

Board of Pesticides Control

Report to the 130th Maine State Legislature on LD 524 Resolve, Directing the Board of Pesticides Control to Research Workable Methods to Collect Pesticide Sales and Use Records for the Purpose of Providing Information to the Public

LEGISLATIVE REPORT FISCAL YEAR 2021



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**AGRICULTURE
CONSERVATION
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I. Acronyms and Definitions

BPC	Board of Pesticides Control
GUP	General Use Pesticide Dealer
IPM	Integrated Pest Management
LD	Legislative Document
RUP	Restricted Use Pesticide Dealer
SCF	Spray Contracting Firm
MePERLS	Maine Pesticide Enforcement, Registration and Licensing System

II. Introduction

In 2021, the Maine Legislature passed LD 524, Resolve, Directing the Board of Pesticides Control to Research Workable Methods to Collect Pesticide Sales and Use Records for the Purpose of Providing Information to the Public. One of the two major provisions of the bill directed the Board to research the best methods for collecting pesticide use information from K-12 schools, private applicators, and commercial applicators. Private applicators of general use pesticides as defined by 22 MRSA § 1471-C (22-A) have been excluded from the requirements of LD 524.

The second provision directed the Board to research the best methods for collecting information on pesticides sales in the state.

The Board was further directed to prepare a report with findings and recommendations for submission no later than January 1, 2022.

III. Background

The Board is keenly aware of longstanding legislative interest (Appendix E) in pesticide sales and use reporting and related topics and has focused on methods to accurately collect and report this information. Historically, the Board produced reports of the 1997, 1998, and 2000 pesticide sales and use data, as well as several informal summaries of sales and use data (Appendix G). Currently, the BPC does track annual pesticide sales and use data, which is submitted by a variety of means (hard copy or email) on forms supplied by the BPC by relevant parties such as commercial pesticide applicators and general and restricted use pesticide dealers. The data is then filed by BPC staff into the relevant commercial applicator, spray contracting firm, or pesticide distributor physical files located at the BPC's offices.

In 2019, the Board committed funding to the development of electronic reporting of annual use summary reports from commercial applicators and sales and distribution reports from both general and restricted use pesticide dealers. Development of this new functionality began in 2020, and in 2021, staff began testing this new approach to reporting using the Board software solution MePERLS, to tabulate this data. This report describes the type of sales and use data collected, provides summaries of 2019 commercial use data, describes a possible approach for collecting information on commercial pesticide use on school grounds, and provides a summary of considerations for private applicator use reporting.

IV. Existing Board Authorities

The Board has authority under 22 MRSA § 1471-G and W to establish regulations requiring the annual collection of general use pesticide dealer sales, restricted use pesticide dealer sales, and commercial pesticide applicator use reports. The Board has authority to require private applicators and schools to maintain detailed records of pesticide use and to provide those records for inspection by representatives of the Board at reasonable times, upon request. Presently, the Board does not have the authority to require routine submission of private applicator and school records.

Before reviewing what is collected, however, the below table provides a brief synopsis of the types of pesticide dealers and applicators referenced in this report.

Table 1. Licensure Categories for Pesticide Businesses in Maine

<p>General Use Pesticide Distributor</p>	<p>"General use pesticide" means any pesticide which has been registered by the US EPA as evidenced by a registration number on the label and which is not a restricted use or limited use pesticide</p>
<p>Restricted Use Pesticide Distributor</p>	<p>"Restricted use pesticide" means any pesticide or pesticide use classified for use only by or under the direct supervision of a certified applicator by the Administrator of the US EPA or by the Commissioner of DACF</p>
<p>Agricultural Basic Applicator</p>	<p>For growers who annually sell more than \$1,000 of plants or plant products intended for human consumption and who use only general-use (over-the-counter) pesticides on property owned or leased by them. These include:</p> <ul style="list-style-type: none"> • Growers of fruits, vegetables, herbs, and grains for human consumption; • Growers of the above crops who make bread, jam, french fries, wine, cider, juice, etc., or who sell produce to be processed into these products; and • Greenhouse growers selling fruit, vegetable, and herb seedlings. • Medical marijuana growers

Private Applicator

For those wishing to purchase and use restricted-use, as well as general-use, pesticides in the production of agricultural commodities on property owned or leased by them. These typically include:

- Farmers
- Greenhouse and nursery operators
- Orchardists
- Christmas tree growers
- Foresters

Commercial Applicator

For professionals using any pesticide in a variety of occupations, a commercial license is required in all of the following situations:

- Application of any restricted-use pesticide for purposes other than producing an agricultural commodity;
- Use of any pesticide as a service for which compensation is received. Examples include lawn and landscape care; tree and shrub care; and home pest control;
- Use of any pesticide in a licensed food or eating establishment;
- Use of any pesticide in connection with duties as an official or employee of federal, state or local government;
- Use of any pesticide on non-agricultural sites open to public use. Examples include office and apartment buildings and grounds; golf course, campgrounds, and other outdoor recreation facilities; hospitals and nursing homes; and retail and commercial spaces.

A. General Use Pesticide Dealers

The Board derives authority to regulate general use pesticide dealers from 22 MRSA § 1471-W. In Maine, general use pesticide dealers who sell pesticides that the general public may purchase, are required, under 22 MRSA § 1471-W(3), to annually report sales to the BPC when they sell products to other general use pesticide dealers to the BPC. Reports (Appendix A) must include the contact information for all companies from which pesticides were purchased and companies to which pesticides were distributed, and for each brand of pesticide any wholesale dealer sells, they must report annually the:

- trade name,
- EPA registration number,
- total number of units sold, and
- weight/volume per unit

Pesticide dealers are exempted from licensure and sales reporting requirements for the following types of pesticides as detailed in 22 MRSA § 1471-W(5):

- household use pesticide products with no more than 3% active ingredients;
- Dichlorvos (DDVP) impregnated strips with concentrations not more than 25% in resin strips and pet collars;
- pet supplies such as shampoos, tick and flea collars and dusts;
- disinfectants, germicides, bactericides, and virucides;
- insect repellents;
- indoor and outdoor animal repellents;
- moth flakes, crystals, cakes, and nuggets;
- indoor aquarium supplies;
- swimming pool supplies;
- aerosol products; and
- general use paints, stains, and wood preservatives and sealants.

B. Restricted Use Pesticide Dealers

Restricted use pesticide dealers are individuals licensed to sell any pesticide classified for use only by or under the direct supervision of a certified applicator by the United States Environmental Protection Agency (EPA) or the Maine Department of Agriculture, Conservation and Forestry (DACF). Individuals licensed as restricted use pesticide dealers must pass a certification exam before becoming licensed (CMR 01-026 Chapter 34), must complete continuing education, and are subject to annual restricted and limited use pesticide sales reporting requirements (CMR 01-026 Chapter 50).

Required reports (Appendix B and C) must include the contact information for all companies from which they purchase pesticides and separate listings for companies versus consumers to which they distribute; and, for each brand of pesticide any dealer sells, they must report annually the:

- trade name,
- EPA registration number,
- total number of units sold, and
- weight/volume per unit

C. Spray Contracting Firms and Commercial Pesticide Applicators

Spray Contracting Firms and Commercial Master Applicators working as sole proprietors must keep detailed records of each application they make and are required (CMR 01-026 Chapter 50) to report the supervisory master applicator's name and license number as well as the following summary (Appendix D) of use data annually:

- site of application,
- pesticide name brand,
- EPA registration number,
- total pounds or gallons undiluted formulation used, and
- total area treated

D. Private Pesticide Applicators and Private Pesticide Applicators of General Use Pesticides (Ag Basic Applicators)

The Private Pesticide Applicator (22 MRSA § 1471-C (22)) license is for agricultural producers who wish to purchase and use restricted-use, as well as general-use, pesticides in the production of agricultural commodities on property that they own or lease. Individuals interested in this type of licensure typically include farmers, greenhouse and nursery operators, orchardists, Christmas tree growers, and foresters.

The Private Applicator of General Use Pesticides (or Ag Basic Applicator) (22 MRSA § 1471-C (22-A)) license is for growers who annually sell more than \$1,000 of plants or plant products intended for human consumption and who use only general-use (over-the-counter) pesticides on property owned or leased by them. Individuals interested in this type of license typically include growers of fruits, vegetables, herbs, and grains for human consumption; growers of these crops who make value-added products or sell produce to be processed; greenhouse growers selling fruit, vegetable and herb seedlings; and cannabis growers.

Private and Ag Basic Applicators are not required to submit annual reports to the BPC, but they are required to keep a detailed record (CMR 01-026 Chapter 50) of each application they make as well as a sprayer calibration log (Appendix F). The BPC employs five pesticide inspectors who review these records when conducting inspections. Each application, even those exempt from licensure requirements, such as the application of general use sanitizers and disinfectants in produce wash water, must be documented with the following recorded details :

- date,
- start time,
- finish time,
- address, town/field location
- size of treated area,
- any nearby sensitive areas,
- site or crop,
- target pest,
- wind speed and direction,
- temperature/cloud cover, and time noted,

- pesticide(s) and diluent applied,
- undiluted amount, mix, mix ratio,
- application method

Additionally, maintenance of complete pesticide application records requires inclusion of data relevant to the:

- Routine Calibration Log (calibration date, sprayer type, nozzle type, nozzle spacing, boom height, pressure, speed, calculated volume/acre, calibration method, etc.)
- Pesticide Key (brand name, active ingredients, EPA Registration Number, Restricted Entry Interval and/or Air Concentration Level)

At present, this information must be maintained at the agricultural establishment for two years and made available to representatives of the Board upon request, but the Board does not have the authority to require submission of these records.

