of oxyfluorfen.

Potential exposure from broccoli consumption:
The highest concentration representing use on broccoli was found to be 0.0168 ppm following use at the 0.25 lbs a.i./A rate.[6] These data were submitted as part of IR-4 tolerance setting. Experiments found no residues in broccoli samples treated with 0.125 lbs a.i./A but did find detectable residues in one out of seven fields at the 0.25 lbs a.i./A rate. The maximum detected broccoli residue in that one field is the 0.0168 ppm mentioned above.

The average daily consumption of broccoli is 7.5 lbs/yr which corresponds to 9.3 grams/day.[7] If an adult consumes this amount of broccoli that was treated with oxyfluorfen (and that broccoli ended up with the maximum detected residue of 0.0168 ppm) they would be expected to be exposed to 0.00000195 mg oxyfluorfen/ kg body weight per day. This is lower than the established acceptable daily intake (ADI) of 0.003 mg oxyfluorfen/ kg body weight per day.[8] This value is conservatively based on 100% of the broccoli weight even though it is understood that oxyfluorfen is only going to be present in fatty-type tissues of the plant (based on its K_{ow} of 4.86 and that broccoli is 0.4% fat).[9,10] Additionally, this is based on 100% uptake into the body even though rat studies have shown that only 18% is expected to cross the GI tract and into the body.[11]

Oxyfluorfen is classified as likely to be carcinogenic to humans with an exposure level for cancer risk set at 0.0732 mg oxyfluorfen/kg body weight per day.[12] Based on the above calculation an individual would have to eat over 37,000 daily equivalents to reach this exposure level for cancer risk. This value overestimates the exposure potential by using the highest known concentration of oxyfluorfen in broccoli or any other commodity tested in USDA's PDP program, overestimating the partitioning into the broccoli, and overestimating the potential for crossing out of the GI tract.

Fate and transfer in the environment:
As previously discussed oxyfluorfen has a high K_{ow} indicating it is likely to partition into fatty tissues. That together with the low solubility in water indicates leaching into groundwater is not a likely concern for this compound. The vapor pressure and Henry's law constant (0.026 mPa and 0.0238 Pa/ m^3 mol^{-1} respectively) indicate low and non-volatility, together with the K_{ow} and solubility values, indicate that movement off-site is unlikely.[13,14]

In studies looking at the depth of penetration into the soil horizon oxyfluorfen has been found to travel short distances.[15] One study found the compound stayed within the top ten centimeters at 28 days after application. Another study found after three to twelve centimeters of rain the product traveled to five to nine centimeters deep.

Degradation:
Soil half-life data are variable. The range for laboratory-derived half-life data averages from 35 to 138 days, though the full range went up to 438 days. Soil field-derived half-life data were also variable and ranged from 31 to 172 days, averaging at 73 days.[16] Using the five half-lives rule of thumb, under the most extreme persistence (438 days) this chemical would take approximately six years until the product would be eliminated

from the environment, or more specifically 97.5% degraded. Under more normal or average conditions, the product would be expected to be eliminated from the soil environment in one year, again at the 97.5% eliminated threshold.

Sunlight appears to have significant degradation effects on the chemical which are reflected in shorter half-lives when the compound is in or on the plant or in sun-lit water. Water itself does not cause the compound to break down. On the surface of a plant, the breakdown half-life is 1.6 days. When the product is measured as on and in the plant tissues the half-life is 3.6 days.[16]

Long term soil dynamics:
Due to the combination of persistence in the soil and bioaccumulation potential the long-term patterns of oxyfluorfen are of concern. Soils of differing compositions will differ in their behavior, however, some studies indicate that oxyfluorfen does not accumulate in soils significantly. Figure 1 shows the soil concentration of oxyfluorfen on the same parcel over a four-year period.[17] Given the typical half-life 95.5% elimination from the soil is expected at the one-year point and you can see from the graph that the prediction is pretty accurate. The soil concentration at day 150 is approximately 0.8 mg/kg and the soil concentration at day 1350 (or 150 days after the fourth application) is approximately 1 mg/kg. While this is clearly an increase it does not follow the typical patterns of additive exposures which increase over time. Additionally, the soil maximum concentrations do not increase over time.

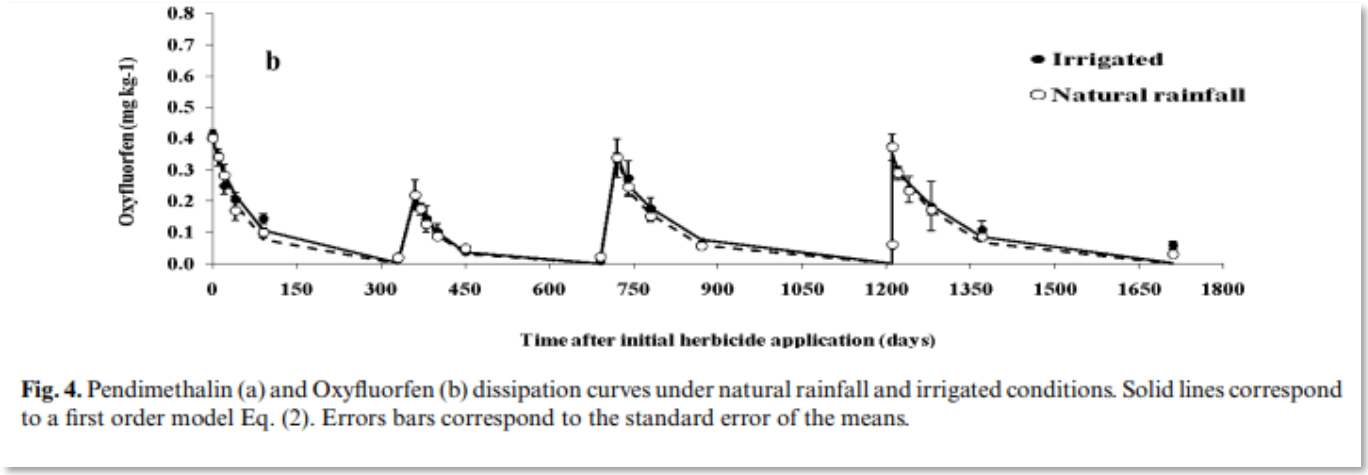


Fig. 4. Pendimethalin (a) and Oxyfluorfen (b) dissipation curves under natural rainfall and irrigated conditions. Solid lines correspond to a first order model Eq. (2). Errors bars correspond to the standard error of the means.

Figure 1. Excerpt from the paper by Claudio et al. 2009 showing soil concentrations of oxyfluorfen following repeated applications over a four-year period.

Another study has shown that oxyfluorfen residues that become entrapped by the soil stay bound to the soil particles.[18] Forty-two percent of the applied oxyfluorfen was found in the top two centimeters of soil 109 days following a wintertime application in a Mediterranean olive orchard under natural rainfall conditions. Of the oxyfluorfen found offsite it was found in the sediment, not the rainwater accumulated offsite. This reaffirms the data suggesting oxyfluorfen is unlikely to leach while reminding us that offsite transport can still occur. The residues are not considered to be active when they are bound.

Technical consideration:
It is of note that oxyfluorfen may be considered as a PFAS compound under the State of Maine's PFAS definition as per 38 MRS §1614(1)(f). Oyxfluorfen does not meet the Office of Pesticide Pollution's working definition of PFAS, nor does it fit into the Buck et al. 2011 classification scheme.[19,20]

Details of this SLN application:
The Goal Tender supplemental label states that the required amount of time following application that harvest activities are allowed is 35 days. There are 10 specific restrictions on the supplemental label. Use under this label does not allow rates that exceed those tested in the IR-4 testing program (0.25 lbs per acre), meaning the estimates of how much oxyfluorfen may enter the food supply would likely not exceed those estimated by the analysis performed. Similar SLN registrations have been issued in AZ, DE, MI, NY, PA, & TX.

The EPA Office of Pesticide Program's webpage indicates that the oxyfluorfen registration reevaluation interim decision is to be released in the first quarter of 2022.[21]

References

[1]Resistance classification group: https://hracglobal.com/tools/hrac-mode-of-action-classification-2021-map

[2]Applicator hazards: https://pubchem.ncbi.nlm.nih.gov/compound/39327#section=Skin-Eye-and-Respiratory-Irritations & https://pubchem.ncbi.nlm.nih.gov/compound/39327#section=Human-Toxicity-Excerpts

[3]Hazard classification: WHO (2005) The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification 2004, International Programme on Chemical Safety, p.34

[4]USDA PDP: https://www.ams.usda.gov/datasets/pdp

[5]Tolerance for broccoli: https://www.ecfr.gov/current/title-40/chapter-I/subchapter-E/part-180/subpart-C/section-180.381

[6]Broccoli test residues: Submitted test results in 2009 SLN review, data generated by IR-4 National Pesticide Clearance Protocol oxyfluorfen/broccoli. PR No 08806. Analytical results Report Date 08/02/05.

[7]Broccoli consumption: https://www.statista.com/statistics/257338/per-capita-consumption-of-fresh-broccoli-in-the-us/

[8]ADI for oxyfluorfen: https://comptox.epa.gov/dashboard/chemical/executive-summary/DTXSID7024241

[9]Oxyfluorfen K_{ow} value: https://sitem.herts.ac.uk/aeru/ppdb/en/Reports/502.htm

[10]Broccoli fat content: https://www.healthline.com/nutrition/foods/broccoli#nutrients

[11]Uptake rate: EPA 2014. Oxyfluorfen: Human Health Assessment Scoping Document in Support of Registration Review. PC Code 111601. Decision No. 489866. Nieves et al.

[12]Cancer risk: EPA 2014. Oxyfluorfen: Human Health Assessment Scoping Document in Support of Registration Review. PC Code 111601. Decision No. 489866. Nieves et al.

[13]Water solubility: https://sitem.herts.ac.uk/aeru/ppdb/en/Reports/502.htm

[14]Vapor pressure: https://sitem.herts.ac.uk/aeru/ppdb/en/Reports/502.htm

[15]Oxyfluorfen soil mobility: https://pubchem.ncbi.nlm.nih.gov/compound/39327#section=Environmental-Fate-Exposure-Summary

[16]Half-live values: https://sitem.herts.ac.uk/aeru/ppdb/en/Reports/502.htm

[17]Figure of oxyfluorfen applications over four years: Claudio A. Alister , Patricio A. Gomez , Sandra Rojas & Marcelo Kogan (2009) Pendimethalin and oxyfluorfen degradation under two irrigation conditions over four years application, Journal of Environmental Science and Health Part B, 44:4, 337-343, DOI: 10.1080/03601230902800986

[18]Oxyfluorfen in olive orchard: Calderon MJ, De Luna E, Gomez JA, Hermosin MC. Herbicide monitoring in soil, runoff waters and sediments in an olive orchard. Sci Total Environ. 2016 Nov 1;569-570:416-422. doi: 10.1016/j.scitotenv.2016.06.126. Epub 2016 Jun 25. PMID: 27351146.

[19] EPA PFAS definition: https://www.epa.gov/pesticides/pfas-packaging

[20]Buck, R.C., Franklin, J., Berger, U., Conder, J.M., Cousins, I.T., de Voogt, P., Jensen, A.A., Kannan, K., Mabury, S.A. and van Leeuwen, S.P. (2011), Perfluoroalkyl and polyfluoroalkyl substances in the environment: Terminology, classification, and origins. Integr Environ Assess Manag, 7: 513-541. https://doi.org/10.1002/ieam.258

[21]OPP renewal schedule: https://www.epa.gov/pesticide-reevaluation/upcoming-registration-review-actions

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

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

To: Board of Pesticides Control Members
From: Mary Tomlinson, Pesticides Registrar/Water Quality Specialist
RE: EPA SLN ME-220001, Goaltender, EPA Reg. No. 92894-3
EPA SLN ME-220001B, Goaltender, EPA Reg. No. 92894-3-71368
For Post-Emergent Use in Broccoli
Date: May 26, 2020

Mark Hutton, Specialist at the University of Maine Cooperative Extension, is requesting the extension of the SLN allowing for post-emergent application of Goaltender, active ingredient oxyfluorfen, EPA Reg. No. 92894-3, on broccoli. The Board originally approved the application on March 27, 2009 and the SLN registration expired December 31, 2021. This is a new application rather than an extension due to the transfer of product ownership to Adaura LLC with a sub-registration to Nufarm Inc. (EPA Reg. No. 92894-3-91368).

The application request is for an extension of five years with an expiration date of December 31, 2026. Adaura, LLC is interested in pursuing the addition of this use to the EPA approved label; however, until oxyfluorfen completes the current registration reevaluation process, a label amendment cannot be submitted to the EPA.

Goaltender is approved for pre-transplant and pre-emergence applications. The post-emergence use fills a vital need in controlling difficult weed species that emerge later in the growing season. According to Dr. Hutton and Emily Smith of Smith Farm, Goaltender is an important alternative for post-emergent applications on broccoli and is efficacious against some of the problem species, especially hairy nightshade and pigweed.

Hairy nightshade is of special significance to Maine broccoli growers because broccoli is grown in rotation with potatoes. Hairy nightshade is an important alternate host for the late blight pathogen *Phytophthora infestans* which infects potatoes. Consequently, control of hairy nightshade eliminates a niche for the disease, thereby, reducing the need for fungicide use on potatoes.

In approving the original SLN application, the Board reviewed tolerance studies, product toxicity data, and environmental fate data, and determined that the extended use would not result in unreasonable adverse effects. The review Pamela J. Bryer, Ph.D., BPC Toxicologist, conducted supports this determination. Please refer to her memo included in this package.

The Section 3 label includes groundwater and surface water advisories. Although the product is toxic to aquatic invertebrates and wildlife; label restrictions are intended to mitigate impacts to the environment. The active ingredient oxyfluorfen is persistent and relatively immobile in the soil.[1] Surface water contamination can occur through spray drift and runoff; however, it demonstrates low runoff potential.[2] This chemical is not one of 57 pesticides of interest listed on the EPA Pesticides of Interest Tracking System (POINTS) through which states were required to track water quality data and is not one of the pesticides that Maine has analyzed for.

WIN-PST Results for broadcast applications[3]

Name	**PC Code**	**SOL**	**KOC**	**HL**	**PLP**	**PSRP**
Oxyfluorfen	111601	0.1	10000	35	Very low	Low

SOL - solubility

Koc – affinity to adsorb

HL - half-life (days)

PLP – pesticide leaching potential

PSRP – Pesticide solution run-off potential

Enclosed are supporting documents for your consideration to extend the SLN through December 31, 2024. Please let me know if you have any questions.

- Letter of request from Mark Hutton, Ph.D., Vegetable Specialist, University of Maine Cooperative Extension
- Letter of support from Emily Smith, Smith Farms
- Letter of support from Wentao Jin, CEO, Adaura, LLC
- Letter of support from Maryanne Kellogg, Pyxis Regulatory Consulting, Inc. Agent for Adaura, LLC
- Memo from Pamela J. Bryer, Ph.D., BPC Toxicologist
- EPA Form 8570-25 Application for State Registration to Meet a Special Local Need
- Draft Maine Goaltender SLN label Adaura
- Draft Maine Goaltender SLN label Nufarm)
- Goaltender (Nufarm) Section 3 label
- Goaltender EPA approved master label

References

1. Mantzos et al. 2014. Science of the Total Environment. Persistence of oxyfluorfen in soil, runoff water, sediment and plants of a sunflower cultivation. Vol. 472:767-777. https://pubmed.ncbi.nlm.nih.gov/24333999.

2. Oxyflourfen RED Facts. EPA-738-F02-013. October, 2002

3. Win-PST 3.1.20 Windows Pesticide Screening Tool. NRCS. Version 3.1.0020.

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- Draft Maine Goaltender SLN label Nufarm)
- Goaltender EPA approved master label
- Goaltender (Nufarm) Section 3 label

References

1. Mantzos et al. 2014. Science of the Total Environment. Persistence of oxyfluorfen in soil, runoff water, sediment and plants of a sunflower cultivation. Vol. 472:767-777. https://pubmed.ncbi.nlm.nih.gov/24333999.

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3. Win-PST 3.1.20 Windows Pesticide Screening Tool. NRCS. Version 3.1.0020.

THE UNIVERSITY OF MAINE
Cooperative Extension

Putting Knowledge to Work with the People of Maine

December 14, 2021

Mary Tomlinson
Pesticide Registrar
Maine Board of Pesticides Control
28 State House Station
Augusta, Maine 04333

Dear Mary,

I am writing this letter to request a Special Needs Registration for post-emergent application of the herbicide GoalTender. The Special Local Needs Registration for GoalTender herbicide with the active ingredient Oxfluorfen is an important option for broccoli producers who need to apply a post-emergent herbicide to suppress or control broadleaf weeds after crop emergence.

Several of the broccoli producers have used GoalTender to great benefit and are reliant on this product when preplant herbicides have not worked effectively. This is important chemistry for post-emergence control of nightshade and pigweed. Control of hairy nightshade which serves as an important alternate host for the late blight *Phytophthora infestans* in potatoes. Broccoli may be grown in rotation with potatoes; therefore, control of hairy nightshade may reduce the need for fungicide use on potatoes.

I fully support the renewal of the Special Local Needs Registration for GoalTender herbicide for use in Maine.

Mark Hutton, Ph.D.
Highmoor Farm
P.O. Box 179
Monmouth, ME 04259
Tel. 207-933-2100
Fax 207-933-4647
mark.hutton@maine.edu

The University of Maine and the U.S. Department of Agriculture cooperating.
Cooperative Extension provides equal opportunities in programs and employment.

Smith's Farm, Inc.
99 Fort Road, Suite 1 Presque Isle, Maine 04769 Tel.: (207) 764-4540 Fax: (207) 764-2816

November 16, 2021

To Whom It May Concern,

In 2009, the Maine Board of Pesticide Control approved a Special Local Needs (SLN) registration for the use of GoalTender, EPA registration #62719-447 in broccoli for post emergence broadleaf weed control. The SLN was extended in 2017 for further use of the herbicide.

As a Maine broccoli grower in Maine, we respectfully request the use be continued. GoalTender is still the only alternative for post emergence weed control available to Maine broccoli growers. Through management and trials we have been able to lower the rate, by splitting applications, but it is a vital tool for our farms weed control in broccoli. It may deem beneficial in the essence of time management and multiple review processes to label GoalTender more permanently as an alternative for Maine growers.

We would also, respectfully request that Movento HL EPA registration # 264-1188 be labeled for broccoli in Maine. The HL version of Movento is a concentrated version demands less chemical then its original Movento. The original Movento is labeled for broccoli, but the Movento HL is not and it is much more common for the chemical companies to stock. In todays world of limited resources it would help to have more options.

Thank you for your time and efforts in this matter. If you have any further questions or concerns that we could address as the grower, please feel free to include us in the discussion.

Thank you,

Emily G. Smith

Emily G Smith

emily@smithsfarm.com

Adaura

January 12, 2022

Mary Tomlinson
Pesticide Registrar/Water Quality Specialist
Board of Pesticides Control
22 State House Station
Augusta, ME 04333-0022

RE: Support of GoalTender (92894-3) SLN registration in Maine

Dear Ms. Tomlinson,
Adaura, LLC intends to support Nufarm Inc. in the registration of the SLN, For Postemergence Use in Broccoli, in the state of Maine for the product GoalTender (EPA Reg. No. 92894-3) which is sub-registered to Nufarm Inc. (EPA Reg. No. 92894-3-71368). Adaura, LLC will not be distributing or selling the product GoalTender (EPA Reg. No. 92894-3) in Maine.

Regards,

Wentao Jin
CEO of Adauro

160 Mine Lake Ct Ste 200，Raleigh, NC 27615

PYXIS Regulatory Consulting, Inc.

4110 136TH ST CT NW
GIG HARBOR, WA 98332
T: (253) 853-7369
MARYANNE@PYXISRC.COM

February 1, 2022

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

RE: Special Local Need, FIFRA Section 24(c) Application
GoalTender (EPA Reg. No. 92894-3)

Dear Ms. Tomlinson,

Adaura, LLC respectfully requests to register the Special Local Need (FIFRA Section 24(c)) for Postemergence Use in Broccoli for GoalTender (EPA Reg. No. 92894-3). We request the SLN registration be issued under Adaura, LLC. In addition, Adaura, LLC asks that the label also be issued under the sub-registrant, Nufarm Inc. (EPA Reg. No. 92894-3-71368).

Please note: Although Adaura, LLC is interested in adding this use to their EPA-approved, Section 3 label, we will not be submitting a label amendment at this time. Oxyfluorfen is going through the Registration Review process at EPA and therefore no label amendments adding uses will be entertained at this time.

In support of this SLN application, please find the following:

1. Letter of Request (this letter)
2. One (1) copy of EPA Form 8570-25
3. One (1) copy of each draft 24(c) label
4. Letter supporting Nufarm Inc.
5. Letter of Authorization

Please contact me at 253-853-7369 or maryanne@pyxisrc.com, if you have any questions or need additional information.

Sincerely,

Maryanne M. Kellogg
Agent for Adaura, LLC

Enclosures

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

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

Memorandum

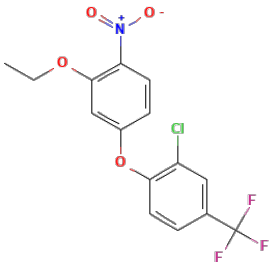
To: Board of Pesticides Control

From: Pamela J. Bryer, Ph.D. | Pesticides Toxicologist | Maine Board of Pesticides Control

Subject: Goal Tender FIFRA 24(c) Special Local Need registration

Date: February 18, 2022

Oxyfluorfen, the active ingredient in Goal Tender, is an herbicide that has been in use since the late 1970's. It works as a contact herbicide that inhibits a cellular enzyme leading to damage of the cell membrane. It is in Group 14 of the Herbicide Resistance Action Committee Mode of Action Classification (2021 Edition). It is immobile in soil and, depending on circumstances, is considered to be moderately persistent to persistent. Laboratory studies indicate low toxicity to mammals, honeybees, some sediment-dwelling organisms, and some algae. Moderate toxicity is seen for birds, earthworms, fish, some sediment-dwelling organisms, some aquatic invertebrates, and some algae. High toxicity was seen for acute exposures to aquatic plants and aquatic invertebrates.



Exposed applicators have found the product is an irritant to eyes, skin, and occasionally respiratory tract tissues. A group of agricultural workers entered a field 30 minutes following application (a violation of the 24-hour restricted entry interval (REI)) and experienced symptoms of chemical conjunctivitis, eye irritation, tingling and itching of the skin, nausea, dizziness, headache, and vomiting.

The WHO Recommended Classification of Pesticides by Hazard identifies oxyfluorfen as unlikely to present an acute hazard in normal use.

Risks associated with oxyfluorfen:
Managing risk with pesticides is largely a function of controlling exposure. Current-use pesticides often degrade quickly and reach low or non-detectable concentrations by the time the treated commodity reaches the market. I attempted to determine if there are currently ongoing exposures of oxyfluorfen and how use on broccoli might add to those exposures.

MEGAN PATTERSON, DIRECTOR
90 BLOSSOM LANE, MARQUARDT BUILDING

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

Current occurrences in the marketplace:
USDA testing routinely includes oxyfluorfen as part of the Pesticide Data Program (PDP). Out of 141,238 samples tested 106 samples have tested positive for oxyfluorfen which is 0.1% of all tests. The highest detection found to date is 0.011 ppm. The only violative tests occurred when the active ingredient was found on crops lacking established tolerances. Detections have been made on cilantro, celery, spinach, rice, raisins, green onions, and mustard greens, none of the detections exceeded the established tolerances. The current tolerance for broccoli is 0.05 ppm.

Potential exposure from broccoli consumption:
The highest concentration representing use on broccoli was found to be 0.0168 ppm following use at the 0.25 lbs a.i./A rate. These data were submitted as part of IR-4 tolerance setting. Experiments found no residues in broccoli samples treated with 0.125 lbs a.i./A but did find detectable residues in one out of seven fields at the 0.25 lbs a.i./A rate. The maximum detected broccoli residue in that one field is the 0.0168 ppm mentioned above.

The average daily consumption of broccoli is 7.5 lbs/yr which corresponds to 9.3 grams/day. If an adult consumes this amount of broccoli that was treated with oxyfluorfen (and that broccoli ended up with the maximum detected residue of 0.0168 ppm) they would be expected to be exposed to 0.00000195 mg oxyfluorfen/ kg body weight per day. This is lower than the established acceptable daily intake (ADI) of 0.003 mg oxyfluorfen/ kg body weight per day. This value is conservatively based on 100% of the broccoli weight even though it is understood that oxyfluorfen is only going to be present in fatty-type tissues of the plant (based on its K_{ow} of 4.86 and that broccoli is 0.4% fat). Additionally, this is based on 100% uptake into the body even though rat studies have shown that only 18% is expected to cross the GI tract and into the body.

Oxyfluorfen is classified as likely to be carcinogenic to humans with an exposure level for cancer risk set at 0.0732 mg oxyfluorfen/kg body weight per day. Based on the above calculation an individual would have to eat over 37,000 daily equivalents to reach this exposure level for cancer risk. This value overestimates the exposure potential by using the highest known concentration of oxyfluorfen in broccoli or any other commodity tested in USDA's PDP program, overestimating the partitioning into the broccoli, and overestimating the potential for crossing out of the GI tract.

Fate and transfer in the environment:
As previously discussed oxyfluorfen has a high K_{ow} indicating it is likely to partition into fatty tissues. That together with the low solubility in water indicates leaching into groundwater is not a likely concern for this compound. The vapor pressure and Henry's law constant (0.026 mPa and 0.0238 Pa/ m^3 mol^{-1} respectively) indicate low and non-volatility, together with the K_{ow} and solubility values, indicate that movement off-site is unlikely.

In studies looking at the depth of penetration into the soil horizon oxyfluorfen has been found to travel short distances. One study found the compound stayed within the top ten centimeters at 28 days after application. Another study found after three to twelve centimeters of rain the product traveled to five to nine centimeters deep.

Degradation:
Soil half-life data are variable. The range for laboratory-derived half-life data averages from 35 to 138 days, though the full range went up to 438 days. Soil field-derived half-life data were also variable and ranged from 31 to 172 days, averaging at 73 days. Using the five half-lives rule of thumb, under the most extreme persistence (438 days) this chemical would take approximately six years until the product would be eliminated from the environment, or more specifically 97.5% degraded. Under more normal or average conditions, the

product would be expected to be eliminated from the soil environment in one year, again at the 97.5% eliminated threshold.

Sunlight appears to have significant degradation effects on the chemical which are reflected in shorter half-lives when the compound is in or on the plant or in sun-lit water. Water itself does not cause the compound to break down. On the surface of a plant, the breakdown half-life is 1.6 days. When the product is measured as on and in the plant tissues the half-life is 3.6 days.

Long term soil dynamics:
Due to the combination of persistence in the soil and bioaccumulation potential the long-term patterns of oxyfluorfen are of concern. Soils of differing compositions will differ in their behavior, however some studies indicate that oxyfluorfen does not accumulate in soils significantly. Figure 1 shows soil concentration of oxyfluorfen on the same parcel over a four-year period. Given the typical half-life 95.5% elimination from the soil is expected at the one-year point and you can see from the graph that the prediction is pretty accurate. The soil concentration at day 150 is approximately 0.8 mg/kg and the soil concentration at day 1350 (or 150 days after the fourth application) is approximately 1 mg/kg. While this is clearly an increase it does not follow the typical patterns of additive exposures which increase over time. Additionally, the soil maximum concentrations do not increase over time.

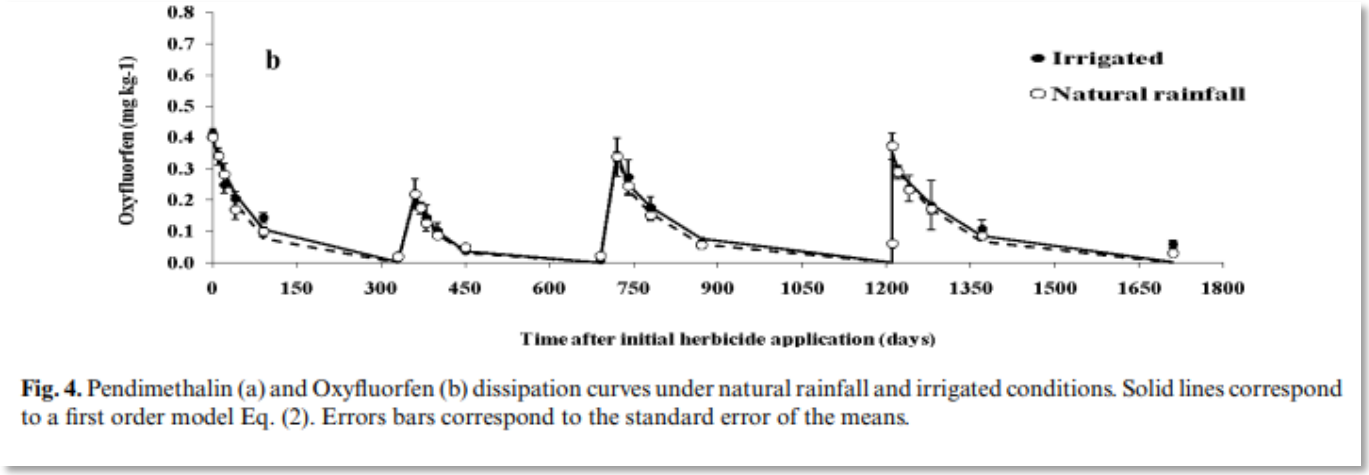


Fig. 4. Pendimethalin (a) and Oxyfluorfen (b) dissipation curves under natural rainfall and irrigated conditions. Solid lines correspond to a first order model Eq. (2). Errors bars correspond to the standard error of the means.

Figure 1. Excerpt from paper by Claudio et al. 2009 showing soil concentrations of oxyfluorfen following repeated applications over a four year period.

Another study has shown that oxyfluorfen residues that become entrapped by the soil stay bound to the soil particles. Forty-two percent of the applied oxyfluorfen was found in the top two centimeters of soil 109 days following a wintertime application in an olive orchard under natural rainfall conditions. Of the oxyfluorfen found offsite it was found in the sediment, not the rainwater accumulated offsite. This reaffirms the data suggesting oxyfluorfen is unlikely to leach while reminding us that offsite transport can still occur. The residues are not considered to be active when they are bound.

Technical consideration:
It is of note that oxyfluorfen may be considered as a PFAS compound under the State of Maine's PFAS definition as per LD 1503 An Act To Stop Perfluoroalkyl and Polyfluoroalkyl Substances Pollution. Oyxfluorfen does not meet the Office of Pesticide Pollution's working definition of PFAS, nor does it fit into

the Buck et al. 2011 classification scheme. Under LD 1503 all intentionally added PFAS compounds will be prohibited from entering the state in 2030 and beyond unless specifically allowed by the Department of Environmental Protection (DEP).

Details of this SLN application:
The Goal Tender supplemental label states that the required amount of time following application that harvest activities are allowed is 35 days. There are 10 specific restrictions on the supplemental label. Use under this label does not allow rates that exceed those tested in the IL-4 testing program (0.25 lbs per acre), meaning the estimates of how much oxyfluorfen may enter the food supply would likely not exceed those estimated by the analysis performed. Similar SLN registrations have been issued in AZ, DE, MI, NY, PA, & TX.

The EPA Office of Pesticide Program's webpage indicates that the oxyfluorfen registration reevaluation interim decision is to be released in the first quarter of 2022.

References

Resistance classification group: https://hracglobal.com/tools/hrac-mode-of-action-classification-2021-map

Hazard classification: WHO (2005) The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification 2004, International Programme on Chemical Safety, p.34

Applicator hazards: https://pubchem.ncbi.nlm.nih.gov/compound/39327#section=Skin-Eye-and-Respiratory-Irritations & https://pubchem.ncbi.nlm.nih.gov/compound/39327#section=Human-Toxicity-Excerpts

Tolerance for broccoli: https://www.ecfr.gov/current/title-40/chapter-I/subchapter-E/part-180/subpart-C/section-180.381

USDA PDP: https://www.ams.usda.gov/datasets/pdp

Broccoli test residues: Submitted test results in 2009 SLN review, data generated by IR-4 National Pesticide Clearance Protocol oxyfluorfen/broccoli. PR No 08806. Analytical results Report Date 08/02/05.

Broccoli consumption: https://www.statista.com/statistics/257338/per-capita-consumption-of-fresh-broccoli-in-the-us/

Broccoli fat content: https://www.healthline.com/nutrition/foods/broccoli#nutrients

Oxyfluorfen K_{ow} value: https://sitem.herts.ac.uk/aeru/ppdb/en/Reports/502.htm

Uptake rate: EPA 2014. Oxyfluorfen: Human Health Assessment Scoping Document in Support of Registration Review. PC Code 111601. Decision No. 489866. Nieves et al.

Cancer risk: EPA 2014. Oxyfluorfen: Human Health Assessment Scoping Document in Support of Registration Review. PC Code 111601. Decision No. 489866. Nieves et al.

Water solubility: https://sitem.herts.ac.uk/aeru/ppdb/en/Reports/502.htm

Figure of oxyfluorfen applications over four years: Claudio A. Alister , Patricio A. Gomez , Sandra Rojas & Marcelo Kogan (2009) Pendimethalin and oxyfluorfen degradation under two irrigation conditions over four years application, Journal of Environmental Science and Health Part B, 44:4, 337-343, DOI: 10.1080/03601230902800986

Oxyfluorfen in olive orchard: Calderon MJ, De Luna E, Gomez JA, Hermosin MC. Herbicide monitoring in soil, runoff waters and sediments in an olive orchard. Sci Total Environ. 2016 Nov 1;569-570:416-422. doi: 10.1016/j.scitotenv.2016.06.126. Epub 2016 Jun 25. PMID: 27351146.

OPP renewal schedule: https://www.epa.gov/pesticide-reevaluation/upcoming-registration-review-actions

Form Approved. OMB No. 2070-0182 Approval expires 5-31-15

United States Environmental Protection Agency
Office of Pesticide Programs, Registration Division (7505C)
Washington, DC 20460

Application for/Notification of State Registration of a Pesticide To Meet a Special Local Need

(Pursuant to section 24(c) of the Federal Insecticide, Fungicide, and Rodenticide Act, as Amended)

For State Use Only
Registration No. Assigned
Date Registration Issued

1. Name and Address of Applicant for Registration

Adaura, LLC
4780 Ashford Dunwoody Road
Ste 540-267
Atlanta, GA 30338

2. Product is (Check one)

- [X] EPA-Registered — EPA Registration Number: 92894-3
- [ ] New (not EPA-registered) — Attach EPA Form 8570-4, Confidential Statement of Formula for new products. — EPA Company Number: 92894

3. Active Ingredient(s) in Product

4. Product Name

GoalTender

5. If this is a food/feed use, a tolerance or other residue clearance is required. Cite appropriate regulations in 40 CFR Part 180, 185, and/or 186. 40 CFR Part 180.381

6. Type of Registration (Give details in Item 13 or on a separate page, properly identified and attached to this form):

- [ ] a. To permit use of a new product.
- [X] b. To amend EPA registrations for one or more of the following purposes:
  - [X] (1) To permit use on additional crops or animals.
  - [ ] (2) To permit use at additional sites.
  - [ ] (3) To permit use against additional pests.
  - [ ] (4) To permit use of additional application techniques or equipment.
  - [ ] (5) To permit use at different application rates.
  - [ ] (6) Other (specify below)

7. Nature of Special Local Need (check one)

- [ ] There is no pesticide product registered by EPA for such use.
- [X] There is no EPA-registered pesticide product which, under the conditions of use within the State, would be as safe and/or as efficacious for such use within the terms and conditions of EPA registration.
- [ ] An appropriate EPA-registered pesticide product is not available.

8. If this registration is an amendment to an EPA-registered product, is it for a "new use" as defined in 40 CFR 152.3 ?

- [ ] Yes (discuss in Item 13 below)
- [X] No

9. Has an EPA Registration or Experimental Use Permit for this chemical ever been (check applicable box(es), if known):

- [X] Sought
- [X] Issued
- [ ] Denied
- [ ] Cancelled
- [ ] Suspended
- [X] Registration
- [ ] Experimental Use Permit
- [ ] No Previous Permit Action

10. Has FIFRA section 24(c) registration for this use of the product ever, by another State, been (check appropriate box(es), if known):

- [X] Sought
- [X] Issued
- [ ] Denied
- [ ] Revoked

If any of the above are checked, list States in item 13 below.

- [ ] No FIFRA section 24(c) Action

11. Endangered Species Act: (Give details in Item 13 or on a separate page, properly identified and attached to this form)

Identify the counties where this pesticide will be used. If Statewide, indicate "all." Provide a list of Federally protected endangered/threatened species which occur in the areas of proposed use. ALL

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate, and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

12. Indicate use status of Special Local Need, i.e., planned dates of use:

From: January 1 To: December 31.

