

THE COMMONWEALTH OF MASSACHUSETTS

EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS



Department of Agricultural Resources

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TO: Senate and House Clerks
Joint Committee on Natural Resources and the Environment
FROM: Taryn LaScola, Director of Crop and Pest Services
DATE: August 13, 2024
REGARDING: End of Year Report

INTRODUCTION

The Massachusetts Department Agricultural Resources (“MDAR”) is the lead state agency for pesticide oversight and regulation in the Commonwealth under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) as well as the Massachusetts Pesticide Control Act ([M.G.L. c. 132B](#)) (“Act”) and its regulations promulgated at [333 CMR](#) (“Regulations”). Pursuant to M.G.L. c. 132B, Section 5A, MDAR is required to submit an annual report to Clerks of the Senate and the House of Representatives and the Joint Committee on Natural Resources and Agriculture describing the efforts taken and the progress made toward reducing pesticide use. This document serves as that report for the federal fiscal year 2023, October 1, 2022, through September 30, 2023

The Pesticide Program, which falls under the Division of Crop and Pest Services within MDAR, carries out the day-to-day responsibilities of regulating pesticides in the Commonwealth, including the licensing of pesticide applicators, the registration of pesticide products, and the enforcement of the Act and Regulations. In addition, the Pesticide Program carries out other pesticide related activities in support of the regulatory mandate, such as education, outreach, and water monitoring. The Pesticide Program also acts as support staff for the Pesticide Board, Pesticide Board Subcommittee, Pesticide Applicator Advisory Council, and Conservationist Advisory Council.

While MDAR enforces the Act and Regulations, the following bodies are established in statute and regulation to support its work:

- **Pesticide Board (“Board”)**: A 13-member board made up of state agencies and members of the public. The Board’s role is to advise MDAR on the implementation of the Act and Regulations. It is also the authority on approving any regulatory change. *See*, M.G.L. c. 132B, Section 3.
- **Pesticide Board Subcommittee (“Subcommittee”)**: A five-member board that is made up of state agencies and members of the public. The Subcommittee registers products for use in the state. *See*, M.G.L. c. 132B, Section 3A.
- **Pesticide Applicator Advisory Council**: A five-member body established by the Board and comprised of individuals in the pesticide industry. Its role is to advise the Board relative to the development of policy or the adoption, amendment, or repeal of regulation. *See*, 333 CMR 4.00.
- **Conservationist Advisory Council**: A five-member body established by the Board and comprised of individuals who are experienced in the conservation and protection of the environment. Its role is to advise the Board relative to the development of policy or the adoption, amendment, or repeal of regulation. *See*, 333 CMR 4.00.

Each year, MDAR staff must prioritize where MDAR’s efforts should be made. Considerations taken when prioritizing include, but are not limited to, the following:

- Resources (staff and funds);
- Federal responsibilities;
- Legislative mandates (state and federal);
- Changes in regulation;
- Enforcement trends;
- Complaints (which take precedent over routine inspections); and
- Stakeholder/public requests and needs.

INTEGRATED PEST MANAGEMENT AND THE REDUCTION OF PESTICIDE USE

Integrated Pest Management

Integrated Pest Management (“IPM”) is defined at 333 CMR 14.02 as “A comprehensive strategy of pest control whose major objective is to achieve desired levels of pest control in an environmentally responsible manner by combining multiple pest control measures to reduce the need for reliance on chemical pesticides; more specifically, a combination of pest controls which addresses conditions that support pests and may include, but not be limited to, the use of monitoring techniques to determine immediate and ongoing need for pest control, increased sanitation, physical barrier methods, the use of natural pest enemies and a judicious use of lowest risk pesticides when necessary.” IPM is a “common sense” approach to pest management and is implemented through the following steps:

1. Identifying the pest;
2. Determining the threshold for the pest, which will be dependent on a number of variables;
3. Identifying the reason/cause for the pest;
4. Controlling the pest using the best tools available for the situation such as mechanical, cultural, chemical controls; and
5. Eliminating or reducing the reason/cause for the pest.

IPM is a strategy that pest management professionals are familiar with and are constantly trained on. In order for an individual to maintain a license, they must receive continuing education units (“credits”). While trainings may not be specific IPM as a whole, it is important to note that most trainings include IPM elements as listed above. For examples, trainings approved for credits include but are not limited to:

- Pest Identification and history;
- Pest management strategies (which include mechanical, cultural, chemical controls);
- Laws and regulations;
- Best management practices; and
- Pesticide safety.

MDAR conducted a survey (See Attachment A) among 110 entities that have historically offered pesticide type trainings to licensed applicators. The survey asked whether IPM or elements of IPM were provided in trainings. Thirty-nine (39) entities responded with just one of the entities reporting they do not provide trainings. The survey found the following:

TOPIC	NUMBER OF ENTITIES THAT HAVE PROVIDED TRAININGS
Integrated Pest Management (as a whole)	38
Best Management Practices	33
Mechanical Controls	31
Pest Identification	36
Pesticide Laws and Regulations	34
Pesticide Safety (Environment and Health)	36
Proper Use of Pesticides	34

Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc)	29
Cultural Controls	27
Pest Trapping/Monitoring	27
Pest Management Strategies	32
Pest Forecasting Tools	12
Pest Thresholds	21

Reduction in Pesticide Use

MDAR requires that all licensed applicators submit an Annual Pesticide Use report. This report is an overall summary of what products a company uses. While it could be used to examine pesticide use in the state, it is important to remember that it does not capture homeowner use or any applications that do not require a license and therefore it is difficult to determine how much pesticide is being used in the state from year to year.