LD 524 specifically addresses pesticide use reporting for Private Pesticide Applicators and doesn't appear to contemplate further data gathering from Ag Basic Applicators. All pesticides present risk and most pesticides used by agricultural producers are general use pesticides. Given these two points, there is little reason to not include Ag Basic Applicators in a proposed use reporting requirement for agricultural producers.

E. Pesticide Applications on School Grounds

The vast majority of pesticide applications on school grounds must be made by outsourced licensed Commercial Applicators (CMR 01-026 Chapter 31). The two exceptions to this licensure requirement are the emergency application of ready-to-use aerosol insecticides for stinging insects and the hand/non-powered application of general use antimicrobial pesticides for routine cleaning. These and all other applications must be approved and documented by an Integrated Pest Management (IPM) Coordinator.

Maine K-12 schools and affiliated nursery schools are required to appoint a trained IPM Coordinator who must authorize and document pesticide applications made on school grounds (CMR 01-026 Chapter 27). IPM Coordinators are required to complete an initial pesticide safety course within one month of appointment and a three-hour comprehensive course within one year of appointment. Information for any applications made on school grounds must be kept in a "Pest Management Log" for at least two years and must include justification for why the application was necessary. Justification of necessity requires documentation of monitoring efforts for the pest and/or conditions conducive to a pest outbreak; pest identification; pest population exceedance of a safety, economic, or aesthetic threshold; and demonstrated use of practicable, effective, and affordable non-pesticide control measures. Schools are currently not required to submit Pest Management Logs annually, but these documents are reviewed by Board inspectors while conducting onsite school inspections. All Pest Management Logs must also be made

available for review by school staff, parents, and guardians upon request, and schools must comply with notification requirements that are outlined in CMR 01-26 Chapter 27—Standards for Pesticide Applications and Public Notification in Schools.

The Board does not currently have the authority to require submission of school Pest Management Logs. However, all pesticide applications made by Commercial Applicators on school grounds are also documented in the applicator's or Spray Contracting Firm's pesticide application log and reported to the Board via the Commercial Applicator/Spray Contracting Firm annual use summary report.

V. Current and Potential Reporting Practices

A. Pesticide Dealer and Commercial Applicator Use Reporting

All required sales and use reports are submitted annually to Board staff—typically via paper or PDF on standardized forms (Appendix A, B, C, & D). These records are kept on file at the Board offices and made available to the public upon request for in-person review. In 2021, Board staff began entering 2019 commercial applicator use summary reports and then 2019 pesticide dealer sales summary reports into the newly developed MePERLS use reporting functionality. A preliminary summary of the 2019 commercial applicator annual use data is presented in Section VI of this report.

The time required for report quality control and data entry has, historically, been prohibitive to routine sales and use reporting. This remains the primary obstacle to electronic entry of sales and use records. While some applicators and dealers have begun voluntarily using MePERLS for report submission, the Board does not currently have the authority to require use of electronic records reporting. Temporary staff have made possible the compilation of 2019 use and sales information. Requiring most commercial applicators and pesticide dealers to use electronic data entry may make annual use and sales reporting possible. Instructions designed for use by applicators and dealers explaining how to use the MePERLS software provide some insight into the process of data collection and are available on the Board's website:

Commercial Use Reporting:

https://www.maine.gov/dacf/php/pesticides/documents2/pega/External_Portal-Commercial-Use-Reporting-Directions.pdf

General Use Dealer Reporting:

https://www.maine.gov/dacf/php/pesticides/documents2/pega/External_Portal-GPD-Sales-Reporting-Directions.pdf

Restricted Use Dealer Reporting:

https://www.maine.gov/dacf/php/pesticides/documents2/pega/External_Portal-RPD-Reporting-Directions.pdf

B. Private Applicators and Private Applicators of General Use Pesticides (Ag Basic)

In the past, Board staff have conducted on-farm surveys of agricultural pesticide use. These surveys were anonymous and were typically conducted at the same time as a routine enforcement inspection—collecting information similar to those collected during a records and operations inspection. Agricultural producers generally consented to this data collection because while the cropping type was recorded, the farm size was documented as an acreage range, and no other identifying features such as applicator name or farm name were recorded (Appendix H). These surveys provided the Board with useful information on agricultural pesticide use. The most recent agricultural use surveys were conducted in 2014.

While preparing this report and considering workable methods of agricultural use reporting, Board staff recognized a need to reach out to Maine’s agricultural community. Staff hosted a stakeholder meeting on December 20, 2021 with the purpose of gaining input from agricultural producers regarding use reporting. As stated, agricultural producers who use pesticides must keep records of those applications and make them available to Board staff for routine auditing; however, they are not required to submit any records documentation to the BPC. Participants invited represented specific aspects of the agricultural and forest industries in the state.

Growers were asked to reflect on a series of questions that focused on their thoughts about required agricultural pesticide use reporting; frequency of required reporting; and reported records content. The overall sentiment of the meeting was that growers were not supportive of an annual or more frequent requirement to submit pesticide use information to the Board. Growers cited several considerations about new requirements, including:

- concerns about lack of time for additional record keeping/reporting requirements;
- the added pressure of the current labor shortage and its impact on existing or additional work;
- the difficulty of electronic reporting in the absence of reliable broadband access;
- concerns about data use, including that the records may be used for defamation on social media;
- concerns about public access to CBI (confidential business information);
- the Board is already collecting pesticides sales data from restricted-use pesticide retailers and general-use pesticide wholesalers that could provide amounts of pesticides used in agriculture in the state.

C. Schools Use Reporting

While schools are required to maintain Pest Management Logs to document pesticide applications made on school grounds, all pesticide applications requiring a pesticide license must be made by Commercial Applicators. All commercial pesticide applications made on school grounds are recorded in the relevant commercial applicator’s application log and will be reported as a part of the commercial applicator annual use summary report (Appendix D). As mentioned in Section V(A) of this report, these reports can now be submitted electronically by commercial

applicators. At present, applications on school grounds are not necessarily specifically identified but could be identified in the description for the site of application—a required reporting field.

VI. Current Reporting Results—Use Summary

In 2021, BPC hired a temporary part-time staff member whose primary role was to enter 2019 Sales and Use Reports into the newly created functionality of the MePERLS database. To date, over 500 hours of staff time has been committed to this effort. Data entry for 2019 Sales Reports is ongoing and expected to be finished early in 2022. The following is a brief and preliminary summary of the 2019 use data displaying types of information and patterns that can be described with existing collection efforts.

Use of 359 conventional pesticide active ingredients, plus approximately 25 Minimum Risk (Section 25(b)) pesticide products were reported in 2019. The total for solid products tallied by weight in 2019 was 394,378 lbs. The total for liquid products tallied by volume was 24,291 gallons. The totals presented represent the weight and volume of the active ingredients as determined by multiplying the total amount of product used by the product's percent active ingredient. Tables 2 and 3 present the most commonly reported pesticides applied by commercial applicators. Commercial applicator use summary data includes some agricultural applications, but only those applications for which an agricultural producer hired a commercial applicator to apply pesticides. Applications made by individuals with private applicator licenses and agricultural basic licenses are not included. Many of the solid pesticide products reported as most commonly used or used in the largest quantities are primarily used for industrial applications. The industrial use of pesticides includes applications in paper mills and cooling towers largely to control microorganisms in slurries and these applications occur at higher volumes, comparatively.

Table 2. Use Summary for Commonly Used Pesticide Active Ingredients for 2019 (Reported by Weight). List includes only products where the total used was in excess of 100 lbs.

Active Ingredient (AI)	Use Type	AI Lbs
Dazomet	Soil fumigant	138,561.8
Ammonium sulfate	Industrial Antimicrobial	88,027.6
Ammonia	Industrial Antimicrobial	51,107.3
Chloropicrin	Soil fumigant	44,886.5
Chlorpropham	Herbicide	20,831.5
Sodium bromide	Industrial Antimicrobial	13,098.8
Sodium hypochlorite	Disinfectant	9,291.6
Boric acid	Insecticide	3,449.0
Phosmet	Insecticide	2,791.4
Trichloro-s-triazinetrione	Industrial Antimicrobial	2,647.7
Mancozeb	Fungicide	1,523.0
5-Chloro-2-methyl-3(2H)-isothiazolone	Industrial Antimicrobial	1,512.2
Sulfometuron	Herbicide	1,419.2
Chlorothalonil	Fungicide	1,344.9
2,4-D	Herbicide	1,329.0
Glutaraldehyde	Disinfectant	1,212.5
Terbacil	Herbicide	1,211.1
Fosetyl-AI	Fungicide	1,127.1
Imidacloprid	Insecticide	1,052.7
Dithiopyr	Herbicide	707.4
Atrazine	Herbicide	656.2
Prodiamine	Herbicide	595.8
Trichlorfon	Insecticide	576.5
2-Methyl-3(2H)-isothiazolone	Industrial Antimicrobial	510.5
Bifenthrin	Insecticide	500.5
Acetamiprid	Insecticide	428.0
Quinclorac	Herbicide	364.8
Chlorantraniliprole	Insecticide	347.2
1,3-Dichloro-5,5-dimethylhydantoin	Industrial Antimicrobial	289.0
Pentachloronitrobenzene	Fungicide	285.7
Acephate	Insecticide	227.1
Bronopol	Industrial Antimicrobial	220.5
Captan	Fungicide	220.0
Glyphosate	Herbicide	180.3
1,3-Dichloro-5-ethyl-5-methylhydantoin	Industrial Antimicrobial	159.0
Thiophanate-methyl	Fungicide	156.4
Hexazinone	Herbicide	117.0
Dicamba	Herbicide	106.2

Table 3. Use Summary for Commonly Used Pesticide Active Ingredients for 2019 (Reported by Volume). List includes only products where the total used was in excess of 50 gallons.

