



**MARYLAND
PESTICIDE DATA REPORT
FOR 2024**

**MARYLAND
DEPARTMENT OF AGRICULTURE**

Wes Moore
Governor

Aruna Miller
Lieutenant Governor

Kevin M. Atticks
Secretary of Agriculture

Steven A. Connelly
Deputy Secretary

Prepared By: Rob Hofstetter

MARYLAND PESTICIDE DATA REPORT FOR 2024

Introduction

The Maryland Pesticide Regulation and Labeling law (Title 5, Subtitle 1, Agricultural Article, Ann. Code MD Section 5-102(D)), requires the Secretary of Agriculture to develop a comprehensive pesticide data program to provide the General Assembly, in accordance with Section 2-1246 of the State Government Article, a report on pesticide data. The annual data program is to include the number and types of enforcement actions taken and figures for the number, types, and uses of pesticides in Maryland.

A pesticide is defined by Maryland and federal law, as any substance or mixture of substances intended to present, destroy, repel, or mitigate any pest. There are at least 21 different classes (types) of pesticides based on their target pests, including algacides (target pest is algae), avicides (target pest is birds), bactericides, (target pest is bacteria), fungicides (target pest is fungi), growth regulators (target is to restrict plant or insect development), herbicides (target pest is weeds), insecticides (target pest is insects), rodenticides (target pest is rodents); and mildewcides (target pest is slime mold).

The Maryland Department of Agriculture (MDA) is the state agency responsible for the regulation, distribution, sale, storage, use, and disposal of pesticides in Maryland. The department cooperates with other state agencies, institutions, and federal agencies to conduct pesticide education, regulatory, and enforcement programs. Departmental activities and responsibilities are described as follows:

Pesticide Regulation Section (PRS) Enforcement Program

The PRS section enforces the Federal Insecticide, Fungicide, and Rodenticide Act, and the Maryland Pesticide Applicator's Law and Regulations. Under the enforcement program, MDA conducts routine inspections of licensed pesticide businesses, public agencies, and restricted use pesticide dealers. Inspections include a review of pesticide application records, restricted use pesticide sales records, safety equipment, pesticide storage areas, application equipment, vehicles, and anti-siphon devices. Use observations are conducted to monitor pesticide application to field crops, structures, lawns, and ornamentals to ensure compliance with label directions and state and federal regulations.

Pesticide misuse incidents and consumer complaints are investigated. In the event of a violation, the department has the authority to suspend, revoke, or deny a license or certificate, and to assess a civil penalty not to exceed a total of \$25,000. As part of a cooperative agreement grant with the U.S. Environmental Protection Agency (EPA), the section conducts inspections at pesticide producer establishments, marketplaces, worker protection centers, container structures, and pesticide importers. EPA also refers complaint investigations and special initiative inspections to the department for investigation.

Application Certification and Training Program

The Pesticide Regulation Section certifies private and commercial pesticide applicators to verify the competence of the applicators. Private applicators, like farmers, are given closed

book written exams to become certified for a three-year period. Certification authorizes them to purchase and apply restricted use pesticides on property they own or lease for producing agricultural commodities. Certificates are renewed by MDA after submission of proof of updated training. MDA certifies commercial pesticide applicators (employees of pest control businesses and public agencies) who meet the minimum standards of experience or education requirements, and who have passed written exams in specific pest control categories. Commercial applicator certificates are renewed annually after the required training has been obtained to maintain their level of competency. MDA approves and monitors applicator recertification training courses and sets minimum standards for approval of courses for recertification purposes. Private and commercial applicator training sessions are coordinated with county Extension agents who are provided training materials such as slide sets, videos, and education brochures by MDA. In addition, MDA registers employees who work under the supervision of a commercial applicator. Prior to registration with the department and within 30 days of employment, the employee must be trained according to the standards developed by MDA.

MDA issues licenses and permits to pesticide businesses or public agencies that apply general or restricted use pesticides. Dealers who sell restricted use pesticides must obtain a license issued by MDA. MDA issues licenses to pest control consultants who either identify pests, recommend pesticides, or other techniques for the purpose of controlling pests.

Technical Information Collection and Dissemination Program

PRS provides information to pesticide applicators, dealers, federal, state, and local agencies, and the public on issues concerning pesticide use and regulations. Training materials, information brochures, and fact sheets are developed for pesticide applicators to provide compliance assistance when new guidelines or regulations are implemented. A series of "Pesticide Information Sheets" were developed to provide information on pesticide issues and regulations to consumers and applicators. PRS developed a Consumer Information Bulletin for use by licensed lawn and landscape firms for distribution to their customers. In addition, the section has compiled pesticide product label information that must be given to all pest control customers to inform them of any safety precautions or environmental hazards associated with each pesticide used. Pesticide sensitive individuals receive advance notification prior to lawn and ornamental pesticide applications being made to adjacent properties by licensed pest control businesses or public agencies. Mosquito applications also require a licensed business to provide notification to those individuals. Maryland is one of 21 states that have a mandated notification program.