Referencing the steps of IPM, there are many elements that factor into whether or not someone chooses to use a pesticide.

It is important to understand that pest pressures and environments constantly change and therefore the reaction to the pest pressure will also change. Climate, individual habits, historical management practices, requirements from other regulatory agencies, and infrastructure changes are just a few things that may affect pest pressure.

Additionally, pests and their pressure differ from county to county, town to town and address to address. For example:

- Mosquito populations and the threat of arborvirus change from year to year and therefore the management practices will change. In a year where there are high levels of arborvirus more pesticides may be used to manage them versus in years when the threat of arborvirus is low. Additionally, the mosquitoes that carry arborvirus are typically found in one part of the state. If arborvirus is found in a different part of the state that area may now have increased their pesticide use versus an area that does not harbor mosquitoes that carry arborvirus.
- There are often town by-laws that put a zero-tolerance or extremely low threshold on pest pressure (ie: low pest threshold) and then require specific types of pest management for a restaurant to stay in business. New restaurants opening or existing ones closing may affect the amount of pesticides used in that town/area/property based on the number of establishments that have these requirements.
- A pest that was not previously “established” may become established in an area. Pesticides may be used to control that pest to attempt to contain or control the pest, which may lead to an increase in pesticide use. If the pest is eradicated, then the use is reduced.

In order for MDAR to accurately determine if pesticide use has increased or decreased from year to year, it would require statute/regulatory change to allow for additional tracking of sales and use. Significant additional resources, research, and analysis would be required to gather such data.

COMPLIANCE AND ENFORCEMENT

Enforcement Program

The enforcement program is charged with ensuring that the use, which includes but is not limited to, the application of pesticides, is performed within the confines of the Act and regulations as well as FIFRA. In the federal Fiscal Year of 2023, MDAR had the following staff in the enforcement program:

- Pesticide Inspector (4)
- Rights of Way Inspector (1)
- Chief Inspector (1)

Inspectors conduct inspections that include, but are not limited to:

- Record inspections;
- Worker Protection Standard inspections;
- Marketplace inspections;
- Producer Establishment inspections;
- School inspections;
- Use observations;
- Rights of Way inspections;
- Investigations;
- License checks; and
- Dealer inspections.

If violations are found, enforcement actions are issued. Enforcement actions include, but are not limited to:

- Letter of Warning;
- Administrative Order;
- Notice of Assessments (fine);
- License Revocation; and
- License Suspension.

Inspections Completed

MDAR continued to monitor pesticide use, storage, sales, and labeling throughout the Commonwealth. Overall, a total of 252 pesticide inspections/investigations covering a wide range of pesticide use in the Commonwealth were completed in FY23 (See Tables 1 and 2).

Table 1. FY23 Inspections Completed

Inspection Type	Inspections Completed	Physical Samples Collected	Documentary Samples Collected
Agricultural Use	18		3
*WPS Tier I	12		
*WPS Tier II	1		
Agricultural Use Follow-up	14	52	
Non-Ag Use	66	18	
Non-Ag Use Follow-up	36	40	1
Experimental Use			
Producer Establishment	3		3
Marketplace	77		
Import			
Export			
Applicator Records	40		
Restricted Use Pesticide Dealer	6		
Total	260	110	4

* Worker Protection Standard (“WPS”) inspections are reported as a subset of Agricultural Use Inspections.

Table 2. FY23 Enforcement Actions

Inspection Type	Warning Letter	Fine	Licensing Action	Criminal Action	Admin. Hearings	Referrals to EPA	Other
Agricultural Use	3						
Agricultural Use Follow-up	3						7*
Non-Ag Use	5						
Non-Ag Use Follow-up	26		1			1	2*
Experimental Use							
Producer Establishment							
Marketplace	5						
Import							
Export							
Applicator Records	1						
Restricted Use Pesticide Dealer							
Total	44	0	1	0	0	1	9*

*Denotes an Administrative Order

Compliance Verification was documented by three methods:

1. First, a re-inspection of the violating firm occurs within time constraints set forth in the specific Letter of Warning or Administrative Order issued.
2. Next, the Pesticide Program sends a written document describing any and all documented violations to a firm which has been found to be out of compliance. This document contains a statement that describes how and when compliance was attained and is signed by the respondent and notarized.
3. Finally, the receipt of payment for case assessed fines. There were six case assessed fines during FY23.

Rights of Way (ROW) Program

333 CMR 11.00 provides requirements relative to applications of herbicides to manage ROW. It requires that Vegetation Management Plans (“VMP”) and Yearly Operational Plans (“YOP”) be developed and submitted to MDAR for review and approval. The ROW Program received forty-one (41) Yearly Operational Plans (“YOP”). YOPs consist of the product name(s), rates and use amounts of pesticides to be applied along a specific Right of Way. It also identifies the individual areas to be applied to, and as applicable, the identification of “sensitive areas” (as defined in 333 CMR 11.00) where limits or prohibitions in application practices are warranted. The plans are reviewed and if needed, comments and/or edits are made by the ROW Coordinator. This process closed with the acceptance of 40 finalized YOPs.