Signature of Applicant or Authorized Representative

MaryAnn M Kellogg

13. Comments (attach additional sheet, if needed)

10. CA, NY,TX, NJ, MI, PA, DE, AZ

11. Attached

Title

Regulatory Consultant

Telephone Number	Date
253-853-7369	January 27, 2022

Determination by State Agency

This registration is for a Special Local Need and is being issued in accordance with section 24(c) of FIFRA, as amended. To the best of our knowledge, the information above is correct, except as noted in "Comments" below or in attachments.

Name, Title, and Address of State Agency Official	Comments (by State Agency Only)	Received by EPA
Title		
Telephone Number / Date		

EPA Form 8570-25 (Rev. 5-12)

EPA COPY

Listed species believed to or known to occur in Maine

Source: US-FWS Environmental Conservation Online System (ECOS)
https://ecos.fws.gov/ecp/report/species-listings-by-state?stateAbbrev=ME&stateName=Maine&statusCategory=Listed
Date: 1/28/2022

Notes:
As of 02/13/2015 the data in this report has been updated to use a different set of information. Results are based on where the species is believed to or known to occur. The FWS feels utilizing this data set is a better representation of species occurrence. Note: there may be other federally listed species that are not currently known or expected to occur in this state but are covered by the ESA wherever they are found; Thus if new surveys detected them in this state they are still covered by the ESA. The FWS is using the best information available on this date to generate this list.
This report shows listed species or populations believed to or known to occur in ME
This list does not include experimental populations and similarity of appearance listings.
Click on the highlighted scientific names below to view a Species Profile.

12 Species Listings

Scientific Name	Common Name	Where Listed	Region	ESA Listing Status
Birds				
Charadrius melodus	Piping Plover	[Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered.	5	Threatened
Calidris canutus rufa	Red knot	Wherever found	5	Threatened
Sterna dougallii dougallii	Roseate tern	Northeast U.S. nesting population	5	Endangered
Fishes				
Salmo salar	Atlantic salmon	Gulf of Maine DPS	5	Endangered
Flowering Plants				
Platanthera leucophaea	Eastern prairie fringed orchid	Wherever found	3	Threatened
Pedicularis furbishiae	Furbish lousewort	Wherever found	5	Endangered
Isotria medeoloides	Small whorled pogonia		5	Threatened
Insects				
Bombus affinis	Rusty patched bumble bee	Wherever found	3	Endangered
Mammals				

Lynx canadensis	Canada Lynx	Wherever Found in Contiguous U.S.	6	Threatened
Myotis septentrionalis	Northern Long-Eared Bat	Wherever found	3	Threatened
Reptiles				
Eretmochelys imbricata	Hawksbill sea turtle	Wherever found	4	Endangered
Dermochelys coriacea	Leatherback sea turtle	Wherever found	4	Endangered

FIFRA 24(c) Special Local Need Label

GoalTender®

EPA Reg. No. 92894-3

24(c) Special Local Need Registration SLN ME-220001

For Postemergence Use in Broccoli

(For Distribution and Use Only in the State of Maine)

Expiration date: This label expires and must not be distributed or used in accordance with this SLN registration after December 31, 2027.

Conditions and Risks of Use for Special Local Need

USE OF GoalTender® (THE "PRODUCT") ON BROCCOLI (THE "CROP") FOR THIS SPECIAL LOCAL NEED MAY RESULT IN CROP INJURY, CROP YIELD REDUCTION AND/OR CROP LOSS AS FURTHER DISCUSSED BELOW. READ AND UNDERSTAND THESE CONDITIONS AND RISKS OF USE FOR SPECIAL LOCAL NEED BEFORE USING THE PRODUCT ON THE CROP.

This Product is available for use in the manner described in this Supplemental Labeling on the basis that, in the sole opinion of the user, the benefits and utility derived from the use of the Product on the Crop outweigh the potential risk of Crop injury, Crop yield reduction or Crop loss. The decision to use this Product in the manner described in this Supplemental Labeling must be made by each individual user on the basis of anticipated benefits versus (i) the potential risk of Crop injury, Crop yield reduction and Crop loss, (ii) the severity of the target pest infestation, (iii) the cost and availability of alternative pest controls and (iv) any other relevant factors.

By purchasing the Product for use, or using the Product, in the manner described in this Supplemental Labeling, you acknowledge and accept that, to the extent permitted by law:

(1) you assume all risk of Crop injury, Crop yield reduction and Crop loss;
(2) Adaura, LLC does not make, and do not authorize any agent or representative to make, any representations or recommendations regarding the use of this Product on the Crop other than the statements on this Supplemental labeling;
(3) Adaura, LLC does not make, and does not authorize any agent or representative to make, any warranties, express or implied, with respect to the use of the Product on the Crop and disclaim all warranties, expressed or implied, including any implied warranty of merchantability;
(4) Adaura, LLC disclaims all liability for any damages, losses, expenses, claims or causes of actions arising out of or relating to Crop injury, Crop yield reduction and/or Crop loss;
(5) these Conditions and Risks of Use for Special Local Need supersede any contrary representations or recommendations by Dow AgroSciences, or its respective agents or representatives, and any provisions in or on any Product literature or labeling including any provisions on the label affixed to the Product container.

If these Conditions and Risks of Use for Special Local Need are not acceptable, the unopened Product may be returned to the seller for a refund or used for a different labeled use in accordance with the label affixed to the Product container.

These Conditions and Risks of Use for Special Local Need are required by Adaura, LLC and not specified by the US EPA or the State of Maine.

ATTENTION

- It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
- This label must be in the possession of the user at the time of pesticide application.
- Read this SLN labeling and the label affixed to the container for GoalTender™ before applying. All applicable use directions, precautions and restrictions on this SLN labeling and the label affixed to the product container must be followed.

Directions for Use

GoalTender® may be applied as a broadcast or directed spray for the postemergence suppression/control of susceptible broadleaf weed species in direct-seeded or transplanted broccoli.

Crop Tolerance Information: Broccoli are tolerant to postemergence applications of GoalTender; however, under certain conditions, GoalTender can cause severe crop injury. Application to crops grown under very mild (cool, cloudy) conditions can produce leaf cupping, crinkling, stunting, or necrotic lesions. When injury occurs, it is usually limited to the treated leaves with new leaves emerging undamaged. Delay in crop development and/or maturity, and yield reduction can result under these conditions.

Do not use GoalTender on plants that are weakened or are under stress due to temperature, disease, fertilizer, soil, salts, nematodes, insects, pesticides, drought, excessive moisture, flooding, or soil crusting.

Application Rate, Timing and Method of Application: Apply GoalTender as a broadcast postemergence application at the rate of 4 to 6 fl oz per acre (0.125 to 0.188 lb active). GoalTender may also be applied as a directed application at a rate of 4 to 8 fl oz per acre (0.125 to 0.25 lb active). Directed applications are those where spray mixtures are applied in such a way as to minimize contact to crop leaves, directing the spray toward the soil at the base of the crop.

For direct-seeded crops apply when the crop reaches a minimum of four true leaves. For transplanted crops apply after a minimum of two weeks after planting.

For postemergence use in broccoli do not mix GoalTender with adjuvants (oils, surfactants), liquid fertilizer or pesticides.

Apply only with ground equipment in a spray volume of 20 gallons or more of water per acre. Increase the spray volume to ensure complete and uniform coverage as weed height and density increases. Use a low-pressure sprayer equipped with flat fan nozzles operated at the manufacturer's recommended pressure.

Weeds Controlled or Suppressed Postemergence: GoalTender provides postemergence control/suppression of the following weeds when used at recommended dosages:

Common Name	Scientific Name
burning nettle	*Urtica urens*
cheeseweed (Malva)	*Malva parviflora*
nightshade, black	*Solanum nigrum*
pigweed, redroot	*Amaranthus retroflexus*
purslane, common	*Portulaca oleracea*
shepherdspurse	*Capsella bursa-pastoris*
sowthistle, annual	*Sonchus oleraceus*

Cultural Considerations: Best weed control results when GoalTender is applied to young (1-4 leaf), actively growing weeds.

Use Restrictions

In addition to the General Use Restrictions in the product label for GoalTender, the following use restrictions must be observed:

- For direct-seeded crops, do not apply more than 8 fl oz per acre (0.25 lb active) per crop as a post emergence treatment.

- For transplanted crops, do not apply more than 8 fl oz per acre (0.25 lb active) per crop as a post-transplant treatment. If a pre-transplant (preplant) treatment has previously been made, the combination of pre- plus post-transplant treatments must not exceed 16 fl oz per acre per season (0.5 lbs active).
- Do not add any adjuvant or liquid fertilizer to the spray mixture.
- For postemergence use in broccoli do not mix GoalTender with adjuvants (oils, surfactants), liquid fertilizer or pesticides.
- Do not apply within 35 days of harvest.
- Do not apply when weather conditions favor drift. Avoid drift to all non-target areas. GoalTender is phytotoxic to susceptible plant foliage.
- **Chemigation**: Under this SLN label, do not apply this product through any type of irrigation system.
- Avoid application if heavy rainfall is predicted to occur within 24 hours after planned application.
- The use directions under this SLN label supersede the Section 3 label prohibitions for broccoli.
- Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

Produced for:
Adaura, LLC
4780 Ashford Dunwoody Road, Ste 540-267
Atlanta, GA 30338

®Trademark of Nutrichem Co. Ltd.

(20220127)

FIFRA 24(c) Special Local Need Label

GoalTender®

EPA Reg. No. 92894-3-71368

24(c) Special Local Need Registration SLN ME-220001B

For Postemergence Use in Broccoli

(For Distribution and Use Only in the State of Maine)

Expiration date: This label expires and must not be distributed or used in accordance with this SLN registration after December 31, 2027.

Conditions and Risks of Use for Special Local Need

USE OF GoalTender® HERBICIDE (THE "PRODUCT") ON BROCCOLI (THE "CROP") FOR THIS SPECIAL LOCAL NEED MAY RESULT IN CROP INJURY, CROP YIELD REDUCTION AND/OR CROP LOSS AS FURTHER DISCUSSED BELOW. READ AND UNDERSTAND THESE CONDITIONS AND RISKS OF USE FOR SPECIAL LOCAL NEED BEFORE USING THE PRODUCT ON THE CROP.

This Product is available for use in the manner described in this Supplemental Labeling on the basis that, in the sole opinion of the user, the benefits and utility derived from the use of the Product on the Crop outweigh the potential risk of Crop injury, Crop yield reduction or Crop loss. The decision to use this Product in the manner described in this Supplemental Labeling must be made by each individual user on the basis of anticipated benefits versus (i) the potential risk of Crop injury, Crop yield reduction and Crop loss, (ii) the severity of the target pest infestation, (iii) the cost and availability of alternative pest controls and (iv) any other relevant factors.

By purchasing the Product for use, or using the Product, in the manner described in this Supplemental Labeling, you acknowledge and accept that, to the extent permitted by law:

(1) you assume all risk of Crop injury, Crop yield reduction and Crop loss;
(2) Nufarm Americas, Inc. does not make, and do not authorize any agent or representative to make, any representations or recommendations regarding the use of this Product on the Crop other than the statements on this Supplemental labeling;
(3) Nufarm Americas, Inc. does not make, and does not authorize any agent or representative to make, any warranties, express or implied, with respect to the use of the Product on the Crop and disclaim all warranties, expressed or implied, including any implied warranty of merchantability;
(4) Nufarm Americas, Inc. disclaims all liability for any damages, losses, expenses, claims or causes of actions arising out of or relating to Crop injury, Crop yield reduction and/or Crop loss;
(5) these Conditions and Risks of Use for Special Local Need supersede any contrary representations or recommendations by Nufarm Americas, Inc., or its respective agents or representatives, and any provisions in or on any Product literature or labeling including any provisions on the label affixed to the Product container.

If these Conditions and Risks of Use for Special Local Need are not acceptable, the unopened Product may be returned to the seller for a refund or used for a different labeled use in accordance with the label affixed to the Product container.

These Conditions and Risks of Use for Special Local Need are required by Nufarm Americas, Inc. and not specified by the US EPA or the State of Maine.

ATTENTION

- It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
- This label must be in the possession of the user at the time of pesticide application.
- Read this SLN labeling and the label affixed to the container for GoalTender™ herbicide before applying. All applicable use directions, precautions and restrictions on this SLN labeling and the label affixed to the product container must be followed.

Directions for Use

GoalTender® herbicide may be applied as a broadcast or directed spray for the postemergence suppression/control of susceptible broadleaf weed species in direct-seeded or transplanted broccoli.

Crop Tolerance Information: Broccoli are tolerant to postemergence applications of GoalTender; however, under certain conditions, GoalTender can cause severe crop injury. Application to crops grown under very mild (cool, cloudy) conditions can produce leaf cupping, crinkling, stunting, or necrotic lesions. When injury occurs, it is usually limited to the treated leaves with new leaves emerging undamaged. Delay in crop development and/or maturity, and yield reduction can result under these conditions.

Do not use GoalTender on plants that are weakened or are under stress due to temperature, disease, fertilizer, soil, salts, nematodes, insects, pesticides, drought, excessive moisture, flooding, or soil crusting.

Application Rate, Timing and Method of Application: Apply GoalTender as a broadcast postemergence application at the rate of 4 to 6 fl oz per acre (0.125 to 0.188 lb active). GoalTender may also be applied as a directed application at a rate of 4 to 8 fl oz per acre (0.125 to 0.25 lb active). Directed applications are those where spray mixtures are applied in such a way as to minimize contact to crop leaves, directing the spray toward the soil at the base of the crop.

For direct-seeded crops apply when the crop reaches a minimum of four true leaves. For transplanted crops apply after a minimum of two weeks after planting.

For postemergence use in broccoli do not mix GoalTender with adjuvants (oils, surfactants), liquid fertilizer or pesticides.

Apply only with ground equipment in a spray volume of 20 gallons or more of water per acre. Increase the spray volume to ensure complete and uniform coverage as weed height and density increases. Use a low-pressure sprayer equipped with flat fan nozzles operated at the manufacturer's recommended pressure.

Weeds Controlled or Suppressed Postemergence: GoalTender provides postemergence control/suppression of the following weeds when used at recommended dosages:

Common Name	Scientific Name
burning nettle	*Urtica urens*
cheeseweed (Malva)	*Malva parviflora*
nightshade, black	*Solanum nigrum*
pigweed, redroot	*Amaranthus retroflexus*
purslane, common	*Portulaca oleracea*
shepherdspurse	*Capsella bursa-pastoris*
sowthistle, annual	*Sonchus oleraceus*

Cultural Considerations: Best weed control results when GoalTender is applied to young (1-4 leaf), actively growing weeds.

Use Restrictions

In addition to the General Use Restrictions in the product label for GoalTender, the following use restrictions must be observed:

- For direct-seeded crops, do not apply more than 8 fl oz per acre (0.25 lb active) per crop as a post emergence treatment.
- For transplanted crops, do not apply more than 8 fl oz per acre (0.25 lb active) per crop as a post-transplant treatment. If a pre-transplant (preplant) treatment has previously been made, the combination of pre- plus post-transplant treatments must not exceed 16 fl oz per acre per season (0.5 lbs active).
- Do not add any adjuvant or liquid fertilizer to the spray mixture.
- For postemergence use in broccoli do not mix GoalTender with adjuvants (oils, surfactants), liquid fertilizer or pesticides.
- Do not apply within 35 days of harvest.
- Do not apply when weather conditions favor drift. Avoid drift to all non-target areas. GoalTender is phytotoxic to susceptible plant foliage.
- **Chemigation**: Under this SLN label, do not apply this product through any type of irrigation system.
- Avoid application if heavy rainfall is predicted to occur within 24 hours after planned application.
- The use directions under this SLN label supersede the Section 3 label prohibitions for broccoli.
- Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

Produced for:
Nufarm Inc.
11901 S. Austin Avenue
Alsip, IL 60803

GoalTender is a registered trademark of Nutrichem Co, LTD and used under exclusive license by Nufarm Americas, Inc.

R204-089
Approved: 04/04/17
Replaces: R204-051

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

August 14, 2020

Maryanned Geisbush
Regulatory Consultant
Adaura, LLC
c/o Pyxis Regulatory Consulting Inc.
410 136th St. Ct. NW
Gig Harbor, WA 98332

Subject: Notification per PRN 98-10 – Minor label revisions
Product Name: GoalTender
EPA Registration Number: 92894-3
Application Date: July 29, 2020
Decision Number: 565076

Dear Ms. Geisbush:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

The label submitted with the application has been stamped "Notification" and will be placed in our records.

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

If you have any questions, you may contact please contact Lindsay DeMers at 703-308-3194 or by email at demers.lindsay@epa.gov.

Shaja B. Joyner, Product Manager 20
Fungicide-Herbicide Branch
Registration Division 7505P

NOTIFICATION
92894-3-label
The applicant has certified that no changes, other than those reported to the Agency have been made to the labeling. The Agency acknowledges this notification by letter dated:
08/14/2020

(Base label):

GoalTender®
HERBICIDE

Use Directions For: artichokes (globe), broccoli/cabbage/cauliflower, cacao, citrus (nonbearing), coffee, conifer (seedbeds, transplants, container stock) and selected deciduous trees, corn, cotton, cottonwood, eucalyptus, fallow bed, (cotton/soybeans) fallow land, garbanzo beans, garlic, guava (Hawaii only), horseradish, jojoba, mint, onions, onions grown for seed, papaya (Hawaii only), soybeans, taro, treefruit/nut/vine

Active Ingredient	
oxyfluorfen: 2-chloro-1-(3-ethoxy-4-nitrophenoxy)4-(trifluoromethyl)benzene	41%
Other Ingredients	59%
Total	100%

Contains 4 pounds active ingredient per gallon

Shake Well Before Using

Keep Out of Reach of Children

CAUTION

Precautionary Statements

Hazards to Humans and Domestic Animals

Avoid contact with skin or clothing.

Personal Protective Equipment (PPE):

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category A on an EPA chemical resistance category selection chart.

Mixers, loaders and applicators using engineering controls (see Engineering Controls requirements below) must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves such as Nitrile, Butyl, Neoprene, and/or Barrier Laminate) when mixing and loading
- Chemical-resistant apron when mixing and loading

All other mixers, loaders, applicators and other handlers must wear:

- Coveralls over long-sleeved shirt and long pants
- Chemical-resistant footwear plus socks
- Chemical-resistant gloves (such as Nitrile, Butyl, Neoprene, and/or Barrier Laminate)
- Protective eyewear (goggles of face shield)
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when exposed to the product concentrate

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

Engineering Controls: Mixers and loaders supporting aerial applications to fallow land or ground applications to corn, cotton or soybeans must use a closed system that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4)], and must:

- Wear the personal protective equipment required above for mixers/loaders using engineering controls
- Wear protective eyewear if the system operates under pressure, and
- Be provided and have immediately available for use in case of emergency, such as a broken package, spill, or equipment breakdown, coveralls and chemical-resistant footwear.

Handlers performing applications to corn must use an enclosed cab that meets the definition in the Worker Protection Standard for agricultural pesticides [40 CFR 170.240(d)(5)] for dermal protection. In addition, such applicators must:

- Wear the personal protective equipment required above for applicators using engineering controls
- Be provided and must have immediately available for use in an emergency when they must exit the cab in the treated area: coveralls, chemical-resistant gloves, chemical-resistant footwear, and chemical-resistant headgear, if overhead exposure.
- Take off any PPE that was worn in the treated area before reentering the cab, and
- Store all such PPE in a chemical-resistant container, such as a plastic bag, to prevent contamination of the inside of the cab.

Pilots must use an enclosed cockpit in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6);

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove contaminated 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 product is toxic to aquatic invertebrates and wildlife. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. See Directions for Use for additional restrictions. Do not contaminate water when disposing of equipment wash water or rinseate.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to the label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

Nonrefillable containers 5 gallons or less:

Storage and Disposal:

Do not contaminated water, food or feed by storage or disposal
Pesticide Storage: Keep from Freezing. Store above 32°F
Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide spray mixture or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.
Container Handling: Nonrefillable container. Do not reuse or refill this container. After rinsing, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.
Triple rinse or pressure 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. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable containers larger than 5 gallons:

Storage and Disposal:

Do not contaminated water, food or feed by storage or disposal
Pesticide Storage: Keep from Freezing. Store above 32°F
Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide spray mixture or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.
Container Handling: Refillable container. 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. 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 a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Nonrefillable containers larger than 5 gallons:

Storage and Disposal:

Do not contaminated water, food or feed by storage or disposal
Pesticide Storage: Keep from Freezing. Store above 32°F
Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide spray mixture or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.
Container Handling: Nonrefillable container. Do not reuse or refill this container. After rinsing, offer for recycling if available available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.
Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **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. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refer to label booklet for Directions for Use.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

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

EPA Reg. No. ~~62719-447~~92894-3 EPA Est. _____

®Trademark of ~~The Dow Chemical Company ("Dow") or an affiliated company of Dow~~Nutrichem Co. Ltd.

Produced for
~~Dow AgroSciences~~Adaura, LLC
~~9330 Zionsville Road~~4780 Ashford Dunwoody Road, Ste 540-267
~~Indianapolis, IN 46268~~ Atlanta, GA 30338

NET CONTENTS _____

(cover / shipping container)

GoalTender®
HERBICIDE

Use Directions For: artichokes (globe), broccoli/cabbage/cauliflower, cacao, citrus (nonbearing), coffee, conifer (seedbeds, transplants, container stock) and selected deciduous trees, corn, cotton, cottonwood, eucalyptus, fallow bed, (cotton/soybeans) fallow land, garbanzo beans, garlic, guava (Hawaii only), horseradish, jojoba, mint, onions, onions grown for seed, papaya (Hawaii only), soybeans, taro, treefruit/nut/vine

Active Ingredient
oxyfluorfen: 2-chloro-1-(3-ethoxy-4-nitrophenoxy)4-(trifluoromethyl)benzene 41%
Other Ingredients 59%
Total 100%

Contains 4 pounds active ingredient per gallon

Shake Well Before Using

Keep Out of Reach of Children

CAUTION

Agricultural Use Requirements
Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to the label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

Refer to inside of label booklet for Precautionary Statements and Directions for Use.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

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

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NET CONTENTS _____

(Page 1 through end):

Precautionary Statements

Hazards to Humans and Domestic Animals

CAUTION

Avoid contact with skin or clothing.

Personal Protective Equipment (PPE):

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category A on an EPA chemical resistance category selection chart.

Mixers, loaders and applicators using engineering controls (see Engineering Controls requirements below) must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves such as Nitrile, Butyl, Neoprene, and/or Barrier Laminate) when mixing and loading
- Chemical-resistant apron when mixing and loading

All other mixers, loaders, applicators and other handlers must wear:

- Coveralls over long-sleeved shirt and long pants
- Chemical-resistant footwear plus socks
- Chemical-resistant gloves (such as Nitrile, Butyl, Neoprene, and/or Barrier Laminate)
- Protective eyewear (goggles of face shield)
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when exposed to the product concentrate

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

Engineering Controls: Mixers and loaders supporting aerial applications to fallow land or ground applications to corn, cotton, or soybeans must use a closed system that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4)], and must:

- Wear the personal protective equipment required above for mixers/loaders using engineering controls
- Wear protective eyewear if the system operates under pressure, and
- Be provided and have immediately available for use in case of emergency, such as a broken package, spill, or equipment breakdown, coveralls and chemical-resistant footwear.

Handlers performing applications to corn must use an enclosed cab that meets the definition in the Worker Protection Standard for agricultural pesticides [40 CFR 170.240(d)(5)] for dermal protection. In addition, such applicators must:

- Wear the personal protective equipment required above for applicators using engineering controls
- Be provided and must have immediately available for use in an emergency when they must exit the cab in the treated area: coveralls, chemical-resistant gloves, chemical-resistant footwear, and chemical-resistant headgear, if overhead exposure.
- Take off any PPE that was worn in the treated area before reentering the cab, and
- Store all such PPE in a chemical-resistant container, such as a plastic bag, to prevent contamination of the inside of the cab.

Pilots must use an enclosed cockpit in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6);

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove contaminated 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 product is toxic to aquatic invertebrates and wildlife. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. See Directions for Use for additional restrictions. Do not contaminate water when disposing of equipment wash water or rinseate.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

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. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

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 greenhouses, 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. 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) of 24 hours, except for the following:

- Onions, garlic and horseradish: The REI is 48 hours

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 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 for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.
Do not enter or allow others to enter until sprays have dried.

Storage and Disposal:

Do not contaminated water, food or feed by storage or disposal
Pesticide Storage: Keep from Freezing. Store above 32°F
Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide spray mixture or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Nonrefillable containers 5 gallons or less:
Container Handling: Nonrefillable container. Do not reuse or refill this container. After rinsing, offer for recycling if available available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.
Triple rinse or pressure 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. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable containers larger than 5 gallons:
Container Handling: Refillable container. 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. 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 a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Nonrefillable containers larger than 5 gallons:
Container Handling: Nonrefillable container. Do not reuse or refill this container. After rinsing, offer for recycling if available available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.
Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **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. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

PRODUCT INFORMATION

GoalTender® herbicide is a selective herbicide for postemergence and preemergence residual weed control in labeled crops. Directions provided in the General Use Information section of this label apply to all uses of this product. Use directions for listed crops are provided in the Crop-Specific Use Directions section of this label.

Use Restrictions

The following use restrictions apply to all labeled uses of GoalTender (Refer to directions for use for individual crops for additional crop-specific use restrictions.):

- Do not graze or harvest plants from areas treated with GoalTender for feed or forage.
- Apply GoalTender only with ground equipment unless otherwise specified in crop-specific use directions.
- GoalTender is phytotoxic to plant foliage. Avoid accidental spray contact or drift with established crops. Do not apply when weather conditions favor drift to non-target areas.
- Some labeled crops are tolerant to over-the-top applications of GoalTender if applied during dormancy. Do not make over-the-top applications unless specifically allowed in crop-specific use directions.
- Do not treat ditch banks or waterways with GoalTender or contaminate water used for irrigation or domestic purposes.
- Do not apply GoalTender in enclosed greenhouses as foliage injury will result.

Spray Drift Buffer Restrictions

- A 25 foot vegetative buffer strip must be maintained between all areas treated with this product and lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries and commercial fish farm ponds.
- Do not allow spray to drift from the application site and contact people, structures people may occupy at any time and the associated property, parks and recreation areas, non-target crops, aquatic and wetland areas, woodlands, pastures, rangelands, or animals.
- For ground boom applications, apply with nozzle height no more than 4 feet above the ground or crop canopy when wind speed is 10 mph or less at the application site as measured by an anemometer.
- Use coarse spray according to ASAE 572 definition for standard nozzles or VMD of 475 microns for spinning atomizer nozzles.
- The applicator also must use all other measures necessary to control drift.

Rotation Crop Restrictions

- Do not rotate to small-grain crops (includes barley, buckwheat, corn, pearl millet, proso millet, oats, popcorn, rice, rye, sorghum, triticale, wheat, wild rice) within 10 months following an application of GoalTender.
- Do not direct seed any crop, other than a crop labeled for use with GoalTender, within 60 days following application.
- Do not transplant seedlings of crops, other than crops labeled for use with GoalTender, within 30 days following application.
- **IMPORTANT: Unless otherwise specified elsewhere in this label or ~~Dow AgroSciences~~Adaura, LLC supplemental label or product bulletin, treated soil must be thoroughly mixed to a depth of 4 inches after harvest (or abandoning) of the treated crop but prior to planting of the rotational crop. Failure to achieve thorough and complete mixing or to follow the required minimum plant-back interval may result in crop injury, stand reduction and/or vigor reduction of the**

plant-back crop. See specific fallow bed labeling instructions for required treatment-to-planting intervals following application of GoalTender to fallow beds or fallow fields.

Weeds Controlled

Common Name	***Scientific Name***
ageratum	*Ageratum conyzoides*
amaranth, spiny	*Amaranthus spinosus*
balsamapple	*Momordica charantia*
barnyardgrass (watergrass) †	*Echinochloa crus-galli*
bedstraw, catchweed	*Galium aparine*
bittercress, lesser	*Cardamine oligosperma*
bluegrass, annual †	*Poa annua*
buckwheat, wild	*Polygonum convolvulus*
burclover	*Medicago hispida*
buttercup, smallflower	*Ranunculus abortivus*
buttonweed	*Borreria laevis*
camphorweed	*Heterotheca subaxillaris*
canarygrass (annual)	*Phalaris canariensis*
carpetweed	*Mollugo verticillata*
cheeseweed (malva)	*Malva parviflora*
clover, red †	*Trifolium pratense*
clover, white †	*Trifolium repens*
cocklebur, common	*Xanthium pensylvanicum*
crabgrass, large (hairy) †	*Digitaria sanguinalis*
crotalaria	*Crotalaria species*
croton, tropic	*Croton glandulosus*
cudweed, narrowleaf	*Gnaphalium falcatum*
eveningprimrose, cutleaf	*Oenothera laciniata*
fiddleneck, coast †	*Amsinckia intermedia*
filaree, broadleaf	*Erodium botrys*
filaree, redstem	*Erodium cicutarium*
filaree, whitestem	*Erodium moschatum*
fireweed (from seed)	*Epilobium angustifolium*
flixweed	*Descurainia sophia*
foxtail, giant †	*Setaria faberi*
foxtail, green	*Setaria viridis*
foxtail, yellow	*Setaria lutescens*
geranium, Carolina	*Geranium carolinianum*
goosegrass †	*Eleusine indica*
groundcherry, cutleaf	*Physalis angulata*
groundcherry, Wright	*Physalis wrightii*
groundsel, common	*Senecio vulgaris*
henbit	*Lamium amplexicaule*
horseweed (marestail)	*Conyza canadensis*
jimsonweed	*Datura stramonium*
johnsongrass, seedling	*Sorghum halepense*
knotweed, prostrate	*Polygonum aviculare*
ladysthumb (smartweed)	*Polygonum persicaria*
lambsquarters, common	*Chenopodium album*
lettuce, prickly (china lettuce)	*Lactuca serriola*
mallow, little (malva)	*Malva parviflora*
mayweed (dog fennel)	*Anthemis cotula*
minerslettuce	*Montia perfoliata*
morningglory species, annual	*Ipomoea species*
morningglory, ivyleaf †	*Ipomoea hederacea*

morningglory, tall †	*Ipomoea purpurea*
mustard, black	*Brassica nigra*
mustard, blue (purple mustard)	*Chorispora tenella*
mustard, common yellow	*Brassica campestris*
mustard, hedge	*Sisymbrium officinale*
mustard, tumble (Jim hill mustard)	*Sisymbrium altissimum*
mustard, wild	*Brassica kaber*
nettle, burning	*Urtica urens*
nightshade, American black	*Solanum americanum*
nightshade, black	*Solanum nigrum*
nightshade, hairy	*Solanum sarrachoides*
oats, wild	*Avena fatua*
orach, red	*Atriplex rosea*
oxalis (bermuda buttercup)	*Oxalis pes-caprae*
panicum, fall	*Panicum dichotomiflorum*
pepperweed, Virginia	*Lepidium virginicum*
pepperweed, yellowflower	*Lepidium perfoliatum*
pigweed, prostrate	*Amaranthus blitoides*
pigweed, redroot	*Amaranthus retroflexus*
pimpernel, scarlet	*Anagallis arvensis*
poinsettia, wild	*Euphorbia heterophylla*
puncturevine	*Tribulus terrestris*
purslane, common	*Portulaca oleracea*
pusley, florida	*Richardia scabra*
ragweed, common	*Ambrosia artemisiifolia*
redmaids	*Calandrinia caulescens*
rocket, London	*Sisymbrium irio*
ryegrass, Italian	*Lolium multiflorum*
sage, lanceleaf	*Salvia reflexa*
sandbur, field	*Cenchrus incertus*
sandspurry, red	*Spergularia rubra*
sesbania, hemp	*Sesbania exaltata*
shepherdspurse †	*Capsella bursa-pastoris*
sicklepod	*Cassia obtusifolia*
sida, prickly (teaweed)	*Sida spinosa*
signalgrass, broadleaf	*Brachiaria platyphylla*
smartweed, pennsylvania	*Polygonum pensylvanicum*
sorrel, red (from seed)	*Rumex acetosella*
sowthistle, annual	*Sonchus oleraceus*
speedwell, birdseye	*Veronica persica*
spurge, garden	*Euphorbia hirta*
spurge, prostrate ††	*Euphorbia supina*
spurge, spotted ††	*Euphorbia maculata*
spurry, corn	*Spergula arvensis*
tansymustard	*Descurainia pinnata*
thistle, bull ††	*Cirsium vulgare*
thistle, Russian	*Salsola kali*
velvetleaf	*Abutilon theophrasti*
witchgrass	*Panicum capillare*
witchweed	*Striga asiatica*
woodsorrel, common yellow ††	*Oxalis stricta*

† Highest rate and/or multiple applications may be required for acceptable control.
†† Preemergence control only

Application Methods and Cultural Practices

Preemergence Weed Control

Apply the specified rate in a broadcast spray volume of 15 or more gallons of water per acre using calibrated spray equipment capable of uniform application to the soil surface. Seedling weeds are controlled as they come in contact with the soil-applied herbicide during emergence. Preemergence weed control is most effective when GoalTender is applied to soil surfaces that are clean (free of crop or weed residues or clippings) and weed-free. Prior to application, weed or crop residues should be removed by thorough incorporation into the soil using tillage equipment or by blowing the area to be treated. At least 0.25 inch of irrigation or rainfall is required to activate GoalTender and should occur within 3 or 4 weeks after application. For optimum results, GoalTender should be applied to prepared beds or soil surfaces that will be left undisturbed during the time period for which weed control is desired. Cultural practices that disturb or redistribute surface soil following treatment with GoalTender such as cutting water furrows will reduce weed control effectiveness.

Application Rates and Rate Ranges: Where rate ranges are given, use the lower rate in the rate range on coarse texture soils with less than 1% organic matter and lighter weed infestations. Use higher rates in the rate range on medium to fine texture soils, soils containing greater than 1% organic matter, heavy weed infestations, or for extended residual preemergence weed control.

Postemergence Weed Control

Apply the specified rate in a broadcast spray volume of 20 or more gallons of water per acre (a minimum 10 gallons if applying GoalTender in tank mix with glyphosate). Because GoalTender is a contact herbicide, complete and uniform coverage of weed foliage is essential for optimum postemergence control. Increase the spray volume to ensure complete and uniform coverage as weed height and density increases or in the presence of heavy trash (weed or crop residue). Postemergence applications of GoalTender are most effective when made to weeds at the seedling stage. Applications made later than the 4-inch or 4 leaf stage may result in partial control or suppression. Postemergence applications should be made to seedling grasses not exceeding the 2-leaf stage. The addition of 0.25% v/v (2 pints per 100 gallons of spray) of an 80% active nonionic surfactant, labeled for application to growing crops, will enhance herbicidal effectiveness in controlling emerged weeds.

Postemergence Application Rates: Where a rate range is given, use a higher rate in the rate range for heavy weed infestations, weeds in advanced stages of growth or for extended residual preemergence weed control following control of existing emerged weeds.

Ground Application

Ground Broadcast: Apply GoalTender using conventional low-pressure ground spray equipment with flat fan spray nozzles. Follow manufacturer's recommendation for spraying pressure and boom height. An off-center (OC) nozzle positioned at the end of the boom may be desired. Check calibration of spray equipment before each use.

Directed Sprays: Apply GoalTender as a coarse low-pressure spray in a spray volume of 20 or more gallons of spray per acre (broadcast basis). Follow manufacturer’s recommendations for nozzle spacing and operating pressure. Spray should be directed toward the soil at the base of the crop. In row crops, use a minimum of 2 flat fan nozzles per row (one on each side) and for optimum spray coverage use 4 flat fan nozzles per row (two on each side). The 2 forward nozzles should point forward and downward while the rear nozzles should point to the rear and downward. With either sprayer system, nozzles should be adjusted to cover the weed foliage but minimize contact with the crop. Do not apply with hollow cone nozzles.

IMPORTANT: GoalTender is a contact herbicide. Contact of sprays or drift with foliage or green stems can cause severe crop injury. Use directed sprays and spray shields and/or leaf lifters as necessary to minimize contact of spray or drift with crop foliage or stems. Young green stems of woody plants are also susceptible to injury from spray contact. Potential for injury to woody

stems diminishes with loss of green color and the development of relatively impervious non-living corky tissue (bark) on the surface of the stem.