Active Ingredient (AI)	Use Type	AI Gals
Glyphosate	Herbicide	9,828.9
Chlorothalonil	Fungicide	2,887.9
2,4-D	Herbicide	978.3
Malathion	Insecticide	952.1
Bifenthrin	Insecticide	804.5
Dithiopyr	Herbicide	744.6
lambda-Cyhalothrin	Insecticide	691.6
Permethrin	Insecticide	451.4
MCPA	Herbicide	428.4
Mineral oil - includes paraffin oil	Insecticide	392.8
Imazapyr	Herbicide	369.8
Piperonyl butoxide	Insecticide	358.4
Iprodione	Fungicide	342.9
Diuron	Herbicide	288.1
Propiconazole	Fungicide	277.5
Hexazinone	Herbicide	273.3
Prothioconazole	Fungicide	257.0
Triclopyr	Herbicide	243.1
Methomyl	Insecticide	226.1
Sethoxydim	Herbicide	218.7
Mecoprop-p	Herbicide	188.6
Garlic	Insecticide	184.7
Aminopyralid	Herbicide	166.4
Tebuconazole	Fungicide	142.2
Alpha-cypermethrin	Insecticide	127.1
Dicamba	Herbicide	124.3
Potassium salts of phosphorus acid	Fungicide	118.7
Mesotrione	Herbicide	111.5
Naphthalene	Insecticide	95.0
Imidacloprid	Insecticide	93.9
Rosemary oil	Insecticide	88.6
Fipronil	Insecticide	88.4
S-Metolachlor	Herbicide	87.0
Sodium hypochlorite	Disinfectant	86.1
Methoxyfenozide	Insecticide	74.7
Thiophanate-methyl	Fungicide	72.7
Clethodim	Herbicide	72.3
Quinclorac	Herbicide	71.5
Pyrethrins	Insecticide	70.7
Pendimethalin	Herbicide	68.7
Spinosad	Insecticide	57.3

Sodium bromide	Industrial Antimicrobial	55.0
Diquat	Herbicide	54.8
Cedarwood oil	Insecticide	50.5

A further breakdown of the reported active ingredients by use type are presented in Tables 2 and 3. These use types are categories created to describe various types of pesticide application scenarios. The Built Structures category is very broad but includes all the applications geared toward keeping human-constructed facilities in working order. This category includes applications for managing bedbugs, sidewalks, foundations, cooling towers, biocide treatment as well as roofing, ant infestations, the areas around homes, fences, and similar. These categories do not correspond to licensure categories; instead, they are based on popular topics in pesticide discussions and were selected to help better understand use patterns. For example, the Rodents category is a subset of Built Structures but relevant to the ongoing discussions around rodenticides.

These data can also be explored on an active ingredient by active ingredient basis, as seen as examples in Figures 1 and 2, for glyphosate and imidacloprid respectively. The data from Tables 4 and 5 show how certain active ingredients appear under multiple use categories. Conversations about regulating the use of these active ingredients can be aided by better understanding which sectors use the largest quantities. Over time, graphs like these could provide a perspective on use pattern changes over time.

Table 4. Pesticide Active Ingredient Use Reported in Pounds by Commercial Applicators in 2019. The table is organized from greatest to least weight, in pounds. Note: In addition, there were 57,656 lbs of active ingredient recorded but general application categories could not be easily summarized from the data.

Broad Application Category	Active Ingredient Weight (lbs)	Top Three Most Common Active Ingredients (highest to lesser)
Built structures	235,743	Dazomet, ammonium sulfate, sodium bromide
Ag	71,039	Chloropicrin, Chlorpropham, Phosmet
Water	19,460	Ammonium sulfate, <i>Bacillus thuringiensis israelensis</i> , Diquat dibromide
Turf	7,311	Fosetyl-Al, Imidacloprid, Chlorothalonil
Ornamental	2,030	Boric acid, Acephate, Dithiopyr
Right of way	982	Sulfometuron, Glyphosate, Metsulfuron
Forestry	136	<i>Bacillus sphaericus</i> , Sulfometuron, Metsulfuron
Biting flies, ticks, & allies	14	Bifenthrin, S-Methoprene, Indoxacarb
Rodents	3	Carbon monoxide, Bromadiolone, Brodifacoum
Bare ground	2	Diuron, Sulfometuron, Chlorsulfuron
Invasives and habitat management	1	Imidacloprid, Metsulfuron, Triclopyr
Grand Total (of 1,456 records)	336,721	

Table 5. Pesticide Active Ingredient Use Reported in Gallons by Commercial Applicators in 2019. The table is organized from greatest to least volume, in gallons. Note: In addition, there were 9,808 gals of active ingredient recorded but general application categories could not be easily summarized from the data.

Broad Application Category	Active Ingredient Volume (gal)	Top Three Most Common Active Ingredients (highest to lesser)
Turf	4,129	2,4-D, Dithiopyr, Chlorothalonil
Ag	3,794	Malathion, Chlorothalonil, Glyphosate
Right of way	2,672	Glyphosate, Aminopyralid, Hexazinone
Ornamental	2,144	Bifenthrin, Permethrin, Piperonyl butoxide
Built structures	1,479	Lambda-Cyhalothrin, Garlic, Bifenthrin
Bare ground	110	Glyphosate, Nonanoic acid, Aminocyclopyrachlor
Forestry	52	Glyphosate, Triclopyr, Imazapyr
Biting flies, ticks, & allies	49	Bifenthrin, Cedarwood oil, 2-phenyl ethyl propionate
Water	32	Diquat dibromide, Cuprous oxide, Glyphosate
Invasives and habitat management	20	Glyphosate, Triclopyr, Imazapyr
Rodents	< 1	Fipronil, Borax, Bromadiolone
Grand Total (of 3,143 records)	14,482	

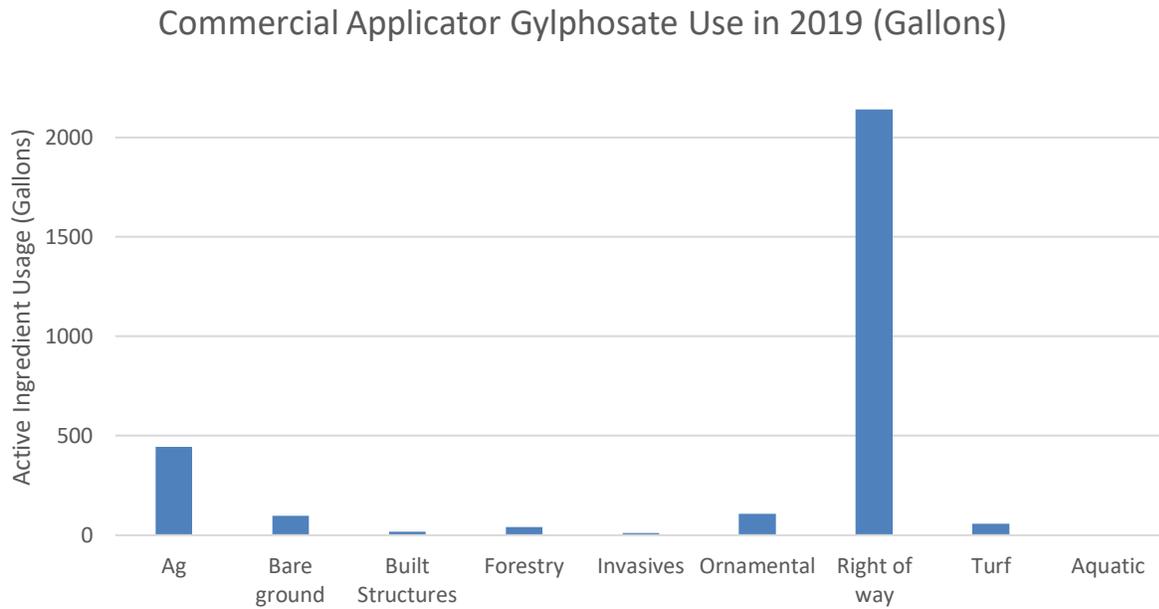


Figure 1. Liquid Glyphosate Use by Maine Commercial Applicators in 2019.

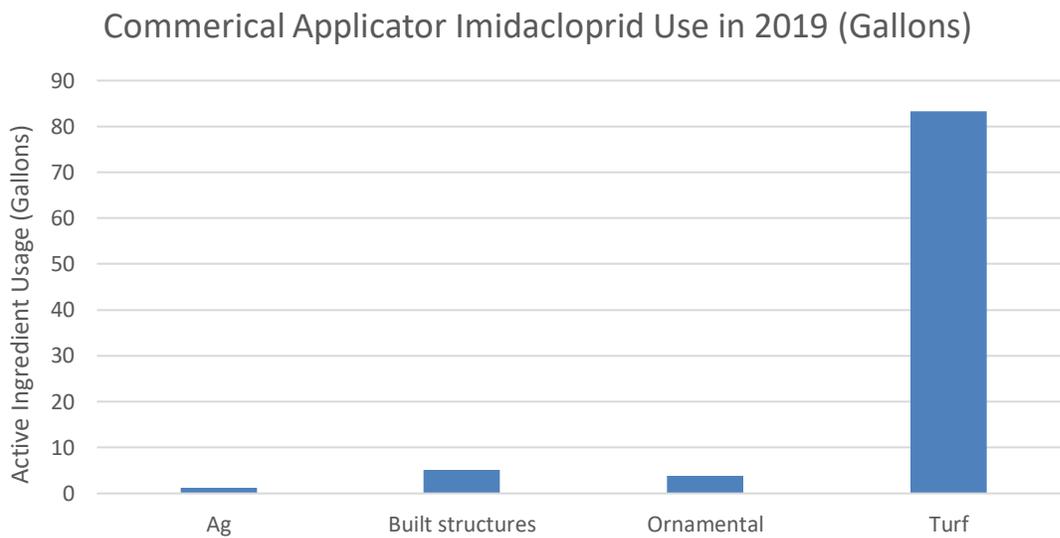


Figure 2. Liquid Imidacloprid Use by Maine Commercial Applicators in 2019.