Vegetation Management Plans (“VMP”) provide a comprehensive overview of vegetation control for a given Right of Way. VMPs describe potential methods of vegetation control which may include the following: herbicides; mechanical and biological methods; or a combination of the three. Integrated Pest Management (“IPM”) and—in the case of ROWs—IVM (Integrated Vegetation Management) play a prominent role in the MDAR ROW Program. As such, the IPM-IVM approach for the specific ROW is outlined in the VMP and the YOP. The VMPs are valid for five years, and then the plan process must start over again. A proposed VMP is part of the public record for the Commonwealth, and comments are sought in written format as well as at public hearings held in areas traversed by the Right of Way.

For FY23, five (5) VMPs were reviewed by the ROW Advisory Panel and MDAR staff and approved by the Commissioner in accordance with 333 CMR 11.00.

Pesticides and Bees/Pollinators

The Pesticide Inspectors work closely with State Apiary Inspectors when following up on allegations of pesticide related bee kills. The Apiary program will vet the call first to determine if a pesticide may be the cause of the issue. If they believe it is, then they will reach out to the Pesticide Inspectors and begin following up on the complaint together.

The Apiary Program received 18 alleged pesticide complaints. After initial vetting, two were followed up on. Samples taken of adult bees revealed that one bee kill was likely caused by the combination of pyrethrin pesticides, bacteria, and viruses. The source of the pesticide was not able to be determined. The other complaint did not have any pesticides detected in the sample and suspected to be due to a fungal pathogen found in the sample.

PRODUCT REGISTRATION AND PESTICIDE LICENSING

Pesticide Product Registration

Any person who has obtained a pesticide product registration from the EPA must then apply for a registration with MDAR. The registrant, or an agent acting on behalf of the registrant, is required to submit an "Application for New Pesticide Registration," a Material Safety Data Sheet ("MSDS"), and a product label. New products are usually registered by the Subcommittee on a monthly basis. Every product label is thoroughly reviewed for compliance with state and federal laws and then brought to the Subcommittee for consideration. Accepted products are categorized in three ways:

- State Restricted Use Pesticide ("SRUP") classification: A Federal General Use pesticide product registered by the Commonwealth may be classified as either general use or reclassified as State Restricted Use based upon its use pattern or the potential to become a groundwater contaminant.
- Special Local Needs ("SLN") registration: When a particular agricultural problem exists that can only be mitigated through the use of a pesticide that is not federally registered for that specific purpose, a Special Local Need registration may be issued by the state under Section 24c of FIFRA.
- Experimental Use Permits ("EUP"): EUPs are required to control potential hazards of pesticide experimentation under outdoor, greenhouse, and domestic animal trial conditions. To obtain such a permit, a state application must be filed with the Subcommittee along with a product label, and a copy of the EPA EUP.

During FY23 there were 602 new products registered, with eight of those containing new active ingredients.

Groundwater

As part of its pesticide registration process the Department has an ongoing program to assess the potential of pesticides to impact groundwater. Pesticides, which are considered to potentially impact water resources, are restricted. The use of these chemicals in recharge areas to public water supplies is greatly limited. During FY23, MDAR staff conducted groundwater exposure assessments for five new active ingredients (NAIs) that were registered by the MA Pesticide Board Subcommittee.

The evaluation of new active ingredients and re-evaluation of registered active ingredients includes the assessment of their potential to cause groundwater contamination based on criteria for "Toxicological Concern" and "Leaching Potential" as defined in MA regulations 333 CMR 12.02. None of these new active ingredients were classified as a "potential groundwater contaminant."

Pesticide Licensing

If an individual is going to use a pesticide on property that is not their own, a Massachusetts Pesticide License is required. MDAR offers the following applicator licenses:

- Commercial Applicator License allows the holder to:
 - Apply a general use pesticide.
 - Apply a restricted use pesticide under the direct supervision of an individual with the appropriate Commercial Certification.
- Commercial Certification License allows the holder to:
 - Apply general and restricted use pesticides.
 - Supervise the use of a SRUP.

In order to obtain a pesticide license from MDAR, an individual must take and pass an exam, provide proof of insurance, renew every year, and obtain CEUs within a three-year period.

MDAR provided 2,590 exams in FY23. 1,768 individuals received passing scores and were offered the opportunity to apply for a license or certification issued by the Department. Overall, during FY23, there were approximately 9,500 licensed applicators in the state.

MDAR continues to update the licensing regulations in 333 CMR 10.00 in order to comply with the Federal Certification and Training Rule set forth in FIFRA. MDAR also is updating the Dealer regulation at 333 CMR 9.00 and the Protection of Children and Families (i.e., school) regulation at 333 CMR 14.00).

EDUCATION AND OUTREACH

While continuing education is part of the requirement for an individual to hold and maintain their pesticide license, MDAR does not provide the education. Outside entities such as educational institutions and industry stakeholders provide trainings that offer the Continuing Education Units (“CEU”). For a training to qualify for a CEU, the training provider must fill out a form and request approval. The training is reviewed by MDAR staff to ensure that it meets the requirements set forth in 333 CMR 10. These trainings are audited by staff to ensure that the training information that was submitted was the training that is provided.

For FY 23 there were approximately 685 programs approved for Massachusetts Pesticide Applicator Continuing Education (PACE) Credit Hours. This includes:

- 298 “on-demand” PACE trainings approved and/or re-approved.
- 387 “livestreaming, Virtual or Traditional Classroom” PACE trainings approved.