Band Application: Application rates listed in this label are for broadcast application. For band application, the rate per broadcast acre should be reduced according to the following formula:

Band Width (in inches) Row Width (in inches)	X	Rate per Broadcast Acre	=	Amount Needed per Acre for Banded Application

Spot Application

For spot application, apply sprays uniformly to soil for preemergence weed control or on a spray-to-wet basis for postemergence weed control. Mix the required amount of GoalTender with the recommended specified amount of water. For preemergence weed control, use one-half to one gallon of spray per 1000 sq ft. For postemergence weed control use a minimum of 1 gallon of spray per 1000 sq ft and add an 80% nonionic surfactant at the rate of 0.5 fl oz (1 Tbs) per gallon of spray. If making spot applications within an established crop, use coarse low-pressure sprays and direct the spray to the soil beneath the plants. To avoid crop injury, do not allow spray to contact leaves and stems of herbaceous plants or leaves or green stems of woody plants.

Amount of GoalTender Required to Treat 1000 sq ft at Specified Application Rate					
0.25 pt/acre	**0.5 pt/acre**	**1.0 pt/acre**	**1.5 pt/acre**	**2.0 pt/acre**	**4.0 pt/acre**
0.1 fl oz (2.75 ml)	0.2 fl oz (5.5 ml)	0.4 fl oz (11 ml)	0.55 fl oz (16.5 ml)	0.75 fl oz (22 ml)	1.5 fl oz (44 ml)

1 pint = 16 fl oz; 1 fl oz = 29.6 (30) ml

Aerial Application

Use aerial boom equipment designed for use with herbicides and a minimum spray volume of 10 gallons per acre (5 gallons per acre if tank mixed with glyphosate). **Do not aerially apply GoalTender unless crop-specific use directions specifically allow and provide directions for aerial application.**

AVOID DRIFT: Exercise extreme care to avoid herbicide contact with any desirable dormant or non-dormant crop, plant, tree or vegetation as severe injury may result. Extreme care must be exercised to prevent spray drift that could result in damage to other crops or desirable vegetation. Adhere to the following guidelines when aerial applications are to be made.

Spray Drift Management (Aerial Application): Avoiding spray drift at the application site is the responsibility of the applicator. The potential for spray drift is controlled by the interaction of many equipment-and-weather-related factors. The applicator and the grower are responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed ¾ the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they should be observed.

The applicator must adhere to the following requirements when GoalTender is aerially applied:

1. Do not apply when the wind direction is not stable, when inversion conditions exist, or when wind velocity exceeds 10 mph.

2. When wind speeds are 5 mph or less, maintain a minimum downwind buffer zone of at least 1/2 mile from all crops and desirable vegetation, except the following:
   Maintain a minimum downwind buffer zone of:
   - 150 feet from dormant treefruit/nut/vine crops and overwintering sugar beets.
   - 650 feet from garlic, jojoba, legumes, onions, pastures, small grains, seedling sugar beets, and non-targeted vegetable fallow beds.
3. When wind speeds are between 5 and 10 mph, downwind buffer zones in excess of those listed above are suggested.
4. For upwind and side borders, maintain a minimum buffer zone of 150 feet from any non-targeted vegetable fallow bed, crop, or desirable vegetation.

The use of a drift control agent may be required by local regulations. However, the drift control agent may decrease the weed control effectiveness.

Important: Aerial applicators must be familiar with the label for GoalTender and follow all applicable use precautions. Applying GoalTender in a manner other than specified in this label is done at the user's risk. Users are responsible for all loss or damage resulting from aerial spraying. In addition, aerial applicators should follow all applicable state and local regulations and ordinances. In interpreting the label and local regulations, the most restrictive limitations apply.

Chemigation Instructions

Do not apply this product through any irrigation system unless the instructions for chemigation are followed. **Do not apply GoalTender through chemigation equipment unless chemigation is allowed by Crop-Specific Use Directions.**

Apply this product only through sprinkler (center pivot, solid set, portable lateral, or low-volume (micro-sprinkler)), drip (trickle), or flood (basin) irrigation systems. Refer to use directions for specific crops for instructions as to which type of irrigation system may be used. 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.

Sprinkler Chemigation (Foliar Spray Uses)

For sprinkler irrigation, sufficient water should be applied at the beginning of the irrigation period to insure uniform wetting of the plant and/or soil surfaces. Meter GoalTender into the sprinkler irrigation system at a continuous uniform rate during the middle 1/3 of the irrigation period to allow for uniform distribution to target weeds and/or soil surface. Continue irrigation during the final 1/3 of the irrigation period to insure proper flushing of the irrigation system. During sprinkler irrigation, sufficient water should be applied to insure water penetration to a depth of two inches.

AVOID DRIFT: Extreme care must be exercised to prevent spray drift that could result in damage to other crops or desirable vegetation. Use the following guidelines when applications of GoalTender are made through sprinkler irrigation equipment:

1. Do not apply when the wind direction is not stable, when inversion conditions exist, or when wind velocity exceeds 10 mph.

2. When wind speeds are 5 mph or less, maintain a minimum downwind buffer zone of at least 1/2 mile from all crops and desirable vegetation, except for the following:
   Maintain a minimum downwind buffer zone of:
   - 150 feet from dormant treefruit, dormant vines and overwintering sugar beets.
   - 650 feet from garlic, jojoba, legumes, onions, pastures, small grains, seedling sugar beets and vegetable fallow beds.
3. When wind speeds are between 5 and 10 mph, downwind buffer zones in excess of those listed above are suggested.
4. For upwind and side borders, maintain a minimum buffer zone of 150 feet from any vegetable fallow bed, crop, or desirable vegetation.

To apply a pesticide using sprinkler chemigation, the chemigation system must meet the following specifications:

- 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) Chemigation (Soil Drench Uses)

GoalTender should be continuously metered into the water during the entire irrigation period. Agitation in the pesticide supply tank is suggested. Best weed control results from GoalTender applied through flood (basin) irrigation systems are obtained when a uniform distribution and flow of irrigation water is maintained over level land.

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 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:

- The system must contain a functional check calve, 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 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.

Drip (Trickle) Chemigation (Soil Drench Uses)

To achieve optimum distribution of GoalTender in the soil surface, meter GoalTender at a continuous uniform rate during the middle 1/3 of the irrigation period. For best results, GoalTender should be uniformly distributed across the wetted area to help reduce the "ring effect" of weed escapes. Continue irrigation during the final 1/3 of the irrigation period to insure proper flushing of the irrigation system.

To apply a pesticide using drip (trickle) chemigation, the chemigation system must meet the following specifications:

- 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 pipe 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.

Chemigation Calibration: For Low-Volume Sprinklers (Micro-sprinklers) and Drip (Trickle) Irrigation Systems

Calculation of use rate is based on wetted area around emitters - NOT on grove acres. To determine correct amount of GoalTender, use the following formula:

1. Treated area per each emitter = A
   A = 3.14 x (radius x radius)

   Example: If the average distance from emitter to perimeter of wetted area measured at the soil surface is 13 inches, then
   A = 3.14 X (13" x 13")
   A = 3.14 X (169")
   A = 530.7 square inches

2. The area in square feet wet in each acre = B

$$B = \frac{A \times \text{emitters/acre}}{144}$$

   Example: If there are 300 emitters per acre, then

$$B = \frac{530.7 \times 300}{144} = B = 1105.6 \text{ square feet wetted per acre}$$

3. The total area (in square feet) wet by your system = C
   C = B X acres covered by system

   Example: If the system covers 20 acres, then
   C = 1105.6 square feet per acre x 20 acres
   C = 22,112 square feet wetted by system

4. Amount of GoalTender to inject = S

   Rate per treated acre of GoalTender = R

$$S = \frac{C \times R}{43{,}560} = \text{pints of GoalTender}$$

Example: If the desired application rate per treated acre is 1 quart of GoalTender, then

$$S = \frac{22{,}112 \times 1.0}{43{,}560} = S = 0.507 \text{ pints of GoalTender should be injected into system.}$$

Note: Select the proper rate based on weed spectrum and desired length of control (See **Rate Ranges** section below).

Chemigation Systems Connected to Public Water Systems

If the chemigation system is connected to a public water supply, the following conditions must also be met:

- 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 a 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 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, 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.

Mixing Directions

Shake well before use. Fill the spray tank at least one-third full of clean water. With the pump and agitator running, add the specified amount of herbicides to the spray tank. The order of addition to the spray tank should be (1) wettable powders, (2) flowables and (3) soluble liquids. Complete filling of the spray tank with water.

Use of Surfactants: For all applications of GoalTender where postemergence weed control is desired **(except garlic and onions)**, add a minimum of 2 pints of 80% active nonionic surfactant (cleared for application to growing crops) per each 100 gallons of spray. The addition of 4 pints of nonionic surfactant is specified to enhance postemergence activity when hard water (greater than 600 ppm) is used. Maintain agitation until spraying is completed.

Tank Mixing Precautions:

- Follow applicable use directions, precautions, and limitations on the respective product labels. In interpreting the labels of tank mixed products, the most restrictive label limitations must apply.
- Do not exceed specified application rates. Do not tank mix this product with another pesticide that contains the same active ingredient as this product unless the label of either tank mix partner specifies the maximum dosages that may be used.

Tank Mix Compatibility Testing: A jar test is specified prior to tank mixing to ensure compatibility of this product and other pesticides. Use a clear glass quart jar with lid and mix the tank mix ingredients in their

relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour. If the mixture balls-up, forms flakes, sludges, jels, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

Sprayer Clean-up: Thoroughly flush spray equipment (tank, pump, hoses and boom) with clean water before and after each use. Residues of GoalTender remaining in spray equipment may damage other crops. The addition of a non-ionic surfactant to equipment flushing waters at the rate of 1 quart per 100 gallons is specified to aid in removal of residues of GoalTender.

Crop-Specific Use Directions

Artichoke (Globe)

Post-Directed Spray Application

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence Postemergence	2 - 3	**Application Method:** Apply as a directed spray to the soil surface between the rows and at the base of artichoke plants in a minimum spray volume of 40 gallons per acre. **Timing to Crop:** Apply after completion of ditching operations. Separate applications of up to 2 pt/acre may be made 8 to 10 weeks apart or a single application of up to 3 pt/acre may be made. **Timing to Weeds:** Preemergence up to 8 leaf stage.
Precautions: • Do not apply over-the-top. Contact with direct spray or drift will cause injury to artichoke fronds or severe injury to buds or flowers. • Application of GoalTender to artichoke plantings should be delayed a minimum of 60 days after cutting back or transplanting.		
Restrictions: • Do not apply more than 3 pints of GoalTender per acre per season as a result of a single application or multiple applications. • **Preharvest Interval:** Do not apply within 5 days of harvest.		

Key Weeds Controlled

Preemergence	Postemergence
cheeseweed (malva)	cheeseweed (malva)
groundsel, common	groundsel, common
lambsquarters, common	mustard, common yellow
mustard, common yellow	nettle, burning
oxalis (bermuda buttercup) †	oxalis (bermuda buttercup)
shepherdspurse	shepherdspurse
sowthistle, annual	sowthistle, annual

† Suppression

Broccoli / Cabbage / Cauliflower

Pre-Transplant (Preplant) Application for Preemergence Broadleaf Weed Control

Weed Control	Rate (pt/acre)	Specific Use Directions

Preemergence	0.5 - 1	**Pre-Transplant Application Only:** Apply broadcast to final seedbed prior to transplanting. Use lower rate in the rate range on coarse textured soils with less than 1% organic matter. Use the highest rate in the rate range on medium to fine textured soils or soils containing greater than 1% organic matter. Transplanting should be accomplished with minimal soil disturbance and soil left undisturbed during the time weed control is desired.

Precautions:

- Pre-transplant applications may result in initial, but temporary, crop injury (leaf cupping or crinkling) and is enhanced if crop leaves come in direct contact with treated soil. Crop will rapidly outgrow this condition and develop normally. Severe crop injury may result if transplants are under stress due to temperature, disease, fertilizer, nematodes, insects, pesticides or storage conditions. The use of transplants less than 5 weeks old or use of extremely succulent transplants grown in containers less than 1 inch square, may increase the severity of crop injury. Hardening off, increasing the age of transplants or increasing the size of the rooting containers will lessen the possibility and/or severity of potential crop injury.
- GoalTender will assist in early season annual grass control, however, a herbicide program for preemergence or postemergence control of annual grasses is specified.
  Note: Do not apply GoalTender if an acetanilide herbicide such as Dual Magnum herbicide, Lasso herbicide, or Ramrod herbicide has been applied to the field during the current growing season as severe crop injury may occur.
- Do not apply GoalTender as a preemergence treatment to direct-seeded broccoli, cabbage or cauliflower.
- Do not apply GoalTender post-transplant or over-the-top of broccoli, cabbage or cauliflower.
- Applications to muck soils may result in partial weed control or suppression.
- Furrow and drip irrigation immediately after transplanting and under high temperatures can result in increased crop injury. Sprinkler irrigation is specified during early establishment of transplants. If these conditions cannot be met, GoalTender herbicide should not be used.

Crop-Specific Restrictions:

- Do not apply more than 1 pint of GoalTender per treated acre per season.

Key Weeds Controlled:

Preemergence
carpetweed
pigweed, redroot
purslane, common
smartweed, Pennsylvania

Cacao (Bearing And Nonbearing)

(For Use Only in Hawaii)

GoalTender may be applied as a pre-transplant treatment or to established or recently transplanted cacao.

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence Postemergence	1 - 4	**Pre-transplant Application:** Up to 2 pints per broadcast acre may be applied as a pre-transplant application. **Application to Established Plantings:** In established plantings, including recently transplanted cacao plants, apply as a directed spray to the orchard floor. Use higher

		rates in rate range and increase spray volume to control dense growth of existing weeds or for extended residual preemergence weed control.

Precautions:

- Do not apply preplant or preemergence to direct-seeded cacao.
- GoalTender should be applied to only healthy growing trees/transplants of suitable size to allow directed sprays. Avoid spray contact with foliage.

Crop-Specific Restrictions:

- Do not apply more than 4 pints of GoalTender per acre as a single application or more than 12 pints per acre per year.
- **Preharvest Interval:** Do not apply GoalTender within 1 day of harvest.

Key Weeds Controlled

Preemergence	Postemergence
ageratum buttonweed crotalaria purslane, common spurge, garden	purslane, common spurge, garden

Citrus (Nonbearing)

Citrus, such as Calamondin, Chironja, Citrus Citron, Grapefruit, Kumquat, Lemon, Lime, Mandarin, Pummelo, Satsuma Mandarin, Sour Orange, Sweet Orange, Tangelo, Tangerine, Tangor

GoalTender may be applied only in non-bearing citrus orchards. Apply only as a directed spray to the orchard floor avoiding contact with citrus foliage.

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence	3	**Preemergence Weed Control:** Up to 3 pt/acre may be applied for residual preemergence weed control. **Postemergence Weed Control:** The 3 pint/acre rate will control weeds up to 4 inches tall. Weeds greater than 4-leaf or 4 inches tall may be partially controlled. Use sufficient spray volume for complete and uniform coverage of weeds. Increase the spray volume with increased weed height and density to ensure complete coverage.
Postemergence	1 - 3	

Tank Mixing: Refer to Mixing Directions section for Tank Mixing Precautions.

- **Preemergence Use:** For residual control of grass weeds, GoalTender may be tank mixed with grass herbicides labeled for use in citrus.
- **Postemergence Use:** For broader spectrum postemergence control of emerged grass and broadleaf weeds, GoalTender may be tank mixed with paraquat (Gramoxone herbicide) or glyphosate.

Precautions:

- Do not apply during periods of new citrus foliage growth. Applications should be made after foliage has fully expanded and hardened off. Avoid direct spray contact with citrus foliage.

Crop-Specific Restrictions:

- Apply GoalTender only to nonbearing citrus (trees that will not bear fruit for one year).
- Do not apply more than 3 pints (1.5 lbs ai) of GoalTender per acre per year as a result of a single or multiple applications.

Key Weeds Controlled

(Arizona and California)		(Florida, Louisiana and Texas)	
Preemergence	**Postemergence**	**Preemergence**	**Postemergence**
burclover cheeseweed (malva) fiddleneck, coast filaree, broadleaf filaree, redstem filaree, whitestem groundsel, common henbit knotweed, prostrate lambsquarters, common lettuce, prickly pigweed, redroot purslane, common redmaids rocket, London shepherdspurse sowthistle, annual spurge, prostrate spurge, spotted	cheeseweed (malva) fiddleneck, coast filaree, broadleaf † filaree, redstem † filaree, whitestem † groundsel, common henbit minerslettuce nettle, burning pigweed, redroot redmaids shepherdspurse sowthistle, annual	cudweed, narrowleaf eveningprimrose, cutleaf †† groundcherry, cutleaf lambsquarters, common nightshade, American black nightshade, black pepperweed, Virginia pigweed, redroot poinsettia, wild pusley, florida sida, prickly (teaweed) smartweed, pennsylvania sowthistle, annual spurge, prostrate spurge, spotted	balsamapple cudweed, narrowleaf ††† eveningprimrose, cutleaf †† groundcherry, cutleaf groundcherry, Wright lambsquarters, common morningglory, annual nightshade, American black nightshade, black pepperweed, Virginia pigweed, redroot poinsettia, wild purslane, common pusley, florida sida, prickly (teaweed) smartweed, pennsylvania sowthistle, annual

† GoalTender at the 3 pt/acre will provide control of filaree and other weeds up to 4-inch stage. Applications to weeds beyond the 4-inch stage may result in partial control.
†† Highest rate and/or multiple applications may be required for acceptable control.
††† Maximum 0.5-inch diameter

Clary Sage

Clary Sage *(Salvia sclarea)* Grown and Utilized in the Essence Industry
(For Use Only in North Carolina)

Weed Control	Rate (pt/acre)	Specific Use Directions
Postemergence	0.25 – 0.5	GoalTender may be applied to established clary sage for control of henbit *(Lamium amplexicaule*) and other winter annual broadleaf weeds during the winter and spring season. Apply shortly after the first flush of henbit is in the 2- to 4-leaf stage of growth. Additional applications may be required to control subsequent weed flushes through the spring season. After treatment, henbit will stop growing and slowly die. Increase the spray volume if weed growth is dense.
Precautions: • Clary sage may respond to the topical application of this product with some marginal leaf burn, but recovery is rapid.		
Crop-Specific Restrictions: • Do not apply more than 3 pints per acre per year.		

Coffee (Bearing And Nonbearing)

(For Use Only in Hawaii)

GoalTender may be applied to established coffee, recently transplanted coffee, or as a pre-transplant treatment. In established non-dormant coffee, apply as a directed spray avoiding contact with crop foliage. Newly established transplants should be healthy and well established and of sufficient size to allow use of directed sprays without contacting crop foliage.

GoalTender may be applied over-the-top of dormant coffee transplants. Transplants are considered to be dormant when active terminal growth has ceased and terminal buds have formed. Application over-the-top of coffee plants after buds start to swell (a sign that new growth has resumed) may result in crop injury.

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence Postemergence	1 - 4	**Preemergence Weed Control:** ● Apply as a directed spray to the orchard floor beneath established coffee plants. ● Up to 2 pints per acre may be applied as a pre-transplant application prior to transplanting coffee plants. **Postemergence Weed Control:** Increase the spray volume when weed growth is dense or trash is present; or use a higher rate within the rate range for extended residual preemergence weed control.
Tank Mixing: Refer to Mixing Directions section for Tank Mixing Precautions. Apply tank mixes only as a directed spray.		
Precaution: To prevent foliar injury, do not apply during periods of rapid new growth or allow spray or drift to contact actively growing foliage.		
Crop-Specific Restrictions: • Do not apply preplant or preemergence to direct-seeded coffee. • Do not apply more than 4 pints per broadcast acre of GoalTender in a single application or 12 pints per broadcast acre per year. • **Preharvest Interval:** Do not apply GoalTender within one (1) day of harvest.		

Key Weeds Controlled:

Preemergence	Postemergence
ageratum buttonweed crotalaria purslane, common spurge, garden	purslane, common spurge, garden

Conifer Seedbeds, Transplants, Container Stock And Selected Field Grown Deciduous Trees

General Use Precautions and Restrictions:

- Do not apply GoalTender in an enclosed greenhouse structure as injury to plant foliage may result.
- Do not store or transport treated container stock in an enclosed structure until completion of 4 irrigations (minimum 21 days) as injury to non-labeled plants may occur.
- Apply GoalTender only to healthy conifer stock. Do not apply GoalTender to conifers that are under stress from excessive fertilizer or soil salts, disease, nematodes, frost, drought, flooding, previously applied pesticides, soil insects, or winter injury, as severe injury may result.
- Do not graze or harvest livestock forage from treated areas.

Key Weeds Controlled: When GoalTender is applied preemergence or postemergence at specified dosages and weed stages.

barnyardgrass †
bedstraw, catchweed
bittercress, lesser
bluegrass, annual †
buckwheat, wild
burclover
carpetweed
clover, red †
clover, white †
cocklebur, common
crabgrass, large †
fiddleneck, coast †
filaree, broadleaf
filaree, redstem
fireweed (from seed)
flixweed
foxtail, giant †
goosegrass †
groundcherry, cutleaf
groundcherry, wright
groundsel, common
henbit
jimsonweed
knotweed, prostrate
ladysthumb
lambsquarters, common
lettuce, prickly
mallow, little
mayweed
minerslettuce
morningglory, ivyleaf †
morningglory, tall †
mustard, blue
mustard, tumble
mustard, wild
nettle, burning
nightshade, black
nightshade, hairy
oats, wild
orach, red
pepperweed, yellowflower
pigweed, prostrate
pigweed, redroot
pimpernel, scarlet
purslane, common
redmaids
rocket, London
sandspurry, red
shepherdspurse †
sida, prickly
smartweed, Pennsylvania
sorrel, red (from seed)
sowthistle, annual
speedwell, birdseye
spurge, prostrate ††
spurge, spotted ††
spurry, corn
tansymustard
thistle, bull ††
thistle, Russian
velvetleaf
witchgrass
woodsorrel, yellow ††

† Highest rate and/or multiple applications may be required for acceptable control.
†† Preemergence control only.

Conifer Seedbeds

Agricultural Use Requirements: Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

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 footwear plus socks
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

GoalTender provides both postemergence and residual preemergence control of many broadleaf weeds and annual grass species.

Seeded conifers are tolerant to preemergence and postemergence applications of GoalTender. For weed control during the establishment of conifer seedlings, GoalTender can be applied after seeding of conifers, but prior to emergence. For weed control in emerged conifers, GoalTender may be applied over-the-top, but application should be delayed a minimum of 5 weeks after seedling emergence. If

application is made during cool, cloudy weather, make certain that seedlings have hardened-off prior to spraying.

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence	0.5 - 2	**Application after planting, but prior to emergence of conifer seedlings:** Where grass weeds are present, apply 1 to 2 pints of GoalTender per acre. In known areas of high weed competition, apply 2 pints of GoalTender per acre. Broadcast to beds and irrigate with ½ to ¾ inch of sprinkler irrigation before weed emergence. GoalTender is most effective on annual grasses when applied preemergence.
Postemergence	0.5 - 1	**Application after emergence of conifer seedlings:** Application should be made to seedling weeds less than 4 inches in height (seedling grasses not exceeding the 2-leaf stage). Depending on subsequent weed flushes, multiple applications may be necessary to achieve season-long weed control.
Chemigation: GoalTender may be applied at labeled rates through sprinkler irrigation systems. For center pivot irrigation systems, apply the specified dosage of GoalTender per acre metered at a continuous uniform rate during the entire irrigation period, otherwise meter GoalTender at a continuous uniform rate during the middle 1/3 of the irrigation period. When applying by sprinkler irrigation, follow directions given in the Chemigation Instructions section of this label.		
Precautions: • Occasionally spotting, crinkling, or flecking may appear on leaves of conifers. Leaves that receive direct spray or drift may be injured, but typically outgrow this condition rapidly and develop normally.		
Crop-Specific Restrictions: • Do not apply more than 4 pints of GoalTender per acre per year.		

GoalTender may be applied to conifer seedbeds of the following species:
Important: When applied as directed, the conifer species listed on this label have shown tolerance to GoalTender. It is impossible, however, to evaluate this product on all varieties, biotypes and cultivars of listed species under all possible growing conditions. Until familiar with results under local growing conditions, the user should exercise reasonable judgment and caution with this product. Limit application of this product to a few plants in a small area to determine plant tolerance and extent of injury if such occurs, prior to initiating large-scale applications.

Douglas fir	*Pseudotsuga menziesii*
Fir	Fraser (*Abies fraseri)* Grand (*Abies grandis)* Noble (*Abies procera*)
Hemlock	Eastern hemlock (*Tsuga canadensis)*
Pine	Austrian (*Pinus nigra)* Eastern White (*Pinus strobus)* Himalayan (*Pinus wallichiana)* Jack (*Pinus banksiana)* Loblolly (*Pinus taeda)* Lodgepole (*Pinus contorta)* Longleaf (*Pinus palustris)* Monterey (*Pinus radiata)* Mugo (*Pinus mugo)* Ponderosa (*Pinus ponderosa)* Scotch (*Pinus sylvestris)* Shortleaf (*Pinus echinata)* Slash *(Pinus elliottii)* Virginia *(Pinus virginiana)*
Spruce	Blue (*Picea pungens)*

	Dwarf Alberta (*Picea glauca Conica)* ~~Alberta~~ Norway (*Picea abies)* ~~Norway~~ Sitka (*Picea sitchensis)*

Conifer Transplants And Container Stock (Includes 2-0 Seedling And Christmas Tree Plantings)

Agricultural Use Requirements: Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

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 footwear plus socks
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

Many container-grown conifers and conifer transplants are tolerant to preemergence and postemergence applications of GoalTender. Applied postemergence, GoalTender provides postemergence control of emerged weeds and preemergence residual control of many broadleaf weeds and grasses (see Key Weeds Controlled) at the beginning of this section.

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence Postemergence	2 - 4	**Transplanted and Container Grown Conifers:** For best results, preemergence applications should be made immediately after transplanting seedlings or to weed-free container stock. Postemergence applications should be made to weeds less than 4 inches in height. Two applications may be necessary, in fall-transplanted conifer fields, for season-long weed control. The addition of a non-ionic surfactant (0.25% v/v) labeled for application to growing crops, enhances the activity of GoalTender on emerged weeds.
Precautions: • Do not make over-the-top applications during periods of active conifer growth. Apply only before bud break or after new terminal growth has hardened off.		
Crop-Specific Restrictions: • Do not apply more than 4 pints of GoalTender per acre in a single application or more than 8 pints per acre per year.		

In addition to those conifer species listed under the Conifer Seedbed section, the following conifer species have been shown to be tolerant to GoalTender:

Arborvitae	*Thuja occidentalis* *Thuja orientalis*
Juniper	*Juniperus chinensis* *Juniperus horizontalis* *Juniperus procumbens* *Juniperus sabina* *Juniperus scopulorum*
Red cedar	*Juniperus virginiana*
Western Hemlock	*Tsuga heterophylla*
Yew	*Taxus species*

Selected Field-Grown Deciduous Trees

Listed field-grown deciduous trees are tolerant only to directed spray applications of GoalTender. GoalTender provides both preemergence and postemergence control of listed broadleaf weeds and grasses.

Timing to Crop: Apply GoalTender to established deciduous trees or after transplanting. For optimum weed control, applications should be made prior to weed germination. Apply only as a directed spray to soil beneath the trees.

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence Early postemergence	1 - 3	GoalTender may be applied to established deciduous trees or after transplanting as a single or split application. Apply as a directed spray to the soil surface. Use of spray shields to reduce exposure of foliage and bark is specified. The addition of a non-ionic surfactant (0.25% v/v) labeled for application to growing crops, will enhance herbicidal activity on emerged weeds. **Spot Application:** Spot treatments at specified rates may be used to control localized weed infestations. See use directions for Spot Application in the Application Methods and Cultural Practices section.
Tank Mixing: For broader spectrum control, GoalTender may be tank mixed with other preemergence or postemergence herbicides registered for this use in deciduous trees. Refer to Mixing Directions section for Tank Mixing Precautions.		
Precautions: • For maximum crop safety, directed applications should be prior to budbreak in the spring or after trees have initiated dormancy in the fall. Avoid contact of spray or drift with foliage or stems with green bark. Application after bud swell may result in crop injury. If a non-dormant application is required due to weed competition, apply only after foliage has fully expanded and hardened off. Use only directed sprays and spray shields to prevent spray contact with stems with green bark or foliage. • Do not apply GoalTender to trees that have been weakened or are under stress from excessive fertilizer or soil salts, disease, nematodes, frost, wind injury, drought, flooding, previously applied pesticides, insects, or winter injury as severe injury may result.		
Crop-Specific Restrictions: • Do not apply more than 3 pints of GoalTender per acre per year. • Do not apply to bearing treefruit, nut and vine crops. For selected bearing treefruit, nut and vine crops, refer to Treefruit/Nut/Vine section of this label for use directions. • Do not graze or feed livestock forage cut from areas treated with GoalTender.		

GoalTender may be applied to the following deciduous tree species:

Almond ††	*Prunus spp.*
Apple ††	*Malus X domestica*
Apricot ††	*Prunus spp.*
Ash, Green Ash, White	*Fraxinus pennsylvanica* *Fraxinus americana*
Birch, River	*Betula nigra*
Cherry ††	*Prunus spp.*
Chestnut ††	*Castanea spp.*
Crabapple ††	*Malus spp.*
Cottonwood	*Populus spp.*
Dogwood	*Cornus florida*

Eucalyptus	*Eucalyptus viminalis* *Eucalyptus pulverulenta* *Eucalyptus camaldulensis*
Filbert ††	*Corylus spp.*
Lilac	*Syringa vulgaris*
Locust, Black	*Robinia pseudoacacia*
Maple, Black † Maple, Red † Maple, Sugar †	*Acer nigrum* *Acer rubrum* *Acer saccharum*
Myrtle, Crepe	*Lagerstroemia indica*
Nectarine ††	*Prunus spp.*
Nut, Hickory ††	*Carya sp.*
Nut, Macadamia	*Macadamia ternifolia*
Oak, Chestnut Oak, Cherrybark Oak, Nutt All Oak, Pin Oak, Red Oak , Water Oak, Willow	*Quercus prinus.* *Quercus pagoda* *Quercus nuttallii* *Quercus palustris* *Quercus. rubra* *Quercus nigra* *Quercus phellos*
Olive, Russian	*Elaeagnus angustifolia*
Poplar Poplar, Tulip	*Populus* spp. *Liriodendron tulipifera*
Peach ††	*Prunus persica*
Pear ††	*Pyrus spp.*
Pecan ††	*Carya spp.*
Pistachio ††	*Pistacia vera*
Plum ††	*Prunus spp.*
Prune ††	*Prunus spp.*
Redbud	*Cercis canadensis*
Sweetgum	*Liquidambar styraciflua*
Sycamore	*Platanus occidentalis*
Walnut, Black ††	*Juglans nigra*

† Do not apply to maple trees used for production of maple sap or maple syrup.
†† Apply only to nonbearing trees. For bearing treefruit, nut and vine crops, refer to specific use directions in the Treefruit/Nut/Vine section of this label.

Corn

FOR USE ONLY ON FIELD CORN IN CONJUNCTION WITH THE USDA WITCHWEED ERADICATION PROGRAM IN NORTH CAROLINA AND SOUTH CAROLINA

Apply GoalTender only as a directed spray from May through August for preemergence and postemergence control of witchweed *(Striga asiatica)*. Corn must be a minimum of 24 inches tall. Examine witchweed infested fields during the early part of the growing season to determine uniformity of corn stand and grass weed pressure. If necessary, cultivate weed-infested fields prior to initial application of GoalTender to allow for optimum soil coverage during the initial application. Fields treated with GoalTender should be inspected regularly for any breakthrough of witchweed. If breakthrough occurs, a second application should be made as soon as possible after appearance of witchweed. Repeat treatments should occur prior to bloom stage to prevent seed set.

Weed Control	Rate (pt/acre)	Specific Use Directions

Preemergence	1 – 1.5	**Initial Application:** Apply as a directed spray over the entire row surface at the rate of 1 pint per acre. Use up to 3 pints per acre in areas of heavy witchweed infestation. Use a minimum spray volume of 20 gallons per acre and a non-ionic surfactant at the rate of 2 pints per 100 gallons of spray.
Postemergence	0.5 - 1	**Repeat Applications:** In case of witchweed breakthrough a repeat application may be made at 0.5 to 1 pints per acre.
Precautions: • Do not spray over the top of the corn, as this may result in severe corn injury. Spray should contact only the lower 3 to 8 inches of the corn stalk and any leaves in this zone. Spray droplets contacting the lower leaves will cause necrotic spotting or streaking of sprayed tissue.		
Crop-Specific Restrictions: • Do not apply more than 2.5 pints (1.25 lb active) of GoalTender per acre during the growing season. • Do not apply any apply within 60 days of harvest. • Do not use corn plants from a treated field for green chop, ensilage, forage, or fodder.		

Cotton

Application Methods and Equipment: GoalTender may be applied as a post-direct spray to cotton a minimum of 6 to 8 inches tall. Care must be exercised to avoid spray contact with the cotton leaves. Use rigid precision ground spray equipment and spray shields to prevent spray contact with cotton foliage. Use branch lifters or shields, as necessary, to avoid contact of directed sprays with cotton plant.

Accurate, placement of spray nozzles is essential for uniform coverage of weeds and to minimize injury to cotton plants. Use a minimum broadcast spray volume of 20 gallons per acre and operate the sprayer at the minimum spray pressure specified by the spray nozzle manufacturer. GoalTender may be applied as a post-direct spray with only 2 flat fan nozzles per row (1 nozzle on each side of the row). For optimum coverage, use 4 flat fan nozzles per row (2 nozzles on each side of the row). The 2 forward nozzles should point forward and downward while the rear nozzles should point to the rear and downward. With either sprayer setup, nozzles should be carefully adjusted to cover the weed foliage with minimum contact to cotton plants. GoalTender may also be applied as a band application. **Do not use hollow cone nozzles.**

Tank Mixing: For control of additional broadleaf and grass weeds, GoalTender may be applied as a postemergence directed spray in tank mix combination with other herbicides registered for postemergence use in cotton (see Tank Mixing Precautions under Mixing Directions).

Weed Control	**Rate (pt/acre)**	**Specific Use Directions**
Postemergence	0.5 - 1	Apply as a post-directed spray. For optimum control, use the 1 pint per acre rate on actively growing weed seedlings with no more than 4 true leaves (not counting cotyledon leaves). Effective control of succulent weeds at the 2- to 3-leaf stage can usually be obtained at the 0.5 pint per acre rate. See Mixing Directions for surfactant recommendations. Where available, irrigation may be applied prior to application of GoalTender to encourage maximum weed emergence. Irrigation following application will improve preemergence activity of GoalTender against nightshade and groundcherry species.

Precautions:

- Do not apply to cotton less than 6 inches tall or severe crop injury will result.
- Exercise care to avoid spray contact with cotton leaves. Leaves accidentally sprayed will exhibit necrotic (dead) spots and may be dropped from the plant. Crop injury may be enhanced if application is made when excessive soil moisture is present or rainfall occurs immediately after application, however, cotton will outgrow this condition and develop normally.

Crop-Specific Restrictions:

- **Western Cotton (AZ and CA):** Do not apply more than 1 pint (0.5 lb active) of GoalTender per acre in a single application, or more than a total of 2 pints (1.0 lb active) of GoalTender per broadcast acre per season as a result of multiple applications. Do not apply within 75 days of harvest.
- **Southern Cotton (All other states):** Do not apply more than 1 pint (0.5 lb active) of GoalTender per acre of per season as a result of a single application or multiple applications. Do not apply within 90 days of harvest.

Key Weeds Controlled:

Postemergence	
cocklebur, common	nightshade, black
croton, tropic	nightshade, hairy
groundcherry, cutleaf	pigweed, redroot
groundcherry, Wright	poinsettia, wild †
jimsonweed	purslane, common
lambsquarters, common	sesbania, hemp
morningglory, annual (up to 6 leaf)	sicklepod ††
	sida, prickly (teaweed) †
nightshade, American black	smartweed, pennsylvania
	velvetleaf

† Multiple applications may be required for acceptable control.

†† Post-direct applications of GoalTender will control or suppress seedlings not exceeding the one true leaf stage.

Cottonwood

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence Postemergence	2 - 3	GoalTender may be applied as a single or split application. Apply as a directed spray to soil at the base of cottonwood trees. Use the higher rate in the rate range for extended preemergence weed control or for postemergence control of weeds up to the 6 leaf stage. The addition of a non-ionic surfactant at 2 pints per 100 gallons of spray will enhance the postemergence activity of GoalTender on emerged weeds.

Precautions:

- Apply GoalTender immediately after transplant only to dormant healthy cottonwood stock.
- In established stands, do not allow sprays of GoalTender to contact cottonwood foliage. In newly established cottonwood plantings, use spray shields, if necessary, to prevent exposure of green bark and foliage.

Crop-Specific Restrictions:

- Do not apply more than 3 pints per acre of GoalTender in a single application or more than 9 pints per acre per year.