VII. Use and Sales Reporting in Other States

BPC staff queried other state pesticide programs for information on sales and use reporting activities. In addition to mining state websites for information, a survey was sent via the American Association of Pesticide Control Officials (AAPCO). Twenty-four states and one territory responded to the survey. Summarized answers from the survey of pesticide use reporting and pesticide sales are presented in Table 5. Staff have combined survey results with prior experience and knowledge of other pesticide programs to produce this summary. For example, California, New York, and New Jersey did not respond to the survey, but their programs are known to staff and included below.

Table 6. Summarized Results Pesticide Use and Reporting Survey Sent to State Pesticide Programs. Survey was sent electronically to all state and territories with AAPCO membership. Twenty-four states and one territory responded to the survey. Fifteen states indicated that they did not collect or report on pesticide sales and use information.

State	Collect Use Data?	Report Use Data to Public?	Collect Sales Data?	Report Sales Data to Public?
Arizona	Yes	Yes		
Georgia	Yes			
Hawaii	Yes	Yes	Yes	
Maryland		Yes	Yes	
Massachusetts			Yes	
Minnesota			Yes	Yes
New Hampshire	Yes		Yes	
Oklahoma			Yes	
Puerto Rico	Yes		Yes	
Washington	Yes		Yes	

Ten states collect application data outside of typical enforcement action activities (the states listed in Table 5 plus California, New York, New Jersey, & Vermont). In those states there is a mix of reporting requirements, with annual reporting as the most common.

A. States with pre-notification

In three states/territories, notification of a proposed pesticide application is required prior the actual application taking place. The states/territories with pre-notification for certain types of applications are California, Georgia, and Puerto Rico. In California, County Commissioners accept application plans within the week of a proposed application. As part of the notification, certain agricultural applications in California must show approval of the application details from certified crop advisors. County Commissioner offices are also responsible for data clean-up and often reach out to the applicators for clarifications prior to submission of the data to California's Department of Pesticide Registration. Puerto Rico requires pre-notification of certain pesticide

applications within the week of the application. Georgia has a heightened focus on termite applications and consumer protection issues. In advance of structural pesticide treatments for termite control, applicators are required to submit fumigation plans that detail the location, name, and contact information for the operator in charge, active ingredient, volume to be treated, pest, and time of release.

B. States with post-application use records collection

Many states collect post-application records; however, each program is unique in the details of what is collected. In Maine and Vermont, annual summaries (Appendix D) based on application records (Appendix F) are collected from commercial applicators (private applicators are excluded from this requirement). In New Hampshire, annual summaries based on application records are submitted, similar to Maine and Vermont; however, in New Hampshire, all applicators (commercial and private) are required to submit records. In New York, commercial applicators, but not private applicators, are required to submit an annual summary report. Applicators report every application on an application-by-application basis. The New York annual summary report includes product information, application location, date, dosage, method of application, target pest, site, and total product used. In Hawaii, recent legislation required annual use reporting for restricted use pesticide applications by certified applicators. The reporting form and collected details in Hawaii are not substantially different from Maine's annual reporting (Appendix A). Washington collects details associated with usage on a voluntary basis at pesticide credit training conferences. Since credit meetings tend to be focused around applicator categories or specific commodities, these meetings work well for asking focused groupings of applicators what methods and active ingredients they have been using.

C. States that report data from use records or summaries to the public

The data reported is not in the format most useful to the public. Pesticides are managed by the State Brand Name and EPA Registration Number, not the active ingredient. Some states present the data received as lists of products (like Hawaii), while others process the information and convert the data into pounds of active ingredient. Even the task of determining the amount to report differs among reporting states. The weight of the product as purchased includes the active ingredient and the inert/other ingredients together. By using percent active ingredient information from the label, the total weight can be converted into active ingredient alone. Some states (like Vermont) additionally convert liquid products from gallons into their solid weights using formulas based on the density of active ingredient.

Other states (like New York) report the results separately in pounds and in gallons. The New York results are available as summarized report documents and as an interactive web application hosted by Cornell University/Cooperative Extension. The most recent validated annual report covers 2013 data; however, data up to 2018 can be found on the interactive web application.

In Arizona, most reporting focuses on specific topics rather than simply all of the annually submitted data. Reports are the product of Cooperative Extension under direction and collaboration of the Arizona Pesticide Management Committee (APMC), a stakeholder group for IPM in Arizona. Pesticide use data requested by third-party groups in Arizona is handled by a Data Request subcommittee to ensure that identifying features are removed prior to release.

Maryland does not annually collect use data. However, every few years, as budget permits, they work with the National Agricultural Statistical Service (NASS) to estimate pesticide usage in the state. NASS performs in-depth surveys of agricultural producers (generating greater than \$1,000 annually) as part of their Census of Agriculture. After identifying growers, private applicators, and commercial spray firms associated with agriculture in Maryland NASS and Maryland Department of Agriculture sends surveys to all growers and applicators. The surveys are voluntary, and between 34% and 55% of the surveys are returned. The data are privacy protected as data management is handled completely by NASS personnel, and privacy is extended by federal law under Title 7 US Code § 2276.

D. States with sales records collection

As seen in Table 6, eight states participating in our survey reported the collection of sales data from pesticide dealers. Of those eight respondents, only one state, Minnesota, also publishes sales data for the public. New York state also apparently collects and represents sales data to the public, similar to their use data as discussed in the previous section.

VIII. Past Board Use and Sales Reporting Efforts

In 2002, the BPC released findings relevant to LD 1726, An Act to Minimize Reliance on Pesticides, where the BPC was to study ways to improve the usefulness of report information and to publish an annual report on pesticides sales and sector of use wherever possible. The full report discusses 2000 sales and use data but also includes discussion of 1995, 1997, 1998 and 1999 data and can be found here:

https://www.maine.gov/dacf/php/pesticides/documents2/technical_resources/Pesticide-sales-and-use-report-2020.pdf

The 2002 report acknowledged that the legislature did not provide any new money to accomplish the proposed task of annual use reporting and data sorting by active ingredient and use sector. Staff identified several major hurdles to accomplish the effort, the first of which was density conversion factors to translate gallons of liquid products into pounds of active ingredients contained in each liquid product sold in the state. The necessary data to calculate conversions was and is not readily available from any one source. In 2002, a staff decision was made to divert the staff person in charge of water quality and worker safety from those responsibilities to focus

on searching and compiling density data for each of over 500 active ingredients. The ensuing process consumed hundreds of staff hours.

The second major hurdle involved checking the veracity of hundreds of use and sales summary reports, entering thousands of lines of data, and developing a database.

In addition to these significant challenges, the 2002 report noted that while sales and use data was reported, additional work was necessary to improve the poor quality of reports, ensure required reports are received from all distributors, and continue efforts to sort the data by sector of use.

The 2002 report also provided a series of recommendations that are described in further detail below.

IX. Considerations

The Board's staff has attempted to identify considerations relevant to successful implementation of comprehensive use and sales reporting as has been requested by LD 524. Following review of the 2002 Sales and Use Report (Appendix G), staff determined that the recommendations of this report remain relevant and are listed below. Additionally, staff have identified relevant necessary resources, barriers to success, and recommendations that are also provided below.

Recommendation from the 2002 Sales and Use Report:

- Consider revisions to 22 M.R.S.A § 1471-W (3) that would require any person who distributes pesticides into the state to report the amounts of the sales, regardless of to whom those sales are made. Such an approach should eliminate many of the reporting loopholes and the potential for double reporting.
- Consider revisions to 7 M.R.S.A. § 607 (2) to require pesticide registrants to submit additional useful information about the pesticide products at the time of registration, similar to New York State. Examples of other useful information may include: 1) pounds of active ingredients per gallon of liquid formulations; 2) type of pesticide such as insecticide, herbicide, etc.; 3) probable use sector such as agriculture, turf, structures, aquatic, industrial, etc.; and 4) label signal word or other toxicity data.
- Identify funding and provide necessary positions to administer the state pesticide sales and use information program. Other states charged with compiling pesticide sales and use data have come to recognize the complexity of the task and allocated resources accordingly. For instance, in New York State, this program is contracted to Cornell University, which had, in 2002, eight staff members working on the program.
- Consider requiring commercial agricultural producers to submit annual pesticide use reports in addition to the commercial applicator reports the Board currently receives.

- Modify the Board’s rules requiring reporting by commercial pesticide applicators (Chapter 50) to tailor the reports to correspond to the type of information that is of interest to the legislature.

Additional Necessary Resources/Transitions and Barriers to Success

As previously mentioned, the Board has new electronic reporting functionality and has compiled 2019 commercial data with this new software and the help of temporary staff. Temporary staff will continue to be necessary for successful compilation of 2020 and 2021 data. In order to effectively receive annual sales and use data from reporting parties in the future, it will be necessary for pesticide applicators and distributors to input their own data. The Attorney General’s Office has indicated that making electronic submittals mandatory would require rulemaking.

It is important to note that even with applicator and dealer input of the data, additional staff will be necessary to respond to the increased volume of support requests for entering sales and use reports and for data quality control. Without some idea of the type and frequency of the records reported and expectations for data publishing, it is impossible for staff to precisely predict the number of staff and the cost of software improvements necessary for response.