Many times, the entities providing the training will contact MDAR staff to present on various items such as laws/regulation, pollinator concerns, and chemistry/toxicology etc. When this occurs, MDAR takes every measure to ensure that an individual from our team is able to present.

ITEMS OF NOTE

Glyphosate Monitoring Study: Pesticide Program staff have been conducting a monitoring study of glyphosate and its primary metabolite, aminomethylphosphonic acid (AMPA), in drinking water sources throughout the state. Twenty-seven municipalities and water districts across the Commonwealth opted to participate. This study was undertaken as part of an ongoing Individual Review of glyphosate by the Massachusetts Pesticide Board Subcommittee that was initiated in February of 2020. The objective of this study was to determine if measurable glyphosate residues occur in public water supplies in the Commonwealth. Staff worked with public water suppliers in several different municipalities across the Commonwealth in areas where glyphosate use is expected. Monitoring consisted of collecting raw water, prior to treatment, from one public water supply well in each of the participating towns. Sites were sampled either monthly or quarterly, depending on municipality preference.

Where a community had multiple wells, the sampling site was selected based on consideration of groundwater flow proximity to managed landscapes, rights-of-way powerline and transit corridors, and surface water bodies unless a community had a compelling interest in a particular site. Sampling commenced in November 2022 and continued through the fall of 2023. This monitoring period began at the end of an historically dry growing season in 2022, followed by an unusually wet year throughout much of the state. The initial objective was to collect samples for one year and then evaluate if additional sample collection should be considered.

Summary of results for samples collected during FY23:

- November 2022 - September 2023: No glyphosate or AMPA was detected in any raw water samples at the analytical detection limit of 0.1 µg/L (ppb).

Digitizing the Annual Pesticide Use and Sales Report: Annual use and sales reports have historically been submitted via hard copy to MDAR. This makes it difficult to collate the data and to provide information that may be related to a public records request. In May of 2022, MDAR launched an online annual use report, where applicators/dealers go online and enter in their use information. This makes it much easier to review data and to provide information for public records requests.

Transparency Online: In FY23, MDAR improved its pesticide program website to make the Annual Use Report and certain enforcements actions public.

EPA State Plan Approval: In 2017, the certification and training of pesticide applicators section of FIFRA (“Certification and Training Rule”) was updated. As part of the updates, state lead agencies were required to update their EPA State Plan which outlines how the state is in compliance with FIFRA. MDAR submitted its updated plan in 2020 and it was approved by EPA in 2023.

CONCLUSION

MDAR has made every effort to meet its charge with ensuring compliance with the Act and Regulations and will continue to prioritize its efforts and focuses based on the resources it has, the mandates it must enforce through state authority, and the direction from EPA. At times, funding availability, staff capacity, and other challenges are limiting factors for the program, given its broad responsibility for both state and federal law oversight and enforcement throughout the Commonwealth.

Attachment A

Please select the types of individuals that your organization serves.	Does your organization offer classes/trainings about pests or pesticide related topics?	Have you provided classes/trainings that describe what Integrated Pest Management is?	Do you provide classes/trainings that discuss any of the following topics?	How many of these types of classes/trainings do you provide within a year?	Do you typically provide any of the following to participants?	How do you provide your trainings?	Is there anything else that you would like to add?
City/Town Employees Homeowners/General Public Landscapers Mosquito Control Structural Pest Control Operators Tree/Shrub Applicators Interior Pest Control	Yes	Yes	Best Management Practices Mechanical Control Measures Pest Identification Pesticide Laws and Regulations Pesticide Safety (Environmental/Public Health) Proper Use of Pesticides Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Cultural Control Measures	2 to 4	Access to PowerPoint Slides from presentation Print Materials	In-Person	NO- I think IPM is an extremely important topic to cover as well as Best Application practices
Structural Pest Control Operators Mosquito Control Homeowners/General Public	Yes	Yes	Best Management Practices Pest Identification Pest Management Strategies Pesticide Laws and Regulations Pesticide Safety (Environmental/Public Health)	5 to 9	None apply	Live Stream Online Training;	none
Agriculture (ie: nurseries, orchards, vegetables, fruit, etc) Cranberry Growers	Yes	Yes	Best Management Practices Cultural Control Measures Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Pest Thresholds These items are taught with Bogs Online	2 to 4	Access to Online Repository of Materials Links to Online Sources Items above are housed within Bogs Online;	In-Person Live Stream Online Training	Bogs Online creates and generates State Pesticide Reports, would it be possible for future development to allow BOL to export data into the State Pesticide Portal?

Please select the types of individuals that your organization serves.	Does your organization offer classes/trainings about pests or pesticide related topics?	Have you provided classes/trainings that describe what Integrated Pest Management is?	Do you provide classes/trainings that discuss any of the following topics?	How many of these types of classes/trainings do you provide within a year?	Do you typically provide any of the following to participants?	How do you provide your trainings?	Is there anything else that you would like to add?
Agriculture (ie: nurseries, orchards, vegetables, fruit, etc) City/Town employees Landscapers Homeowners/General Public Master Gardeners/Garden Clubs Mosquito Control Tree/Shrub Applicators	Yes	No	Best Management Practices Cultural Control Measures Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Thresholds Proper Use of Pesticides	1	Access to PowerPoint Slides from presentation Links to Online Sources Print Materials	In-Person	no
Mosquito Control Structural Pest Control Operators Landscapers	Yes	Yes	Best Management Practices Cultural Control Measures Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Mechanical Control Measures Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Pest Thresholds Proper Use of Pesticides	10 or more	Access to Online Repository of Materials Timed training videos with a 20 question quiz;	On Demand Online Training	No