Key Weeds Controlled:

groundsel, common	mustard, hedge
knotweed, prostrate	shepherdspurse
lambsquarters, common	smartweed, Pennsylvania

Eucalyptus

Apply GoalTender for preemergence and postemergence control of listed broadleaf weeds in established eucalyptus plantings.

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence Postemergence	2 - 3	**Directed Spray:** GoalTender may be applied as a single or split application. Apply as a directed spray to soil at the base of eucalyptus trees. Use the higher rate in the rate range for extended preemergence weed control or for postemergence control of weeds up to the 6 leaf stage. The addition of a non-ionic surfactant at the rate of 2 pints per 100 gallons of spray, will enhance the postemergence activity of GoalTender on emerged weeds. **Over-the-Top Application:** In new plantings, apply GoalTender just before or immediately after transplanting eucalyptus seedlings that are in a dormant condition (i.e., leaves may be present, but terminal growth has hardened off and terminal buds have formed). In established plantings, GoalTender may be applied as an over-the-top spray when plants are in a dormant condition.
Precautions: • At transplant, apply GoalTender only to healthy "dormant" healthy eucalyptus stock. In established plantings, use spray shields, if needed, to prevent exposure of foliage and bark of small and/or actively growing plants. • To avoid phytotoxicity, make over-the-top applications only to eucalyptus trees in a dormant condition. Do not make over-the-top applications after bud break and resumption of active growth.		
Crop-Specific Restrictions: • Do not apply more than 3 pints of GoalTender per acre in a single application or more than 9 pints per acre per year.		

Key Weeds Controlled:

Preemergence	Postemergence
burclover	cheeseweed (malva)
cheeseweed (malva)	fiddleneck, coast
fiddleneck, coast	filaree, broadleaf †
filaree, broadleaf	filaree, redstem †
filaree, redstem	filaree, whitestem †
filaree, whitestem	groundsel, common
groundsel, common	henbit
henbit	minerslettuce
knotweed, prostrate	nettle, burning
lambsquarters, common	pigweed, redroot
lettuce, prickly	redmaids
pigweed, redroot	shepherdspurse
redmaids	sowthistle, annual

rocket, London shepherdspurse sowthistle, annual spurge, prostrate spurge, spotted

† At the 3-pint rate, GoalTender will provide control of filaree up to the 6-leaf stage.

Use on Fallow Beds

(Not for use prior to planting soybeans in California)

Used alone or in tank mix combination with glyphosate, GoalTender provides preemergence and/or postemergence control of winter annual broadleaf weeds on land to be planted to crops.

Prior to planting, treated fallow beds should be thoroughly tilled (incorporated) to a depth of at least 2.5 inches. GoalTender is no longer herbicidally effective once the active layer in the soil surface is disrupted by soil incorporation.

Aerial Application: GoalTender may be aerially applied for weed control in fallow beds. Follow requirements for Aerial Application in the Product Information section of this label.

Minimum Treatment to Planting Intervals for listed crops:

	Minimum Treatment-to-Planting Interval	
Direct Seeded Crops	**GoalTender (up to 0.5 pint/acre)**	**GoalTender (>0.5 to 1 pint/acre)**
carrot	90 days	90 days
cotton	7 days	7 days
potato	60 days	60 days
sugar beet	60 days	90 days
other root/tuber crops	90 days	90 days
onions	180 days	180 days
other bulb vegetables	180 days	180 days
cabbage	90 days	90 days
cauliflower	90 days	90 days
other brassica crops	120 day	120 days
lettuce	90 days	120 days
other leafy vegetables (except brassica crops)	120 days	120 days
pepper	90 days	120 days
tomato	60 days	120 days
other fruiting vegetables	120 days	120 days
cantaloupe	60 days	90 days
squash	90 days	120 days
watermelon	60 days	60 days
other cucurbits	90 days	120 days
dry beans	60 days	60 days
peanut	60 days	60 days
other legume vegetables	60 days	60 days
safflower	60 days	60 days
Soybeans (Except California)	7 days	7 days

cereal grains: Including barley, buckwheat, corn, proso millet, pearl millet, oats, popcorn, rice, rye, sorghum, triticale, wheat, and wild rice	10 months	10 months
cotton and soybean	(see specific labeling for fallow beds to be planted to cotton or soybeans)	

	Minimum Treatment-to-Planting Interval	
Transplanted Crops	**GoalTender (up to 0.5 pint/acre)**	**GoalTender (>0.5 to 1 pint/acre)**
celery	30 days	30 days
conifer	0 days	0 days
garlic	0 days	30 days
grape/kiwi	0 days	0 days
onion	0 days	30 days
pepper	30 days	30 days
strawberries	30 days	30 days
tomato	30 days	30 days
treefruit/nut/citrus	0 days	0 days

Weed Control	**Rate (pt/acre)**	**Specific Use Directions**
Preemergence Postemergence	0.5 - 1	Use 20 or more gallons of spray volume per acre and increase spray volume for dense weed growth. Use the 0.5 pint per acre rate for up to 4 weeks of preemergence control and postemergence control of susceptible weeds up to 4-leaf stage. Use the 1 pint per acre rate for up to 8 weeks of preemergence control and postemergence control of susceptible weeds up to 6-leaf stage. Best preemergence control is achieved when irrigation or rainfall occurs within 3 or 4 weeks after application. A tank mix with glyphosate is specified if the treatment area contains dense weed populations, oversized weed seedlings, volunteer grains, annual grasses or under unfavorable environmental conditions. **Outside of California:** For enhanced contact activity (burndown/suppression) tank mix 3.25 fl oz of GoalTender with the labeled rate of either glyphosate or paraquat (Gramoxone). Apply at the application rate and weed growth stages specified in the respective tank mix product label.

Precautions:

- **Failure to achieve thorough and complete incorporation, or to follow the** specified **treatment-planting interval, may result in stand reduction and/or vigor reduction of the planted crop.**
- Crop injury may be enhanced if newly seeded crops or transplants are under stress due to drought, flooding, excessive fertilizer or soil salts, low soil temperatures, wind injury, hail, frost damage, injury from previously applied pesticides, or injury due to insects or diseases.
- **Exercise extreme care to avoid herbicide contact with any desirable dormant or non-dormant crop, plant, tree or vegetation as severe injury may result.**

Crop-Specific Restrictions:

- Do not apply more than 1 pint of GoalTender per acre per fallow season.

Key Weeds Controlled: GoalTender provides preemergence and postemergence control of the following weeds on fallow beds: †

buttercup, smallflower	mustard species
cheeseweed (malva)	nettle, burning
eveningprimrose, cutleaf ††	oxalis
fiddleneck, coast	pigweed, redroot
filaree, broadleaf	purslane, common
filaree, redstem	redmaids
geranium, Carolina	rocket, London
groundcherry, cutleaf	shepherdspurse
groundsel, common	sida, prickly
henbit	sowthistle, annual
ladysthumb	velvetleaf (wild cotton)
minerslettuce	

† Thorough spray coverage is essential to maximize the postemergence activity of GoalTender. For postemergence control when applied by air, a tank mixture of GoalTender with either glyphosate or paraquat (Gramoxone) is specified.
†† Requires maximum rate and/or multiple applications for effective control.

Fallow bed use prior to transplanting peppers or strawberries grown in plastic culture

GoalTender herbicide may be applied broadcast or banded as a fallow bed application to pre-formed beds prior to transplanting peppers or strawberries grown in plastic culture. The GoalTender use rate is up to 1 pint per broadcast acre. It is recommended that soil moisture be used to activate GoalTender soon after application. This can be done by sprinkler irrigation with approximately 1/2 inch of sprinkler irrigation and then applying the plastic any time during the 30-day treatment to planting interval. Or, if there is adequate existing soil moisture, apply plastic to the beds as soon as possible after application and allow the moisture which condenses and accumulates beneath the plastic to thoroughly wet the treated soil.

Mechanical incorporation of the fallow-bed treatment prior to laying plastic is not required. Not disturbing the soil may allow for extended weed control. Not incorporating increases the potential for crop injury, especially under wet conditions. Therefore, the treatment should be incorporated if the risk of crop injury is not acceptable. The minimum treatment to planting interval is 30 days.

Fallow Land

(For Use Only In Idaho, Oregon and Washington)

Used alone or in a tank mix combination with glyphosate, GoalTender provides preemergence and/or postemergence control of listed annual broadleaf weeds in a fallow land system. GoalTender may be used to reduce weed growth prior to the establishment of a dry soil mulch. Use is restricted to summer fallow on land that will be planted the following year to winter wheat, barley or oats.

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence Postemergence	0.25 - 1	**GoalTender Alone:** Preemergence weed control occurs as seedling weeds come in contact with the soil-applied herbicide during emergence. Postemergence weed control is most effective when GoalTender is applied to seedling weeds less than 4 inches in height. Apply GoalTender in 15 or more gallons of water per acre and increase spray volume if weed growth is dense. Use of an 80% active nonionic surfactant cleared for use on growing crops is specified for optimum postemergence weed control.

Tank Mixing: For postemergence control of annual grass weeds, 0.25 - 1 pt/acre of GoalTender may be tank mixed with labeled rates of glyphosate. Follow label instructions for Fallow and Reduced Tillage Systems for the glyphosate product. Refer to Mixing Directions section for Tank Mixing Precautions.
Use Restrictions for Fallow Land: • Do not apply more than 1 pint per acre per application or more than 1 pint per use season.

Key Weeds Controlled: GoalTender provides preemergence and postemergence control of the following weeds on fallow land:

fiddleneck, coast henbit lettuce, prickly (china lettuce) mustard, blue (purple mustard) mustard, tumble (Jim hill mustard)	pigweed, redroot purslane, common shepherdspurse sowthistle, annual

Garbanzo Beans

(For Use Only in Arizona and California)

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence	0.5	Apply after planting but prior to weed or crop emergence as a single broadcast application using a spray volume of 20 or more gallons of water per acre.
Precautions: • Garbanzo beans are tolerant to preemergence application of GoalTender, however, under certain conditions, severe but temporary crop injury may occur. A heavy splashing rain shortly after crop emergence or wet soil conditions during early growth stages can cause leaf cupping, crinkling, stunting or defoliation of the garbanzo seedlings. Injury, when it occurs, it is usually limited to the first few leaves that develop after plants emerge from the soil. Delays in crop development and/or maturity may result, but Garbanzo beans do recover with little to no impact on yield.		
Crop-Specific Restrictions: • Do not apply more than 0.5 pint per acre of GoalTender in a single application. • Do not use bean vines for livestock feed or hay. • Maximum total application rate per year is 1.5 lbs ai/A		

Key Weeds Controlled:

Preemergence
groundsel, common mallow, little rocket, London shepherdspurse

Garlic

Agricultural Use Requirements: Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

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 footwear plus socks
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

For optimum preemergence weed control, the soil surface should be smooth and free of excessive trash (clippings, plant residues, etc.). Following application, cultural practices which result in redistribution or disturbance of the soil surface or move untreated soil into treated areas will reduce weed control.

Direct Seeded Garlic (Postemergence Application):		
Weed Control	**Rate (per acre)**	**Specific Use Directions**
Postemergence	1 - 2 fl oz	**Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont:** Apply GoalTender at 1 to 2 fl oz per acre to direct seeded garlic that has at least 3 fully developed true leaves using ground equipment. Adjust nozzles for minimum spray contact with garlic plants, directing the spray to the soil at the base of garlic plants and adjacent bed top and furrow area. Multiple treatments at 1 to 2 fl oz per acre may be applied up to a maximum of 1 pint (16 fl oz) per acre per use season. For optimum postemergence control, apply when susceptible weeds are in the 2 to 4-leaf stage and actively growing. Application to weeds at later than the 4 leaf growth stage may result in reduced weed control.
Postemergence	0.25 – 0.5 pt	**Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, Texas, Utah and Washington:** Apply GoalTender at 0.25 to 0.5 pt per acre to seeded garlic that has at least 2 fully developed true leaves using ground equipment. Adjust nozzles for minimum spray contact with garlic plants, directing the spray to the soil at the base of garlic plants and adjacent bed top and furrow area. Multiple treatments at 0.25 to 0.5 pt per acre may be applied up to a maximum of 1.25 pints per acre per use season. For optimum postemergence weed control, apply when susceptible weeds are in the 2 to 4-leaf stage and actively growing. Application to weeds at later than the 4 leaf growth stage may result in reduced weed control.
Postemergence	0.25 pt	**All Other States:** Apply GoalTender at 0.25 pt per acre to direct seeded garlic that has at least 2 fully developed true leaves using ground equipment. Adjust nozzles for minimum spray contact with garlic plants, directing the spray to the soil at the base of garlic plants and adjacent bed top and furrow area. Multiple treatments at 0.25 pt per acre may be applied up to a maximum of 1 pint per acre per use season. For optimum postemergence control, apply when susceptible weeds are in the 2 to 4-leaf stage and actively growing. Application to weeds at later than the 4 leaf growth stage may result in reduced weed control.

Direct Seeded Garlic (California Only)		
Weed Control	**Rate (per/acre)**	**Specific Use Directions**
Preemergence	0.5 pt	**Application after planting but prior to garlic emergence:**

Postemergence		Apply GoalTender after planting, but prior to crop emergence, for preemergence control of listed broadleaf and grass weeds using ground, air or sprinkler irrigation (chemigation). **Aerial application:** Apply in a minimum spray volume of 10 gallons per acre. Follow Aerial Application instructions and precautions in the Product Information section of this label. **Postemergence directed application:** Apply GoalTender as a directed spray to garlic that is at least 12 inches tall. Accurate, uniform placement of directed postemergence sprays is essential for effective weed control and to minimize injury to garlic plants. Use low-pressure sprays and a minimum spray volume of 20 gallons per acre. Adjust nozzles for minimum spray contact with garlic plants, directing the spray to the soil at the base of garlic plants and adjacent bed top and furrow area. For optimum postemergence control, apply when susceptible weeds are in the 2 to 4-leaf stage and actively growing. Application to weeds at later than the 4 leaf growth stage may result in reduced weed control. **Sprinkler irrigation (portable lateral or solid set) preemergence or postemergence:** Apply GoalTender at the specified broadcast application rate using sufficient irrigation to wet soil to a depth of 2 inches. Apply after planting but prior to garlic emergence or postemergence when garlic is at least 12 inches tall. Follow the application directions and precautions for "Sprinkler Chemigation" given in the Chemigation section of this label.

Precautions:

- **Garlic Response to Preemergence Applications of GoalTender:** Following a preemergence application of GoalTender, a chlorotic band around some of the leaves may be observed after the first irrigation (or rainfall) following garlic emergence.
- **Garlic Response to Post-direct Applications of GoalTender:** Post-direct applications may cause chlorotic leaf banding, necrotic lesions, or stunting of the garlic plants. Symptoms will be more severe if applications are made during cool, wet, overcast, or foggy weather. Garlic will typically outgrow these conditions. A delay in crop development, maturity, reduced yields, or quality may result

Transplanted Garlic: Postemergence Application Immediately after Planting

Weed Control	Rate (per/acre)	Specific Use Directions
Preemergence Postemergence	up to 1 pt	**All States Except Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont:** Transplanted garlic is most tolerant of a postemergence application immediately after transplanting. An application of up to 1 pint per acre may be made within two days after transplanting. Adjust nozzles for minimum spray contact with garlic plants, directing the spray to the soil at the base of garlic plants and adjacent bed top and furrow area. If less than 1 pint per acre is applied, a second application can be made two weeks or more after transplanting. Do not exceed the maximum use rate of 1 pint per acre of GoalTender per season as a result of multiple applications.
Preemergence Postemergence	1 - 2 fl oz	**Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont:** Multiple treatments at 1 to 2 fl oz per acre may be applied up to a maximum of 1 pint (16 fl oz) per acre per use season. Adjust

		nozzles for minimum spray contact with garlic plants, directing the spray to the soil at the base of garlic plants and adjacent bed top and furrow area.

Key Weeds Controlled:

canarygrass (annual)	puncturevine
eveningprimrose, cutleaf	purslane, common †
groundsel, common	rocket, London
mallow, little (malva)	sage, lanceleaf
nightshade, black	shepherdspurse †
pigweed, prostrate †	sowthistle, annual
pigweed, redroot †	

† Key weeds controlled at specified rates in Northeastern States.

Garlic - Crop-Specific Precaution (Postemergence Application):

- Postemergence applications of GoalTender may cause chlorotic leaf banding, necrotic lesions, or stunting of the garlic plants. Symptoms may be more severe if garlic emerged under cool, wet, overcast, or foggy weather. These conditions are temporary and should not affect the vigor or development of garlic plants.

Crop-Specific Restrictions (Applicable to All Methods of Application):

- In all states **except** Northeastern states, do not apply until **direct seeded** garlic plants have two fully developed true leaves. In the Northeastern states, do not apply until direct seeded garlic plants have three fully developed true leaves. Application made prior to the specified growth stage may result in serious crop injury.
- Do not apply more than a total of 1 pint per acre of GoalTender per use season as a result of multiple applications.
- Do not apply within 60 days of harvest.
- In direct seeded garlic (except in California), do not apply GoalTender as a preemergence treatment.
- Use only on dry bulb garlic.
- Do not apply to garlic grown for seed.
- For weed control in garlic, do not mix GoalTender with oils, surfactants, liquid fertilizers or pesticides except as specified on approved ~~Dow AgroSciences~~Adaura, LLC Supplemental Labeling.
- Do not apply to garlic plants that are under stress due to drought, flooding, excessive fertilizer or soil salts, storage conditions, wind injury, hail, frost damage, injury from previously applied pesticides, or injury due to insects, nematodes or diseases.

Guava (Bearing and Non-Bearing

(For Use Only in Hawaii)

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence	2.5 - 4	**Preemergence or Postemergence:** In established guava plantings, apply preemergence or postemergence to weeds. Increase the spray volume to ensure adequate coverage in high densities of emerged weeds or heavy trash. Minimize contact with guava plants by directing the spray to the soil surface. Spray shields are suggested to minimize spray contact in young plantings. For broader spectrum postemergence control of grass and broadleaf weeds, GoalTender may be applied in tank mix
Postemergence	1 - 4	

		combination with paraquat (Gramoxone) or glyphosate. Follow applicable use directions, precautions and limitations on the labels of the respective tank mix products.

Precautions:
- Prevent direct spray or drift from contacting green stems, fruit or foliage, as injury may result.
- Alone or in tank mix combination, GoalTender should be applied to only healthy growing trees.
- Application of GoalTender should be made only after new foliage growth has hardened off.

Crop-Specific Restrictions:
- Do not apply more than 4 pints per acre of GoalTender in a single application or more than 8 pints per season.
- Do not apply GoalTender within 1 day of harvest.

Key Weeds Controlled:

Preemergence	Postemergence
ageratum buttonweed crotalaria purslane, common spurge, garden	purslane, common spurge, garden

Horseradish

Agricultural Use Requirements: Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

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 footwear plus socks
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence	1	Apply GoalTender after the horseradish roots have been planted but prior to emergence of new horseradish leaves. Emerged leaves that receive direct or indirect spray (drift) contact will be injured. If necessary, cultivate before application to destroy germinated weeds.

Precautions:
- Do not apply GoalTender to horseradish plantings that have been weakened or stressed due to unfavorable temperature conditions, disease, fertilizer, nematodes, insects, pesticides, drought or excessive moisture.

Crop-Specific Restrictions:
- Do not apply more than 1 pint of GoalTender per acre per crop.

Key Weeds Controlled:

lambsquarters, common pigweed, redroot purslane, common	shepherdspurse smartweed, pennsylvania

Jojoba

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence Postemergence	2 - 3	Initial application may be made when jojoba plants have reached a height of 6 inches or more. Use sufficient spray volume to ensure thorough coverage of dense weed growth. Sprays should be directed to the base of jojoba plants to avoid possible phytotoxicity to foliage. Spray shields are suggested for use in young plantings. Use higher rate in rate range for extended residual preemergence weed control. Make follow-up applications as necessary to maintain weed control. For early postemergence control of susceptible seedling weeds (less than 8 inches tall) apply GoalTender at the rate of 2 pints per acre. GoalTender may be applied at the rate of 3 pints per acre for postemergence control of weeds up to 12 inches tall. For optimum residual control, apply during the fall or winter months. Control may be unsatisfactory for weeds greater than 12 inches tall.
Precautions: • Avoid direct spray or drift contact with jojoba flowers or buds as severe injury may result. • Over-the-top applications may cause burning, crinkling or bronzing of jojoba foliage, particularly to the youngest leaves, flowers, or buds present at the time of application.		
Crop-Specific Restrictions: • Do not apply more than 3 pints per acre per year.		

Key Weeds Controlled:

Preemergence	Postemergence
burclover	fiddleneck, coast
fiddleneck, coast	filaree, broadleaf ††
filaree, broadleaf	filaree, redstem ††
filaree, redstem	filaree, whitestem ††
filaree, whitestem	groundsel, common †
groundsel, common	henbit
henbit	mallow, little (malva,
knotweed, prostrate	cheeseweed)
lambsquarters, common	minerslettuce
lettuce, prickly	nettle, burning
mallow, little (malva,	pigweed, redroot †
cheeseweed)	redmaids
pigweed, redroot	shepherdspurse
purslane, common	sowthistle, annual
redmaids	
rocket, London	
shepherdspurse	
sowthistle, annual	

† Highest rate may be required for acceptable postemergence control.

†† GoalTender at the 3-pint rate will provide control of filaree not exceeding the 4-inch stage. Applications to filaree beyond the 4-inch stage may result in partial control.

Mint (Spearmint and Peppermint)

Mint (Spearmint and Peppermint) Grown on Mineral Soils		
Weed Control	**Rate (pt/acre)**	**Specific Use Directions**
Preemergence Postemergence	2 - 3	**Oregon and Washington (East of Cascades), California, Montana, Idaho, Nevada, South Dakota and Utah:** Apply from December through March when mint is dormant. When used postemergence (to weeds), add an 80% active ingredient nonionic surfactant at the rate of one quart per 100 gallons of spray volume and apply before weeds exceed a height of 4 inches. Late winter applications will provide maximum activity on summer weeds, but summer grass control may be inconsistent. For best results, fall-plowed fields should be harrowed to provide a smooth surface for application. In furrow-irrigated fields, corrugating must be done prior to application. Corrugating or harrowing will result in disturbance of treated soil or movement of untreated soil into treated areas, resulting in poor weed control.
Preemergence	1 – 1.5	**Peppermint (Western Oregon Willamette Valley):** Apply GoalTender from November through February to dormant peppermint only. Treatments in January or February generally provide better residual preemergence control of annual broadleaf weeds. Full season weed control should not be expected from this treatment.
Precautions: • Application must be made prior to emergence of new spring growth or severe crop injury may result. • **In the Willamette valley, do not apply GoalTender to mint that has been plowed.** • Apply GoalTender only to healthy stands of spearmint and peppermint. Do not apply to spearmint or peppermint weakened by disease, drought, flooding, excessive fertilizer, soil salts, previously applied pesticides, nematodes, insects, or winter injury, as severe injury may result.		
Crop-Specific Restrictions: • Do not make more than one application of GoalTender per season.		

Key Weeds Controlled:

bedstraw, catchweed	† oats, wild
† bluegrass, annual	orach, red
flixweed	pepperweed, yellowflower
groundsel, common	pigweed, redroot
lambsquarters, common	† ryegrass, Italian
lettuce, prickly (china lettuce)	shepherdspurse
mustard, blue (purple mustard)	sowthistle, annual
mustard, tumble (Jim hill mustard)	tansymustard
nightshade, hairy	thistle, Russian

† Control of annual grasses is best obtained when GoalTender is applied prior to emergence. Postemergence control of winter annual grasses is generally unsatisfactory if applications are made after the 1 to 2-leaf stage.

Mint (Spearmint and Peppermint) Grown on Muck Soils): For Use Only on Mint Grown in Indiana, Michigan, Montana, North Dakota, South Dakota, and Wisconsin		
Weed Control	**Rate (pt/acre)**	**Specific Use Directions**

Preemergence Postemergence	2 - 3	**Note:** Use directions in this section apply only to spearmint and peppermint grown on muck soils (organic matter content of 20% or greater). When used postemergence (to weeds), add an 80% active ingredient nonionic surfactant at the rate of one quart per 100 gallons of spray volume and apply before weeds exceed a height of 4 inches.

Precautions:

- Application must be made prior to emergence of new spring growth or severe crop injury may result.
- To avoid excessive crop injury, do not apply within 4 days of planting (sprigging) spearmint or peppermint.
- Apply GoalTender only to healthy spearmint or peppermint. Do not apply to spearmint or peppermint that has been weakened by disease, nematodes, soil insects, or winter injury, as severe injury may result.

Crop-Specific Restrictions:

- Do not make more than one application of GoalTender per season.

Key Weeds Controlled

Knotweed, prostrate
pigweed, redroot
purslane, common

Non-Crop Use

(Non-Food-Producing, Non-Cultivated Agricultural or Non-Agricultural Areas, such as Highway and Utility Rights-of-Way, Industrial Sites, Tank Farms, Storage Areas, Airports, Fencerows, and Farmsteads)

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence	2.5 - 4	**Preemergence:** Use higher rate in rate range for longer residual control. **Postemergence:** Use the lower rate in the rate range for control of susceptible weeds in the early postemergence stage, less than 4 inches tall. Use the higher rate for weeds up to 12 inches tall. Application to weeds beyond the 4-inch stage may result in partial control.
Postemergence	1 - 4	

Tank Mixing: Refer to Mixing Directions section for Tank Mixing Precautions. Follow applicable use directions, precautions, and limitations on the respective product labels. In interpreting the labels of tank mixed products, the most restrictive label limitations must apply.

- **Preemergence:** For broader-spectrum residual preemergence weed control, GoalTender may be applied in tank mix combination diuron (Karmex) or simazine.
- **Postemergence:** For additional postemergence control of susceptible grass and broadleaf weeds, GoalTender may be applied in tank mix combination with paraquat (Gramoxone) or glyphosate.

Site-Specific Restrictions:

- Do not feed or allow animals to graze on any areas treated with GoalTender.
- Do not apply more than 4 pints per acre in a single application.

Key Weeds Controlled:

Preemergence	Postemergence
burclover	cheeseweed (malva)
cheeseweed (malva)	fiddleneck, coast
fiddleneck, coast	filaree, broadleaf
filaree, broadleaf	filaree, redstem
filaree, redstem	groundsel, common
groundsel, common	henbit
henbit	minerslettuce
knotweed, prostrate	nettle, burning
lambsquarters, common	pigweed, redroot
lettuce, prickly	purslane, common
pigweed, redroot	redmaids
purslane, common	shepherdspurse
redmaids	sowthistle, annual
rocket, London	
shepherdspurse	
sowthistle, annual	

Onions

Agricultural Use Requirements: Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

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 footwear plus socks
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

For optimum preemergence weed control, the soil surface should be smooth and free of excessive trash (clippings, plant residues, etc.). Following application, cultural practices which result in redistribution or disturbance of the soil surface or move untreated soil into treated areas will reduce weed control.

Direct Seeded Onions: Postemergence Application		
Weed Control	**Rate (per acre)**	**Specific Use Directions**
Postemergence	1 - 2 fl oz	**Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont:** Apply GoalTender at 1 to 2 fl oz per acre to direct seeded onions that have at least 3 fully developed true leaves using ground equipment. Multiple treatments at 1 to 2 fl oz per acre may be applied up to a maximum of 1 pint (16 fl oz) per acre per use season. For optimum postemergence control, apply when susceptible weeds are in the 2 to 4-leaf stage and actively growing.
Postemergence	0.25 – 0.5 pt	**Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, Texas, Utah and Washington:** Apply GoalTender at 0.25 to 0.5 pt per acre to direct seeded onions that have at least 2 fully developed true leaves using ground equipment. Multiple treatments at 0.25 to 0.5 pt per acre may be applied up to a maximum of 1.25 pints per acre per use season. For

		optimum postemergence control, apply when susceptible weeds are in the 2 to 4-leaf stage and actively growing.
Postemergence	0.25 pt	**All other states:** Apply GoalTender at 0.25 pt per acre to direct seeded onions that have at least 2 fully developed true leaves, using ground equipment. Multiple treatments at 0.25 pt per acre may be applied up to a maximum of 1 pint per acre per use season. For optimum postemergence control, apply when susceptible weeds are in the 2 to 4 leaf stage and actively growing.
Postemergence	(see above)	**Sprinkler Irrigation - all except northeastern states (center pivot, portable lateral or solid set):** Apply GoalTender at the specified broadcast application rate using sufficient irrigation to wet soil to a depth of 2 inches. Follow the application directions and precautions for "Sprinkler Chemigation" given in the Chemigation section of this label.

Transplanted Onions: Application Immediately before Planting		
Weed Control	**Rate (per/acre)**	**Specific Use Directions**
Preemergence Postemergence	0.5 - 1 pt	**pre-transplant application (not for use in northeastern states or western states:** GoalTender may be applied as a broadcast or band application after completion of tillage operations, but before transplanting of onion plants. Transplanting should be accomplished with a minimum of soil disturbance. For optimum weed control, soil surfaces should be left undisturbed after transplanting for the period for which weed control is desired. However, timely cultivation after weed emergence will assist in weed control. If less than 1 pt per acre was applied as a pre-transplant application, postemergence applications may be made as instructed for seeded onions. Do not exceed the maximum use rate of 1 pt per acre per use season as a result of multiple applications.

Transplanted Onions: Application Immediately after Planting		
Application Timing for Target Weeds	**Rate (per/acre)**	**Specific Use Directions**
Preemergence	up to 1 pt	**All states except northeastern states:** transplanted onions are most tolerant of a postemergence application immediately after transplanting. An application of up to 1 pint per acre may be made within two days after transplanting. If less than 1 pint per acre is applied, a second application can be made two weeks or more after transplanting. Do not exceed the maximum use rate of 1 pint per acre of GoalTender per season as a result of multiple applications.
Preemergence	1 - 2 fl oz	**Northeastern states including Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont:** Multiple treatments at 1 to 3 fl oz per acre may be applied up to a maximum of 1 pint (16 fl oz) per acre per use season.

Onions - Use Precautions (applicable to all areas and methods of application):

- GoalTender can cause necrotic lesions, twisting, pigtailing or stunting of the onion plants. Injury will be more severe if applications are made immediately following or during cool, wet weather and/or if applications are made prior to the specified onion growth stage of the onion plants as specified in Specific Use Directions.
- Do not apply to onion plants that are under stress due to drought, flooding, excessive fertilizer or soil salts, storage conditions, wind injury, hail, frost damage, injury from previously applied pesticides, or injury due to insects, nematodes or diseases.

Onions - Crop-Specific Restrictions (applicable to all areas and methods of application):

- In all states **except** Northeastern states, do not apply until **direct seeded** onion plants have at least two fully developed true leaves. In the Northeastern states, do not apply until direct seeded onion plants have at least three fully developed true leaves. Application made prior to the specified growth stage may result in serious crop injury.
- Do not apply more than a total of 1 pint per acre of GoalTender per use season as a result of multiple applications.
- Do not apply within 45 days of harvest.
- Do not apply GoalTender as a preemergence treatment to direct seeded onions.
- Use only on dry bulb onions.
- Do not apply to onions grown for seed, except as instructed in separate use directions.
- Tank mixtures of GoalTender herbicide with oils, surfactants, liquid fertilizers or other pesticides may be made but could result in enhanced crop response/injury and are the responsibility of the user.

Key Weeds Controlled:

Postemergence
canarygrass (annual)
eveningprimrose, cutleaf [(a)]
groundsel, common
mallow, little (malva)
nightshade, black
pigweed, prostrate [(b)]
pigweed, redroot [(a, b)]
puncturevine
purslane, common [(a, b)]
rocket, London
sage, lanceleaf
shepherdspurse [(b)]
sowthistle, annual

[a] Weeds controlled when applied as a pre-transplant application. In addition, GoalTender at the rate of 0.5 to 1 pint per acre will provide control/suppression of carpetweed, Pennsylvania smartweed, galinsoga, common lambsquarters, and wild mustard. Applications of GoalTender to muck soils may result in partial control or suppression of the weeds listed.

[b] Specific weeds controlled at rates specified for use in northeastern states (see DOSAGE section).

Onions Grown for Seed

Agricultural Use Requirements: Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

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 footwear plus socks
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

Weed Control	Rate (per/acre)	Specific Use Directions
Preemergence	1 fl oz	**Northeastern States including Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont:** Multiple treatments at 1 fl oz per acre may be applied up to a maximum of 1 pint (16 fl oz) per acre per use season. Prior to initial treatment, seeded onions must have *at least four (4) true leaves*. Multiple treatments at the aforementioned rate may be applied.
Preemergence	up to 0.25 pt	**All other States:** Apply GoalTender at up to 0.25 pt per acre to seeded onions that have *at least three (3) true leaves.* Multiple treatments at 0.25 pt per acre may be applied up to a maximum of 1 pint per acre per use season. For optimum postemergence control, apply when susceptible weeds are in the 2 to 4-leaf stage and actively growing. **Sprinkler Irrigation - Portable Lateral or Solid Set:** Apply GoalTender at the specified broadcast application rate using sufficient irrigation to wet soil to a depth of 2 inches. Follow the application directions and precautions for "Sprinkler Chemigation" given in the Chemigation section of this label.

Use Precautions:

- **Notice:** Some varieties or inbred lines of onions may be more susceptible to GoalTender. Care should be taken to insure that the particular onion variety or line being grown is tolerant to GoalTender. It is suggested that all onion varieties or lines be tested in limited areas to ensure an adequate level of crop tolerance prior to an application for postemergence weed control.
- GoalTender can cause necrotic lesions, twisting, pigtailing or stunting of the onion plants. Injury will be more severe if applications are made immediately following or during cool, wet weather and/or if applications are made prior to the specified onion growth stage of the onion plants as specified in Specific Use Directions.
- Do not apply to onion plants that are under stress due to drought, flooding, excessive fertilizer or soil salts, wind injury, hail, frost damage, injury from previously applied pesticides, or injury due to insects or diseases.

Crop-Specific Restrictions:

- In all states, do not apply GoalTender until the onions have reached the minimum leaf stage specified. Application prior to the specified stage of development may result in serious injury
- Do not apply more than a total of 1 pint per acre of GoalTender during one use season.
- Do not apply within 60 days of harvest.
- For seeded onions, do not apply GoalTender with oils, surfactants, liquid fertilizers or other pesticides except as specified in approved ~~Dow AgroSciences~~Adaura, LLC Supplemental Labeling.

Key Weeds Controlled:

Postemergence
canarygrass (annual)
eveningprimrose, cutleaf
groundsel, common
mallow, little (malva)
nightshade, black
pigweed, prostrate †
pigweed, redroot †
puncturevine
purslane, common †
rocket, London
sage, lanceleaf
shepherdspurse
sowthistle, annual

† Specific weeds controlled at rates specified for use in northeastern states (see DOSAGE section).

Papaya

(For Use Only in Hawaii)

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence Postemergence	2	The initial application should occur no sooner than 4 months after transplanting or 6 months after direct seeding, and after the papaya has reached a minimum height of 4 feet. Applications may be repeated at approximate 4-month intervals. Apply preemergence or postemergence to weeds. Increase the spray volume to assure adequate coverage of dense growth of emerged weeds. GoalTender must be applied as a directed spray to the orchard floor beneath the papaya plants. Accurate, uniform placement of GoalTender is essential for effective weed control and to minimize crop injury. GoalTender must be applied using rigid precision ground sprayer equipment. Postemergence applications may be made up to the 4 leaf stage of weed growth.
Precautions: • Do not allow the herbicide solution, spray, drift or mist to contact green bark, stems, fruit or foliage as injury may result. • Do not use GoalTender on papaya plantings that are weak, or under stress due to temperature, disease, fertilizer, nematodes, insects, pesticides, drought or excessive moisture.		
Crop-Specific Restrictions: • Do not apply more than 2 pints of GoalTender per broadcast acre in a single directed spray or more than 6 pints per broadcast acre per year as a result of multiple applications. • Do not apply GoalTender within 1 day of harvest.		

Key Weeds Controlled:

amaranth, spiny
purslane, common
spurge, garden

Soybeans

(Not for Use in California)

Soybeans - Early Preplant Application in Conservation Tillage Systems		
Weed Control	**Rate (pt/acre)**	**Specific Use Directions**
Preemergence	0.75 – 1.5	**Early Preplant Application:** Surface apply GoalTender to the stale seedbed approximately 14 days before planting conservation tillage soybeans for postemergence and preemergence residual broadleaf control. Use a spray volume of 20 or more gallons per acre and increase the spray volume if growth of existing weeds is dense. GoalTender at 1 to 1.5 pints provides early season suppression of annual grasses, but should not be relied upon as a basic grass herbicide. A planned program utilizing herbicides registered for early preplant, preemergence or postemergence grass control in soybeans is specified. Use of ridge or slot planter or a similar planting implement that causes minimal soil disturbance is specified. Movement or redistribution of surface soil will reduce herbicidal effectiveness.