Given concerns about the cost of employing the necessary number of staff to adequately address the demands of comprehensive reporting, Board staff have reached out to the Maine Office of Information Technology and the currently contracted programmers who built and maintain MePERLS. Staff have asked for recommendations of technological solutions to staffing, specifically asking about the application of artificial intelligence (a.i.) and optical character recognition (OCR). Following these discussions, staff anticipate incorporating a rudimentary version of OCR into the existing sales and use reporting framework; however, use of a.i. appears unrealistic given the absence of a searchable pesticide label language database.

Additional Recommendations

Staff have identified some potential additional suggestions to aid in fulfillment of the sales and use reporting request and to improve the quality of the annual pesticide sales and use reports:

- Consider modifying the Commercial Use Summary report (CMR 01-026 Chapter 50) to require identification of pesticide applications on school grounds through use of the existing reporting field “site.”
- Consider revisions to CMR 01-026 Chapter 50 to require electronic submittal of commercial applicator use annual summary and restricted-use pesticide dealer sales annual summary reports.
- Consider revisions to 22 MRSA § 1471-W(3) to require electronic submittal of general-use pesticide dealer annual sales summary reports.

- Consider hosting a series of stakeholder meetings with parties required to submit sales and use reports and entities interested in sales and use data to better understand the types of questions to which the data might be applied. Without a clear understanding of the types of information of interest, it is difficult to impossible to effectively tailor responsive reports.
- At present, all pesticides sales and use data collected by the Board is subject to FOAA. Consider revisions to Maine law to provide protection for information identified as CBI by agricultural producers.
- Consider the potential issues of data security for all collected information and identify ways by which sales and use data could be collected and protected.

Commercial Applicator Annual Summary Report

Report Year 2021

Master Applicator's License #	
Master Applicator's Name	
Company Name	
Company Email	
Address	
Telephone #	

If this report covers applications performed by all company licensees, please check here

If no applications performed, please check box and return to the Board. Please convert all application data to pounds or gallons of 'undiluted'

Target site	Pesticide Brand Name	EPA Registration Number	Total Pounds Undiluted Formulation	Total Gallons Undiluted formulation	Total Area Treated (Ac, Sq Ft, #trees, homes, pets)
Golf greens	Scott's fungicide 6	538-159	373.75		183,931 Sq. Ft.
Broccoli	Phosdrin 4EC	5481-412		7.1	57 Ac.
Wall Void	Empire 20	6217-145		0.16	20 homes
Dogs	Fleas-No-More	624-467		3	1378 dogs

Page ____ of ____

Appendix E—Summary of Maine Legislation Addressing Use/Sales Reporting, Notification, and Drift

Notification				
Legislature	LD #	Title of Bill	Description	Final Disposition
110 th	941	An Act Requiring the Notification of the Specific Location of All Aerial Application of Pesticides Including Herbicides.	Requires notice to the BPC and newspapers in the area before aerial spraying of pesticides	Leave to Withdraw (died) 1983
111 th	1249	An Act Relating to the Notification of Intent to Apply Pesticides	Requires notification of intent to apply pesticides & establishes fee of retail sale of pesticides to provide funds to monitor notification and application	Unanimous Leave to Withdraw (died) 1984
111 th	2335	An Act to Provide for Public Notifications of the Intent to Apply Pesticides and for Monitoring Certain Pesticide Application Projects	Establishes a system for public notification provisions prior to pesticide application.	Unanimous Leave to Withdraw (died) 1984
113 th	2441	An Act to Require Farms to Post Notice of Pesticides Used	Requires owners of farms to notify both agricultural workers and persons who enter the farm to pick their own produce of the pesticides used on the farm.	Majority ONTP (died) 1988
118 th	447	An Act Regarding Disclosure of Pesticide Use to a Buyer of Blueberry Land	Requires seller of blueberry land to disclose to the prospective buyer any use of pesticides on the land prior to purchase.	ONTP (died) 1997
119 th	1535	An Act to Require Notice to Abutters Prior to Commercial Applications of Pesticides	Requires commercial applicators to provide a one-week advance notice of applications to residences on abutting property.	Unanimous ONTP (died) 1999
122 nd	1256	An Act To Ensure Public Awareness of Pesticide Applications	This bill requires persons certified to apply pesticides to provide written notice of pesticide application to the Board of Pesticides Control concerning the type and amount of pesticide and the time and place of application. The Board must then make that information easily available to the public.	ONTP (died) 2005

123 rd	1698	An Act To Provide for Public Notification of Indoor Pesticide Applications	voids the current rules of the BPC for notification in Ch 26, requires institutions to post for a period of 6 months after the application a notice that pesticide application took place. Also implements specific notification rules for childcare facilities and notice to tenants.	ONTP (died) 2007
123 rd	2194	Resolve, Regarding Legislative Review of Portions of Chapter 26: Standards for Indoor Pesticide Applications and Notification for All Occupied Buildings Except K-12 Schools, a Major Substantive Rule of the Department of Agriculture, Food and Rural Resources, Board of Pesticides Control. (Submitted by the Department of Agriculture, Food and Rural Resources, Board of Pesticides Control	This resolve provides for legislative review of portions of Chapter 26: Standards for Indoor Pesticide Applications and Notification for All Occupied Buildings Except K-12 Schools, a major substantive rule.	Emergency Passed. Resolve, Chapter 153. 2008
124 th	972	Resolve, Regarding Legislative Review of Portions of Chapter 28: Notification Provisions for Outdoor Pesticide Applications, a Major Substantive Rule of the Board of Pesticides Control	This resolve provides for legislative review of portions of Chapter 28: Notification Provisions for Outdoor Pesticide Applications, a major substantive rule of the Department of Agriculture, Food and Rural Resources, Board of Pesticides Control.	Emergency Passed. Resolve, Chapter 115. 2009
124 th	1293	An Act To Require Citizen Notification of Pesticide Applications Using Aerial Spray or Air carrier Application Equipment	Requires land managers to notify neighbors prior to the application of pesticides using an aircraft or air-carrier equipment. Establishes the notification registry of citizens that desire additional information when pesticides are applied using aircraft within 1,320 feet of land owned, leased, or resided upon.	Enacted, PL Chapter 378. 2009
124 th	1294	An Act To Amend the Laws Governing the Referred to Jt. Standing Comm. On Agriculture, Conservation and Forestry. Public Hearing Process for the Board of Pesticides Control	Requires the BPC to hold public hearings on registration applications of certain pesticides (toxicity category I, 40 Code of Federal Regulations, 5 Section 156.62, 2008) or for an application for registration of a product that contains a plant-incorporated protectant.	ONTP, Joint Rule 310. (died) 2009

124 th	1547	An Act To Revise Notification Requirements for Pesticides Applications Using Aircraft or Air-carrier Equipment	Excludes backpack sprayers as air-carrier equipment, adds definition for “sensitive area likely to be occupied”, requires notification be sent by March 15 th , removes obligation to update notification information more than 3 years, allows information for participants in the pesticide registry to be provided any time of day before application rather than minimum of 24 hours prior, specifies brand names rather than commercial and scientific names of pesticides provided to registry participants, request for MSDS from landowner will not postpone treatments, land managers must use registrant’s preferred form of communication, revises information required from registrants, establishes a deadline of March 15 for registrants who want to receive information, and authorizes waivers of notification requirements when public health or natural resources are threatened.	Emergency enacted, PL Chapter 584. 2010
125 th	16	An Act To Revise Notification Requirements for Pesticides Applications Using Aircraft or Air-carrier Equipment.	Changes the distance requirements for the pesticide notification registry from within 1,320 feet of a property to within 100 feet of a property.	ONTP (died) 2011
125 th	228	An Act To Revise Notification Requirements for Pesticide Application	Repeals laws that govern the development and maintenance of a registry of the properties of residents, lessees, and property owners who request that their properties be placed on an advanced notification registry for outdoor pesticide applications.	Enacted, PL Chapter 332. 2011
125 th	1041	An Act To Simplify and Enhance Pest Control Notification	This bill amends the notification process for pesticides applications. The bill directs that the registry established by the Department of Agriculture, Food and Rural Resources, Board of Pesticides Control is the only mandatory notification system for outdoor applications. It requires all registrants to update or confirm their contact information annually. The bill amends notification requirements that currently apply to applications made using aircraft or air-carrier equipment to provide that the requirements apply to outdoor applications generally. It requires that the board determine the distances between properties and applications within which a land manager is required to notify a person whose property is on the registry of an application based on the type of equipment used to make the application.	ONTP (died) 2011

126 th	1391	An Act To Provide a Pesticide Spraying Notification Process	This resolve directs the DACF to create a publicly accessible website where persons may enter their information on a registry for notification of pesticide applications by aircraft or air carrier equipment in a given county. This bill also allows persons to be on more than one county registry. Applicators must enter application date, time and location and the types of pesticides to be applied and other information as determined by the department into the publicly accessible website at least one week before the application. The website must then generate e-mail messages to those listed on the appropriate county registry notifying them of the application of pesticides	ONTP (died) 2013
126 th	33	Resolve, Regarding Legislative Review of Portions of Chapter 27: Standards for Pesticide Applications and Public Notification in Schools, a Major Substantive Rule of the Board of Pesticides Control. New Title: Resolve, Regarding Pesticide Applications and Public Notification in Schools	This resolve provides for legislative review of portions of Chapter 27: Standards for Pesticide Applications and Public Notification in Schools, a major substantive rule of the Department of Agriculture, Conservation and Forestry, Board of Pesticides Control.	Emergency Passed, Resolve. Chapter 63. 2013
126 th	1569	Resolve, Regarding Legislative Review of Portions of Chapter 51: Notice of Aerial Pesticide Application, a Late-filed Major Substantive Rule of the Department of Agriculture, Conservation and Forestry. (Submitted by the Department of Agriculture, Conservation and Forestry	This resolve provides for legislative review of portions of Chapter 51: Notice of Aerial Pesticide Application, a major substantive rule of the Department of Agriculture, Conservation and Forestry that was filed outside the legislative rule acceptance period.	Passed, Resolve. Chapter 86. 2014