The department provides information to applicators on where and how to obtain study materials for certifications and conducts certification examination sessions every other month in three regional locations. Private applicators receive exam study materials provided by the department and are offered certification examinations in county Extension offices on an as-needed basis. Beginning in 2023, the Department, through an agreement with Everblue, offers online examinations in addition to in-person examinations.

Homeowners are given information on licensing requirements for pest control firms, information on termite inspections and control, proper pesticide handling, and alternatives to chemical pest controls. Table-top displays, brochures, and pesticide information sheets have been developed for use at various trade shows, grower meetings, and at state and county fairs.

During 2024, MDA continued to expand PRS' web page so that information on pesticide business licensing requirements, certification exam dates, pesticide information sheets, and Integrated Pest Management (IPM) in schools is available to the general public. Consumers and regulated industries can electronically file complaints, report pesticide incidents, download application forms, request employee identification cards, and request additional information. Other links on the section's website are a searchable pesticide database (egov.maryland.gov/MDA/Pesticides), and links to a searchable database containing information on business licenses, dealer licenses, and certified applicators.

Water Quality Protection, Endangered Species Protection and Worker Protection Programs

MDA is actively involved in four federal EPA regulatory programs that are currently being implemented by the states. The department has developed a State Water Quality Management Plan for managing the use of pesticides to protect water resources, such as the tributaries leading to Chesapeake Bay, and the bay proper, as part of its Water Quality Protection Program. The department monitors EPA's "Pesticides of Interest" list annually to maintain a list of pesticides that are of concern in Maryland. Under the Endangered Species Protection Program, the department is responsible for protecting federally listed endangered species that may be harmed by the use of certain pesticides. The department has implemented and conducted the Federal Worker Protection Standard Program to protect certain pesticide users, handlers, and farm workers from exposure to pesticides. EPA has revised some of the Worker Protection Standards (WPS)¹. The section also inspects agricultural facilities to ensure bulk pesticide storage tanks, containment structures, and mixing/loading pads meet state and federal requirements.

Special Programs

The section conducts special programs relating to pesticide management when funding is available. These special programs address specific pesticide issues, environmental concerns, or regional situations that require additional focus and attention beyond routine programs. These may include the development of informational materials, pesticide education programs, coordination of pesticide container recycling, and unusable pesticide disposal programs.

Chesapeake Bay Programs

MDA is an active participant in efforts to enhance and restore Chesapeake Bay. Pesticide management commitments have been incorporated into the toxic strategy and include

¹ epa.gov/pesticide-worker-safety/agricultural-worker-protection-standard-wps

commitments for the adoption of IPM, development of programs for pesticide container recycling, unusable pesticide disposal, and implementation of agricultural best management practices. These pesticide management programs have placed Maryland in a leadership role and have given MDA recognition as one of the key agencies in toxic reduction.

Integrated Pest Management in Public Schools and on School Grounds

PRS has been conducting inspections for the IPM in public schools program since 1995, in cooperation with the Maryland State Department of Education, Maryland Association of Boards of Education, county school systems, the University of Maryland, Maryland State Pest Control Association, and EPA. The purpose of the program is to review each school system's pest management practices and to provide technical assistance to facilitate the implementation of IPM to reduce the risk of exposing students and staff members. Mandatory IPM has been required in Maryland public schools and enforced by MDA since 2001.

State Chemist Section

The State Chemist Section (SCS) has been in continuous operation since 1833. It regulates the sale and distribution of pesticides, animal feeds, pet foods, fertilizers, compost, soil conditioners, and agricultural liming materials in order to enhance and promote agricultural production; protect consumers, animals, and the environment from unsafe products; ensure the sale of effective products and provide the regulated industry with a competitive marketplace. Regulation is accomplished by product registration, laboratory analyses, inspection, voluntary compliance, and enforcement actions such as stop sale orders.

The Section supports MDA's PRS by providing data from the chemical analyses of environmental investigations relative to potential misuse of pesticides, routine label claims, and the Pesticide Container Recycling Program.

Registration

SCS is responsible for registering all pesticide products distributed, manufactured, produced, mixed, consigned, sold, or transported in Maryland. The purpose of product registration is to ensure the sale and distribution of pesticides that are effective and safe for humans, animals, and the environment. In 2024, SCS registered 14,047 pesticide products and 608 fertilizer pesticides.