Soybeans: No-Till (Double-Crop)		
Application Timing for Target Weeds	**Rate (pt/acre)**	**Specific Use Directions**
Preemergence Postemergence	0.25 - 1	**Preemergence Application to Soybeans:** Applied preemergence, GoalTender provides postemergence and residual preemergence control of susceptible broadleaf weeds. **Apply GoalTender within one day after planting. Later applications may result in severe crop injury.** Apply in a minimum spray volume of 20 gallons per acre and increase spray volume if growth of existing weeds is dense.
Tank Mixing: For enhanced postemergence control of existing grass and broadleaf weeds, GoalTender may be tank mixed with paraquat (Gramoxone) or glyphosate. For extended residual control of annual grasses no-till soybeans, GoalTender may also be tank mixed with a residual grass herbicide such as Bronco Herbicide, Dual Magnum Herbicide, or Lasso Herbicide.		
Postemergence	0.5	**Postemergence Directed Application:** GoalTender may be applied as a post-directed application. Optimum control is achieved when GoalTender is applied to seedling weeds not exceeding 4 true leaves (not counting cotyledon leaves) and actively growing. Use of an 80% nonionic surfactant cleared for application to growing crops at the rate of 2 pints per 100 gallons of spray is specified whenever postemergence weed control is desired. **For postemergence application, Soybeans must be a minimum 8 inches tall.** Use a minimum of 2 flat fan nozzles per row. Use branch lifters or shields to prevent excessive spray contact to the soybean plants. Do not use hollow cone nozzles.

Soybeans: Grown Under Conventional Tillage Systems

Application Timing for Target Weeds	Rate (pt/acre)	Specific Use Directions
Preemergence Postemergence	0.5 – 0.75	**Preemergence Application to Soybeans:** GoalTender provides preemergence control of susceptible broadleaf weeds. **Apply GoalTender within one day after planting. Later applications may result in severe crop injury.** Apply in a minimum spray volume of 20 gallons per acre and increase spray volume if growth of existing weeds is dense. The 0.75 pint per acre rate will assist in early season annual grass control but should not be relied upon as a basic grass herbicide. GoalTender may also be applied as a preemergence application following a preplant incorporated grass herbicide treatment

Preemergence Tank Mixes (To Control Additional Grass and Broadleaf Weeds): Apply preemergence tank mixes of GoalTender within one day after planting. Later applications may result in severe crop injury.

- GoalTender at 0.3 to 0.75 pints per acre may be applied preemergence to soybeans in tank mix with Dual Magnum Herbicide or Lasso Herbicide. GoalTender may be applied alone as a preemergence application following a preplant incorporated grass herbicide application or as a tank mix in a preemergence application with Dual Magnum, or Lasso herbicides. Refer to the label of tank mix product for additional weeds controlled.
- GoalTender at 0.3 to 0.4 pints per acre may be applied preemergence to soybeans in tank mix with 1 to 1.67 pints of Command 6EC herbicide. Refer to the label for Command 6EC for additional weeds controlled.

Postemergence	0.5	**Postemergence Directed Sprays:** GoalTender may be applied as a post-directed application at 0.5 pint per acre. Optimum control is achieved when weeds not exceed 4 true leaves and are actively growing (do not count cotyledon leaves). Use of an 80% nonionic surfactant cleared for application to growing crops at the rate of 2 pints per 100 gallons of spray is specified whenever postemergence weed control is desired. **For postemergence application, Soybeans must be a minimum 8 inches tall.** Use a minimum of 2 flat fan nozzles per row. Use branch lifters or shields to prevent excessive spray contact to the soybean plants. Do not use hollow cone nozzles.

Postemergence Tank Mixes: For broader spectrum control of broadleaf weeds, GoalTender may be applied in tank mix with Butoxone Herbicide or Butyrac 200 Herbicide. Use 0.5 pint of GoalTender with 1 pint of Butoxone or 0.7 to 0.9 pint of Butyrac 200 per acre. Refer to label of tank mix product for additional weeds controlled.

Precautions (All Methods and Timings to Soybeans):

- Soybeans are tolerant to preemergence and post-directed applications of GoalTender at specified rates, however, under certain conditions injury may occur. Heavy splashing rain shortly after crop emergence or cold, wet soil conditions during early growth stages can cause leaf cupping and crinkling. When injury occurs, it is generally limited to the first few leaves that develop after crop emergence. Soybeans recover from this injury and yields are not adversely affected. Soybeans accidentally sprayed during a post-directed application will exhibit necrotic spotting and injury to the soybean plant. Exercise care to avoid spray contact with the soybean leaves.

Crop-Specific Restrictions:

- **Tank Mixing:** Read and observe all label directions before using. Follow applicable use directions, precautions and limitations on the labels of the respective tank mix products. Refer to Mixing Directions section for Tank Mixing Precautions. Follow applicable use directions, precautions, and limitations on the respective product labels. In interpreting the labels of tank mixed products, the most restrictive limitations must apply.
- Do not make more than two applications of GoalTender per growing season.
- Do not apply more than 1 pint (0.5 lbs active) of GoalTender per acre during one growing season as a result of preemergence application in no-till (double-crop) or conventional till soybeans, or post-directed in conventional till soybeans. If early preplant application is made, do not apply more than 1.5 pints (0.75 lb active) of GoalTender per acre during one growing season.
- Do not apply a post-directed application of GoalTender to soybeans after the initial appearance of blooms.
- Maximum total application rate per year is 1.5 lbs ai/A

Key Weeds Controlled (GoalTender Alone):

Preemergence	Postemergence
groundcherry, cutleaf †	cocklebur, common
jimsonweed	croton, tropic
lambsquarters, common	groundcherry, cutleaf
nightshade, American black †	groundcherry, Wright
nightshade, black †	jimsonweed
pigweed, redroot	lambsquarters, common
poinsettia, wild	morningglory, annual (up to 6 leaf)
shepherdspurse	mustard, wild
sida, prickly (teaweed)	nightshade, American black
smartweed, Pennsylvania	nightshade, black
sowthistle, common †	nightshade, hairy
velvetleaf	pigweed, redroot
	† poinsettia, wild
	purslane, common
	sesbania, hemp
	shepherdspurse
	sicklepod ††
	sida, prickly (teaweed) †
	smartweed, Pennsylvania
	velvetleaf

† Multiple applications may be required for acceptable control.

†† Post-direct applications of GoalTender will kill or suppress seedlings not exceeding the one true leaf stage.

Taro

(For Use Only in Hawaii)

For use only to dryland taro grown in Hawaii. Dryland taro is defined as taro grown without irrigation, or by using irrigation practices that do not result in run-off, irrigation return flow, or other loss of irrigation water from the production area. If irrigation is used, the water applied shall not exceed the field capacity of the soil.

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence	1	**Preemergence to Taro and Weeds:** A single application of GoalTender at the rate of 2 pints per acre may be applied within 1 week after transplanting but prior to emergence of taro plants.
Postemergence	0.5	**Postemergence to Taro and Weeds:** GoalTender may be applied as a post-directed or band application at the rate of 1 pint per acre. Effective control of succulent weed seedlings in the 2-to 3-leaf stage can usually be obtained. Applications to weeds beyond the 3-leaf stage may result in partial control.

Precautions:

- Accurate, uniform placement of GoalTender is essential for effective weed control and to minimize crop injury. Taro foliage receiving accidental spray or drift will be injured. GoalTender must be applied using rigid precision ground sprayer equipment.
- Occasionally, after the use of GoalTender, spotting, crinkling or flecking may appear on the leaves of the taro. Leaves that receive direct or indirect (drift) spray contact will be injured.
- Do not use GoalTender on taro plantings that are weak, or under stress due to temperature, disease, fertilizer, nematodes, insects, pesticides, drought or excessive moisture.

Crop-Specific Restrictions:

- Do not apply more than 1 pint of GoalTender per broadcast acre as a single preemergence application.
- Do not apply more than 0.5 pint of GoalTender per acre in a single post-direct spray or more than 1 pint per acre per season as a result of multiple post-directed applications.
- Do not apply more than 2 pints of GoalTender per acre per season as a result of preemergence and post-direct applications.
- Do not apply GoalTender within 6 months of harvest of taro (corms, leaves).

Key Weeds Controlled:

amaranth, spiny
purslane, common
spurge, garden

Treefruit / Nut / Vine Crops (Dormant Application)

Almond, Apple, Apricot, Avocado, Beechnut, Brazil Nut, Butternut, Cashew, Cherry, Chestnut, Chinquapin, Crab Apple, Date, Feijoa, Fig, Filbert, Grapes, Hickory Nut, Kiwi, Loquat, Macadamia Nut, Mayhaws, Nectarine, Olives, Peach, Pear, Pecan, Persimmon, Pistachio, Plum, Pomegranates, Prune, Quince, and Walnut

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence (broadcast application)	2.5 – 3	Apply GoalTender a minimum of 20 gallons of water per acre. Use higher spray volumes to ensure thorough coverage in high densities of emerged weeds or heavy trash. Sprays should be directed to the soil and the base of dormant trees or vines. **In California,** GoalTender may be applied as an over-the-top or directed spray to dormant nonbearing grape plantings. The use of a low-pressure sprayer is suggested. Do not apply over-the-top to grape plantings that are under stress due to drought, flooding, excessive fertilizer or soil salts, storage conditions, wind injury, hail, injury from previously applied
(banded application)	2.5 - 4	

		pesticides, or injury due to insects, nematodes, or diseases, as severe crop injury may result.
Postemergence (broadcast application) (banded application)	1 – 3 1 - 4	Apply in a spray volume of 40 or more gallons per acre. For optimum control, apply when weeds are at seedling stage of growth. The lower rate in the rate range (1 pint per acre) is specified for the control of susceptible seedling weeds in the early postemergence stage up to the 4-leaf stage. Higher rates (up to 3 pints per acre) may be used for weeds up to the 6-leaf stage. Applications to weeds beyond the 6-leaf stage may result in partial control.

Tank Mixing: Refer to Mixing Directions section for Tank Mixing Precautions. Follow applicable use directions, precautions, and limitations on the respective product labels. In interpreting the labels of tank mixed products, the most restrictive label limitations must apply. See labels of tank mix partners to determine suitability and use rates for various crops.

- **Postemergence:** For broader spectrum postemergence control of listed grass and broadleaf weeds, GoalTender may be applied in tank mix with paraquat (Gramoxone) or glyphosate. These herbicides may also be added to preemergence tank mixes for enhanced control of existing weeds.
- **Preemergence:** For broad-spectrum preemergence control of susceptible grass and broadleaf weeds in listed treefruit, nut or vine plantings, GoalTender may be applied in tank mix with napropamide (Devrinol herbicide), diuron (Karmex herbicide), pronamide (Kerb® herbicide), simazine, norflurazon (Solicam herbicide) or oryzalin (Surflan herbicide).

Chemigation (All States): For dormant season application using sprinkler (low-volume (micro-sprinkler), drip (trickle), and flood (basin) irrigation systems, apply GoalTender at the specified rate per acre. Follow applicable directions in the Chemigation section of this label when making applications using irrigation systems.

Precautions:

- GoalTender or any of the combinations specified on this label should be applied to only healthy growing trees or vines.
- Avoid direct plant contact. Direct spray toward the base of tree or vines unless specific use recommendations allow over-the-top application.

Crop-Specific Restrictions:

- In all states, unless otherwise specified, do not apply GoalTender during the period between bud swell and completion of final harvest or when fruit/nuts are present. GoalTender may be applied upon completion of final harvest.
- **In Arizona and California, GoalTender may be applied during the period following completion of final harvest up to February 15 (February 1st in the Coachella Valley, California). Applications made after these calendar dates, but prior to bud swell, may result in significant crop injury and are the responsibility of the user.**
- For banded applications, up to 4 pints per acre of GoalTender per use season may be applied within the treated band. Do not apply more than a maximum of 3 pints per acre per use season on a broadcast basis.
- Do not apply to grapes or kiwi established less than 3 years unless vines are on a trellis wire a minimum of 3 feet above the soil surface.
- Do not apply to grapes or kiwi that are not staked or trellised unless vines are free standing.
- Maximum total application rate per year is 1.5 lbs ai/A

Key Weeds Controlled (Arizona and California):

Preemergence	Postemergence
burclover	cheeseweed (malva)
cheeseweed (malva)	fiddleneck, coast
fiddleneck, coast	filaree, broadleaf †
filaree, broadleaf	filaree, redstem †
filaree, redstem	filaree, whitestem †
filaree, whitestem	groundsel, common
groundsel, common	henbit
henbit	minerslettuce
knotweed, prostrate	nettle, burning
lambsquarters, common	pigweed, redroot
lettuce, prickly	redmaids
pigweed, redroot	shepherdspurse
purslane, common	sowthistle, annual
redmaids	
rocket, London	
shepherdspurse	
sowthistle, annual	

† GoalTender at the 3-pint rate will provide control of filaree not exceeding the 4-inch stage. Applications to filaree beyond the 4-inch stage may result in partial control.

Key Weeds Controlled (All Other States Except Arizona and California):

Preemergence	Postemergence
camphorweed	balsamapple
cudweed, narrowleaf	cocklebur, common
eveningprimrose, cutleaf †	cudweed, narrowleaf ††
groundcherry, cutleaf	eveningprimrose, cutleaf †††
jimsonweed	groundcherry, cutleaf
lambsquarters, common	groundcherry, Wright
nightshade, American black	jimsonweed
nightshade, black	lambsquarters, common
pepperweed, Virginia	morningglory, annual
pigweed, redroot	nightshade, American black
poinsettia, wild	nightshade, black
sida, prickly	pepperweed, Virginia
smartweed, Pennsylvania	pigweed, redroot
sowthistle, annual	poinsettia, wild
spurge, prostrate	purslane, common
spurge, spotted	sesbania, hemp
velvetleaf	shepherdspurse
	sida, prickly (teaweed)
	smartweed, pennsylvania
	sowthistle, annual
	velvetleaf

† Highest rate and/or multiple applications may be required for acceptable control.
†† Maximum 0.5-inch diameter
††† Highest rate and/or multiple applications may be required for acceptable control.

Grapes (Non-Dormant Application)

(California Only)

GoalTender may be applied as a directed spray or, for supplemental preemergence weed control, through low-volume sprinkler (micro-sprinkler) or drip irrigation systems for control or suppression of listed broadleaf weeds in non-dormant grapes (raisin and wine grapes only). GoalTender may also be applied to all grapes (raisin, table, and wine) as a dormant season application. Refer to Treefruit/Nut/Vine Crops (Dormant Application) section above for use directions for dormant season application to grapes.

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence	1	GoalTender may be applied preemergence or postemergence to weeds either as a directed spray in a minimum spray volume of 20 gallons per acre or through low-volume sprinkler (micro-sprinkler) or drip irrigation systems. Repeat applications may be required. Applications may be made from completion of bloom up to 14 days before to harvest. When applied as a postemergence directed spray, add 1 quart 80% active nonionic surfactant cleared for application to growing crops per 100 gallons of spray. Sprays should be directed to the soil and the base of vines.
Postemergence	0.5 - 1	

Tank Mixing:

- When applied as a directed postemergence spray using ground equipment, GoalTender may be applied in tank mix with paraquat (Gramoxone) or glyphosate in a minimum spray volume of 10 gallons per acre. Refer to Mixing Directions section for Tank Mixing Precautions. Follow applicable use directions, precautions, and limitations on the respective product labels. In interpreting the labels of tank mixed products, the most restrictive label limitations must apply.

Chemigation: Follow chemigation instructions in Product Information section.

- **Low Volume Sprinkler (Micro sprinkler) and Drip (Trickle) Irrigation:** Apply only through low-volume sprinkler or drip systems designed to uniformly distribute irrigation water beneath the canopy. Meter GoalTender at a continuous rate during the middle 1/3 of the irrigation period and discontinue application during the final 1/3 of the irrigation period to insure proper flushing of the irrigation system. Use of GoalTender through low-volume sprinklers or drip emitters helps to reduce the "ring effect" of weed escapes in areas around sprinklers or emitters where previously applied broadcast or directed treatments begin to break down.

Precautions:

- **Crop Tolerance:** The use of GoalTender may result in varying degrees of injury to non-dormant grapes. Grape foliage will typically exhibit injury symptoms from direct or indirect (spray drift, soil contact) exposure. This injury may result in necrosis, reddening, cupping or crinkling of grape leaves. The grape plant will continue to grow normally. Grape leaves that are immature or expanding at the time of contact with GoalTender are the most susceptible to foliage injury. Grapes may exhibit some small blemishes (spots or flicks) on the fruit.
- GoalTender is phytotoxic to plant foliage. Avoid drift to all other crops and nontarget areas. Do not apply when weather conditions favor drift.

Crop-Specific Use Restrictions:

- The total amount of GoalTender applied during one season (from completion of final harvest through dormancy to non-dormant use covered by this section) cannot exceed 3 pints per acre as a result of multiple applications in any given area (broadcast, banded, or within the wetted area of the low-volume sprinkler or drip irrigation system).
- Do not apply within 14 days of harvest.
- Do not initiate application of GoalTender in non-dormant grapes until the completion of the bloom period.
- Do not apply to grapes established less than 3 years unless vines are either on a trellis wire a minimum of 3 feet above the soil surface, or protected by grow tubes.
- GoalTender should be applied only by ground application equipment of through low-volume sprinkler (micro-sprinkler) or drip (trickle) irrigation systems.
- Apply GoalTender as a non-dormant application to wine grapes or raisin grapes only.

Key Weeds Controlled or Suppressed:

Preemergence	Postemergence
burclover	cheeseweed (malva)
cheeseweed, malva	fiddleneck, coast
fiddleneck, coast	groundsel, common
groundsel, common	henbit
henbit	minerslettuce
knotweed, prostrate	morningglory species, annual
lambsquarters, common	mustard, black
minerslettuce	nettle, burning
mustard, black	nightshade, black
nettle, burning	pigweed, redroot
nightshade, black	purslane, common
pigweed, redroot	redmaids
purslane, common	rocket, London
redmaids	sowthistle, annual
rocket, London	
sowthistle, annual	

Sucker Control in Non-Dormant Grapes

(Washington and Oregon Only)
(Grapes for Wine and Processing Only)

Application Timing for Sucker Control	Rate (pt/acre)	Specific Use Directions
Grape suckers less than 12 inches in length.	0.5 - 1	Apply GoalTender in a three-foot band directed towards to newly emerging suckers at the base of the grapevine. The highest rate and/or a second application may be required to achieve an acceptable level of control/suppression of grape suckers. Avoid spray contact on flowers, grape clusters, or fruit. Use mounted nozzles to deliver the spray solution. Thorough spray coverage of sucker growth is essential for optimal activity. Use a spray volume of 50 or more gallons per acre (broadcast basis).

Tank Mixing: For enhanced postemergence sucker activity, a tank mixture of GoalTender with either glufosinate (Rely Herbicide) or paraquat (Gramoxone) can be used. Apply at the specified rates and growth stages in a manner describe on the respective labels. Refer to Mixing Directions section for Tank Mixing Precautions. Follow applicable use directions, precautions, and limitations on the respective product labels. In interpreting the labels of tank mixed products, the most restrictive label limitations must apply.

Precautions:

- The use of GoalTender may result in varying degrees of injury to non-dormant grapes. Grape foliage will typically exhibit injury symptoms from direct or indirect (spray drift or soil contact) exposure. This injury may result in necrosis, reddening, cupping or crinkling of grape leaves. The grape plant will continue to grow normally. Leaves that are immature or expanding at the time of contact with GoalTender are the most susceptible to injury. Grape fruit may exhibit some small blemishes (spots or flecks) on the fruit.

Crop-Specific Restrictions:

- The total amount of GoalTender applied during one crop year (dormant and non-dormant) cannot exceed 3 pints per acre as a result of multiple applications in any give area (broadcast or banded).
- GoalTender should be applied only by ground application equipment.
- Apply GoalTender as a non-dormant application for sucker control only to wine or processed grapes.
- Do not apply GoalTender within 60 days of harvest.

Pistachios, Walnuts, Almonds (California and Arizona Only)

(Non-Dormant Application)

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence	2.5 - 3	**Preemergence:** For residual weed control of listed weeds.
Postemergence	0.5 - 1	**Postemergence (Suppression):** Apply to seedling weeds less than 4 inches in height. Repeat applications may be required.
	1 - 3	**Postemergence (Cleanup):** Contact (postemergence) control for cleanup sprays and preharvest applications. Apply to seedling weeds less than 4 inches in height. Applications to weed seedlings beyond the 4-inch stage may result in partial control.

Tank Mixing: For broader spectrum grass and broadleaf weed control in tree row middles, GoalTender may be tank mixed with either paraquat (Gramoxone) or glyphosate. Refer to Mixing Directions section for Tank Mixing Precautions. Follow applicable use directions, precautions, and limitations on the respective product labels. In interpreting the labels of tank mixed products, the most restrictive label limitations must apply.

Chemigation: Follow chemigation instructions in Product Information section.

Flood (Basin) Irrigation: For flood (basin) irrigation systems, meter continuously into the water during the entire irrigation period. Best weed control results are obtained when a uniform distribution and flow of irrigation water is maintained over level land. Irrigation water treated with GoalTender must be contained on the treated area until the water is absorbed by the soil.

Low Volume Sprinkler (Micro sprinkler) and Drip (Trickle) Irrigation: Apply only through low-volume sprinkler or drip systems designed to uniformly distribute irrigation water beneath the tree canopy. Applications should be made prior to weed emergence; otherwise postemergence activity may be inconsistent due to uneven coverage. Meter GoalTender at a continuous rate during the middle 1/3 of the irrigation period and discontinue application during the final 1/3 of the irrigation period to insure proper flushing of the irrigation system. Use of GoalTender through low-volume sprinklers or drip emitters helps to reduce the "ring effect" of weed escapes in areas around sprinklers or emitters where previously applied broadcast or directed treatments begin to break down.

Precautions:

- Direct spray toward the base of trees. Avoid direct contact with foliage or nuts.
- GoalTender should be applied only to healthy growing trees

Crop-Specific Use Restrictions:

- When applied as a non-dormant treatment, GoalTender can only be applied to pistachio plantings between May and 7 days prior to harvest.
- When applied as a non-dormant treatment, GoalTender can only be applied to almond plantings between April 1 and September 30 and to walnut plantings between May 1 and September 30.
- Do not apply GoalTender within 7 days of harvest of pistachios.
- Do not apply GoalTender within 30 days of harvest of almonds.
- Do not apply GoalTender within 7 days of harvest of walnuts.
- Do not apply more than 3 pints of GoalTender per acre during the non-dormant season.
- Maximum total application rate per year is 1.5 lbs ai/A

Key Weeds Suppressed and/or Controlled

cheeseweed (malva)	morningglory species, annual
fiddleneck, coast	mustard, black
filaree, broadleaf	nettle, burning
filaree, redstem	pigweed, redroot
filaree, whitestem	purslane, common
groundsel, common	redmaids
henbit	rocket, London
minerslettuce	sowthistle, annual

Additional Weeds Controlled in Tank Mix with Glyphosate or Paraquat

barnyardgrass	horseweed (marestail)
bluegrass, annual	rocket, London
chickweed, common	ryegrass, Italian

Windbreaks and Shelterbelts

(For Use Only in Minnesota, North Dakota, South Dakota and Wyoming)

Weed Control	Rate (pt/acre)	Specific Use Directions
Preemergence Postemergence	2 - 3	Apply GoalTender may be applied as a broadcast, banded or post-directed spray. Preemergence control is most effective when spray is applied to clean, weed-free soil surfaces. Pre-transplant applications must be made after completion of soil preparation but prior to transplanting. Transplanting should be completed with minimal soil disturbance. For optimum weed control results, treated soil surfaces should be left undisturbed during the time period for which weed control is desired. **Postemergence Weed Control:** For best results, apply before 4-leaf stage for broadleaf weeds or 2-leaf stage for grass weeds. **Conifers:** GoalTender can be applied pre-transplant, post-directed or postemergence (over-the-top) to conifers. Postemergence or post-directed applications should be applied prior to budbreak or after new growth foliage has hardened off and new terminal buds have formed. **Deciduous Hardwoods:** GoalTender has exhibited selectivity

		to many deciduous species when applied pre-transplant or as a post-directed spray prior to budbreak.

Precautions:

- **Important:** Some varieties or cultivars of conifers or deciduous species listed may be susceptible to GoalTender. Care should be taken to ensure that the particular variety to be sprayed with GoalTender is tolerant. For unfamiliar species, it is suggested that GoalTender be tested on a limited number of plants prior to large-scale application.
- Occasionally after the use of GoalTender, a spotting, crinkling or flecking may appear on the leaves of the deciduous species. Leaves that receive direct or indirect (drift) spray contact will be injured. Deciduous species typically rapidly outgrow these symptoms and develop normally.
- Application after budbreak may result in injury to deciduous species. If non-dormant application is required, apply only after foliage has fully expanded and hardened off. Avoid direct or indirect spray contact with the foliage by applying to the soil surface as a directed spray.
- Apply GoalTender only to healthy deciduous and/or conifer trees. Do not apply GoalTender to conifers or deciduous trees that have been weakened or under stress from excessive fertilizer or soil salts, disease, nematodes, frost, drought, flooding, previously applied pesticides, soil insects, or winter injury, as severe injury may result.

Specific Use Restrictions for Shelterbelts:

- Do not apply more than 3 pints of GoalTender per acre in a single application or more than 9 pints per acre per year.

Key Broadleaf Weeds Controlled:

buckwheat, wild	mustard, wild
burclover	nettle, burning
carpetweed	nightshade, black
dock, curly	nightshade, hairy
groundcherry, cutleaf	oats, wild
groundcherry, Wright	orach, red
groundsel, common	pepperweed, yellow flower
henbit	pigweed, prostrate
jimsonweed	pigweed, redroot
knotweed, prostrate	purslane, common
kochia	rocket, London
ladysthumb	shepherdspurse †
lambsquarters, common	smartweed, Pennsylvania
lettuce, prickly	sowthistle, annual
mallow, little	tansymustard
mayweed	thistle, Russian (seedling)
mustard, blue	velvetleaf
mustard, tumble	

† The highest rate or multiple applications may be required for acceptable control.

Key Grasses Controlled:

barnyardgrass	foxtail, giant
bluegrass, annual	goosegrass
crabgrass, large	witchgrass

GoalTender may be applied to numerous conifer and deciduous species, including the following:

Conifer Species

Common Name	Scientific Name
douglas-fir	*Pseudotsuga menziesii*
fir	
grand	*Abies grandis*
fraser	*Abies fraseri*
noble	*Abies procera*
hemlock	
eastern hemlock	*Tsuga canadensis*
western hemlock	*Tsuga heterophylla*
pine	
Austrian	*Pinus nigra*
eastern white	*Pinus strobus*
jack	*Pinus banksiana*
Himalayan	*Pinus graffithii*
loblolly	*Pinus taeda*
lodgepole	*Pinus contorta*
longleaf	*Pinus palustris*
monterey	*Pinus radiata*
mugo	*Pinus mugo*
ponderosa	*Pinus ponderosa*
scotch	*Pinus sylvestris*
shortleaf	*Pinus echinata*
slash	*Pinus elliottii*
Virginia	*Pinus virginiana*
spruce	
blue	*Picea pungens*
dwarf Alberta	*Picea glauca conica*
Norway	*Picea abies*
Sitka	*Picea sitchensis*
Arborvitae	*Thuja occidentalis* *Thuja orientalis*
juniper	*Juniperus chinensis* *Juniperus horizontalis* *Juniperus procumbens* *Juniperus sabina* *Juniperus scopulorum*
red cedar	*Juniperus virginiana*
yew	*Taxus* spp.

Deciduous Hardwood Species

Common Name	Scientific Name
ash	*Fraxinus* spp.
crabapple	*Malus spp.*
eucalyptus	*Eucalyptus* spp.
lilac	*Syringa vulgaris*
maple, black	*Acer nigrum*
oak, northern red	*Quercus rubra*
olive, Russian	*Elaeagnus angustifolia*
poplar (cottonwood)	*Populus* spp.
sweetgum	*Liquidambar styraciflua*
sycamore	*Platanus occidentalis*
walnut, black	*Juglans nigra*

Terms and Conditions of Use

If terms of the following Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. Otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitations of Remedies.

Warranty Disclaimer

~~Dow AgroSciences~~Adaura, LLC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. To the extent permitted by law, ~~Dow AgroSciences~~Adaura, LLC MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Plant injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperature, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of ~~Dow AgroSciences~~Adaura, LLC or the seller. All such risks shall be assumed by buyer.

Limitation of Remedies

To the extent permitted by law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at ~~Dow AgroSciences'~~Adaura, LLC's election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used

~~Dow AgroSciences~~Adaura, LLC shall not be liable for losses or damages resulting from handling or use of this product unless ~~Dow AgroSciences~~Adaura,, LLC is promptly notified of such loss or damage in writing. To the extent permitted by law, in no case shall ~~Dow AgroSciences~~Adaura, LLC be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer and Inherent Risks of Use above and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of ~~Dow AgroSciences~~Adaura, LLC or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

®Trademark of ~~The Dow Chemical Company ("Dow") or an affiliated company of Dow~~Nutrichem Co. Ltd.
~~EPA accepted 04/25/13~~
[20200729]

Supplemental Labeling

Dow AgroSciences

Dow AgroSciences LLC 9330 Zionsville Road Indianapolis, IN 46268-1054 USA

GoalTender®

EPA Reg. No. 62719-447

Restricted Entry Interval (REI) for Conifer Seedlings and Conifer Trees

ATTENTION

- It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
- This labeling must be in the possession of the user at the time of application.
- Read the label affixed to the container for GoalTender® herbicide before applying. Carefully follow all precautionary statements and applicable use directions.
- Use of GoalTender according to this supplemental labeling is subject to all use precautions and limitations imposed by the label affixed to the container for GoalTender.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours after application of this product for use in conifer seedlings and conifer trees.

Expiration date: April 29, 2016

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R204-069
EPA accepted: 04/25/13
Initial printing.

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

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

To: Board Members
From: Megan Patterson, Director
Subject: Staff Observations on Rulemaking Comments
Date: February 18, 2022

The staff has discerned a few apparent themes in the rulemaking comment record that we believe merit careful Board consideration. They are as follows:

1. Many commenters identified that the proposed definition of "invasive invertebrate pests" and the associated clarifying conditions in Chapter 41 was far broader in scope than intended by the term used in LD 155—"emerging invasive insect pests." Staff agree that the proposed term is general and are interested in better addressing the original request. While a list may appear to be a simple solution, staff are concerned about the time and expense of repeated rulemaking to update a species list. Emergency rulemaking is only valid for 90 days and may not be justifiable for all proposed changes. Staff is also concerned about the inadvertent exclusion of invasive mites and nematodes that may result from focusing solely on insects.

   Staff has prepared a new draft definition. The new and originally proposed definitions were reviewed during meetings with DACF experts in horticulture, forestry, IPM, and invasive species. The new draft definition uses a definition of invasive species and other language referenced in testimony and in the original text of LD 155. Staff are now asking the Board to consider this new definition and provide additional direction for addressing identification species relevant to the proposed Chapter 41 exemption.

   > "Emerging Invasive Invertebrate Pests" means any invertebrate, including its eggs or other biological material capable of propagating that species, both known now and unknown now but showing up at a later date, that occurs outside of its eco-region and its introduction causes or is likely to cause economic or environmental harm, or harm to human, animal, or plant health including but not limited to Asian long-horned beetle, emerald ash borer, and hemlock wooly adelgid. EPA has defined eco-regions as ecosystems (with respect to the type, quality, and quantity of environmental resources) that are generally similar.

MEGAN PATTERSON, DIRECTOR
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2. Some commenters indicated that the timeline for implementation in Chapter 41 of the prohibition of neonicotinoid use permitted continued use of residential ornamental applications of neonicotinoids through the 2022 growing season. Commenters suggested that the timeline for publication of a list of restricted products and the prohibition of use was longer than intended by LD 155. Staff have concerns about an inequitable application of a prohibition of use that may result from the publication of a partial list of restricted products. Staff are also concerned about compliance challenges that may result from a shortened timeline for implementation. While staff are interested in the timely implementation of regulations, changes to implementation timelines may require revisiting rulemaking, thereby prolonging the rule adoption process. Staff will be asking the Board for direction on how best to address a shortened timeline for list publication and restriction of use.

3. Many commenters asked that PFAS reporting-related affidavits in Chapter 20 be made public. Commenters correctly identified that the proposed affidavit information will be considered public information. If it is the Board's preference, staff could prepare and post an annual summary of the results of affidavit reporting. Implementation of this request would not require rulemaking. Staff will be asking the Board if the proposed rule should or should not be modified.

4. Some commenters stated that the proposed identification via an affidavit of fluorinated HDPE containers should be broadened to include other types of containers. While staff recognize that many types of containers—including those used in food and cosmetics packaging—are fluorinated, LD 264 directs the Board to amend regulations to address fluorinated HDPE containers. The Board needs to consider if the proposed rule should also address other types of pesticide packaging.

5. Some commenters stated that the Board should ban pesticides containing PFAS. The bill language in LD 264 directed staff to report back to the legislature on a process for a similar prohibition. As noted in the report by staff, 38 MRS § 1612 *et seq*. (LD 1503) prohibits the distribution of products containing intentionally added PFAS by 2030As for PFAS as a contaminant, EPA considers the presence of PFAS in a pesticide to be adulteration where the identified PFAS are not a part of the Confidential Statement of Formula. Staff continues to research the level and types of PFAS EPA considers to be adulterants as well as the process by which EPA will address this issue. While outside the scope of the rulemaking requested by LD 264, the Board needs to consider what its expectations will be relative to the prohibition of the use of pesticides containing PFAS as a part of the known formulation or as contaminants.