127 th	203	Resolve, Regarding Legislative Review of Portions of Chapter 28: Notification Provisions for Outdoor Pesticide Applications, a Major Substantive Rule of the Department of Agriculture, Conservation and Forestry, Board of Pesticides Control	This resolve provides for legislative review of portions of Chapter 28: Notification Provisions for Outdoor Pesticide Applications, a major substantive rule of the Department of Agriculture, Conservation and Forestry, Board of Pesticides Control.	Emergency Passed, Resolve. Chapter 6. 2015
129 th	101	An Act To Reestablish the Pesticide Notification Registry	This bill reestablishes the law, which was repealed by Public Law 2011, chapter 332, governing the development and maintenance of a registry of the properties of residents, lessees and property owners who request that their properties be placed on a registry in order that they receive advance notification of the outdoor application of pesticides near their properties.	Leave to Withdraw. 2019
Sales & Use				
110 th	738	Resolve, Authorizing and Directing the Board of Pesticides Control to Study and Report on Urban Pesticide Usage.	Requires the Board of Pesticides Control to study the use of pesticides in urban areas and report back to the first regular session of the 111 th Legislature.	Leave to Withdraw, Report Read and Accepted. 1981
114 th	179	An Act Concerning the Regulation of General Use Pesticides	Requires annual sale reports from persons who are licensed to distribute general use pesticides.	Enacted, PL Chapter 93. 1989
114 th	466	An Act to Study the Use of Pesticides in the State's Forests	This bill requires the Department of Conservation to review the issues relating to pesticide use in the state's forests on an ongoing basis. The department is required to review the use of pesticides and the issues surrounding their use by December 1990.	Majority ONTP (died) 1989
115 th	577	An Act Regarding the Use of Pesticides and Placing the Board of Pesticides Control under the Authority of the Department of Environmental Protection	Moves the BPC from DACF to DEP and prohibits sale of certain produce treated with pesticides. Requires research into agricultural, forestry, and right-of-way alternatives to pesticide use, repeal the exemption for pesticide dealer reporting of pesticides sold in smaller containers.	Majority ONTP – resolve from LD 1838, 1989 to study herbicide use

115 th	72	An Act Regarding the Forestry, Natural Habitat, Water Quality and Environmental Impacts of Pesticide Use	Same bill as above but removes the change of jurisdiction of the BPC from DACF to DEP.	ONTP (died) 1991
118 th	420	An Act to Improve the Reporting of General Use Pesticide Sales	Shifts reporting requirements primarily to wholesalers and a few large distributors. Computerized sales data on all pesticides regardless of package size. Removes burden from smaller retailers.	Enacted, PL Chapter 139. 1997
118 th	447	An Act Regarding Disclosure of Pesticide Use to a Buyer of Blueberry Land BY REQUEST	This bill requires a seller of blueberry land to disclose to the prospective buyer any use of pesticides on the land of which the seller has knowledge. This includes knowledge the seller may have about pesticide use that occurred before the seller bought the land. Disclosure may be delivered orally or written in the contract, but may not be hidden in fine-print contract language. The bill gives the buyer the right to rescind the land sale contract, or after delivery of the deed, to recover damages.	ONTP (died) 1997.
118 th	1726	An Act to Minimize Reliance on Pesticides	This bill directs the agencies of the State to promote integrated pest management and to work with private interests to determine other appropriate actions. It directs the State Board of Pesticides Control to study ways to improve the usefulness of report information and to publish an annual report on pesticides sales and sector of use wherever possible.	Enacted, PL, Chapter 251. 1997
119 th	2435	An Act to Implement the State Policy to Minimize Reliance on Pesticides	This bill appropriates \$150,000 to the Board of Pesticides Control to be used to establish an Integrated Pest Management Research Fund.	ONTP (died) 2000
120 th	1540	An Act to Ensure that the State Board of Pesticides Control has Sufficient Resources to Provide Accurate Information About the Use of Pesticides in the State	Amends the annual reporting requirements of the BPC to require that report to Legislature each January 15 th . Contents expanded to include review of all commercial and noncommercial uses of pesticide products in the state and ID of purpose for use, environmental and economic impacts, and benefits of those uses.	Enacted, PL Chapter 335 2001
127 th	708	An Act To Limit the Use of Pesticides on School Grounds	Defines lawn care pesticide, pesticide, school, and school grounds and stipulates that lawn care pesticides can only be used for stinging or biting insects, in response to a public health nuisance, or on an agricultural field in accordance with manufacturer's instructions. This rule also designates the Department of Education to adopt landscaping designs that minimize use of pesticides.	ONTP – introduced in 128 th as LD 174

128 th	174	An Act To Limit the Use of Pesticides on School Grounds	See above	Died on Adjournment 2018
129 th	908	An Act To Require Schools To Submit Pest Management Activity Logs and Inspection Results to the Board of Pesticides Control for the Purpose of Providing Information to the Public	This bill establishes in law certain requirements of the Department of Agriculture, Conservation and Forestry, Board of Pesticides Control related to pest management on school property. It requires a school to maintain a pest management activity log related to the application of pesticides. It requires this information to be provided annually to the board and requires the board to post the information on its publicly accessible website. It also requires that the board post on its publicly accessible website a list of all board inspections of a school's use of pesticides and the results of those inspections.	Died on Adjournment 2020
129 th	2083	An Act To Require the Board of Pesticides Control To Annually Publish Certain Information Regarding Pesticides and To Prohibit Certain Uses of Neonicotinoids	This bill has two requirements. First, The Department of Agriculture, Conservation and Forestry, Board of Pesticides Control to annually publish a summary of the reports received during the previous calendar year from commercial applicators of pesticides. For each pesticide reported to the board, the board's annual summary must include information on the total quantity of pesticide applied and the total area treated in each county in the State. Second, the bill requires The Board of Pesticides Control to prohibit the use of any product containing neonicotinoids for landscape gardening by certified applicators or limit the use of any product containing neonicotinoids if the board determines that use is necessary to protect the State. The bill also requires the board to adopt rules establishing restrictions for the use of products containing neonicotinoids.	Died on Adjournment 2020
130 th	524	Resolve, Directing the Board of Pesticides Control To Research Workable Methods To Collect Pesticide Sales and Use Records for the Purpose of Providing Information to the Public	This bill directs the Board of Pesticides Control to research workable methods to collect pesticides sales and use records from schools. The board shall explore the best methods for collecting information on pesticide sales in the State. Results of this research must be provided in a report to the Joint Sanding Committee on Agriculture, Conservation, and Forestry.	Passed, PL Chapter 54. 2021

130th	1599	An Act To Establish A Maine Pesticide Sales and Use Registry	This bill directs the Department of Agriculture, Conservation and Forestry, Board of Pesticides Control, in collaboration with the Department of Administrative and Financial Services, Office of Information Technology, to create a publicly accessible online registry of pesticide dealers and applicators reporting pesticides sold, distributed or applied in the State and including the quantity, location and purpose of the use of pesticides in indoor and outdoor applications. This bill also requires the Board of Pesticides Control to report annually to the Legislature on the developments and progress made in carrying out the state policy of minimizing the use of pesticides.	Died on Adjournment 2021
Drift				
111 th	1022	An Act to Protect the Public from Unsafe Pesticide Use.	Enhances the Board of Pesticides Control Act to strengthen Board investigative, rulemaking, and enforcement powers. This includes residues, droplet size, buffer zones, and new registration periods.	Enacted, PL Chapter 558. 1983
111 th	2306	An Act to Amend the Act to Protect the Public from Unsafe Pesticide Use	Repeals a prohibition on all application of pesticides which may result in any off-target residue and substitutes a requirement that the board may issue regulations to minimize drift.	Enacted, PL Chapter 761. 1983
122 nd	1657	An Act To Minimize the Risk to Maine's Marine Waters and Organisms Posed by the Application of Pesticides	Limits the application of pesticides near the normal high tide mark for the control of browntail moths. This includes prohibiting the use of mist blower and hydraulic rig within 500 and 50 feet of a high tide mark, respectively.	Enacted, PL Chapter 553. 2005
123 rd	406	An Act To Prohibit Aerial Spraying of Pesticides near Buildings, Roads and Bodies of Water	This bill establishes buffers where aerial spraying of pesticides is prohibited.	ONTP 2007 – became LD 182 in 124 th
124 th	182	An Act To Prohibit Aerial Spraying of Pesticides near Buildings, Roads and Bodies of Water	See above	ONTP (died) 2009

124 th	494	Resolve, Regarding Legislative Review of Portions of Chapter 22: Standards for Outdoor Application of Pesticides by Powered Equipment in Order To Minimize Off-target Deposition, a Major Substantive Rule of the Department of Agriculture, Food and Rural Resources, Board of Pesticides Control	Revises portions of Chapter 22 to minimize off-target deposition, major substantive rule.	Emergency Passed, Enacted. Resolve Laws. Chapter 114. 2009
125 th	591	An Act To Prohibit the Use of Pesticides in Certain Circumstances	Prohibits application of pesticides from aircraft. Also prohibits use of pesticides for aesthetic purposes, removing roadside vegetation, and removing vegetation in parks. Also directs the board to prohibit synthetic pesticides when less toxic, naturally occurring pesticides are present as an alternative.	Leave to Withdraw. (died) 2011
126 th	1567	Resolve, Regarding Legislative Review of Portions of Chapter 22: Standards for Outdoor Application of Pesticides by Powered Equipment in Order To Minimize Off-Target Deposition, a Late filed Major Substantive Rule of the Department of Agriculture, Conservation and Forestry	This resolve provides for legislative review of portions of Chapter 22: Standards for Outdoor Application of Pesticides by Powered Equipment in Order to Minimize Off Target Deposition, a major substantive rule of the Department of Agriculture, Conservation and Forestry that was filed outside the legislative rule acceptance period.	Passed, Resolve PL. Chapter 88. 2014

SPRAYER CALIBRATION LOG

Date calibrated:				
Sprayer brand:				
Spayer type:				
Sprayer model:				
Nozzle type:				
Nozzle spacing:				
Nozzle orientation ¹ :				
Nozzle condition ² :				
Boom height ³ :				
Pressure:				
Speed (mph):				
Throttle (rpm):				
Tractor model:				
Tractor gear:				
Calculated volume/acre ⁴ :				
Calibration method:				

1 - Nozzle orientation is the nozzle angle with reference to the airstream (for aerial and air-blast) or with the ground (for boom sprayers). For aerial and airblast 0° = with the airstream; for boom sprayers, 0° = straight down.