Please select the types of individuals that your organization serves.	Does your organization offer classes/trainings about pests or pesticide related topics?	Have you provided classes/trainings that describe what Integrated Pest Management is?	Do you provide classes/trainings that discuss any of the following topics?	How many of these types of classes/trainings do you provide within a year?	Do you typically provide any of the following to participants?	How do you provide your trainings?	Is there anything else that you would like to add?
City/Town employee Landscapers Tree/Shrub Applicators	Yes	Yes	Best Management Practices Cultural Control Measures Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Mechanical Control Measures Pest Forecasting Tools Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Pest Thresholds Proper Use of Pesticides	5 to 9	Access to PowerPoint Slides from presentation Links to Online Sources Print Materials Access to Online Repository of Materials	In-Person Live Stream Online Training On Demand Online Training	We train on finding the root cause of pest issues not just responding to their presence.
Structural Pest Control Operators Mosquito Control Homeowners/General Public	Yes	Yes	Best Management Practices Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.); Cultural Control Measures Mechanical Control Measures Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Proper Use of Pesticides	10 or more	Print Materials	In-Person Live Stream Online Training On Demand Online Training	N/A

Please select the types of individuals that your organization serves.	Does your organization offer classes/trainings about pests or pesticide related topics?	Have you provided classes/trainings that describe what Integrated Pest Management is?	Do you provide classes/trainings that discuss any of the following topics?	How many of these types of classes/trainings do you provide within a year?	Do you typically provide any of the following to participants?	How do you provide your trainings?	Is there anything else that you would like to add?
Homeowners/General Public Mosquito Control Structural Pest Control Operators	Yes	Yes	Best Management Practices Cultural Control Measures Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Mechanical Control Measures Pest Forecasting Tools Pest Identification Pest Management Strategies Pesticide Laws and Regulations Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Proper Use of Pesticides Pest Thresholds	10 or more	Access to Online Repository of Materials Access to PowerPoint Slides from presentation Links to Online Sources; Print Materials	In-Person On Demand Online Training	No
Agriculture (ie: nurseries, orchards, vegetables, fruit, etc) Homeowners/General Public Structural Pest Control Operators Fumigation	No						

Please select the types of individuals that your organization serves.	Does your organization offer classes/trainings about pests or pesticide related topics?	Have you provided classes/trainings that describe what Integrated Pest Management is?	Do you provide classes/trainings that discuss any of the following topics?	How many of these types of classes/trainings do you provide within a year?	Do you typically provide any of the following to participants?	How do you provide your trainings?	Is there anything else that you would like to add?
Landscapers City/Town employees Homeowners/General Public Golf Course Superintendents	Yes	Yes	Best Management Practices Cultural Control Measures Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Mechanical Control Measure Pest Forecasting Tools Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Pest Thresholds Proper Use of Pesticides	2 to 4	Access to PowerPoint Slides from presentation Print Materials	In-Person	I do think Taryn's presentation she made at the MALCP meeting could be given to the golf course superintendents.
Agriculture (ie: nurseries, orchards, vegetables, fruit, etc) City/Town employees Homeowners/General Public; Landscapers Master Gardeners/Garden Clubs Mosquito Control Structural Pest Control Operators Tree/Shrub Applicators;	Yes	Yes	Best Management Practices Cultural Control Measures Mechanical Control Measures Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Proper Use of Pesticides	10 or more	Links to Online Sources	On Demand Online Training	None

Please select the types of individuals that your organization serves.	Does your organization offer classes/trainings about pests or pesticide related topics?	Have you provided classes/trainings that describe what Integrated Pest Management is?	Do you provide classes/trainings that discuss any of the following topics?	How many of these types of classes/trainings do you provide within a year?	Do you typically provide any of the following to participants?	How do you provide your trainings?	Is there anything else that you would like to add?
Agriculture (ie: nurseries, orchards, vegetables, fruit, etc)	Yes	Yes	Best Management Practices Cultural Control Measures Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Mechanical Control Measure Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Pest Thresholds Proper Use of Pesticides	1	Access to PowerPoint Slides from presentation	In-Person Live Stream Online Training	no
Homeowners/General Public;	Yes	Yes	Best Management Practices Cultural Control Measures Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Mechanical Control Measures Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring; Proper Use of Pesticides	2 to 4	Access to PowerPoint Slides from presentation ;Print Materials;	In-Person ;Live Stream Online Training;	no

Please select the types of individuals that your organization serves.	Does your organization offer classes/trainings about pests or pesticide related topics?	Have you provided classes/trainings that describe what Integrated Pest Management is?	Do you provide classes/trainings that discuss any of the following topics?	How many of these types of classes/trainings do you provide within a year?	Do you typically provide any of the following to participants?	How do you provide your trainings?	Is there anything else that you would like to add?
<p>City/Town employees Mosquito Control Structural Pest Control Operators Tree/Shrub Applicators Landscapers Agriculture (ie: nurseries, orchards, vegetables, fruit, etc);</p>	<p>Yes</p>	<p>Yes</p>	<p>Best Management Practices Mechanical Control Measures Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Pest Thresholds Proper Use of Pesticides</p>	<p>10 or more</p>	<p>Access to Online Repository of Materials Access to PowerPoint Slides from presentation Links to Online Sources</p>	<p>Live Stream Online Training</p>	<p>I started the webinar program in March 2020 immediately as the pandemic hit to replace meetings that could not take place. The program I created and manage for FMC is called 1st Friday Webinars - we do two on the first Friday of each month, pest at 10:30 am and lawn/turf at 2 pm (ET). All are one hour and usually are licensed for CEUs in 35+ states monthly. IF you ever need someone to help provide webinars on behalf of the state that are not currently being offered, I'd be happy to work with you.</p>