Inspection

Product quality and safety are determined by chemical analysis of the active ingredients in the products sampled by inspectors. They inspect, on a regular schedule, warehouses, producers, and retail outlets.

Chemical Analyses

In 2024, the section analyzed 237 formulation samples for label claims of the active ingredients and 60 samples for pesticide residues. The section participates in the

Committee International Pesticide Analytical Council collaborative studies. These studies are done to validate methods that become official for the analysis of pesticide formulations.

Pesticide Registration Data and Enforcement

The Pesticide Registration and Labeling Law requires a distributor of pesticide products to annually register the product with the section before distribution in the state. The section utilizes a computerized registration process that has expedited and improved the accuracy of the registration process and enables the section to compile more information about registered pesticide products.

During 2024 pesticide product registration data included:

- Number of Registrants – 1,495
- Number of pesticide products registered – 14,047
- Number of fertilizer pesticide products registered - 608

As a result of the section's enforcement and registration program, the following regulatory actions were taken against companies who violated the State Pesticide Registration and Labeling Law:

- Pesticide formulations analyzed - 237
- Total active ingredients analyzed – 325
- Deficiencies – 25
- Stop sales issued – 25
- Over formulations - 0

In support of PRS' enforcement activities, the section's laboratory analyzed samples (soil, water, plant tissues, swabs, products, etc.) for pesticide residues. The following summary of the analysis.

Investigation Samples (Pesticide Misuse, accidents)

- Samples analyzed - 60
- Total number of analyses – 3150

Pesticide Use Enforcement Inspection and Actions

During 2024, Inspection of licenses, pest control businesses, and public agencies were conducted as follows:

- Routine Business Inspections - 548
- Pesticide Dealer Inspections - 78
- Pesticide Use Observations - 95
- Applicator Record Reviews. - 643

Violations detected during pest control business inspections are summarized in Table 1 and include:

- Unregistered Employee violations - 25
- Incomplete or inaccurate records - 79
- Vehicles not properly identified - 31
- No Anti-siphon device - 7
- No first aid/safety equipment - 1
- No/Incomplete Customer Information provided - 19

During 2024, regulatory enforcement actions against individuals or firms for violations of the Maryland Pesticide Applicators law. The actions taken or penalties assessed from specific violations of the law or regulations are summarized as follows:

- Consumer Complaint Investigations - 37
- An investigational conference were held with a licensee to gather information about an ongoing investigation and to alert the current licensee to correct the situation - 3

Penalties Assessed

- Notice of Warnings – 59 (Certified letter notifying licensee, permittee, or individual that they have committed a violation or that the situation needed correcting.)
- Field Notice - 386 (Violation noted by field inspector during routine inspections. Licensee, Permittee, or individual is informed of an infraction.)
- Civil Penalties - 7 civil penalties were assessed in lieu of or in addition to a suspension or revocation of a license permit, certificate, or an employee registration card. Licensees were assessed a total of \$11,500.00.

Pesticide Applicator Certification and Training Program

During 2024, the following licensing and certification activities were conducted and are summarized below:

- Pesticides Business Licensed – 1,444
- Public Agencies permitted - 305
- Pesticide Restricted Use Dealer Permits - 181
- Pest Control Applicators Certified (All) – 8064
- Pest Control Technicians (Registered Employees) – 7,806
- Applicators taking the exams - 756

- Total Examinations administered – 2475

In order to maintain applicator certification, private applicators must participate in MDA approved training once every three years. Commercial applicators of pesticides must attend annual recertification training sessions. The following data indicates training held in 2024:

- Commercial applicators training sessions held - 667
- Private applicator training sessions held - 156
- Commercial Applicator recertified – 5646
- Private applicators recertified - 1526

Pesticide Use Data

PRS regulates the use of pesticides in Maryland (See Section II). An essential factor in conducting effective regulatory educational programs on pesticides is data relating to the quantity and distribution of pesticide product usage in the state. MDA conducted pesticide usage data on 3-year cycles, beginning in 1982 and followed with surveys in 1985, 1988, 1991, 1994, 1997, and 2000. Due to limited resources (funds and personnel), the department was limited to conducting additional pesticide usage surveys in 2004, 2011 and 2014. The data was compiled by the National Agricultural Statistics Service (NASS), an agency of the U.S. Department of Agriculture. MDA contracts with NASS to conduct surveys to provide final data, but the department has no access to the raw data in order to protect the confidentiality of the data and the privacy of the respondents. A survey for the 2020 and 2022 growing seasons has been conducted and are available on our website. A Survey is also being conducted for the 2024 growing season and will be available in late 2025. At current funding levels, we anticipate being able to conduct the survey biennially.