2 - Do all nozzles match (size and number) and does output of each nozzle vary by less than ± 10% from the average nozzle output?

PESTICIDE APPLICATOR LOG

Company Name:

Date	Start Time	Finish Time	Address, Town/ Field Location ¹	Size of Treated Area ²	Sensitive Area ³ Yes/No	Site or Crop

1 - Be specific, street address, etc. Use abbreviations if needed.

2 - Acres or other unit of measure you normally use, eg. 1000 sq ft, tree-volume, acre-ft, linear miles, etc.

3 - If sensitive areas are present, a description or map is required.

NOTES:

Applicator Name(s):

License Number (s):

2.

Target Pest	Wind	Weather Conditions			Pesticide(s) and Diluent Applied ⁵	Rate Description			Application Method
	Speed & Direction	Temp	Cloud Cover	Time Noted ⁴		Undiluted	Mix	Mix Ratio	

4 - Note weather conditions every two hours, more often if conditions change.

5 - Use the pesticide key at the front of this Logbook to record pesticide brand name, active ingredient, EPA registration number and restricted entry interval or air concentration interval.

If you make an incorrect entry - DO NOT ERASE - cross out the error and write in the correction

REPORT OF
PESTICIDE SALES AND COMMERCIAL USE
FOR
CALENDAR YEAR 2000

PREPARED BY

MAINE BOARD OF PESTICIDES CONTROL
MAINE DEPARTMENT OF AGRICULTURE, FOOD & RURAL RESOURCES
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PUBLISHED IN ACCORDANCE WITH P.L. 1997, CHAPTER 389
AND P.L. 2001, CHAPTER 355

MARCH 29, 2002

REVISED JUNE 27, 2002

REVISED SEPTEMBER 6, 2002

Report of Pesticide Sales and Commercial Use
For Calendar Year 2000

1

REVISION NOTES

The revisions of June 27th result from information prepared for a presentation to the Joint Standing Committee on Agriculture, Conservation and Forestry on June 4, 2002. They include a new section titled Interpretation of Reports plus three new tables that (1) sort the pesticides by major use classification, (2) sort the homeowner products by quantity but list the type of product, and (3) compare retail sales for 2000, 1997 and 1995.

The revisions of September 6th correct errors in Appendices I-A and I-B that resulted from an error in the original query that incorrectly multiplied the quantities when there was more than one federal or state registration number.

REPORT DISCUSSION

Introduction

In 1997, the Maine Legislature passed LD 1726, An Act to Minimize Reliance on Pesticides. One of the two major provisions of the bill created a state policy for finding ways to use the minimum amount of pesticides needed to effectively control targeted pests in all areas of application.

The second provision directed the Board to implement a system of record keeping, reporting, data collection and analysis that provides information on the quantity of products and brand names of pesticides sold. In addition, the Board was directed to apply this system to compile, by October 1st of each year, an annual report containing the quantity of product sold in the previous year, sorted by the trade name and United States Environmental Protection Agency registration numbers. Further, the report was to be sorted by sector of use, wherever possible. The Board was also directed to build cooperation with the University of Maine Cooperative Extension to improve these pesticide information databases and to optimize reporting analyses.

The Board produced reports of the 1998 and 1999 sales and use data before there was general agreement that sorting by product name and EPA registration number did not produce a useable report that allowed evaluation of the relative levels of pesticide use by principle use sectors within the state. Legislation passed in 2000 released the Board from reporting in 2000 and 2001, directing it instead to study ways to improve the quality of the data collection and sorting. In 2001, legislators pointed to small, focused reports produced previously by the Board that summarized sales of agricultural pesticides by pounds of active ingredient. Subsequently, legislation was passed directing the Board to sort the data by active ingredient and prepare a new report by April 1, 2002.

Constraints on Staff Resources

Because the 2001 legislation did not provide any new money to accomplish these tasks, production of the newly required reports presented some major hurdles for the Board's staff. First, density conversion factors to translate gallons of liquid products into pounds of active ingredients had to be acquired and entered into a database for all active ingredients contained in each liquid product sold in the state. This data is not readily available from any one source. Consequently, the staff person in charge of water quality and worker safety who is knowledgeable in databases and pesticide formulations was diverted from her job responsibilities. A labor intensive process of searching for density data for each of over 500 active ingredients ensued that consumed hundreds of staff hours. Second, this staff person was assigned to check the veracity of the hundreds of reports, enter the thousands of lines of data, and develop a database system capable of

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summarizing sales and use amounts and converting them to pounds of active ingredients. It required over two months of staff time to develop the report to this point. Significant additional man hours will be needed in the future to improve the poor quality of submitted reports, ensure that required reports are received from all distributors and continue efforts to sort the data by sector of use.

Limitations of the Data

In addition to some of the obstacles discussed above, the Board is still confronted with a fundamental problem that limits the usefulness of the attached reports. The statutory reporting requirements as currently constructed do not capture all the pesticide sales in the state and have a potential for some double reporting.

In 1997, legislation was passed with the hope it would improve the reporting for the vast majority of pesticide (the general use or over the counter pesticides) sales in the state. Prior to that time, all licensed retailers of general use pesticides, including department and hardware stores, had to report their annual pesticide sales, but products sold in less than one quart or five pound sizes were exempt from the reporting requirement. When the Board pointed out difficulties encountered trying to obtain accurate reports from these retailers and that large quantities of smaller sized products were not being reported, the legislature decided to remove the container size exemption but take the burden off the smaller stores by identifying a smaller group to do the reporting. The actual language in the revised statute, 22 M.R.S.A. § 1471-W (3), reads, "Any person who distributes general use pesticides to licensed general use pesticide dealers in the State shall keep and maintain records of these sales for reporting purposes." While it seemed like a good idea at the time, we now realize it creates a system where sales of the same products could be reported more than once, and it ignores some fairly substantial amounts of sales that go directly from out-of-state to large in-state end-users and licensed restricted use pesticide dealers. Examples of high volume sales directly to end-users include the following:

- Exterminators
- Lawn care companies
- Golf courses
- Right-of-way maintenance companies
- Forest management companies
- Internet sales to any end-user
- Catalogue sales to any end-user
- Chlorine to many industrial/municipal sites
- Biocides to many industrial/municipal sites
- Wood preservatives to pressure treatment facilities

Sales Reports

There are three sets of calendar year 2000 Maine pesticide sales reports attached, tallied by total volume of active ingredient sold. Each set is sorted both alphabetically and then by volume of sale. These sets are comprised of:

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- Wholesale sales,
- Retail sales, and
- Sales of homeowner products.

Wholesale Reports (Appendices I-A & I-B)

The wholesale reports were compiled from reports submitted by distributors who sell pesticides to licensed Maine general use pesticide dealers. Therefore, this information represents sales of pesticides to retailers such as department stores, hardware stores, farm & garden supply stores and other retailers that distribute over the counter pesticides. Several types of pesticides are exempt from the general use pesticide dealer licensing requirements, and those products are not covered by these reports:

- Household use pesticide products containing no more than 3% active ingredients;
- DDVP impregnated strips containing no more than 25% active ingredient;
- Pest supplies, such as shampoos, tick and flea collars and dusts;
- Disinfectants, germicides, bactericides and virucides;
- Insect repellents;
- Indoor and outdoor animal repellents;
- Moth flakes, crystals, cakes and nuggets;
- Indoor aquarium supplies;
- Swimming pool supplies;
- Aerosol products; and general use paints, stains and wood preservatives and sealants.

Aside from those products that are exempted from licensing and sales reporting as described above, there are a number of types of general use pesticide sales that are not subject to the reporting requirements as described earlier in this report, including the following:

- Sales from out-of-state distributors to large in state end-users; and
- Sales from out-of-state distributors to licensed in state restricted use pesticide dealers.

In addition, some sales of general use pesticides may be reported more than once where products are distributed between licensed general use pesticide dealers in the state.

Retail Reports (Appendices II-A & II-B)

The attached retail pesticide sales reports are derived from reports submitted by licensed restricted use pesticide dealers distributing products in Maine. This includes both in-state and out-of-state licensed dealers. These distributors tend to cater primarily to commercial agriculture, forestry, exterminators and golf courses.

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Homeowner Reports (Appendices III-A & III-B)

The attached homeowner pesticide sales reports represent a subset of the wholesale reports and are based on product data obtained from New York State intended to identify products most likely marketed primarily to homeowners. At the time of product registration, New York's Product Registration Section asks registrants to specify the major use of each product. Household or home garden are two of their categories and their staff adds a code for either use to the product's EPA registration number in their database. At the Board's request, New York officials provided a listing of all their EPA registration numbers with the two homeowner codes. This information was then used to check the Maine database to identify products most likely marketed primarily to homeowners.