Please select the types of individuals that your organization serves.	Does your organization offer classes/trainings about pests or pesticide related topics?	Have you provided classes/trainings that describe what Integrated Pest Management is?	Do you provide classes/trainings that discuss any of the following topics?	How many of these types of classes/trainings do you provide within a year?	Do you typically provide any of the following to participants?	How do you provide your trainings?	Is there anything else that you would like to add?
Mosquito Control	Yes	Yes	Best Management Practices Cultural Control Measures Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Mechanical Control Measures Pest Forecasting Tools;Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Pest Threshold Proper Use of Pesticide;	2 to 4	Access to Online Repository of Materials Links to Online Sources Print Materials Access to PowerPoint Slides from presentation	In-Person	There
Structural Pest Control Operators	Yes	Yes	Best Management Practices Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Mechanical Control Measures Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Proper Use of Pesticides Rodent Biology, Behavior, Control	10 or more	Print Materials Links to Online Sources	In-Person Live Stream Online Training	No

Please select the types of individuals that your organization serves.	Does your organization offer classes/trainings about pests or pesticide related topics?	Have you provided classes/trainings that describe what Integrated Pest Management is?	Do you provide classes/trainings that discuss any of the following topics?	How many of these types of classes/trainings do you provide within a year?	Do you typically provide any of the following to participants?	How do you provide your trainings?	Is there anything else that you would like to add?
<p>Agriculture (ie: nurseries, orchards, vegetables, fruit, etc)</p> <p>City/Town employees</p> <p>Landscapers;</p> <p>Master Gardeners/Garden Clubs</p> <p>Tree/Shrub Applicators</p>	Yes	Yes	<p>Best Management Practices</p> <p>Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.)</p> <p>Pest Identification</p> <p>Pesticide Laws and Regulation</p> <p>;Pest Management Strategies</p> <p>Pesticide Safety (Environmental/Public Health)</p> <p>Proper Use of Pesticides</p>	5 to 9	<p>Access to Online Repository of Materials</p> <p>Print Materials</p> <p>Links to Online Sources</p> <p>Access to PowerPoint Slides from presentation</p>	<p>In-Person</p> <p>On Demand</p> <p>Online Training</p>	not at this time
<p>Structural Pest Control Operators</p> <p>City/Town employees</p>	Yes	Yes	<p>Best Management Practices</p> <p>Cultural Control Measures</p> <p>Mechanical Control Measures</p> <p>Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.)</p> <p>Pest Forecasting Tools</p> <p>Pest Identification</p> <p>Pesticide Laws and Regulations</p> <p>Pest Management Strategies</p> <p>Pesticide Safety (Environmental/Public Health)</p> <p>Pest Trapping/Monitoring</p> <p>Pest Thresholds</p> <p>Proper Use of Pesticides</p>	10 or more	<p>Links to Online Sources</p> <p>Print Materials</p> <p>Access to Online Repository of Materials</p>	<p>In-Person</p> <p>Live Stream</p> <p>Online Training</p>	<p>MDAR has historically been VERY pro-CEU training & education. My sample swath with MDAR has been over 25yrs and several MDAR training coordinators, they all have fostered a positive process.</p>

Please select the types of individuals that your organization serves.	Does your organization offer classes/trainings about pests or pesticide related topics?	Have you provided classes/trainings that describe what Integrated Pest Management is?	Do you provide classes/trainings that discuss any of the following topics?	How many of these types of classes/trainings do you provide within a year?	Do you typically provide any of the following to participants?	How do you provide your trainings?	Is there anything else that you would like to add?
Structural Pest Control Operators	Yes	Yes	Best Management Practices Cultural Control Measures Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Mechanical Control Measures Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Pest Thresholds Proper Use of Pesticides	5 to 9	Access to Online Repository of Materials Access to PowerPoint Slides from presentation Links to Online Sources Print Materials	In-Person	No, Thank You
City/Town employees Homeowners/General Public Mosquito Control Commercial facilities	Yes	Yes	Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Mechanical Control Measures Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Proper Use of Pesticides	10 or more	Access to PowerPoint Slides from presentation Print Materials	In-Person	We hold certain courses for MDAR-approved credits, but some classes are informational and not for credits.

Please select the types of individuals that your organization serves.	Does your organization offer classes/trainings about pests or pesticide related topics?	Have you provided classes/trainings that describe what Integrated Pest Management is?	Do you provide classes/trainings that discuss any of the following topics?	How many of these types of classes/trainings do you provide within a year?	Do you typically provide any of the following to participants?	How do you provide your trainings?	Is there anything else that you would like to add?
Agriculture (ie: nurseries, orchards, vegetables, fruit, etc) City/Town employees Landscapers Mosquito Control Structural Pest Control Operators Tree/Shrub Applicators All licensed/certified pesticide applicators	Yes	Yes	Best Management Practices Cultural Control Measures Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Mechanical Control Measures Pest Identification Pesticide Laws and Regulations Pesticide Safety (Environmental/Public Health) Pest Thresholds Proper Use of Pesticides	10 or more	Links to Online Sources Print Materials	Live Stream Online Training;	Not at this time
Structural Pest Control Operators;	Yes	Yes	Best Management Practices Cultural Control Measures Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Mechanical Control Measures Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Proper Use of Pesticides	5 to 9	Print Materials	In-Person	The PACEAPP programs works. Recommend the department continue promoting and supporting the PACEAPP program.