Summary of Comments Received Regarding 130th Legislature, LD 264, Resolve, Directing the Board of Pesticides Control To Gather Information Relating to Perfluoroalkyl and Polyfluoroalkyl Substances in the State

Board of Pesticides Control CMR26-01 Chapter 20

#	Name	Summary of Comments	Response
1	**Heather Spaulding** – Deputy Director & Senior Policy Director for Maine Organic Farmers and Gardiners Association; **Patricia Rubert-Nason** – Maine Sierra Club; **Sarah Woodbury** – Director of Advocacy for Defend Our Health; **Sharon Treat** – Senior Attorney for Institute for Agriculture and Trade Policy	• All work done for Ch. 20 is appreciated. • Agrees with the Board definition of PFAS, provides consistency with other state agencies.	• The Board of Pesticides Control (BPC) appreciates the support. • BPC plans to keep the current definition to remain consistent with other state agencies.
2	**Patricia Rubert-Nason** – Maine Sierra Club; **Sarah Woodbury** – Director of Advocacy for Defend Our Health; **Sharon Treat** – Senior Attorney for Institute for Agriculture and Trade Policy	• Required affidavits submitted by registrants should be publicly available.	• All reports and affidavits produced by the BPC are already public documents.
3	**Patricia Rubert-Nason** – Maine Sierra Club; **Sarah Woodbury** – Director of Advocacy for Defend Our Health; **Heather Spaulding** – Deputy Director & Senior Policy Director for Maine Organic 4Farmers and Gardiners Association	• Concerned about and would like clarification regarding the Confidential Statement of Formula (CSF) and the need to include all inert ingredients, active ingredients, and contaminants in addition to the CSF.	• Confidential Statement of Formula (CSF) includes the active and inert ingredients and are protected by federal law FIFRA §10(a) as confidential business information (CBI). Any material not identified as a part of the CSF is considered to be a contaminant. The CSF would not be included in any public documents due to their confidentiality. The Environmental Protection Agency (EPA) considers Perfluoroalkyl and Polyfluoroalkyl Substances

			(PFAS) to be potentially toxicologically significant contaminants and may trigger 159.179(b) in the Code of Federal Regulations (CFR). Under FIFRA Section 6(a)(2), pesticide registrants should report to EPA additional factual information on unreasonable adverse effects, including metabolites, degradates, and impurities (such as PFAS). EPA has identified a master list PFAS that is available on their website. BPC staff have an inquiry into EPA and AAPCO (Association of American Pesticide Control Officials) regarding the process of requiring 6(a)(2) reporting.
4	**Sarah Woodbury** – Director of Advocacy for Defend Our Health; **Sharon Treat** – Senior Attorney for Institute for Agriculture and Trade Policy	• Recognized that the resolution specifically responded to HDPE containers, but to expand the scope of containers from just HDPE containers to any fluorinated plastic containers.	• BPC recognizes that many plastics – not just HDPE containers – are fluorinated. Identifying additional container types to be included in affidavits is beyond the scope of the current ask from LD 264. EPA has noted that there is no evidence that PFAS occur from containers other than HDPE. Additionally, LD 1503 will ultimately prohibit any intentionally fluorinated

			products in the State of Maine by 2030.
5	**Patricia Rubert-Nason** – Maine Sierra Club; **Heather Spaulding** – Deputy Director & Senior Policy Director for Maine Organic Farmers and Gardiners Association	• More should be done to eliminate PFAS in pesticides	• BPC agrees that long-chain PFAS resulting from the fluorination of pesticide product containers should not be allowed to continue to occur. BPC is working toward a greater understanding of the scope of PFAS in pesticides as more information becomes available in this rapidly evolving issue. BPC also acknowledges that any product that contains intentionally added PFAS will be prohibited under LD 1503 by the year 2030.
6	**Sharon Treat** – Senior Attorney for Institute for Agriculture and Trade Policy	• Full extent of legal authority that the Board has should be used against PFAS. • The full panel of PFAS chemicals should be excluded from pesticides. • Affidavits should not be withheld from the public, as the committee that led the implementation of LD 1503 voted to not keep documents and affidavits confidential. • Disclosure of CSF should include contamination. • Clarify that affidavits are public records, under Maine's Freedom	• The BPC has reviewed its authority and has outlined it in their full report regarding LD 264 to the Maine Legislature. • The current definition proposed by BPC includes all PFAS chemicals identified by the EPA and is consistent with other state agencies. • The BPC recognizes that during the implementation of LD 1503 affidavits were not withheld and intends to make affidavits public records. • Contaminants in pesticides are required to be reported upon

		of Access Act (preferably on the website, not as a document that must be accessed through a formal freedom of access request). • It is not necessary to wait for further legislative direction or authority to include adjuvants as a part of the manufacturers' affidavit as to the presence or absence of PFAS. The Board has extensive authority to require information about the formulation and to require other information for registration of a product and should make clear that adjuvants are covered with other inert ingredients. • Board should make a point to prohibit registration of PFAS	federal registration with FIFRA §6(a)(2) incident reporting and would be available as a part of products' federal registration process. BPC has inquiries into EPA and AAPCO regarding additional requirements for 6(a)(2) reporting. • Affidavits will be public records. • If adjuvants are contained within a pesticide formulation, the CSF would disclose that information. Adjuvants that are added to pesticides separately are not considered to be pesticide products and the Board has included the avenues that need to be taken in order to regulate adjuvants or fluorinated adjuvants in the future in their full report regarding LD 264 to the legislature. Since this proposed action would require amendments to state statute, the BPC will wait for further legislative direction to address this issue. • The proposed resolve does not currently prohibit PFAS from pesticide products but does require BPC to identify if PFAS are in registered products. BPC

			acknowledges this concern and would like to note that all products that contain intentionally added PFAS will be prohibited by 2030 as outlined in LD 1503.
7	**Karen Reardon** – Vice President of Public Affairs for Responsible Industry for a Sound Environment	• Definitions of PFAS should take data assessments into account. • The Board should consider reviewing the container leeching study that will be coming from US EPA in the first quarter of 2022. • The Board should not rush to complete rulemaking before they have a full finding of what is happening with HDPE containers.	• Initially, BPC was interested in referring to policy for a group of PFAS considered to be the "most concerning" by the EPA but ultimately decided to remain consistent with other state agencies in their definition. BPC will continue to review new data assessments as they are published. • The BPC will consider reviewing the container leeching study during its development of rulemaking regarding containers. • BPC staff have already entered into rulemaking guidelines, following A.P.A. procedures, and must meet deadlines for amendments, approval from Board members, and public comment. This process is not typically quickly implemented but must continue to comply with LD 264.
8	**Sarah Woodbury** – Director of Advocacy for Defend Our Health	• Chapter 20, Section 1 affidavit requirements requires clarification; should require	• Complete formulations from the CSF are protected under federal law FIFRA §6(a)(2) and

		complete formulation including active, inert, and contaminants. • There is no reasonable claim for the need to prohibit disclosure of the affidavits to protect confidential business information since no one could derive a formula simply based on the presence or absence of thousands of potential ingredients. • Maine should have a single definition of PFAS, and that definition should be the same one already in use in statute, which is now the one proposed in the draft rule as well. • Noted that contaminants should be added to the rule because Maine already has PFAS contamination and the cleanup will cost millions. • The rule should unequivocally state the affidavits are public and accessible records. While this may be the intent of the proposed language, ambiguity should be eliminated by separately listing the three required items or adding a sentence explicitly clarifying the public nature of the affidavits. • Stated that the Board should make a recommendation to the	cannot be included with affidavits as public records – however the affidavits will describe if a pesticide product contains PFAS. • Information in the CSF itself is confidential business information (CBI) under federal law FIFRA §10(a). Affidavits themselves will be public documents and will describe whether a PFAS known to the manufacturer is in the product or if it is stored in an HDPE container. • BPC recognizes the statements made and has incorporated a definition of PFAS that has been used across multiple state agencies. • Contaminants are addressed during federal registration FIFRA §6(a)(2). BPC currently has an inquiry in at EPA and AAPCO regarding 6(a)(2) reporting at the state level. BPC acknowledges that millions will be spent on remedial PFAS activities. • BPC acknowledges the concern regarding transparency of the affidavits. BPC will consider

		legislature that the Board supports no use of pesticides containing PFAS or of pesticides stored in HDPE containers.	changing the rule to incorporate this sentiment. • The BPC is working toward understanding the full scope of PFAS in pesticides and is implementing measures to better understand if PFAS are in pesticides registered in Maine through its registration process. The full scope of PFAS in pesticides, the Maine registration process, and all legal authorities that the BPC has to regulate these classes of chemicals is outlined in the full report to the Maine legislature regarding LD 246.
9	**Heather Spaulding** – Deputy Director & Senior Policy Director for Maine Organic Farmers and Gardiners Association	• Stated that new rules will help minimize reliance on pesticides. The original legislation was to stop PFAS contamination from aerial spraying and morphed into LD 264. Described the PFAS problem was being exacerbated by pesticides that contain PFAS and farmers were losing businesses, land, and health. Hoped this rule would help Maine turn off one of the PFAS taps by discovering the extent of PFAS in pesticides. • CSF is confidential but affidavits can be made public.	• It is the BPC's policy title 22 M.R.S §1471-X to minimize reliance on pesticides and promote integrated pest management. BPC appreciates the sentiments made to reduce PFAS contamination in Maine's environment. To BPC's current understanding, most PFAS contamination in the environment in Maine is attributed to sludge and sludge-derived compost in agriculture rather than pesticides. • BPC agrees that the CSF is confidential and that the

		• The Board should exercise the broad authority it has to gather formula data in consideration of granting product registration. We hope that the system established for compiling the information would be streamlined so that it would not create an undue burden on the BPC staff. Manufacturers know whether PFAS is in their products and they must be responsible for reporting that in an online database that would minimize additional work for the staff.	affidavits will be public documents. • BPC has researched and started the implementation of adding affidavits to its existing registration software, Maine Pesticide Registration and Licensing Software (MEPRLS). This would allow registrants to state whether or not they have PFAS in their product as they are conducting the registration process, reducing staff time and burden.
10	**Patricia Rubert-Nason** – Maine Sierra Club	• Would like to thank the Board of Pesticides for their work on implementing LD 264. Urges the Board to ensure that all ingredients and known contaminants are included in the affidavits and that those affidavits are shared with the public.	• The BPC appreciates the support and plans to use CSF to determine if PFAS are in pesticide formulations, which include active and inert ingredients. Containments known to manufacturers are required to be addressed during federal registration FIFRA §6(a)(2). However, BPC has inquired about 6(a)(2) forms to both EPA and AAPCO.
11	**Mariana Tupper** – Yarmouth, ME	• Particularly concerned about the use of PFAs. As both our Environmental Protection Agency and the Food & Drug Administration say, such substances are dangerous for	• BPC appreciates the support and will continue to work on this issue as it relates to pesticides.

		human beings and other species on which we depend. Please help the State of Maine stay a strong leader in sensible, smart, and safe agriculture. Progress made in 2021 should be underscored, embellished, and celebrated.	
12	**Lelania Avila** – Northeast Harbor, ME; **Penelope Andrews –** Hermon, ME, Member of Sierra Club of Maine and Natural Resources Council of Maine; **John Olsen** – Jefferson, Maine	• Urges Maine's Board of Pesticides Control to implement the pesticide laws passed in the last session of the Legislature. The laws will restrict and assess and address the problem of PFAS in pesticides. • Please ensure that any PFAS chemical added to the product as an "inert" ingredient will be included in the reporting. The same goes for PFAS contaminants known to the manufacturer.	• BPC will implement rules regarding PFAS from the Maine legislature. • Active and inert ingredients are included in the required affidavits and CSF. Contaminants that are known to the manufacturer are reported under FIFRA §6(a)(2) reporting during the federal registration process. BPC is reviewing its ability to also require 6(a)(2) reporting.

Summary of Comments Received Regarding 130th Legislature, LD 155, Resolve, Directing the Board of Pesticides Control To Prohibit the Use of Certain Neonicotinoids for Outdoor Residential Use

Board of Pesticides Control CMR26-01 Chapter 41

#	Name	Summary of Comments	Response
1	**Patricia Rupert-Nason** – Maine Sierra Club; **Representative Nicole Grohoski** – State Representative for House District 132 representing Ellsworth and Trenton; **Anya Fetcher** – State Director, Environment Maine; **Lelania Avila** – Northeast Harbor, ME	• Noted that pollinators are in crisis and decline, often due to factors such as pesticides.	• The BPC recognizes the concern regarding pollinators and pesticides and agrees that pesticides should be used in accordance with their labels to reduce misuse and non-target impacts.
2	**Patricia Rupert-Nason** – Maine Sierra Club; **Representative Nicole Grohoski** – State Representative for House District 132 representing Ellsworth and Trenton; **Heather Spaulding** – Deputy Director & Senior Policy Director for Maine Organic Farmers and Gardiners Association (MOFGA)	• Concerned with the current definition of "invasive invertebrate pests". • Recommends a specific list of insect pests that are exempt from the rule. • Would like to keep the original bill language of "emerging invasive insects".	• The definition that the BPC has used as a part of this rule was proposed during a consultation with IPM specialists within DACF, including the State Entomologist, State Horticulturist, and IPM Specialist. "Invertebrate" was chosen to incorporate other non-insect pests, such as mites and nematodes, that can be damaging to ornamentals. One specific example that was discussed included current testing that has indicated dinotefuran as a potential treatment option for the nematode (*Litylenchus crenatae mccannii*), which has been associated with beech leaf disease. In consultation with DACF IPM specialists, the BPC has determined that restricting this definition to only insects would potentially leave few options for management of this and other invasive pests. • Originally, a list of species was discouraged as they can be difficult to assess, upkeep, and maintain over time as new invasive threats are identified. There was also interest in a variance process, but this was also

			discouraged by The Board. Ultimately, the definition and list of criteria were created with DACF staff for this rule. A complete list of invasive insect pests would be costly to update via rulemaking and cause time constraints for the limited DACF staff available outside of the BPC. • BPC will review its options and consult with specialists within DACF (State Entomologist, State Horticulturist, and IPM Specialist, among others) to determine the most appropriate and practical options for definitions moving forward.
3	**Patricia Rupert-Nason** – Maine Sierra Club; **Anya Fletcher** – State Director for Environment Maine	• Recommended a list of products and the species appropriate for the use of those products.	• Section 6 (B) would already require the Board to develop a list of products registered in Maine that manufacturers have indicated have turf or ornamental use. All pesticide labels also must have a site for use and/or pests that are appropriate for use – although this would not be on the published list it would be available on the label of any product. The BPC is not able to provide product recommendations, but the University of Maine Cooperative Extension is able to provide product recommendations for these species.
4	**Patricia Rupert-Nason** – Maine Sierra Club; **Representative Nicole Grohoski** – State Representative for House District 132 representing Ellsworth and Trenton	• Current definition could cause confusion and burdens on applicators to decide what pests fit the list of criteria	• Applicators are already required to research pests that they intend to treat per best IPM management practices and are trained depending on their license category on specific pests. Applicators are instructed to seek assistance for the identification of specific pests from multiple sources including The University of Maine Cooperative Extension, The Maine Forest Service, and the Board of Pesticides Control. In addition, many applicators are required to learn how to identify specific pests in the outdoor ornamental exam (3A). BPC will consult with DACF staff on ways to reduce confusion among applicators.

5	**Representative Nicole Grohoski** – State Representative for House District 132 representing Ellsworth and Trenton; **Heather Spaulding** – Deputy Director & Senior Policy Director for Maine Organic Farmers and Gardiners Association (MOFGA)	• Noted that emergency rulemaking can be used as a tool to add emerging pests not already on a list to it as evidence becomes available that a pest may emerge in Maine.	• BPC could use emergency rulemaking to amend any lists of invasive pests, but this process would make them temporary changes. According to title 5 M.R.S. § 8054, an immediate threat to public health, safety, or general welfare must be identified for an agency to undergo emergency rulemaking, and any emergency rule shall be effective for 90 days, after which the rule must be adopted by the guidelines outlined in title 5 M.R.S. § 8052 (A.P.A. guidelines). Although this could be used to add species to the list, it is unclear if pests that only impact ornamental vegetation in residential landscapes under this rule would be considered an immediate threat to public health, safety, or general welfare. It is likely that the BPC would have to enter routine technical rulemaking every time they were to add new pests to an exempted list of invasive insects. Annual rulemaking regarding emerging pests may become difficult to implement given the high costs associated with filing and advertising rulemaking and DACF staff time constraints.
6	**Representative Nicole Grohoski** – State Representative for House District 132 representing Ellsworth and Trenton; **Anya Fetcher** – State Director, Environment Maine	• Urged the Board to move quickly on this issue before the growing season starts.	• BPC staff agree that this is an urgent and important issue and will work as swiftly as possible to implement this rule. Additionally, every time additional amendments are made there are costs (upwards of $2,000) to file and re-advertise rulemaking. BPC staff are required to follow A.P.A. rulemaking guidelines and additional amendments and costs may take extra time to incorporate into the proposed rules and ultimately implement. Many applicators and distributors have already been made aware of rulemaking surrounding neonicotinoids.
7	**Patricia Rupert-Nason** – Maine Sierra Club	• The Board should consider the tradeoff between severity of	• Board of Pesticide Control Rules CMR26-01 Chapter 20, Chapter 26, Chapter 27, Chapter 29, and Chapter

		pests and effectiveness of treatments for pests. • A positive list of invasive insect species exemptions should be considered. Species do not typically emerge as a problem abruptly and without warning. In most cases, problems with particular species are well-documented for months, if not years, in other states prior to arriving in Maine. Suggests DACF Staff periodically report on emerging invasive species that might be appropriately addressed with neonicotinoids to the BPC, allowing rulemaking prior to their becoming an urgent problem in Maine. • The proposed definition would permit virtually any invertebrate which presents any level of economic (or other) harm, even if it is modest, to be characterized as an invasive pest, even if it is a native species, or is not particularly aggressive. part c of the definition "native or non-native vectors of plant diseases" could permit neonicotinoids to be applied for the control of a wide range of insects. Many plant-eating insects can transmit plant	33 describe selecting lowest risk pesticides, a strong tenant of integrated pest management (IPM). This aligns with the BPC's policy to minimize reliance on pesticides and promote IPM (title 22 M.R.S §1471-X). Licensed applicators are required to become educated in the lowest risk effective approaches to pesticide use through initial certification and annual recertification programs (CMR26-01, Chapter 31). University of Maine Cooperative Extension can give product recommendations for specific pests, as BPC cannot recommend specific products. The Board will consider this policy and other established rules when publishing the product list in Section 6(B). • Whilst staff recognizes that many species slowly become invasive over time and have predictable pathways, there are recent documented instances of sudden emergences of invasive species. Throughout Maine's ecological history, we've seen this occur from several insect species (e.g. southern pine beetle, spotted winged drosophila, European fire ant, browntail moth) where very little warning was given to state agencies prior to their arrival or re-emergence – resulting in a lag in agency response and public awareness. BPC will consider this when further developing this proposed rule after consultation with DACF staff with IPM expertise (State Entomologist, State Horticulturist, and IPM Specialist). • The proposed definition was developed in consultation with department IPM specialists (State Entomologist, State Horticulturist, and IPM Specialist). This definition uses the basis for how many invasive species are defined (Executive Order 13112, Executive Order 13751) with a list of criteria

		diseases, thus the proposed definition would allow a wide range of species, including many native species, to be characterized as "invasive pests" and is much broader than the conventional definition of invasive species. • LD 264 says that the use of neonicotinoids should be permitted for the control of "invasive insect pests" "in order to safeguard the public health, safety and welfare of the State and to protect the natural resources of the State." This would seem to indicate that the focus in determining the limits of the exemption should be on human health and environmental impact rather than economics.	outside of that definition that would be applicable to some species in Maine. The term "invertebrate" was used to incorporate some pests on ornamentals that are not insects (e.g. mites, nematodes). Plant vectors of disease were included to help protect residential ornamental vegetation from plant diseases caused by invertebrate vectors (e.g. nematodes that cause beech leaf disease). BPC acknowledges that this definition is not the most restrictive with respect to allowing native species and others not typically defined as "invasive" – but many species that are native to our continent are not native to our eco-region, which was the intent of including those groups. The BPC will take this into consideration while reviewing the possibility of a list of invasive species, a definition of invasive species that aligns with federal executive orders, or both. • BPC is presuming this comment is in reference to LD 155. As discussed above, the Executive Order 13112 (and subsequently 13751) is a federal document that defines invasive, non-native, and alien species; which were used to develop the proposed definition. The Maine Forest Service, Maine Natural Areas Program, and Maine Invasive Species Network all use the same or a similar definition to those defined in Executive Order 13112, and if BPC is to remain consistent with other state and UMCE agencies, the definition should include economic impacts. BPC will consider this when reviewing a definition for this proposed rule.
8	**Representative Nicole Grohoski** – State Representative for House District 132 representing Ellsworth and Trenton	• Urged to keep the "emerging invasive insects" definition, with emerging meaning unknown now and showing up at a later date.	• The BPC agrees that invasive insects that have not yet been a threat in Maine should be on or considered for the proposed list. • The BPC agrees that the three species listed were derived from BPC testimony which was developed in

		• The three species included in the bill should be considered a start to a list for emerging invasive insects and the Board should continue it. • Resolve specifically used the word "insect" in its definition of "emerging invasive insects" and the proposed rule uses "invertebrate". This should be changed. • Can provide a list of 164 products currently available in Maine that would be affected by this rule, urges the Board to review and publish that list for the spring growing season (April 1st, 2022). • Rule also should include many technical revisions • There are two places the proposed rule says "turf and lawn" and four where it just says "turf." Using the full phrase "turf and lawn" would provide clarity and consistency with the resolve language, unless there is a scientific and management reason why only "turf" is used in the cases where it is. • Change section in 6 (B) where "the Board may exempt from this list pesticides that it determines are not for use in	consultation with DACF staff. These species were identified as invasive insects for which there are limited options for management other than neonicotinoid pesticides. The BPC agrees that these three species should be on any proposed list, especially since Asian Longhorn Beetles are not yet known to occur in Maine. • Invertebrate was initially included to incorporate non-insect pests like mites and nematodes for which there are limited chemical management options. The BPC will meet with IPM specialists in DACF to discuss options for a definition. • BPC will review the list of products containing the four active ingredients listed in the bill and work to publish a list as soon as possible. Due to time constraints and costs to amend and adopt the current proposed rulemaking and limited staff availability, the publishing date of April 1st, 2022 is not feasible for BPC staff. BPC will aim for the list publishing date in the proposed language of July 1st, 2022. BPC did not receive a list of 164 products in the form of written comment and cannot comment on reviewing this list of 164 products. • Technical revisions will be made as this rule is amended to incorporate public comments. • BPC will consider changing the language to say "turf and lawn" where applicable to make the rule more consistent. • BPC will consider changing this language to better align with the rest of the proposed rule. • Publishing dates are dependent upon rulemaking amendment timelines and BPC staff time constraints. BPC will work swiftly to publish this product list by July 1st, 2022.

		the *control* [emphasis added] of outdoor ornamental plants or turf." Changing this to "managing" would better align with the rest of the language. • Set an effective publishing date of April 1, 2022 for a list of products. • Supports the idea of the emergency permitting process that was discussed during the public hearing.	• During the hearing, emergency rulemaking and the permitting process for limited use pesticides were discussed, but they are separate processes. If the BPC were to conduct emergency rulemaking to add invasive species to a list, it would be a temporary change and would require follow-up rulemaking after the end of the emergency rulemaking period per title 5 M.R.S. § 8054 (90 days). In order for emergency rulemaking to take place an immediate threat to public health, safety, or general welfare must be identified by the agency (BPC). It is not clear to BPC staff that a new invasive pest in Maine that impacts residential ornamental vegetation would be enough of an immediate threat to public health, safety, or general welfare to warrant emergency rulemaking to permit the use of neonicotinoids for this pest for 90 days. In this instance, routine technical rulemaking to amend the rule as soon as a new invasive insect is identified would be more practical. In reference to a permitting process, if these 4 active ingredients were classified as limited use pesticides, applicators would have to apply for a permit that is approved by The Board for every application they want to make (CMR26-01, Chapter 40). These requests for use would be reviewed at board meetings and approved or denied by The Board. Staff view this avenue as impractical due to the number of applicators that currently use these products and the 4-6 week interval between board meetings. This could cause substantial back-up for permits and reduce the ability of applicators to quickly address pest management issues for their customers. BPC staff will consider how to give clear guidance to applicators and reduce staff

			and Board member workload while reviewing options for this proposed rule.
9	**Anya Fetcher** – State Director, Environment Maine	• Recommended the Board research what other states have done and the resources those states use to make and write rules. • Implement an invasive species definition that is as restrictive as possible and includes insect pests and products used for them. Supports a list of invasive insects. • Neonicotinoids are not tools for all insects, alternatives exist. Look into other resources and what other states are doing to develop a list of emerging invasive insects.	• Given more time, BPC staff would be interested in researching what other states have done, BPC appreciates this suggestion. • BPC staff will research implementing a definition that gives clarity exemptions from the rule by meeting with department IPM specialists (IPM Specialist, State Entomologist, and State Horticulturist). A separate product list will also be published by July 1st, 2022. Product labels are required by law to sites and/or pests they can be used for directly on the product, of which applicators can determine what is the best product to use for a site/pest. BPC cannot give product recommendations, but UMCE can give product recommendations for specific pests and are a resource available for applicators. • There are several effective pest management and IPM techniques that exist for many pests in ornamental vegetation. Many of these techniques include non-chemical methods such as cultural, biological, and physical management that can be utilized as a part of an IPM program to reduce pests.
10	**Heather Spaulding** – Deputy Director & Senior Policy Director for Maine Organic Farmers and Gardiners Association (MOFGA)	• Discussed the need to be precautionary with the use of neonicotinoids for cosmetic/aesthetic use. • Noted that pesticides are one of the reasons for insect decline.	• BPC acknowledges the need to be precautionary with any chemical methods of pest management. IPM can be used for cosmetic and aesthetic purposes. It is BPC's policy to use IPM and minimize reliance on pesticides (title 22 M.R.S §1471-X). BPC is working to implement education campaigns to reach homeowners, gardeners, and growers about IPM, the BPC, and tools that can be used to reduce reliance on pesticides. • BPC agrees that some insect decline has been due to improper pesticide use.

11	**Jesse O'Brien** – Portland, ME	• Consider the use of neonicotinoids with white grubs and management of turf. • Described the destructive process in which white grubs can destroy lawns. • Rulemaking can take useful products away from homeowners and applicators. • Recommended the Board consider looking into limited use products, where applicators petition the board for specific uses of products. • Although Portland, Maine has not had any catastrophic damage since their ordinance was implemented, many residents of Portland are unhappy that they cannot control pests with products like neonicotinoids.	• BPC acknowledges that neonicotinoids are a tool used for turf management of white grubs. • Chemical controls are just one method for the management of white grubs, IPM can be a tool for homeowners, businesses, and other entities that want to keep their lawns healthy. Other management tips and tactics can be found at gotpests.org. • The BPC acknowledges that this rule takes products away from homeowners and applicators. BPC staff urge that homeowners use IPM prior to the use of pesticides to manage any pests on their properties. • BPC could make products with these active ingredients limited use, but the process would require that The Board give permission to use a product in each use or application instance. Requirements for limited use products are outlined in The Board of Pesticides Control Rules CMR26-01 Chapter 40. Limited use products have several criteria that must be met before they can be used: limited use products may only be sold by restricted use pesticide dealers, only used by licensed applicators, an application to use said products must be made to the BPC prior use, and the BPC must grant applicant permission to use or apply any limited use products. This task would be cumbersome to BPC staff and members of The Board as many requests would likely come in for neonicotinoids, as they are commonly used products for turf, lawn, and ornamental pest management. Prohibiting use for these sites and allowing exemptions for invasive insect management is an approach that would be more straightforward for homeowners, applicators, BPC staff, and The Board.

			• BPC recognizes municipal ordinances that are more restrictive than state law (title 22 M.R.S.A § 1471-U). There are a myriad of perspectives regarding different municipal ordinances, and regulations are perceived differently, but all ordinances are voted on and adopted by municipal officials.
12	**Lelania Avila** – Northeast Harbor, ME; **Penelope Andrews** – Hermon, ME, Member of Sierra Club of Maine and Natural Resources Council of Maine; **John Olsen** – Jefferson, Maine	• Urges Maine's Board of Pesticides Control to implement the pesticide laws passed in the last session of the Legislature. • Narrow the scope of invasive species that could be treated with neonics by listing specific insect pests and the neonic(s) approved to use in their management. The definition currently proposed by the BPC is too broad and does not reflect the original spirit of the law.	• BPC will implement laws from the Maine legislature. • BPC will consider developing an alternative definition similar to that described in the original bill. A list of products is also proposed in Section 6 (B) that will be published by July 1, 2022. Pest and/or sites appropriate for the application of a product can be found on the product label. BPC will work with IPM Specialists in the department to revise the definition.
13	**Mariana Tupper** – Yarmouth, ME	• Please help the State of Maine stay a strong leader in sensible, smart, & safe agriculture. Progress made in 2021 should be underscored, embellished, and celebrated.	• BPC appreciates the support

Summary of Comments Received Regarding 130th Legislature, LD 316, An Act To Prohibit the Use of Chlorpyrifos

Board of Pesticides Control CMR26-01 Chapter 41

#	Name	Summary of Comments	Response
1	**Patricia Rubert-Nason** – Maine Sierra Club; **Heather Spaulding** – Deputy Director & Senior Policy Director for Maine Organic Farmers and Gardiners Association	• Appreciates and believes chlorpyrifos language in Chapter 41 Section 7 to be appropriate.	• BPC appreciates the support and will keep the rule language.

SIERRA CLUB
MAINE CHAPTER

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To: Board of Pesticides Control

From: Patricia Rubert-Nason, Sierra Club Maine

Date: January 11, 2022

Re: Chapter 20, PFAS in Pesticides

As a part of our fight to protect both people and the environment, especially the most vulnerable among us, Sierra Club advocates for restrictions on harmful chemicals. On behalf of our over 22,000 members and supporters here in Maine and over 4 million across the country, we would like to thank the Board for their work on implementing the first part of LD 264 directing the Board of Pesticides Control to gather information relating to perfluoroalkyl and polyfluoroalkyl substances in the state. We support the proposed definition of PFAS substances and urge the Board to ensure that the affidavits about the presence of PFAS substances include all ingredients (active and inert) and known contaminants of the pesticide formulation. Finally, the affidavits should be shared with the public to allow farmers and citizens to make informed decisions about what materials they apply to their land.

PFAS are a class of chemicals "used to make fluoropolymer coatings and products that resist heat, oil, stains, grease and water."[1] They contain strong carbon-fluorine bonds that keep them from degrading, leading them to accumulate in the environment over time. They also bind to blood proteins, so they tend to accumulate within human and animal bodies, rather than being eliminated.[2]

According to the FDA:

> The widespread use of PFAS and their ability to remain intact in the environment means that over time PFAS levels from past and current uses can result in increasing levels of contamination of groundwater and soil. This same accumulation also can occur in humans and animals, with PFAS found in the blood of humans and animals worldwide. While the science surrounding the potential health effects of PFAS is developing, current evidence suggests that the bioaccumulation of certain PFAS may cause serious health conditions.[3]

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[1] https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html

[2] https://ehp.niehs.nih.gov/curated-collections/pfas

[3] https://www.fda.gov/news-events/press-announcements/statement-fdas-scientific-work-understand-and-polyfluoroalkyl-substances-pfas-food-and-findings

The research supporting the impacts of PFAS on human health is steadily accumulating. The National Institute of Health and Environmental Sciences[4] has documented links between human exposures to PFAS and adverse health outcomes including altered metaboism, decreased fertility, reduced fetal growth, increased risk of being overweight or obese and reduced ability of the immunse system to fight infections.

Maine is seeing widespread impacts of PFAS contamination of our land and waters. In recent years at least 3 Maine farms have had to stop selling milk and/or beef due to PFAS contamination[5] including one farm with shockingly high levels of PFAS documented in their milk, a Fort Fairfield dairy farm with PFAS levels over 150 times the allowable level.[6]

PFAS contamination is not limited to farms. At least 191 wells and water sources have so far been identified as contaminated by PFAS;[7] a do not eat advisory has been issued for deer harvested in the Fort Fairfield area;[8] and the DEP (and other agencies) are investigating over 700 sites for potential PFAS contamination.[9] Clearly, we have a problem with PFAS contamination in Maine. While the best available evidence seems to indicate that the major source of this problem was spreading of contaminated sludge on fields, given PFAS's high persistence and tendency to accumulate in soils, water and biological systems, it is vital that we understand and control sources of PFAS contamination moving forward.

With regards to the specific language of the proposed regulation, we support the proposed definition of PFAS substances as a good reflection of the most current science.[10] We urge the Board to keep the definition as is.

With regards to the required affidavits, we believe that it is vital that reporting on PFAS chemicals in pesticides include inert ingredients and any known contaminants in addition to active ingredients. It does not matter how PFAS got into a pesticide. Whether it is an active ingredient, inert ingredient or a contaminant, the impact is the same. The PFAS chemicals will accumulate on the land where the pesticides are applied, ultimately rendering it unusable for agriculture. We also believe that the affidavits should be available to the public so that farmers and other citizens can make informed decisions about what products they apply to their land until we are able to appropriately regulate the inclusion of PFAS in pesticides.

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[4] https://www.niehs.nih.gov/health/topics/agents/pfc/index.cfm
[5] https://www.maine.gov/dacf/ag/pfas/index.shtml
[6] https://www.mainepublic.org/health/2021-10-22/maine-dep-identifies-34-towns-with-high-priority-sites-pfas-chemicals-testing
[7] https://www.mainepublic.org/health/2021-10-22/maine-dep-identifies-34-towns-with-high-priority-sites-pfas-chemicals-testing
[8] https://www.maine.gov/ifw/hunting-trapping/hunting-resources/deer/index.html
[9] https://www.mainepublic.org/health/2021-10-22/maine-dep-identifies-34-towns-with-high-priority-sites-pfas-chemicals-testing
[10] "A New OECD Definition for Per- and Polyfluoroalkyl Substances" Environ. Sci. Technol. 2021, 55, 23, 15575–15578. https://doi.org/10.1021/acs.est.1c06896

This is just the first step. To protect our land, our farmers and the wider population, the next step must be to limit, and preferably eliminate, PFAS in pesticides and other products within the state of Maine. We look forward to the Board's upcoming report on what is needed to regulate PFAS in pesticides in the State and how to impose a prohibition on the distribution or application of pesticides or adjuvants containing perfluoroalkyl or polyfluoroalkyl substances in the State.

I would like to thank the Board of Pesticides for their work on implementing LD 264. We urge the Board to ensure that all ingredients and known contaminants are included in the affidavits and that those affidavits are shared with the public. We look forward to your continued work on this topic.

Sincerely,
Patricia Rubert-Nason
Sierra Club Maine Volunteer

DEFEND OUR HEALTH

Solutions for a Toxic-Free Tomorrow

Testimony of Sarah Woodbury, Director of Advocacy
Defend Our Health
before the
Maine Board of Pesticide Control
Regarding Rules Proposed in Response to LD 264 "Resolve, Directing the Board of Pesticides Control To Gather Information Relating to Perfluoroalkyl and Polyfluoroalkyl Substances in the State"

January 14, 2022

Good morning, Members of the Board of Pesticide Control,

My name is Sarah Woodbury. I live in Freeport and serve as Director of Advocacy for Defend Our Health. Defend is a Maine-based non-profit that works to make sure that everyone has equal access to safe food, safe drinking water, healthy homes, and toxic-free, climate friendly products.

I am here to submit comments on the draft rules under Section 20, Special Provisions in response to LD 264 "Resolve, Directing the Board of Pesticides Control To Gather Information Relating to Perfluoroalkyl and Polyfluoroalkyl Substances in the State". Section 20 seeks to define PFAS as "Perfluoroalkyl and Polyfluoroalkyl Substances" or "PFAS" means substances that include any member of the class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom." We urge the board to adopt this draft definition.

This is undoubtedly the only definition consistent with the legislative intent. This definition has repeatedly been used by the legislature and appears in multiple statutes written by multiple legislatures. For example, it is used at 32 MRSA §1732, which deals with PFAS in food packaging passed in 2019 by the 129th legislature, as well as at 38 MRSA §1612, which deals with the presence of PFAS in products passed last year by the 130th. It is only reasonable to presume that the legislature means "PFAS" to encompass the entire range of PFAS with this same definition as it has consistently used the term throughout its history of legislation on the topic. Further, since pesticides addressed under this rule would also be subject to the requirements of the products law passed last year, creating a definition different than that would create confusion. Maine should have a single definition of PFAS, and that definition should be the same one already in use in statute, which is now the one proposed in the draft rule as well.

Section 20 also requires that "In conducting review of registration or reregistration pursuant to 7 M.R.S.A §607-A, the Board shall require submission of the confidential statement of formula and the following affidavits:

1. a completed and signed form provided by the Board at the time of application for product registration review or reregistration which attests that the pesticide has or has never been stored, distributed, or packaged in a fluorinated high-density polyethylene container; and

DEFEND OUR HEALTH

2. a completed and signed form provided by the Board at the time of application for product registration review or reregistration which attests that the pesticide formulation does or does not contain perfluoroalkyl or polyfluoroalkyl substances as defined by the Board for this purpose of this section."

This section requires clarification. First, we strongly encourage the board to clarify that the formula or formulation as referenced here is the complete formula that includes both inert and active ingredients. While the intent of the resolution mandating this rule was clearly all encompassing, and Maine's statute clearly provides authority for the Board to require the complete formulation, the fact that the proposed rule does not clearly indicate that formula and formulation encompasses both inert and active ingredients creates unnecessary confusion.

While we do not contest that the "statement of formula" could be considered confidential, this should be clearly differentiated from the affidavits. The rule should unequivocally state the affidavits are public and accessible records. While this may be the intent of the proposed language, ambiguity should be eliminated by separately listing the three required items or adding a sentence explicitly clarifying the public nature of the affidavits.

Since PFAS represents a large class of thousands of chemicals, publicly disclosing the presence or absence of PFAS would under no reasonable interpretation disclose a trade secret or confidential formula. There is no reasonable claim for the need to prohibit disclosure of the affidavits to protect confidential business information since no one could derive a formula simply based on the presence or absence of thousands of potential ingredients. Making the affidavits public, however, has immense benefits to the public, who can use that information to make more informed choices about what products they select. It can also provide reassurance to the public that their fears of potential PFAS presence are without justification. With industry representatives consistently saying to the public and to press that their products do not contain PFAS, putting these statements into legally binding and public commitments will go a long way to regain consumer trust in the safety of pesticide products.

Additionally, we would suggest two important additions to the affidavits. While we recognize the resolution specifically called out "fluorinated high-density polyethylene," containers based on what was identified by the US EPA as a potential source of contamination at the time the resolution was discussed, other types of plastic containers may be fluorinated.[1] The board should use its existing authority to expand upon the minimum and require the affidavit to request if the pesticide was stored in any fluorinated container, not simply HDPE ones. This would clearly be consistent with the purpose of the resolution to identify pesticides with potential PFAS contamination.

Rather than only inquire about the presence of PFAS in the formulation, the board should also require the affidavit to require the identification of PFAS that is a known contaminant or byproduct – that is, not an intentionally added component of the formulation. While we recognize that some sources may not be known to the company and thus not be able to be disclosed, should a registrant have knowledge of a PFAS contamination they should be

[1] For example, MJS Packaging, a company that sells packaging, notes on their website, "...you can select from opaque or clear plastic, LDPE, HDPE, PP, PVC, and other plastics that can be fluorinated." https://www.mjspackaging.com/blog/what-is-fluorination-your-solution-to-the-perfect-plastic-container/

accountable for that to be disclosed. After all, this legislation was the result of what industry now says was the accidental contamination from the fluorinated plastic containers. The very situation that motivated the resolution requiring these rules could fall through a loophole without this addition.