Maryland is unique in having such extensive pesticide use data, as no neighboring state has similar data. This data meets the commitments made by Maryland as part of the Chesapeake Bay Watershed Agreement. In addition, the data has been used in a variety of ways, including as a basis for conducting surface water and groundwater surveys. MDA plans to continue contracting with NASS for future pesticide usage surveys.

Water Quality Protection, Endangered Species Protection and Worker Protection Program

MDA was responsible for developing a Pesticide Management Plan (PMP) to protect water quality. PRS has participated in EPA-sponsored groundwater protection training courses on pesticides monitoring and wellhead protection in order to obtain information and guidance on developing Maryland's PMP. The PMP is one facet of an overall Comprehensive State Ground Water Protection Plan (CSGWPP), which includes all state programs affecting ground water resources of the state.

MDA coordinated efforts with the Maryland Department of the Environment (MDE) and the Maryland Department of Natural Resources (DNR) to initiate the development of Maryland's CSGWPP and PMP. Data collected from PMPs have been used to develop the generic pesticide management plan. Groundwater protection educational materials were

developed for farmers, commercial applicators, and pesticide dealers and incorporated into application recertification programs. MDA has also contracted with the United States Geological Survey (USGS) in a number of projects located in and around the Chesapeake Bay.

MDA continues to support the EPA in its efforts to protect endangered species since it was initiated in 1992. The first endangered species listed in Maryland was the Maryland Darter. MDA developed informational brochures and distributed them to growers, commercial and private applicators located in Harford County, where the darter was last seen. EPA bulletins have since been updated and can be found on EPA's [Bulletins Live! 2 website](#). In addition, EPA has initiated new mitigation measures for certain pesticides that may put a federally listed species or their habitat at risk. PRS has been working with UMD Extension to notify growers of any mitigation measures that are actively in place.

The federal WPS became effective in August 1992 and was revised in 2015. MDA continues to disseminate information on federal programs in pesticide applicator training programs. EPA has recently provided the states with additional information and changes to the WPS. MDA has provided updated information to farmers and farm workers regarding the changes.

Special Programs

MDA has conducted an empty pesticide container recycling program in Maryland since 1993, preventing more than a million pounds of plastic from entering the waste stream. Unwanted and/or unusable pesticide disposal programs have been conducted periodically throughout the state since 1995. To date, MDA has collected more than 230,000 pounds from 423 sites.

Integrated Pest Management in Schools

MDA continues to promote and implement the IPM program in Maryland's public schools. Legislation was passed in 1999 that expanded the 1998 law to include pesticide use on school grounds. Schools are required to provide notification to parents, students, and staff of pesticide applications to school buildings and on school grounds. PRS reviewed and approved revised plans that incorporated programs for managing pest problems on school grounds and provided technical assistance in the development of the plans. Every public school has implemented an IPM program. MDA ensures continued compliance with these IPM regulations. A total of 84 public schools were inspected in 2024, with more than 1,200 schools inspected since uniform standards were required in 2001.

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A Summary and Comparison of Program Activities conducted by PRS

Table 1:

Pesticide Regulation Section Activities	2022	2023	2024
Pesticide Business License	1,669	1,542	1444
Not-for-Hire Business License	107	118	111
Commercial Pest Control Applicators Certified in One or More Pest Control Categories	4,756	4,295	4323
Registered Personnel Employed by Licensed Business and Public Agencies	8,712	7,691	7,806
Public Agency Permits Issued	331	306	305
Public Applicators Certified in One or More Pest Control Categories	944	979	1021
Private Applicator Certified to Date	2,670	2,684	2630
Restricted Use Pesticide Dealer Permits Issued	179	185	196
Applicator Certification Examinations Sessions Held	18	18	18
Individuals Taking Certification Exams	631	871	1008
Examinations Administered in All Categories	1,760	2,317	2475
Number of Business Inspected	418	472	548
Number of Business Inspections with Violations	191	223	258
Unregistered Employee Violations	11	30	25
Records Incomplete or Inaccurate Violation`s	88	88	79
Vehicles Not Properly Identified Violations	21	40	31
No Anti-siphon Device Violations	3	2	7
No First Aid/Safety Equipment Violations	1	1	1
Incomplete or No Customer Information Violations	16	9	19
Pesticide Dealer Inspections	79	77	78
Pesticide Application Records Reviewed	587	909	1020
Hearings and Investigational Conferences	0	3	5
Consumer Complaint Investigations	39	39	37
Pesticide Use Observations	93	108	95
Pesticide Marketplace Inspections	36	40	39

Maryland Department of Agriculture Contacts:

Michael J. Calkins
Assistant Secretary
 Office of Plant Industries
 and Pest Management

Rob Hofstetter
Program Manager
 Pesticide Regulation
 Section

Tom Phillips
State Chemist
 State Chemist Section