Please select the types of individuals that your organization serves.	Does your organization offer classes/trainings about pests or pesticide related topics?	Have you provided classes/trainings that describe what Integrated Pest Management is?	Do you provide classes/trainings that discuss any of the following topics?	How many of these types of classes/trainings do you provide within a year?	Do you typically provide any of the following to participants?	How do you provide your trainings?	Is there anything else that you would like to add?
Utility herbicide	Yes	Yes	Best Management Practices Cultural Control Measures Mechanical Control Measures Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Proper Use of Pesticides	2 to 4	Access to Online Repository of Materials Access to PowerPoint Slides from presentation Links to Online Sources Print Materials	In-Person	No
City/Town employees Landscapers Structural Pest Control Operators	Yes	Yes	Best Management Practices Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Mechanical Control Measures Pest Forecasting Tools Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Pest Thresholds Proper Use of Pesticides	10 or more	Print Materials	In-Person Live Stream Online Training On Demand Online Training	no

Please select the types of individuals that your organization serves.	Does your organization offer classes/trainings about pests or pesticide related topics?	Have you provided classes/trainings that describe what Integrated Pest Management is?	Do you provide classes/trainings that discuss any of the following topics?	How many of these types of classes/trainings do you provide within a year?	Do you typically provide any of the following to participants?	How do you provide your trainings?	Is there anything else that you would like to add?
Mosquito Control Structural Pest Control Operators	Yes	Yes	Best Management Practices Cultural Control Measures Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Mechanical Control Measures Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Proper Use of Pesticides	5 to 9	Print Materials Links to Online Sources Access to Online Repository of Materials	In-Person Live Stream Online Training	Trevor has been terrific to work with
City/Town employees Homeowners/General Public Utilities and similiar Vegetation Mgmt	Yes	Yes	Mechanical Control Measures Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Proper Use of Pesticides	2 to 4	Access to PowerPoint Slides from presentation	Live Stream Online Training	Not at this time

Please select the types of individuals that your organization serves.	Does your organization offer classes/trainings about pests or pesticide related topics?	Have you provided classes/trainings that describe what Integrated Pest Management is?	Do you provide classes/trainings that discuss any of the following topics?	How many of these types of classes/trainings do you provide within a year?	Do you typically provide any of the following to participants?	How do you provide your trainings?	Is there anything else that you would like to add?
Agriculture (ie: nurseries, orchards, vegetables, fruit, etc) City/Town employees Homeowners/General Public Landscapers Master Gardeners/Garden Clubs Mosquito Control Structural Pest Control Operators Tree/Shrub Applicators All Pest Control CEU's	Yes	Yes	Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Mechanical Control Measures Pest Forecasting Tools Pest Identification Pesticide Laws and Regulations Pest Management Strategies Cultural Control Measures Best Management Practices Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Pest Thresholds Proper Use of Pesticides	10 or more	Access to PowerPoint Slides from presentation	On Demand Online Training	Our company offers recertification courses in 35 different states. We also offer initial licensing study material in several states and general non-state specific study material.
arborists, landscapers, IPM consultants, horticulturalists, professional gardeners, and others responsible for urban plant management.	Yes	Yes	Pest Identification Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Pest Forecasting Tools	1	Access to Online Repository of Materials Access to PowerPoint Slides from presentation Links to Online Sources Print Materials	In-Person Live Stream Online Training	https://landscapeipmhc.weebly.com/

Please select the types of individuals that your organization serves.	Does your organization offer classes/trainings about pests or pesticide related topics?	Have you provided classes/trainings that describe what Integrated Pest Management is?	Do you provide classes/trainings that discuss any of the following topics?	How many of these types of classes/trainings do you provide within a year?	Do you typically provide any of the following to participants?	How do you provide your trainings?	Is there anything else that you would like to add?
Agriculture (ie: nurseries, orchards, vegetables, fruit, etc) City/Town employees Homeowners/General Public Master Gardeners/Garden Clubs Structural Pest Control Operators Tree/Shrub Applicators	Yes	Yes	Best Management Practices Cultural Control Measures Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Mechanical Control Measures Pest Identification Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Pest Thresholds Proper Use of Pesticides Food Infesting Pest Management	10 or more	Access to PowerPoint Slides from presentation Print Materials	In-Person On Demand Online Training	no thank you
Structural Pest Control Operators Wood / Lumber Pressure Treaters	Yes	Yes	Mechanical Control Measures Pest Identification Pesticide Laws and Regulations Pesticide Safety (Environmental/Public Health) Proper Use of Pesticides	2 to 4	Links to Online Sources Access to PowerPoint Slides from presentation Seminar/Workshop video recording	Live Stream Online Training	No
Homeowners/General Public Master Gardeners/Garden Clubs Agriculture (ie: nurseries, orchards, vegetables, fruit, etc); Tree/Shrub Applicators Invasive plant control;	Yes	Yes	Best Management Practices Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Mechanical Control Measures Pest Identification Proper Use of Pesticides	1	Access to PowerPoint Slides from presentation Links to Online Sources	In-Person Live Stream Online Training;	We focus our training for our employees needs.