The Board is taking good first steps to limit exposure to PFAS in pesticides, but we need to go further. Nearly every person in the US – from newborns to seniors – have toxic Per- and Polyfluoroalkyl Substances or PFAS in their blood. PFAS are persistent chemicals that do not break down and can remain both in the human body and in the environment for years. They are called “forever chemicals” for a reason. We are exposed to these toxic chemicals in a variety of every day products. They have been linked to interference with normal brain development in children, diminish response to vaccines and harm the immune system, may increase the risk of some cancers, may lower a woman’s chance of getting pregnant, and have been associated with liver problems and increased cholesterol levels.

Maine is already experiencing issues with PFAS contamination both in soil and in drinking water. The cleanup costs for the current contamination levels has the capacity to cost the state hundreds of millions of dollars. Maine cannot afford more PFAS contamination. There have been PFAS found in our water, land, in deer, and in fish. When you spray pesticides containing PFAS, they don’t just stay in one place. PFAS may travel through water and air. We need to limit exposure whenever possible. As the BPC considers next steps, we urge the BPC to recommend to the legislature the phase-out of PFAS in pesticides and in pesticide containers to help stop further PFAS contamination across the state to avoid more costly contamination and cleanup.

Thank you.

Comments of Sharon Treat for the Institute for Agriculture and Trade Policy
Submitted to the Maine Board of Pesticides Control
On Proposed Rule Amending Chapter 20
Implementing LD 264, Resolve, Directing the Board of Pesticides Control To Gather Information Relating to Perfluoroalkyl and Polyfluoroalkyl Substances in the State
January 14, 2022

These comments are submitted by Sharon Treat, Senior Attorney at the Institute for Agriculture and Trade Policy on the Maine Board of Pesticides Control ("Board") Proposed Rule Amending Chapter 20 to address PFAS in pesticides as directed by Legislative Resolve LD 264. IATP is a 501(c)(3) nonprofit headquartered in Minneapolis, Minnesota with an office in Hallowell, Maine and other locations. IATP works closely with farmers and seeks to promote local, sustainable and environmentally beneficial agriculture and trade policies.[1] We have been following PFAS issues both across the country and in Maine, and we testified in support of the Resolve LD 264, that these proposed rules are intended to implement.

IATP wants to emphasize the importance of the proposed amendments to Chapter 20 and to encourage the Board of Pesticides Control to exercise the full extent of its legal authority --of which it has a great deal-- to protect the public, the state's natural resources, and our farms and food from PFAS contamination.

Since LD 264 was enacted, even more residential drinking water wells and a third farm, this one in Unity, have been found to be contaminated. In addition, a "do not eat" deer consumption advisory has been issued by the Department of Inland Fisheries and Wildlife for a large geographic area in central Maine.

Farmers have had their livelihoods destroyed or significantly impacted, and they and others have been exposed to toxic substances in their water and food. At the same time, Maine's reputation for clean, healthy and sustainably produced food is taking a beating. And we know that the contamination that's been measured so far is just the tip of the iceberg. Most of the soils, water and farmland in the state hasn't been tested. It is imperative to get PFAS out of our products, our food, and our environment without delay. As a reminder, PFAS exposure has been linked to health problems including kidney and testicular cancer, thyroid disease, infertility and compromised immune systems.

The Board's proposed amendments to Chapter 20 are an important first step, but more needs to be done, and could be done, within the Board's current statutory authority. There are also some ambiguities in the proposed language that should be clarified. Our specific comments are as follows:

[1] IATP also has offices in Washington, D.C. and Berlin, Germany (IATP Europe). Since 1986, IATP has provided research, analysis and advocacy on a wide range of agriculture-related issues including farm to school; climate; agroecology; soil health and water quality and access; farmworker health and economic security; and trade and market policies. For more information, see www.iatp.org.

- ***Definition of PFAS.*** We strongly support the definition of PFAS in Section 1.A, which is consistent with other Maine law and will assist in coordinating policy and enforcement with other agencies, including the Department of Environmental Protection. Unless the full panoply of PFAS chemicals is addressed in the regulation, the Board will be forced to constantly review its policy to update it and will likely miss addressing new PFAS chemicals that should be covered by the regulation.

- ***Requirement of affidavits.*** We are asking the Board to make several clarifications in the rule to align with the intent of the Resolve and improve the effectiveness of the rule.

    - ***Public disclosure of information.*** As a preliminary matter, the Board should clarify in the rule that the affidavits required in Section 1.F, paragraphs 1 and 2 are *public records* under Maine's Freedom of Access Act that will be readily available to the public (preferably on the website, not as a document that must be accessed through a formal freedom of access request).[2] The affidavit required in Section 1.F.2 does not reveal percentages of ingredients or even whether, if PFAS is present, it is part of the active or inert ingredients or a contaminant. There is no legal requirement to keep this general affidavit confidential under either state or federal law. The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) limits the types of data that may be claimed as confidential. Public disclosure of the PFAS affidavits required by the proposed rule do not appear to fall into any of the exceptions to the general rule of disclosure laid out in FIFRA in 7 U.S. Code § 136h (which is cross-referenced by Maine pesticide law), since the affidavits don't include any specific data or reveal any detail about manufacturing processes or testing methods.[3]

    - Moreover, since the Board doesn't propose in this rulemaking to prohibit registration of pesticides containing PFAS, keeping the affidavits secret will negate much of the public benefit of the regulation. Neither farmers, home gardeners nor members of the public will have the information they need to avoid purchase and use of PFAS-containing pesticides if these affidavits are confidential, nor will there be any pressure on the manufacturers to act to ensure their products are PFAS-free. Significantly, parallel legislation being implemented by DEP (LD 1503, Public Law 477), from which the Board's Chapter 20 PFAS definition was taken, requires public disclosure of information about PFAS in consumer protects without any confidentiality provision.

    - ***Inert ingredients.*** We appreciate the clarification at the public hearing that proposed Chapter 20, Section 1.F.2 is intended to require those registering their products to disclose inert as well as active ingredients that contain PFAS, and that the reference to "confidential statement of formula" incorporates this requirement. Whether PFAS is being delivered via an

[2] 5 MRSA §400 et al, §402, Definition of Public Record. https://www.mainelegislature.org/legis/statutes/1/title1sec402.html

[3] FIFRA excludes the following information from public disclosure: information that discloses manufacturing or quality control processes; information that discloses methods for testing and measuring the quantity of deliberately added inert ingredients; and information that discloses the identity or percentage quantity of deliberately added inert ingredients. See also EPA webpage, Pesticide Registration Manual: Chapter 15 - Submitting Data and Confidential Business Information at: https://www.epa.gov/pesticide-registration/pesticide-registration-manual-chapter-15-submitting-data-and-confidential

inert or active ingredient is irrelevant; the chemical will end up in the environment either way.[4]

- ***Clarification that adjuvants are included in "inert ingredients" for the purpose of required PFAS disclosure.*** While the Board has separately written a report for the Legislature on additional regulation of PFAS in pesticides as required by LD 264, which discusses more broadly regulating adjuvants, it is not necessary to wait for further legislative direction or authority to include adjuvants as part of the manufacturers' affidavit as to the presence or absence of PFAS. As discussed above, the Board has extensive authority to require information about the formulation and to require other information for registration of a product, and should make clear that adjuvants are covered with other inert ingredients. Otherwise, the affidavits will be misleading (and essentially meaningless) if they claim a product is "PFAS free" while containing adjuvants with PFAS.

- ***Contamination during manufacture.*** The presence of PFAS in pesticide products should be disclosed, regardless of the source – active ingredient, inert ingredient, adjuvant or contamination during manufacture. The potential for harm does not evaporate simply because the PFAS presence may not be intentional. If manufacturers know of PFAS in their products, they should be required to disclose that information regardless of the route the PFAS took to get into the product. Manufacturers are in the best position to ascertain this information.

- ***Container affidavit***. The container affidavit in Section 1.F.A shouldn't be limited to fluorinated high-density polyethylene containers. Although this provision tracks the language of LD 264, other types of containers can be fluorinated (and are marketed for pesticide storage) and thus have the potential to leach PFAS into the pesticide. The Board didn't need LD 264 to give it the authority to regulate PFAS contamination from containers. Its rulemaking authority is quite extensive, and specifically includes authority to regulate pesticide storage, which includes containers as a form of storage [7 MRSA §610.2.B]. Adoption of container regulations to more specifically address PFAS contamination is authorized under the Board's extensive general rulemaking authority cited above, and the Board has already exercised its authority to regulate containers more generally (regulating storage and disposal in Section 3 of Chapter 20, and storing pesticides for wholesale or retail purposes in Chapter 24).

In summary, the proposed rule, with the modifications we suggest, is a good start in addressing PFAS in pesticides. We look forward to the Board's report to the Legislature on further regulating fluorinated adjuvants and taking additional action to protect farmers, the public and the environment from PFAS contamination caused by pesticide use.

[4] The pesticide registration requirements of 7 MRSA §607.3 state: "Submission of formula. The board, when it determines it necessary in the administration of this subchapter, may require the submission of the complete formula of any pesticide, including the active and inert ingredients." The Board also has explicit authority under the registration provisions "to require the submission of other necessary information" by adopting rules under 7 MRSA §610.2, the Board's overall rulemaking authority.

SIERRA CLUB
MAINE CHAPTER

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To: Board of Pesticides Control

From: Patricia Rubert-Nason, Sierra Club Maine

Date: January 11, 2022

Re: Chapter 41, Prohibition of the Use of Certain Neonicotinoids for Outdoor Residential Use

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As a part of our fight to protect both people and the environment, especially the most vulnerable among us, Sierra Club advocates for restrictions on harmful chemicals. On behalf of our over 22,000 members and supporters here in Maine and over 4 million across the country, we would like to thank the Board for their work on implementing LD 155, To Prohibit the Use of Certain Neonicotinoids for Outdoor Residential Use. However, we would also like to urge the Board to tighten the proposed definition of "invasive pest" to i) better reflect the intent of the legislature, ii) better align with the accepted definition and iii) better protect pollinator populations. We urge the Board to develop a defined list of exempted pests where the use of neonicotinoids is justified along with the appropriate neonicotinoid(s) for treatment, rather than leaning on a broad definition which leaves determining what qualifies as an invasive pest to the judgment of pesticide applicators.

While we may not all like insects, we rely upon them. "Insects create the biological foundation for all terrestrial ecosystems. They cycle nutrients, pollinate plants, disperse seeds, maintain soil structure and fertility, control populations of other organisms, and provide a major food source for other taxa."[1] Without insects we would be hungry. Eighty-five of the leading food crops worldwide rely on insects for pollination.[2] We would be dirty, up to our necks in biological waste. Insects play a vital role in decomposition. And we would be poorer. Insects provide $57 billion of services to the US economy every year.[3]

But insects are in trouble. There have been numerous scientific papers in recent years on declines in both diversity and populations of insects.[4] While there is debate about the exact speed and scale of the problem, it is clear that the problem is significant.

A recent article in the Proceedings of the National Academy of Sciences, nicely summed up the situation:

> Declining insect population sizes are provoking grave concern around the world as insects play essential roles in food production and ecosystems. Environmental

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[1] Insect Biodiversity: Science and Society, Second Edition. https://doi.org/10.1002/9781118945568.ch2
[2] https://www.fao.org/pollination/en/
[3] https://news.cornell.edu/stories/2006/04/dont-swat-those-bugs-theyre-worth-57-billion-year
[4] https://www.annualreviews.org/doi/full/10.1146/annurev-environ-012420-050035

contamination by intense insecticide usage is consistently proposed as a significant contributor, among other threats. Many studies have demonstrated impacts of low doses of insecticides on insect behavior.[5]

Neonicotinoids are systemic pesticides, meaning they are taken up into the tissues of the plant. Some neonicotinoids, including at least two[6][7] of the compounds addressed by this regulation, are also persistent, meaning they are slow to break down in the environment and in the tissues of plants. As such, these compounds will tend to be present in the pollen and nectar of treated plants when they bloom. They are also highly toxic to pollinators and can reduce foraging ability and general fitness even at concentrations significantly lower than those required to kill the affected insect.[8] Treated flowering plants effectively attract pollinators and then poison them (fatally or non-fatally) and thus present a significant risk to pollinator populations. This justifies the need to limit their use wherever possible and to seriously weigh their benefit against their impact.

We believe that the proposed exemption for “invasive pests” is too broad and does not accurately reflect the intent of the legislature. The established definition of “invasive pest” is limited to “non-native (or alien) to the ecosystem under consideration” and further limited to “the most aggressive species. These species grow and reproduce rapidly, causing major disturbance to the areas in which they are present.”[9] In contrast, the proposed definition would permit virtually any invertebrate which presents any level of economic (or other) harm, even if it is modest, to be characterized as an invasive pest, even if it is a native species, or is not particularly aggressive.

In particular, part c of the definition “native or non-native vectors of plant diseases” could permit neonicotinoids to be applied for the control of a wide range of insects. Many plant-eating insects can transmit plant diseases, thus the proposed definition would allow a wide range of species, including many native species, to be characterized as “invasive pests” and is much broader than the conventional definition of invasive species.

We would also like to note that, while economic harm is a part of the conventional definition of “invasive species,” it is notably absent from the legislature’s rationale for exempting invasive pests from the ban on neonicotinoids for residential ornamental use. LD 264 says that the use of neonicotinoids should be permitted for the control of “invasive insect pests” “in order to safeguard the public health, safety and welfare of the State and to protect the natural resources of the State.” This would seem to indicate that the focus in determining the limits of the exemption should be on human health and environmental impact rather than economics.

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[5] Proceedings of the National Academy of Sciences Oct 2020, 117 (41) 25840-25850; DOI: 10.1073/pnas.2011828117

[6] https://www3.epa.gov/pesticides/chem_search/reg_actions/registration/fs_PC-044312_01-Sep-04.pdf

[7] https://www3.epa.gov/pesticides/chem_search/reg_actions/registration/fs_PC-044309_30-May-03.pdf

[8] Proceedings of the National Academy of Sciences Oct 2020, 117 (41) 25840-25850; DOI: 10.1073/pnas.2011828117

[9] https://www.maine.gov/dacf/php/gotpests/invasive-pests.htm

In writing LD 264, the legislature specified Asian long-horned beetle, emerald ash borer and hemlock wooly adelgid as “emerging invasive pests” for which the use of neonicotinoids should be permitted. These are three extremely destructive, non-native species that are devastating to our native trees. While the legislature did indicate that this exemption was not limited to these three species, we believe that they were intended to provide good examples of the kinds of species for which the legislature felt that the use of neonicotinoids was potentially justified while leaving room for the Board to address other similar threats that presently exist or which may emerge in the future. Rather than providing a broad definition of “invasive pests” we believe it would be more appropriate, and more in keeping with the legislature’s intent, to provide a specific list of invasive pests for which the use of neonicotinoids are permitted and which neonicotinoid(s) are indicated.

Given the ecological hazards associated with neonicotinoids, we believe it would be most appropriate to limit their use for the control of invasive pests to specific pests where their use is appropriate (they are an effective solution for targeting that pest) and the benefits to the environment and human health outweigh the harms and specific neonicotinoid(s) appropriate for that pest.

While we recognize the challenges of ongoing rulemaking related to a positive list, invasive species do not typically emerge as a problem abruptly and without warning. In most cases, problems with particular species are well-documented for months, if not years, in other states prior to arriving in Maine. We would like to suggest that one possible option to avoid the need for emergency rulemaking would be for the Department of Agriculture, Conservation and Forestry Staff to periodically report on emerging invasive species that might be appropriately addressed with neonicotinoids to the BPC, allowing rulemaking prior to their becoming an urgent problem in Maine.

I would like to thank the Board of Pesticides for their work on implementing LD 264 and urge them to tighten the definition of “invasive pests” to better align with accepted definitions and the intent of the legislature. We sincerely hope that you will be able to implement these regulations for this growing season, even if that means initially working with a list of the easy to identify products and finalizing a more complete list for next year.

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Comments of Representative Nicole Grohoski
To: Board of Pesticides Control
Subject: Proposed Rule Amendments to Chapter 41

14 January 2022

Esteemed members of the Board of Pesticides Control – thank you for the opportunity to comment on the proposed rule amendments to Chapter 41, "Special Restrictions on Pesticide Use." Specifically, I will address Section 6, which was drafted in response to LD 155, a resolve I sponsored which was signed by the Governor on June 10, 2021. The Legislature and Governor recognize that our pollinators are in crisis and that certain persistent chemicals contribute to declining survival rates for some species, and that using these chemicals for cosmetic purposes is unwarranted. I know that certain aspects of this rule have been challenging to draft, because we took a very targeted, evidenced-based approach to limiting risk rather than requiring a blanket ban.

I want to start by saying that most of the draft rule language is true to the intent of the resolve language and, I believe, the Legislature, and furthermore, it is exactly what I expected based on previous conversations with Board staff about how the resolve might be codified in rule.

I also regret that I was unable to attend the previous meetings in which you discussed this resolve. I have reviewed the minutes to better understand the few places where the proposed language deviates from what we discussed in the Legislature, and I will focus my comments there. I realize now that what seemed like very clear language and direction to us through the Legislature's committee process was less clear than it could have been, and I apologize for that.

Specifically, the approach to handling the "invasive insect pest" application exemption is not what we envisioned or discussed with Board staff during the committee process. Director Patterson consulted with DACF staff to determine if any of the four targeted neonics were important for management of known invasive insect threats in the residential landscape. She listed three invasive insects in her testimony before the Agriculture, Conservation and Forestry

Committee which are thus listed in the resolve: Asian long-horned beetle, emerald ash borer, and hemlock wooly adelgid.

We tasked the Board with identifying additional invasive insect species requiring neonic application for management if and when those threats were detected. That is the purpose of the word "emerging" – meaning, unknown to us now and emerging at a later date. If we had intended to define "invasive invertebrate pests" as in these draft rules, we would have. Likewise, if we had intended to have the Board create a definition, we would have said to do that and defined parameters. We started a list for the Board to put in rules and add to, it's as simple as that.

As drafted, these rules put the burden on the applicators to determine which species fit the definition. In my view, that is an abdication of regulatory responsibility to the regulated community. It's unfair to the applicators to put that on their plate and will likely result in confusion.

I understand that DACF staff put a lot of research and thought into this definition and acknowledge that understanding invasive species threats is more than a full time job. I think they have made a strong effort, though I would be remiss if I didn't point out that:

1. the resolve intentionally used the word "insect" which is not interchangeable with "invertebrate," and
2. I am unaware of any agency or association in this country that includes native species in the definition of invasive.

If you visit the Maine Forest Service site "Invasive Threats to Maine's Forest and Trees" you'll see a definition of invasive species from federal Executive Order 13112 that reads: "a species is considered invasive if it is not native to the ecosystem in question and its introduction causes or is likely to cause economic or environmental harm or harm to human health." A native species that becomes economically or environmentally damaging is typically called a nuisance species. This is probably why Maine's Interagency Task Force on Invasive Aquatic Plants and Nuisance Species specifically includes both of those terms.

For the above reasons, I request that the Board reject the definition of "invasive invertebrate pests" and instead list the three pests that have thus far been identified. I understand the concern that a threat can appear overnight and would suggest that emergency rulemaking, albeit annoying, is always an available tool to the Board. Board Members, the Board Director, Maine Forest Service staff, the State Horticulturist, applicators or any other member of the public could come to the board with evidence of a legitimate threat and trigger emergency rulemaking. In most cases, these species are well known to scientists and even interested laypeople long before they arrive in Maine. As DACF staff can surely tell us, it is hard to draft a definition that works

for the known and predicts the unknown. It is much easier, and more precise, to list the known as it becomes known.

On the subject of the effective date, I know that there are three main considerations: 1) products have already been renewed for sale this year, 2) products may already be stocked in some retail stores, and 3) easy search options are not available for staff to determine which products with these four neonics are specifically used in outdoor residential landscapes.

However, I would remind the Board and all in attendance that our pollinators are in crisis and time is of the essence. Legislators and the Governor recognized this when they supported LD 155. Do we need to do more to protect bees and butterflies than restrict certain neonic use in residential landscapes? Absolutely, but that is not the task before the Board today. When we learn that food at the grocery store is toxic to people, do we wait for it to sell out before banning it? No, we immediately recall it.

On the subject of availability of products with these four neonics, staff told the Board in August that there are (as written in the minutes): "a total of 164 products registered including for lawn and ornamental treatment." I know that each label needs to be scrutinized to determine its uses and that takes time, but let's start with what we're sure of, publish that list as soon as these rules are finalized, set an effective restriction date of April 1, 2022 for those products, and then work to complete the list on the timeline set forth in the draft rules. I would be happy to submit a list of known products on store shelves in Maine for staff to double-check.

I am certain that big box stores could have these products off the shelves in a week's time if you told them they had to. And as Director Patterson stated in November, staff could for a period of time exercise enforcement discretion, which could be used in the case of smaller, independent retailers in Maine – if they didn't get the October memo that these products were about to become restricted use. Applicators will still have a use for these products as these rules do not affect non-residential use, including in urban settings, forestry, and agriculture.

Finally, the following are a list of technical language revisions that I believe may be warranted, though admittedly, I am not the most qualified person to say for sure.

- There are two places the proposed rule says "turf and lawn" and four where it just says "turf." Using the full phrase "turf and lawn" would provide clarity and consistency with the resolve language, unless there is a scientific and management reason why only "turf" is used in the cases where it is.
- A portion of Section 6, B reads, "the Board may exempt from this list pesticides that it determines are not for use in the *control* [emphasis added] of outdoor ornamental plants or turf." These four chemicals are not used for controlling plants, but rather for controlling pests on plants. In Section 6, C, 5, the phrase "managing" is used, which

seems to fit better. This change would align with other uses of the word “control” in this chapter.

Thank you all for listening attentively to my comments. I assure you they are much shorter than my testimony on LD 155! I would be happy to answer any questions and will submit this in writing for the record.

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Additional Comments of Representative Nicole Grohoski
To: Board of Pesticides Control
Subject: Proposed Rule Amendments to Chapter 41

23 January 2022

Esteemed members of the Board of Pesticides Control – I was glad to be able to join the public hearing regarding proposed rule amendments to Chapter 41 last week. You had many good questions and comments about the section on invasive species, to which I have given further thought.

In addition to listing specific invasive insect species in rule (rather than broadly defining invasive insect pests in rule as I discussed in my previous comment), one option mentioned was establishing an emergency permitting process in rule. This would allow the BPC to respond quickly in the event of an unforeseen threat that required one or more of the restricted neonics to be used. Then, the BPC could subsequently engage in routine technical rulemaking to add the problematic invasive insect species to the list in Chapter 41. I am not sure if there is precedent for this, but I support the idea.

Ideally, DACF staff or other stakeholders would identify emerging threats for and give BPC notice, such that the BPC could engage in rulemaking long before the threat arrived in Maine.

The important point that I would like to underscore is that the list (or definition) should not be all invasive insect pests that threaten public health, safety, and welfare, but a subset of that list that are just those species that also require dinotefuran, clothianidin, imidacloprid and/or thiamethoxam for effective management.

If the BPC would like to stick with a definition of "invasive insect pests," I hope that it will tighten up that definition as I noted in my first comment, make it clear that these four neonics are only allowed for use on a certain subset of species, and publish a list of those species annually or as needed so that there is no confusion for licensed applicators about when to use these chemicals.

Thank you again for your attention to my comments during the rulemaking process.

Maine Organic Farmers and Gardeners Association

Common Ground Country Fair

To: Members of Maine's Board of Pesticides Control
From: Heather Spalding, Deputy Director, MOFGA
Date: January 21, 2022
Subject: Comments on BPC Rulemaking Efforts on Chapters 20 and 41 Regarding PFAS in pesticides, neonicotinoids, and chlorpyrifos

Thank you for the opportunity to submit comments on the proposed rule amendments to Chapter 20, which lays out special provisions regulating the use, storage and disposal of pesticides, and to Chapter 41, which establishes special restrictions on pesticide use.

In the last legislative session MOFGA supported LD 264 addressing the problem of perfluoroalkyl and polyfluoroalkyl substances (PFAS) in pesticides, LD 155 restricting landscaping use of four neonicotinoid pesticides, and LD 316 banning the neurotoxic organophosphate chlorpyrifos. We would like to thank the BPC staff and board for the time and effort that you have put into understanding the legislation and how it could and should be implemented. We are encouraged by the progress on the rulemaking however we would like to see further improvements to ensure that the rules reflect the intent of the legislation. Here is a quick summary of how the rules should be strengthened:

- manufacturer reporting about PFAS in pesticides must include inerts, adjuvants and contaminants in addition to active ingredients listed in the product formulation;
- registrants' affidavits should be made public;
- affidavits about pesticide storage should apply to all fluorinated containers;
- the invasive species definition in the neonics rule should be narrowed;
- the restricted-use neonics should not be available for residential landscaping in the upcoming growing season;

The chlorpyrifos rule looks great. Thank you!

Regarding proposed rules for Chapter 20

Often referred to as "forever chemicals" due to their persistence in the environment, PFAS are designated by the International Agency for Research on Cancer as a possible carcinogen based on epidemiological evidence linking exposure to prostate, kidney and testicular cancer. Other associated health risks include: decreases in fertility or increases in high blood pressure in pregnant women; reduced ability of the body's immune system to fight infections including reduced vaccine response; child development effects including low birth weight, accelerated puberty, bone variations or behavioral changes; interference with the body's natural hormones; and increased cholesterol levels and/or risk of obesity. Almost all of us, including infants, have PFAS in our blood.

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Over the past few years PFAS have emerged as a growing contaminant of concern for the food supply in Maine and elsewhere as testing has revealed levels of contamination in milk, eggs, vegetable and grain crops, and wild game produced or harvested in areas where land was spread with amendments containing PFAS (in most cases, decades ago). As an organization working to create a safe, healthy and fair food system for all, this issue is of great concern to MOFGA and we're closely following, and deeply involved in, the work to understand and address this issue across the state. Farmers are losing their businesses, their land, and their health. The PFAS problem affects all of us.

The Legislature passed many bills to address the PFAS problem in Maine last year. One of the bills that MOFGA supported was LD 264 - *Resolve, Directing the Board of Pesticides Control To Gather Information Relating to Perfluoroalkyl and Polyfluoroalkyl Substances in the State*. LD 264 started out as an effort to ban the aerial spraying of pesticides containing PFAS chemicals, but morphed into an outreach effort to obtain information about the extent of the PFAS problem in pesticides. MOFGA also supported LD 1503 - *An Act To Stop Perfluoroalkyl and Polyfluoroalkyl Substances Pollution*, which is now Public Law 477 and establishes that manufacturers must openly report the presence of PFAS in products, and lays out a plan to eliminate products with intentionally added PFAS over time, unless the use of PFAS is unavoidable. The state will prioritize action on products that are most likely to contaminate land and water resources, so it is logical to compile data on PFAS-containing pesticides that may be sprayed over vast farmland acreage and poison our water. With the story that broke last year about PFAS contamination of pesticides used for mosquito control in Massachusetts, and subsequent reports from EPA, we are particularly concerned about the PFAS problem being exacerbated by the spraying of PFAS-contaminated pesticides and we urge you take swift action to turn off this PFAS tap.

We believe PFAS should be regulated as a class, rather than one by one. It was wise to abandon the recommendation put forth at the October BPC meeting, which advised targeting only 75 PFAS that the Environmental Protection Agency had identified as potential candidates for expedited toxicological screening. That approach inevitably would have led to regular updates in the rule and, as we know, each amendment can take many months to years. We appreciate that you have aligned the definition of PFAS with the definition already in Maine statute. This consistency is critical for agencies to conduct collaborative efforts to address Maine PFAS crisis. We know that the Department of Agriculture, Conservation and Forestry is working tirelessly to coordinate with the Department of Environmental Protection, the Maine Center for Disease Control and Prevention, and the Department of Inland Fisheries and Wildlife.

The presence of PFAS in pesticides sold in Maine should be public information and we urge you to draft the rule to ensure that affidavits attesting to the presence of PFAS are easily accessible to the public. This is not a broader call for access to complete product formula data, it is a reasonable recommendation to ensure the public's right to know about the presence of an extremely toxic and persistent chemical of great concern to the state of Maine.

We also believe that affidavits, while not disclosing the exact formulation of a pesticide, must acknowledge whether PFAS is present in any part of the product for sale – *i.e.,* they must report the presence of PFAS in the active ingredients, the inert ingredients, and the adjuvants, as well as

contaminants from processing or storage. The Board should exercise the broad authority it has to gather formula data in consideration of granting product registration. We hope that the system established for compiling the information would be streamlined so that it would not create an undue burden on the BPC staff. Manufacturers know whether PFAS is in their products and they must be responsible for reporting that in an online database that would minimize additional work for the staff.

LD 264 also directs the BPC to collect manufacturer about storage containers. While we recognize that the Resolve specified storage in high-density polyethylene (HDPE) plastics, it is important to note that new science indicates that the problem of PFAS leaching from containers goes beyond HDPE and is occurring in other plastic containers. As the BPC has established extensive rules regarding pesticide storage facilities, it should exercise similar authority to regulate storage containers without needing authorization from the Legislature. We suggest that the proposed rule's Section 1.F.1. be simplified by changing "fluorinated high-density polyethylene container" to "fluorinated container".

We look forward to hearing how the BPC would implement a prohibition on the distribution or application of pesticides or adjuvants containing PFAS, as directed in the Resolve.

Regarding proposed rules for Chapter 41

LD 155 - *Resolve, Directing the Board of Pesticides Control To Prohibit the Use of Certain Neonicotinoids for Outdoor Residential Use* focuses on four neonicotinoid pesticides (those containing the active ingredients dinotefuran, clothianidin, imidacloprid or thiamethoxam) commonly used in outdoor residential landscapes such as lawns, turf or ornamental vegetation, with some allowances to deal with emerging invasive insects. The law allows licensed pesticide applicators to apply these neonics to the landscape, but only "to manage emerging invasive insect pests, such as the Asian long-horned beetle, emerald ash borer and hemlock wooly adelgid in order to safeguard the public health, safety and welfare of the State and to protect the natural resources of the State." The "invasive invertebrate pests" definition that you have proposed is very broad and goes far beyond the intent of the legislation, even including native species that could serve as vectors and that may be increasing because of our changing climate. If ever there were an occasion to take a precautionary approach to pesticides it would be with the approach to using neonicotinoids in the landscape. The definition of invasive species in the neonics rule should specify the emerging insect pests and the neonicotinoid products approved for use in their management. The decline of the insect population in the United States is becoming more commonly referred to as the "insect apocalypse" and, as reported in the journal PLOS One, is attributable to increasing toxicity of pesticides, particularly neonics. We do feel that broader action should be taken to remove neonicotinoids from the marketplace more generally – *i.e.* more restrictions in agriculture. But we see this law and rulemaking as a critical first step to addressing the problem. The BPC should direct retail outlets to start pulling products from the shelves right away. Pollinators are in crisis and we urge you to act swiftly to protect pollinators from unnecessary poisoning of the residential landscape.

LD 316 - *An Act To Prohibit the Use of Chlorpyrifos* intends to stop the distribution of chlorpyrifos in Maine and calls for a one-year permitting process to sunset and track the use of existing chlorpyrifos inventory already in the possession of licensed pesticide applicators. Chlorpyrifos has been at the

forefront of pesticide concerns for decades due to the serious harms to human health, especially the impact that it has on the developing brains of children. The rule that you have drafted to prevent additional chlorpyrifos applications in Maine reflects the intent of the legislation. We recognize that the U.S. Environmental Protection Agency (EPA) has cancelled food tolerances of chlorpyrifos and will report findings of its registration review for non-agricultural uses by October 1st. We are fortunate in Maine to have the authority to go above and beyond the baseline relative risk standards of our national EPA. Thank you for your efforts with regulating this neurotoxin.

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The Maine Organic Farmers and Gardeners Association (MOFGA) started in 1971 and is the oldest and largest state organic organization in the country. We're a broad-based community that educates about and advocates for organic agriculture, illuminating its interdependence with a healthy environment, local food production, and thriving communities. We have 11,000 members, we certify more than 500 organic farms and processing facilities representing $90 million in sales, and we are working hard to provide training and create opportunities for Maine's next generation of farmers. Each of these farmers is a Maine businessperson for whom economic health and environmental health are interdependent. While MOFGA envisions a future of healthy ecosystems, communities, people and economies sustained by the practices of organic agriculture, we attribute our success to collaboration and outreach to growers across the management spectrum.

Comments received regarding BPC rulemaking Jan. 14th, 2022.

Director Megan Patterson,

I am writing to urge Maine's Board of Pesticides Control to implement the pesticide laws passed in the last session of the Legislature. The laws will restrict landscaping use of four neonicotinoids, ban the neurotoxin chlorpyrifos, and assess and address the problem of PFAS in pesticides.

Specifically, I urge the BPC to:

Narrow the scope of invasive species that could be treated with neonics by listing specific insect pests and the neonic(s) approved to use in their management. The definition currently proposed by the BPC is too broad and does not reflect the original spirit of the law. Please act swiftly to protect pollinators from unnecessary poisoning of the residential landscape. Pollinators are in crisis. There is no time to wait.

Please ensure that any PFAS chemical added to the product as an "inert" ingredient will be included in the reporting. The same goes for PFAS contaminants known to the manufacturer.

I appreciate that the BPC intends to implement the ban on chlorpyrifos as directed by state law. We are fortunate that Maine has the authority to go above and beyond the relative risk standards of the US Environmental Protection Agency.

Thank you for your consideration.

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neonicotinoids, ban the neurotoxin chlorpyrifos, and assess and address the problem of PFAS in pesticides.

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Narrow the scope of invasive species that could be treated with neonics by listing specific insect pests and the neonic(s) approved to use in their management. The definition currently proposed by the BPC is too broad and does not reflect the original spirit of the law. Please act swiftly to protect pollinators from unnecessary poisoning of the residential landscape. Pollinators are in crisis. There is no time to wait.

Please ensure that any PFAS chemical added to the product as an "inert" ingredient will be included in the reporting. The same goes for PFAS contaminants known to the manufacturer.

I appreciate that the BPC intends to implement the ban on chlorpyrifos as directed by state law. We are fortunate that Maine has the authority to go above and beyond the relative risk standards of the US Environmental Protection Agency.

Thank you for your consideration.

joliyoka@gmail.com
11 Olsen Lane
Jefferson, Maine 04348

From: M Tupper <catalpa.girl@gmail.com>
Sent: Monday, January 10, 2022 9:28 AM
To: Pesticides <Pesticides@maine.gov>
Subject: Re: Thank you and Please continue (BPC)

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Megan,

Yes I hoped I was responding to recent BPC work, which I understand is positive but ongoing.
(Trying to spell the names of those chemicals is another challenge!)

Thank you,
Mariana

On Mon, Jan 10, 2022 at 8:15 AM Pesticides <Pesticides@maine.gov> wrote:

Hi Mariana,

Thank you for reaching out. Have your comments been provided in response to recent BPC rulemaking?

Thanks again,

Megan

Megan L. Patterson

Director

Board of Pesticides Control

Maine Department of Agriculture, Conservation and Forestry

Phone: 207.592.0911

From: M Tupper <catalpa.girl@gmail.com>
Sent: Sunday, January 09, 2022 5:57 PM
To: Pesticides <Pesticides@maine.gov>
Subject: Thank you and Please continue (BPC)

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

To Megan Patterson & the rest of the Board of Pesticides Control:

I very much appreciate your work so far to limit the use of toxic chemicals. Now, while we are indoors during the cold season, is an excellent time to promote further progress.

I am particularly concerned about the use of Neonicotinoids, the neurotoxin Clorpyrifos, and PFAs. As both our Environmental Protection Agency and the Food & Drug Administration say, such substances are dangerous for human beings and other species on which we depend.

Please help the State of Maine stay a strong leader in sensible, smart, & safe agriculture. Progress made in 2021 should be underscored, embellished, and celebrated.

As Rachel Carson said, "Man is a part of nature, and his war against nature is inevitably a war against himself." I look forward to following the progress in the upcoming talks.

Thank you!

Mariana

From: Lelania Avila <info@email.actionnetwork.org>
Sent: Monday, January 10, 2022 4:16 PM
To: Pesticides <Pesticides@maine.gov>
Subject: Please Adopt Strong Rules To Implement Maine's New Pesticide Laws

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Director Megan Patterson,

Thank you for considering this letter. I'm including what MOFGA has written, because they say it well. I'm aware that businesses that rely upon pesticides will be impacted by your decision, and that economic incentives often sway votes. Please be leaders in protecting pollinators, and support the full intent of the legislation that passed. We can find other ways for Maine businesses to thrive. Thank you, Lelania Avila.

I am writing to urge Maine's Board of Pesticides Control to implement the pesticide laws passed in the last session of the Legislature. The laws will restrict landscaping use of four neonicotinoids, ban the neurotoxin chlorpyrifos, and assess and address the problem of PFAS in pesticides.

Specifically, I urge the BPC to:

Narrow the scope of invasive species that could be treated with neonics by listing specific insect pests and the neonic(s) approved to use in their management. The definition currently proposed by the BPC is too broad and does not reflect the original spirit of the law. Please act swiftly to protect pollinators from unnecessary poisoning of the residential landscape. Pollinators are in crisis. There is no time to wait.

Please ensure that any PFAS chemical added to the product as an "inert" ingredient will be included in the reporting. The same goes for PFAS contaminants known to the manufacturer.

I appreciate that the BPC intends to implement the ban on chlorpyrifos as directed by state law. We are fortunate that Maine has the authority to go above and beyond the relative risk standards of the US Environmental Protection Agency.

Thank you for your consideration.

Lelania Avila
chickenhatlady2020@gmail.com
PO Box 1127, 5 Tracy Road
Northeast Harbor, Maine 04662

SIERRA CLUB
MAINE CHAPTER

PO Box 1374
Yarmouth, ME 04096
Phone: (207) 761-5616
www.sierraclub.org/maine

To: Board of Pesticides Control

From: Patricia Rubert-Nason, Sierra Club Maine

Date: January 11, 2022

Re: Chapter 41, Prohibition of Chlorpyrifos

As a part of our fight to protect both people and the environment, especially the most vulnerable among us, Sierra Club advocates for restrictions on harmful chemicals. On behalf of our over 22,000 members and supporters here in Maine and over 4 million across the country, we would like to thank the Board for their work on implementing LD 316 to prohibit the use of chlorpyrifos and urge them to adopt the rule as written.

Chlorpyrifos is widely used in both agricultural and non-agricultural settings. It is also a neurotoxin that negatively impacts the development of children. According to the National Pesticide Information Center:

> Chlorpyrifos exposure was linked to changes in social behavior and brain development as well as developmental delays in young laboratory animals. Other studies showed that chlorpyrifos affected the nervous system of young mice, rats, and rabbits more severely than adult animals.
>
> Researchers studied the blood of women who were exposed to chlorpyrifos and the blood of their children from birth for three years. Children who had chlorpyrifos in their blood had more developmental delays and disorders than children who did not have chlorpyrifos in their blood. Exposed children also had more attention deficit disorders and hyperactivity disorders.[1]

Based, in significant part, on these risks, the EPA recently moved to revoke all tolerances for chlorpyrifos on food. However, this still leaves exposure risks from non-agricultural uses. Happily, the Maine legislature has chosen to go further in protecting young Mainers. LD 316 banned the use of pesticides containing chlorpyrifos for all uses, with a limited exception for pesticides that applicators had already purchased prior to the beginning of this year.

I would like to thank the Board of Pesticides for their work on implementing LD 316. We at the Sierra Club support the proposed rule as it is currently written and believe it accurately reflects the intent of the legislature.

---

[1] National Pesticide Information Center - Chlorpyrifos Fact Sheet
http://npic.orst.edu/factsheets/chlorpgen.html

01 DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY

026 BOARD OF PESTICIDES CONTROL

Chapter 20: SPECIAL PROVISIONS

SUMMARY: These provisions regulate the use, storage and disposal of pesticides with specific emphasis on registered pesticides, right of way and aquatic applications and employer/employee requirements.

Section 1. Registered Pesticides

A. **Definitions**

"Perfluoroalkyl and Polyfluoroalkyl Substances" or "PFAS" means substances that include any member of the class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom.

~~A~~B. The use of any pesticide not registered by the Maine Board of Pesticides Control in accordance with Title 7 M.R.S.A. §601 is prohibited except as otherwise provided in this chapter or by FIFRA, Section 2(ee).

~~B~~C. The use of registered pesticides for other than registered uses, or at greater than registered dosages, or at more frequent than registered intervals is prohibited, provided that application or use of unregistered pesticides and unregistered applications or uses of registered pesticides may be made for experimental purposes if in accordance with requirements of the Maine Board of Pesticides Control, and the U.S. Environmental Protection Agency.

~~C~~D. Retailers and end users of pesticides no longer registered in Maine may continue to sell and use those items provided they were properly registered when obtained and such distribution and use is not prohibited by FIFRA or other Federal law.

~~D~~E. In conducting review of registration or re-registration pursuant to 7 M.R.S.A. §607-A, the Board may consider the potential for environmental damage by the pesticide through direct application on or off-target or by reason of drift. If the Board finds that the use of the pesticide is anticipated to result in significant adverse impacts on the environment, whether on or off-target, which cannot be avoided or adequately mitigated, registration or re-registration will not be granted unless the Board finds that anticipated benefits of registration clearly outweigh the risks. In any case where the Board may request data in connection with registration or re-registration of any pesticide, such data may include that concerning pesticide residues, propensity for drift and testing therefor. Such data, if requested, shall provide information regarding residues and residue effects on plant tissues, soil and water and other potential deposition sites, and shall take into consideration differences in plants, soils, climatic conditions at the time of application and application techniques.

F. In conducting review of registration or reregistration pursuant to 7 M.R.S.A §607-A, the Board shall require submission of the confidential statement of formula and the following affidavits:

1. a completed and signed form provided by the Board at the time of application for product registration review or reregistration which attests that the pesticide has or has never been stored, distributed, or packaged in a fluorinated high-density polyethylene container; and

2. a completed and signed form provided by the Board at the time of application for product registration review or reregistration which attests that the pesticide formulation does or does not contain perfluoroalkyl or polyfluoroalkyl substances as defined by the Board for this purpose of this section.

Section 2. Right-of-Way

Deciduous growth over six feet in height and evergreen growth over three feet in height shall not be sprayed with a herbicide within the right-of-way of any public way except that deciduous growth which has been cut to the ground and which has grown more than six feet during the growing season following the cutting, may be sprayed that following season. In addition, chemical pruning of single limbs of trees over the prescribed heights may be performed.

Section 3. Pesticide Storage and Disposal

A. Unused pesticides, whether in sealed or open containers, must be kept in a secure enclosure and otherwise maintained so as to prevent unauthorized use, mishandling or loss; and so as to prevent contamination of the environment and risk to public health.

B. Obsolete, expired, illegal, physically or chemically altered or unusable pesticides, except household pesticide products, shall be either:

1. stored in a secure, safe place under conditions that will prevent deterioration of containers or any contamination of the environment or risk to public health, or

2. returned to the manufacturer or formulator for recycling, destruction, or disposal as appropriate, or

3. disposed of in a licensed hazardous waste facility or other approved disposal site that meets or exceeds all current requirements of the Maine Department of Environmental Protection and the U.S. Environmental Protection Agency for facilities receiving such waste.

Section 4. Aquatic Applications

No person, firm, corporation or other legal entity shall, for the purpose of controlling aquatic pests, apply any pesticide to or in any waters of the state as defined in 38 M.R.S.A. §361-A(7) without approval of the Maine Department of Environmental Protection.

Section 5. Employer/Employee Requirements

A. Any person applying pesticide shall instruct their employees and those working under their direction about the hazards involved in the handling of pesticides to be employed as set forth on the pesticide label and shall instruct such persons as to the proper steps to be taken to avoid such hazards.

B. Any person applying pesticides shall provide and maintain, for the protection of their employees and persons working under their direction, the necessary safety equipment as set forth on the label of the pesticide to be used.

Section 6. Authorization for Pesticide Applications

A. Authorization to apply pesticides to private property is not required when a pesticide application is made by or on behalf of the holder of an easement or right of way, for the purposes of establishing or maintaining such easement or right of way.

B. When the Maine Center for Disease Control and Prevention (CDC) has identified that an organism is a vector of human disease and the vector and disease are present in an area, a government entity shall obtain authorization for ground-based applications by:

1. Sending a written notice to the person(s) owning property or using residential rental, commercial or institutional buildings within the intended target site at least three days but not more than 60 days before the commencement of the intended spray applications. For absentee property owners who are difficult to locate, mailing of the notice to the address listed in the Town tax record shall be considered sufficient notice; and

2. Implementing an “opt out” option whereby residents and property owners may request that their property be excluded from the application by submitting written notice to the government entity at least 24 hours before spraying is scheduled to commence. Authorization is considered given for any property for which written notice was submitted and no “opt out” request was received by the sponsoring government entity.

C. When the Maine Center for Disease Control and Prevention (CDC) recommends control of disease vectors, government entities are not required to receive prior authorization to apply pesticides to private property, provided that the government entity sponsoring the vector control program:

1. Provides advance notice to residents about vector control programs using multiple forms of publicity which may include, but is not limited to, signs, newspaper, television or radio notices, direct mailings, electronic communication or other effective methods; and

2. Implements an “opt out” option whereby residents and property owners may request that their property be excluded from any ground based control program and the government entity makes a reasonable effort to honor such requests; and

3. If aerial applications are made, takes affirmative steps, to the extent feasible, to avoid applications to exclusion areas as identified by Board policy.

D. **General Provisions**. For any pesticide application not described in Chapter 20.6(A),(B) or (C), the following provision apply:

1. No person may contract with, or otherwise engage, a pesticide applicator to make any pesticide application to property unless that person is the owner, manager, or legal occupant of the property to which the pesticide is to be applied, or that person has the authorization of the owner, manager or legal occupant to enter into an agreement for pesticide applications to be made to that property. The term "legal occupant" includes tenants of rented property.

2. No person may apply a pesticide to a property of another unless prior authorization for the pesticide application has been obtained from the owner, manager or legal occupant of that property. The term "legal occupant" includes tenants of rented property.

3. No commercial applicator may perform ongoing, periodic non-agricultural pesticide applications to a property unless:

i. there is a signed, written agreement with the property owner, manager or legal occupant that explicitly states that such pesticide applications shall continue until a termination date specified in the agreement, unless sooner terminated by the applicator or property owner, manager or legal occupant; or

ii. the commercial applicator utilizes another system of verifiable authorization approved by the Board that provides substantially equivalent assurance that the customer is aware of the services to be provided and the terms of the agreement.

Section 7. Positive Identification of Proper Treatment Site

A. Commercial applicators making outdoor treatments to residential properties must implement a system, based on Board approved methods, to positively identify the property of their customers. The Board shall adopt a policy listing approved methods of positive identification of the proper treatment site.

STATUTORY AUTHORITY: Title 22 M.R.S.A., Chapter 258-A

EFFECTIVE DATE:
July 6, l979

AMENDMENT EFFECTIVE:
April 1, 1985
January 1, 1988

May 21, 1996

EFFECTIVE DATE (ELECTRONIC CONVERSION):
March 1, 1997

AMENDED:
May 7, 1997 - Section 5

CONVERTED TO MS WORD:
March 11, 2003

CORRECTED HEADER CHAPTER NUMBER:
January 10, 2005

AMENDED:
January 1, 2008 – new Sections 6 and 7, filing 2007-65
September 13, 2012 – Section 6(E) and references added, filing 2012-270 (Emergency – expires in 90 days unless proposed and adopted in the meantime as non-emergency)
December 12, 2012 – emergency filing expires, chapter reverts to January 1, 2008 version
September 13, 2012 – Section 6(E) and references added, filing 2012-270 (Emergency – expires in 90 days unless proposed and adopted in the meantime as non-emergency)
December 12, 2012 – emergency filing expires, chapter reverts to January 1, 2008 version
June 12, 2013 – Emergency major substantive filing 2013-134

CORRECTIONS:
February, 2014 – agency names, formatting

AMENDED:
September 11, 2014 – filing 2014-163 (Final adoption, major substantive)
December 9, 2014 – Section 7 added, filing 2014-279

01 DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY

026 BOARD OF PESTICIDES CONTROL

Chapter 41: SPECIAL RESTRICTIONS ON PESTICIDE USE

SUMMARY: This chapter describes special limitations placed upon the use of (1) aldicarb (Temik 15G) in proximity to potable water bodies; (2) trichlorfon (Dylox, Proxol); (3) hexazinone (Velpar, Pronone), (4) aquatic herbicides in the State of Maine; ~~and~~(5) plant-incorporated protectants; (6) neonicotinoids (dinotefuran, clothianidin, imidacloprid, thiamethoxam); and (7) chlorpyrifos (Dursban, Lorsban).

Section 1. ALDICARB (TEMIK®)

The registration of aldicarb (Temik 15G) is subject to the following buffer zone requirements:

A. Aldicarb (Temik 15G) shall not be applied within 50 feet of any potable water source if that water source has been tested and found to have an aldicarb concentration in the range of one to ten parts per billion (ppb). The 50 foot buffer would be mandatory for one year with a required retesting of the water at the end of the period.

B. Aldicarb (Temik 15G) shall not be applied within 100 feet of any potable water source if that water source has been tested and found to have an aldicarb concentration in excess of 10 ppb. The 100 foot buffer would be mandatory for one year with a required retesting of the water at the end of this period.

Section 2. TRICHLORFON (DYLOX, PROXOL)

The registration of trichlorfon (Dylox, Proxol) is subject to the following requirements:

A. Trichlorfon shall only be used for control of subsurface insects on turf.

B. Prior to application the target pest must be identified and the severity of the infestation must be determined, including the extent of the damage.

C. Only infested areas shall be treated with trichlorfon. Broadcast treatments of the entire turf area are prohibited.

D. Following application, the trichlorfon must be watered into the soil with at least ½ inch of water and according to the label directions. The applicator must assure that the appropriate watering will take place prior to re-entry by any unprotected person.

Section 3. HEXAZINONE (VELPAR, PRONONE)

The registration of hexazinone is subject to the following limitations and conditions.

A. **Licenses Required**

No person shall use or supervise the use of any pesticide containing the active ingredient hexazinone unless they have obtained an applicators license in accordance with 22 M.R.S. §1471-D.

Section 4. AQUATIC HERBICIDES

The registration of pesticides for which there is an aquatic herbicide use on the product label shall be subject to the following limitations and conditions.

A. **Board Publication of List**

The Board of Pesticides Control will publish by May 23, 2003 and by March 15th of each year thereafter a list of herbicide products registered in Maine for which the manufacturer has verified that there is an aquatic use on the pesticide label. Based on available information, the Board may exempt from this list pesticides that it determines are not for use in the control of aquatic vegetation. Pesticides labeled solely for use in aquariums and antifouling paints, are specifically exempt from this list.

B. **Licenses Required**

I. Unless exempted under Chapter 41, Section 4 (B) (III), no person shall purchase, use or supervise the use of any aquatic herbicides identified on the Board's annual listing unless they have obtained a private or commercial pesticide applicator's license from the Board.

II. No person shall:

a. Distribute any aquatic herbicides identified on the Board's annual listing without a restricted use pesticide dealer's license from the Board; or

b. Unless exempted under Chapter 41, Section 4 (B) (III), distribute any aquatic herbicides identified on the Board's annual listing to any person who is not licensed as a private or commercial applicator by the Board.

III. Registered herbicides containing only the active ingredients erioglaucine (Acid Blue 9 or FD&C Number 1, CAS Registry No. 1934-21-0) and/or tartrazine (Acid Yellow 23 or FD&C Yellow Number 5, CAS Registry No. 2650-18-2 (trisodium salt) or 3844-45-9 (triammonium salt)) are exempt from the applicator licensing requirements described in Chapter 41, Section 4 (B) (I) and Chapter 41, Section 4 (B) (II) (b).

C. **Disclosure**

The Board will make a disclosure form available to dealers distributing any aquatic herbicides identified on the Board's annual listing. The Board requests that dealers present to customers the disclosure form that advises purchasers that, (1) an aquatic discharge license must be obtained from the Maine Department of Environmental Protection before any application may be made to any surface waters of the State as defined in 38 M.R.S.A. Section 361-A(7) including any private ponds that may flow into such a body of water at any time of year, (2) that Best Management Practices developed jointly by the Board and the Maine Department of Environmental Protection on the use of aquatic herbicides are available.

D. **Records and Reporting**

Dealers distributing any aquatic herbicides identified on the Board's annual listing shall keep records of such sales and provide reports to the Board as described for restricted use pesticides in Chapter 50, "Record Keeping and Reporting Requirements."

E. **Use of Best Management Practices**

Aquatic herbicides applied to private ponds and not subject to an aquatic discharge permit may only be applied consistent with Best Management Practices developed jointly by the Board and the Maine Department of Environmental Protection.

Section 5. PLANT-INCORPORATED PROTECTANTS

The registration, distribution and use of plant-incorporated protectants are subject to the following limitations and conditions:

A. **Definitions**

"Plant-incorporated protectant" means a pesticidal substance that is intended to be produced and used in a living plant, or in the produce thereof, and the genetic material necessary for the production of such a pesticidal substance.

B. **License Required**

No person shall distribute any plant-incorporated protectant without either a general use pesticide dealer license or a (restricted or limited use) pesticide dealer license from the Board.

C. **Dealer Requirements**

Dealers distributing plant-incorporated protectants are subject to the following requirements:

I. General use and (restricted or limited use) pesticide dealers shall notify the Board of their intent to distribute plant-incorporated protectants on all initial license and license renewal application forms provided by the Board.

II. General use and (restricted or limited use) pesticide dealers shall maintain sales records showing the list of the names and addresses of all purchasers of plants, plant parts or seeds containing plant-incorporated protectants. These records must be made available to representatives of the Board for inspection at reasonable times, upon request, and must be maintained for two calendar years from the date of sale.

III. Any general use and (restricted or limited use) pesticide dealer who discontinues the sale of plant-incorporated protectants shall notify the Board in writing and shall provide the Board, upon request, with all records required by Section 5(C)II of this chapter.

D. **Grower Requirements**

I. All users of plant-incorporated protectants shall maintain the records listed below for a period of two years from the date of planting. Such records shall be kept current by recording all the required information on the same day the crop is planted. These records shall be maintained at the primary place of business and shall be available for inspection by representatives of the Board at reasonable times, upon request.

a. Site and planting information, including town and field location, a map showing crop location and refuge configuration in relation to adjacent crops within 500 feet that may be susceptible to cross-pollination;

b. Total acres planted with the plant-incorporated protectant and seeding rate;

c. Total acres planted as refuge and seeding rate;

d. Detailed application information on any pesticide applied to the refuge as described in Section 1(A) of Chapter 50, "Record Keeping and Reporting Requirements"; and

e. Planting information for each distinct site including:

i. date and time of planting; and

ii. brand name of the plant-incorporated protectant used.

II. There are no annual reporting requirements for growers.

E. **Product-Specific Requirements**

I. Requirements for plant-incorporated protectant corn containing Bacillus thuringiensis (Bt) protein and the genetic material necessary for its production.

a. Prior to planting plant-incorporated protectant corn containing any Bacillus thuringiensis (Bt) protein and the genetic material necessary for

its production, the grower must have completed a Board-approved training course and possess a valid product-specific training certificate.

b. Product-specific training certificates shall be issued following each Board-approved session. The certificates will remain valid until December 31 of the third year after issuance.

c. Non-Bt-corn growers whose crops are or will be located within 500 feet of a prospective Bt-corn planting site can request that the Bt-corn grower protect the non-Bt-corn crop from pollen drift.

i. the request must be made prior to planting of the Bt-corn crop;

ii. the request must identify the non-Bt-corn crop to be protected; and

iii. the growers may agree on any method for protection but, if an agreement cannot be reached,

1. the Bt-corn grower must plant any refuge required by the Bt-corn grower agreement, grower guide or product label in a configuration that provides maximum protection from pollen drift onto the adjacent non-Bt-corn crop; or

2. if no refuge is required, the Bt-corn grower shall maintain at least a 300-foot Bt-corn-free buffer to non-Bt-corn crops.

d. Bt-corn growers are encouraged to follow all best management practices developed by the Board or the Department of Agriculture, Conservation and Forestry.

II. Dealers distributing Bt-sweet corn shall only sell the seed in quantities large enough to plant one acre or more.

F. **Confidentiality**

Any person providing information to the Board in connection with the record-keeping and reporting requirements of Section 5 of this chapter may designate that information as confidential in accordance with 7 M.R.S.A. §20.

Section 6. NEONICOTINOIDS (DINOTEFURAN, CLOTHIANIDIN, IMIDACLOPRID, OR THIAMETHOXAM)

The registration of pesticides containing dinotefuran, clothianidin, imidacloprid, or thiamethoxam for which there is an outdoor ornamental plant or turf use on the product label shall be subject to the following limitations and conditions.

A. **Definitions**

I. "Invasive Invertebrate Pests" means any invertebrate species, including its eggs or other biological materials capable of propagating that species, that does or is likely to cause economic or environmental harm or harm to human health and meets one or more of the following criteria:

a. federally or state regulated;
b. non-native or not originating from this eco-region;
c. native or non-native vectors of plant diseases;
d. native pests that have become highly destructive due to climate change or ecosystem factors

II. "Ornamental Plants" means shrubs, trees and related vegetation excluding turf and lawn, in and around residences.

B. **Board Publication of Product List**

The Board of Pesticides Control will publish by July 1, 2022 and by March 15th of each year thereafter a list of insecticide products containing dinotefuran, clothianidin, imidacloprid, or thiamethoxam registered in Maine for which the manufacturer has verified that there is an outdoor ornamental plant or turf use on the pesticide label. Based on available information, the Board may exempt from this list pesticides that it determines are not for use in the control of outdoor ornamental plants or turf. Pesticides labeled solely for use in preserving wood, managing indoor pests, managing structural pests within five (5) feet of a human dwelling, and treating pets are specifically exempt from this list.

C. **Licenses Required**

I. No person shall purchase, use, or supervise the use of any pesticides containing dinotefuran, clothianidin, imidacloprid, or thiamethoxam identified on the Board's annual listing unless they have obtained a private or commercial pesticide applicator's license from the Board.

II. Unless exempted under Chapter 41, Section 6 (C) (IV) no person shall purchase, use or supervise the use of any pesticides containing dinotefuran, clothianidin, imidacloprid, or thiamethoxam in outdoor residential landscapes to include ornamental plants and turf.

III. No person shall distribute any pesticides containing dinotefuran, clothianidin, imidacloprid, or thiamethoxam identified on the Board's annual listing without a restricted use pesticide dealer's license from the Board.

IV. Registered pesticides containing dinotefuran, clothianidin, imidacloprid, or thiamethoxam and identified on the Board's annual listing are exempt from the prohibition of use described in Chapter 41, Section 6 (C) (II) where used for management of an invasive invertebrate pest on ornamental plants.

V. No person shall use any pesticides containing dinotefuran, clothianidin, imidacloprid, or thiamethoxam identified on the Board's annual listing for the purposes of managing turf and lawn in outdoor residential landscapes.

D. **Records and Reporting**

Dealers distributing any pesticides containing dinotefuran, clothianidin, imidacloprid or thiamethoxam identified on the Board's annual listing shall keep records of such sales and provide reports to the Board as described for restricted use pesticides in Chapter 50, "Record Keeping and Reporting Requirements."

This section becomes effective January 1, 2023.

Section 7. CHLORPYRIFOS (DURSBAN, LORSBAN)

The registration of chlorpyrifos (Dursban, Lorsban) is subject to the following limitations and conditions.

A. No person shall use or supervise the use of any pesticide containing the active ingredient chlorpyrifos unless they have obtained a private or commercial applicator's license from the Board, possess the pesticide in the State before January 1, 2022, and obtain a temporary use authorization permit from the Board.

B. Permit applications shall be made on such forms as the Board provides and shall include at least the following information:

I. The name, address and telephone number of the applicant;

II. The brand name of the pesticides to be applied;

III. The date on which the pesticides were purchased;

IV. The approximate quantity of the pesticides possessed;

V. The purpose for which the pesticide application(s) will be made; and

VI. The duration for which the applications will take place or until the product is gone.

C. Within 30 days after a complete application is submitted, the Board or its staff shall issue a permit if:

I. The permit application is received prior to December 31, 2022;

II. The applicant possesses a valid pesticide applicator license issued by the State;

III. The pesticides proposed for use were purchased prior to January 1, 2022;

The Board may place conditions on any such permit, and the applicant shall comply with such conditions. Except as required by the permit, the applicant shall undertake the application in accordance with all of the conditions described in their request and all other applicable legal standards. Permits issued by the Board under this section shall not be transferable or assignable except with further written approval of the Board and shall be valid only for the period specified in the permit.

STATUTORY AUTHORITY: 5 M.R.S.A. §§ 8051 *et seq*.
7 M.R.S.A. §§ 601-610
22 M.R.S.A. §§ 1471-A, 1471-B, 1471-C, 1471-D, 1471-M

EFFECTIVE DATE:
March 8, 1981 (Captan)

AMENDED:
May 7, 1981 (Trichlorfon)
January 2, 1984 (Aldicarb)
May 8, 1988 (Trichlorfon)
August 5, 1990 (Captan)
August 17, 1996 (Hexazinone)
October 2, 1996

EFFECTIVE DATE (ELECTRONIC CONVERSION):
March 1, 1997

AMENDED:
May 7, 1997 - Section 3(B)(II)

CONVERTED TO MS WORD:
March 11, 2003

AMENDED:
May 12, 2003 - Section 4 added

NON-SUBSTANTIVE CORRECTIONS:
June 24, 2003 - summary only

AMENDED:
February 2, 2004 - Section 4, 1st paragraph and sub-section A, filing 2004-31
April 30, 2007 – filing 2007-154
February 3, 2008 – filing 2008-36
July 16, 2009 – filing 2009-253 (final adoption, major substantive)
May 3, 2012 – filing 2012-99 (final adoption, major substantive)

CORRECTIONS:
February, 2014 – agency names, formatting

AMENDED:
December 9, 2014 – Section 3, filing 2014-283

Proposed Administrative Consent Agreement
Background Summary

Subject: Green Shield Pest Solutions
5 Caroline Way
Saco, Maine 04072

Date of Incident(s): June 9, 2021

Background Narrative: The owner of Green Shield Pest Solutions self-reported a misplaced pesticide application by one of their applicators. Brian Nash applied Tempo 1% Dust insecticide to exterior windows, trim, and eaves, and Taurus SC Termiticide/Insecticide as an exterior band application around the house foundation to a home at 26 Harold Ave. in Biddeford on June 9, 2021. The owners of this residence were not company customers. The intended property was 22 Harold Ave. in Biddeford.

Summary of Violation(s): CMR 01-026 Chapter 20 Section 6(D)2 No person may apply a pesticide to a property of another unless prior authorization for the pesticide application has been obtained from the owner, manager, or legal occupant of that property.

CMR 01-026 Chapter 20 Section 7 Commercial applicators making outdoor treatments to residential properties must implement a system, based on Board approved methods, to positively identify the property of their customers. The Board shall adopt a policy listing approved methods of positive identification of the proper treatment site.

Rationale for Settlement: Green Shield Pest Solutions did not have the property owners' authorization to apply a pesticide to their property and did not take the necessary steps to confirm the correct address.

Attachments: Proposed Consent Agreement

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY
BOARD OF PESTICIDES CONTROL

In the Matter of:		ADMINISTRATIVE CONSENT
Green Shield Pest Solutions	)	AGREEMENT
5 Caroline Way	)	AND
Saco, Maine 04072	)	FINDINGS OF FACT

This Agreement by and between Green Shield Pest Solutions (hereinafter called the "Company") and the State of Maine Board of Pesticides Control (hereinafter called the "Board") is entered into pursuant to 22 M.R.S. §1471-M (2)(D) and in accordance with the Enforcement Protocol amended by the Board on December 13, 2013.

The parties to this Agreement agree as follows:

1. That the Company provides commercial pest control services and has the firm license number SCF 2569 issued by the Board pursuant to 22 M.R.S. § 1471-D (1)(B).

2. That the Company operations manager/co-owner Gregory England, called the Board's office to report one of the Company's licensed applicators made a pesticide application to the wrong property in Biddeford on June 9, 2021.

3. That in response to the call described in paragraph two, a Board inspector met with Company licensed applicator, Brian Nash, and the Company owner on June 25, 2021 to conduct a follow up inspection. Nash also completed a written statement about the misapplication at that time.

4. That from the inspection described in paragraph three, the inspector documented that Nash applied Tempo 1% Dust insecticide to exterior windows, trim, and eaves, and Taurus SC Termiticide/Insecticide as an exterior band application around the house foundation of Crystal Matteau's home at 26 Harold Ave. in Biddeford on June 9, 2021. The owner of this property was not a Company customer. The intended property was Susan Loring's residence at 22 Harold Ave. in Biddeford.

5. That from the inspection with Nash described in paragraphs three and four, and also in his written statement, Nash reported that the work order he was given to make the application had a typographical error for the address. The address on the work order, 26 Harold Avenue, should have been 22 Harold Avenue.

6. That CMR 01-026 Chapter 20 Section 6(D)2 requires prior consent from the property owner before another person can apply pesticides to the property.

7. That the Company did not have the homeowner's authorization to make a pesticide application at 26 Harold Ave. in Biddeford

8. That the circumstances described in paragraphs one through seven constitute a violation of CMR 01-026 Chapter 20 Section 6(D)2.

9. That CMR 01-026 Chapter 20 Section 7 requires Commercial applicators making outdoor treatments to residential properties to implement a system, based on Board approved methods, to positively identify the property of their customers.

10. That the Company's original work order, as described in paragraph five, was reviewed to see if the Company used a Board approved method to positively identify Susan Loring's residence at 22 Harold Avenue in

Biddeford on June 9, 2021 before making the pesticide application. The review determined that the Company had not.

11. That on June 14, 2021 Board staff called England to discuss the misplaced pesticide application and ask about the Company's system to positively identify customer properties. England explained that Company applicators knock on customers' doors and talk to the customers to confirm the application before making the application. This is not a Board approved method and it led to confusion resulting in the June 9, 2021 misapplication. In this instance the applicator initially talked to the daughter of the homeowner when she answered the door who then called to her father to come to the door. The applicator then talked to the father. The father, who had a contract with TruGreen, thought the applicator was with TruGreen.

12. That the circumstances described in paragraphs one through five and nine through eleven constitute a violation of CMR 01-026 Chapter 20 Section 7.

13. That the Company expressly waives:
    A. Notice of or opportunity for hearing;

    B. Any and all further procedural steps before the Board; and

    C. The making of any further findings of fact before the Board.

14. That this Agreement shall not become effective unless and until the Board accepts it.

That in consideration for the release by the Board of the cause of action which the Board has against the Company resulting from the violation referred to in paragraphs eight and twelve and the Company agrees to pay a penalty to the State of Maine in the sum of $1,000.00. (Please make checks payable to Treasurer, State of Maine).

IN WITNESS WHEREOF, the parties have executed this Agreement of two pages.

GREEN SHIELD PEST SOLUTIONS

By: _____ Date: 2/2/2022

Type or Print Name: Gregory D. England

BOARD OF PESTICIDES CONTROL

By: _____ Date: _____
Megan Patterson, Director

APPROVED:
By: _____ Date: _____
Mark Randlett, Assistant Attorney General

III. Proposed Water Quality Monitoring Effort for 2022 in Response to Directive I B of the EO

The goal of this study is to understand the potential effects of aerially applied herbicides following their use in managed blocks of Maine's softwood stands. This is a difficult assessment because of the multitude of inputs and various landscapes that determine the answer. This study will not answer the question of whether or not there are effects. The scope of this study focuses solely on the presence/absence of pesticide active ingredients in the environment. Stream health is best measured by looking at the entire ecosystem and by measuring changes in algae, plants, microorganisms, macroinvertebrates, and larger aquatic organisms, which is a major undertaking when done correctly. Instead of measuring stream health, this study is intended to measure to what degree pesticide active ingredients occur in nearby streams. The detection (and concentration) of pesticides is an indication of the potential of effects from aerial herbicide practices.

This overall study design focuses on determining the amount of pesticide reaching the nearest stream immediately after the spray event to assess drift and assess run-off from the treated area by sampling the nearby stream over a longer period of time. This study is simple in design but challenging logistically due to the remoteness of the locations and the rapidly changing spray plans which are controlled more by weather than the calendar.

This study is to be conducted in cooperation with timber companies during their regularly planned fall site prep and conifer release spray programs. From their proposed treatment blocks, BPC staff will select study sites. Selection criteria focus on isolating treatment plots co-located to streams but separated away from other treated spray blocks. The study sites will need to be accessible by BPC staff for the deployment, sample collection, and maintenance of autosamplers. Remote actuated autosampling devices will allow staff the flexibility to collect samples on the continuously shifting schedule set by the cooperating timber companies. State regulations stipulate a 25-foot minimum distance. However, timber industry representatives indicate we will not be able to locate sprays that close to streams. Timber industry best management practices typically stipulate greater distances. All efforts will be made to identify the streams closest to spray blocks for sampling. In addition to pesticide regulations, forestry best management practices have formulae in relation to shoreline zoning that prescribes how many and how close to a stream trees can be removed. The goal of study site selection will be to choose streams as close to the treated area as possible, with the recognition that there will be a gradient of distances.

Research question:

Are herbicides used in aerial forestry programs reaching forest streams?

Sample size:

TREATMENT: 20 spray block locations
(Includes 20 close site and 20 distant site samples)
CONTROL: 10 no-spray block locations
(Includes 10 close site and 10 distant site samples)

Timing:

Pre-spray sampling: In summer (May-July 2022), sampling locations will be identified, autosamplers emplaced, and a full suite of samples collected. Sampling begins immediately following emplacement, and samplers will collect a sample (as composite) each hour for 24 hours.

Post-spray sampling: In late-summer and fall (September-October 2022) two post-spray samples will be collected in a manner consistent with the sampling frequency set by the pre-spray sampling. Samples will be collected immediately following the spray event to assess spray drift. Samples will also be collected to capture the runoff from the site during the first rain event following the spray.

Post spray sampling schedule:

Close sites:

Day of spray (Drift)- At each location, a section of stream closest to the treatment block will be sampled over a 24 hour period following (sampling begins within 15 minutes following the aerial spraying for the post-spray sampling). Composite autosampling will sample the water every hour for 24 hours, combining each sample into a single container. This sampling approach reduces the cost of the analysis (by reducing the number of analytical samples from 24 to one) yet preserves the ability to identify the average concentration entering the water over the 24 hour period.

First rain event following spray (Runoff)- Using the same location as the day-of-spray sampling location, the stream will be sampled over a 24 hour period following the first rain event (within an hour following the start of the rain). Composite autosampling will sample the water every hour for 24 hours, combining each sample into a single container.

Distant sites:

Day of spray (Drift)- At each location, a section of stream downstream from the treatment block will be sampled over a 24 hour period following (within 15 minutes of the aerial spraying for the post-spray sampling). Composite autosampling will sample the water every hour for 24 hours, combining each sample into a single container. Topographical maps will dictate the location of the autosampler. Maps will be assessed to find the stream location likely to receive all of the runoff from the location.

First rain event following spray (Runoff)- Using the same location as the day-of-spray sampling location, the stream will be sampled over a 24 hour period following the first rain event (within an hour following the start of the rain). Composite autosampling will sample the water every hour for 24 hours, combining each sample into a single container. Topographical maps will dictate the location of the autosampler. Maps will be assessed to find the stream location likely to receive all of the runoff from the location.

Equipment choice:

Remote actuated compositing autosamplers will be rented to complete this study. Composite sampling allows sampling to occur over a range of times which is essential to

capture the variation created by topography at each site. Each sample is of equal volume such that at the end of the sample period, the pesticide concentration in the water can be divided by 24, and an hourly average pesticide concentration can be derived. Literature reviews indicate that immediately following application, and during the first rain event, are the two most likely times to detect herbicides following aerial applications. Pesticide concentrations in nearby streams tend to fall below detection levels quickly after the application (within the day) except for rainfall events when they are transiently detected again.

The remote actuating aspect of the samplers is critical to be able to keep up with the helicopter and weather schedules. Flight plans are ever-changing based on weather. This feature additionally comes into play to ensure the first-flush rainfall is captured. In both of these scenarios, BPC staff will set up the autosamplers according to when the anticipated treatments are planned to happen. Should plans change, staff will not have wasted time and effort reaching the location; the autosampler can simply wait in place for the spray event. The spray events happen in a very compressed calendar schedule, so the autosampler is not likely to wait very long. To capture the first rain event, autosamplers will be set up to receive samples as soon as the spray event samples have been collected, and they will remain until rainfall.

Chemical analyses:

Consistent with BPC practice, the collected samples will be transported, on ice, to the office and stored at 4°C until ready to ship. Samples are packed on ice and shipped to the Montana Agricultural Laboratory for analysis. The water samples are processed through a pesticide analysis panel that can identify up to 102 unique analytes (roughly 80 parent compounds plus their degradation products).