Please select the types of individuals that your organization serves.	Does your organization offer classes/trainings about pests or pesticide related topics?	Have you provided classes/trainings that describe what Integrated Pest Management is?	Do you provide classes/trainings that discuss any of the following topics?	How many of these types of classes/trainings do you provide within a year?	Do you typically provide any of the following to participants?	How do you provide your trainings?	Is there anything else that you would like to add?
<p>Agriculture (ie: nurseries, orchards, vegetables, fruit, etc)</p> <p>Landscapers</p> <p>City/Town employees</p> <p>Mosquito Control</p> <p>Tree/Shrub Applicators</p>	Yes	Yes	<p>Best Management Practices</p> <p>Cultural Control Measures</p> <p>Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.)</p> <p>Mechanical Control Measures</p> <p>Pest Forecasting Tools</p> <p>Pest Identification</p> <p>Pesticide Laws and Regulations</p> <p>Pest Management Strategies</p> <p>Pesticide Safety (Environmental/Public Health)</p> <p>Pest Trapping/Monitoring</p> <p>Pest Thresholds</p> <p>Proper Use of Pesticides</p>	2 to 4	<p>Access to PowerPoint Slides from presentation</p> <p>Links to Online Sources</p> <p>Print Materials</p>	<p>In-Person</p> <p>Live Stream</p> <p>Online Training</p>	No
Pest Management Professionals	Yes	Yes	<p>Best Management Practices</p> <p>Cultural Control Measures</p> <p>Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.)</p> <p>Mechanical Control Measures</p> <p>Pest Identification</p> <p>Pest Management Strategies</p> <p>Pesticide Safety (Environmental/Public Health)</p> <p>Pest Trapping/Monitoring</p> <p>Pest Thresholds</p>	1	<p>Links to Online Sources</p> <p>Recordings</p>	<p>Live Stream</p> <p>Online Training;</p>	Not at this time.

Please select the types of individuals that your organization serves.	Does your organization offer classes/trainings about pests or pesticide related topics?	Have you provided classes/trainings that describe what Integrated Pest Management is?	Do you provide classes/trainings that discuss any of the following topics?	How many of these types of classes/trainings do you provide within a year?	Do you typically provide any of the following to participants?	How do you provide your trainings?	Is there anything else that you would like to add?
Homeowners/General Public State owned Forestlands	Yes	Yes	Best Management Practices Cultural Control Measures Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Mechanical Control Measures Pest Forecasting Tools Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Pest Thresholds Proper Use of Pesticides	5 to 9	Access to Online Repository of Materials Access to PowerPoint Slides from presentation Links to Online Sources Print Materials	In-Person Live Stream Online Training	N/A
Agriculture (ie: nurseries, orchards, vegetables, fruit, etc) Homeowners/General Public Landscapers Structural Pest Control Operators	Yes	Yes	Best Management Practices Pest Forecasting Tools Pest Identification Pesticide Laws and Regulations Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Proper Use of Pesticides	2 to 4	Print Materials	In-Person	no

Please select the types of individuals that your organization serves.	Does your organization offer classes/trainings about pests or pesticide related topics?	Have you provided classes/trainings that describe what Integrated Pest Management is?	Do you provide classes/trainings that discuss any of the following topics?	How many of these types of classes/trainings do you provide within a year?	Do you typically provide any of the following to participants?	How do you provide your trainings?	Is there anything else that you would like to add?
City/Town employees Landscapers Mosquito Control Structural Pest Control Operators	Yes	Yes	Best Management Practices Cultural Control Measures Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Mechanical Control Measures Pest Forecasting Tools Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Pest Thresholds Proper Use of Pesticides Technician Safety-- License Prep;	10 or more	Access to PowerPoint Slides from presentation Print Materials	In-Person Live Stream Online Training	Integrated Pest Management -- principles and ideas are integrated into most programs
Structural Pest Control Operators	Yes	Yes	Best Management Practices Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.);Cultural Control Measures Mechanical Control Measures Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Proper Use of Pesticides	2 to 4	If requested	In-Person Live Stream Online Training	N/A

Please select the types of individuals that your organization serves.	Does your organization offer classes/trainings about pests or pesticide related topics?	Have you provided classes/trainings that describe what Integrated Pest Management is?	Do you provide classes/trainings that discuss any of the following topics?	How many of these types of classes/trainings do you provide within a year?	Do you typically provide any of the following to participants?	How do you provide your trainings?	Is there anything else that you would like to add?
Structural Pest Control Operators Mosquito Control Homeowners/General Public	Yes	Yes	Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Pest Thresholds Proper Use of Pesticides	10 or more	Access to PowerPoint Slides from presentation Links to Online Sources	Live Stream Online Training	no
Homeowners/General Public Mosquito Control Structural Pest Control Operators	Yes	Yes	Best Management Practices Cultural Control Measures Less Toxic Pesticide Alternatives (Minimum Risk, Organic, Biologicals, etc.) Mechanical Control Measures Pest Identification Pesticide Laws and Regulations Pest Management Strategies Pesticide Safety (Environmental/Public Health) Pest Trapping/Monitoring Pest Thresholds Proper Use of Pesticides	5 to 9	Access to PowerPoint Slides from presentation Print Materials	In-Person	During the Covid outbreak we did provide live stream online training.