Use Reports (Appendices IV-A & IV-B)

The pesticide use reports are compiled from annual pesticide use summary reports submitted by licensed commercial pesticide applicators. Commercial applicators are those individuals who:

- Apply any pesticide as a service for compensation;
- Apply any pesticide in connection with their duties as an employee of a local, state or federal government;
- Apply any pesticide in an area open to the public; or
- Apply restricted use pesticides on sites other than their own agricultural land.

Examples of the most prevalent types of commercial pesticide applications include:

- Exterminating,
- Lawn care applications,
- Right-of-way applications,
- For hire agricultural applications, and
- Forestry applications.

Use Reports from Other Sources

The 2001 revisions to the Board's reporting statute directs the Board to include summaries of pesticide survey results conducted by the University of Maine Cooperative Extension (UMCE) or the United States Department of Agriculture (USDA). The Board's director wrote both agencies requesting pesticide use information for Maine. Their responses are enclosed as Appendices V-A and V-B and they point out that they have no sector of use information available at this time.

Interpretation of Reports

The preceding sections of this report detail a number of hurdles and statutory limitations to acquiring quality pesticide sales and use data and translating that data into useful reports. Although the Board's staff would prefer not to make any tallies due to the illogical and incomplete reporting system, it does recognize the public's interest in an interpretation of the information that was reported. Accordingly, Table 1 was created to present a side by side comparison of the information contained in the appendices for Wholesale, Retail and Commercial Use. First, the reported quantities of each active ingredient were rounded off to thousands of pounds. All of the active ingredients that had more than 500 pounds of sales in one of the appendices were included in this table. The information was first arranged alphabetically by the type of pesticide, and then within type, the active ingredients were arranged alphabetically by common name. Please note the results have been aggregated for herbicides such as 2,4-D, dicamba, endothall, picloram and triclopyr that are active as acids but marketed as salts or esters. The table also contains columns to show how many products containing that active ingredient were registered in Maine in 2001.

The Board's staff added the quantities within the three columns of sales and use records and obtained the following totals:

Wholesale Sales	= 3,867 Thousands of Pounds of Active Ingredients
Retail Sales	= 3,519 Thousands of Pounds of Active Ingredients
Commercial Use	= 2,530 Thousands of Pounds of Active Ingredients

Unfortunately, the many deficiencies in the reporting system do not allow the Board's staff to calculate even an estimate of total sales or usage from the above figures. In addition to sales and use that are not reported, some sales data may represent duplication of reporting. Then there is the simple fact sales reports cannot be converted to use reports.

The side by side comparisons in Table 1 provide an excellent opportunity to point out some gaps in the current reporting system. Diquat dibromide is the most widely used potato vine desiccant but it is a general use pesticide that is primarily sold by restricted use pesticide dealers serving the agricultural community. Thus, persons distributing the product into the state are not delivering it to a general use dealer and are therefore not required to report those wholesale sales. In addition, a high percentage of this product is applied by potato farmers who are not required to report use data. Two other good examples include the slimicides and wood preservatives where no quantities are reported being sold at either level but significant quantities are clearly being used by commercial applicators in industrial settings.

Table 2 was similarly prepared from the homeowner sales reports in Appendix III-A rounded off to thousands of pounds, and the active ingredients arranged by highest to lowest pounds of sales. Diazinon, a widely used insecticide, had the highest level of sales

while the popular herbicides glyphosate and 2,4-D were ranked second and third respectively. It is interesting to note that sales of diazoxon products labeled for indoor home uses will be discontinued after December 31, 2002 while products labeled for outdoor use must cease by December 31, 2004.

At least one distributor reported on sales of DEET that is an active ingredient in many insect repellants. However, these types of products are exempt from licensing and reporting so actual sales are no doubt much higher than the reported amount.

Table 3 presents a comparison of the active ingredients rounded off to the nearest 1,000 pounds from the retail sales in Appendix II-A with two previous tallies of agricultural and forestry sales from the years 1995 and 1997. The Board's staff cautions readers that the 2000 figures were received from more dealers than were included in the previous two tallies. In addition, some of the agricultural dealers are now carrying more ornamental and turf care products so this may be another reason some of the numbers are higher in 2000 than in 1995 or 1997. The best value from this table lies in the Registration Notes that indicate the status of EPA's review of the active ingredient.

Recommendations

Detailed below, the Board's staff has attempted to identify some potential revisions to Maine law intended to improve the quality of the annual pesticide sales and use reports.

- Consider revisions to 22 M.R.S.A. § 1471-W (3) that would require any person who distributes pesticides into the state to report the amounts of the sales, regardless to whom those sales are made. Such an approach should eliminate many of the reporting loopholes and the potential for double reporting.
- Consider revisions to 7 M.R.S.A. § 607 (2) to require pesticide registrants to submit additional useful information about the pesticide products at the time of registration similar to New York State. Examples of other useful information may include: 1) pounds of active ingredients per gallon of liquid formulation; 2) type of pesticide such as insecticide, herbicide etc.; 3) probable use sector such as agriculture, turf, structures, aquatic, industrial etc.; and 4) label signal word or other toxicity data.
- NOTE: The Board has surveyed a number of states and found that many already routinely ask for additional data from registrants at the time of registration renewal. On May 3, 2002 the Board voted to direct the staff to request additional information on all future registration applications including but not limited to primary intended use of the product and the pounds of active ingredient per liquid volume.
- Identify funding and provide a position to administer the state pesticide sales and use information program. Other states charged with compiling pesticide sales and use data have come to recognize the complexity of the task and allocated

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resources accordingly. For instance, in New York State this program is contracted to Cornell University which has eight staff members working on the program.

- Consider requiring commercial agricultural producers to submit annual pesticide use reports in addition to the commercial applicator reports the Board currently receives.
- Modify the Board's rule requiring reporting by commercial pesticide applicators (Chapter 50) to tailor the reports to correspond to the type of information that is of interest to the legislature.

NOTE: The Board's staff is currently redesigning the report form with standardized target codes so future, annual applicator reports may be clearly categorized by sector of use.

Table 1. 2000 Wholesale and Retail Pesticide Sales and Commercial Use Information; Sorted by Major Use Classification and Alphabetically by Common Name; June 27, 2002				
Common name	Thousands of pounds Active			# Products registered in Maine 2001
	Wholesale sales	Retail sales	Commercial use	
Disinfectants				
Alkyl* dimethyl benzyl ammonium chloride (60% C14, 30%C16, 5%C18, 5%C)	0	2	0	197
Alkyl* dimethyl ethylbenzyl ammonium chloride (68% C12, 32% C14, 5%C18, 5%C)	0	2	0	149
Bromo-3-chloro-5,5-dimethylhydantoin	0	0	3	20
Dichloro-5,5-dimethylhydantoin	0	0	2	12
Hydrogen peroxide	2	1	0	21
Nitrobutyl)morpholine	0	0.7	0	3
Poly(oxyethylene(dimethylimino) ethylene(diemthylimino) ethylene dichloride	0	0	1	38
Sodium bromide	0	0	283	18
Sodium chlorite	222	0	0	15
Sodium hypochlorite	0	0	8	79
Sodium-o-phenylphenate	4	0	0	5

Table 1. 2000 Wholesale and Retail Pesticide Sales and Commercial Use Information; Sorted by Major Use Classification and Alphabetically by Common Name; June 27, 2002				
Common name	Thousands of pounds Active			# Products registered in Maine 2001
	Wholesale sales	Retail sales	Commercial use	
Trichloro-s-triazine	0	0	1	50
Disinfectant (Slimicide)				
Bis (bromoacetoxy)-2-butene	0	0	22	1
Bronopol	0	0	36	16
Chloro-2-methyl-3 (2H)-isothiazolone	0	0	20	41
Dibromo-3-nitrilonamide	0	0	81	22
Dithiol-3-one 4,5 dichloro	0	0	14	1
Hydroxymethylamino)ethanol	0.7	0	0	2
Methyl-3(2H)-isothiazolone	0	0	7	42
Potassium N-methyldithiocarbamate	0	0	10	7
Thiocyanomethylthio) benzothiazole	0	0	12	11
Fumigant				
Chloropicrin	0	0.5	3	8
Dichloropropene	0.7	0.7	0	3

Table 1. 2000 Wholesale and Retail Pesticide Sales and Commercial Use Information; Sorted by Major Use Classification and Alphabetically by Common Name; June 27, 2002				
Common name	Thousands of pounds Active			# Products registered in Maine 2001
	Wholesale sales	Retail sales	Commercial use	
Ethylene oxide	2	0	0	6
Gluteraldehyde	0	0	6	23
Methyl isothiocyanate	0	0	13	1
Fungicide				
Azoxystrobin	0	2	0.8	2
Benomyl	0.9	2	0.2	3
Captan	17	34	0.3	19
Chlorothalonil	135	777	40	45
Copper hydroxide	19	28	0.4	18
Copper Chloride hydroxide	0	3	0	10
Cymoxanil	0	1	0	3
Dodine	0	0.7	0	1
Fenarimol	10.7	0	0	4
Fentin hydroxide	18	13	0.2	2

Table 1. 2000 Wholesale and Retail Pesticide Sales and Commercial Use Information; Sorted by Major Use Classification and Alphabetically by Common Name; June 27, 2002				
Common name	Thousands of pounds Active			# Products registered in Maine 2001
	Wholesale sales	Retail sales	Commercial use	
Ferrous sulfate monohydrate	3	2	0	4
Fludioxonil	1	1	0	5
Iodine	0	0	2	16
Iprodione	0	0.6	1	11
Mancozeb	834	514	11	28
Maneb	2	21	0	4
Metalaxyl-M	7	9	0	15
Metam sodium	1	1	0.3	9
Methylene bis thio cyanate	0	0	7	19
Metiram	0	57	2	1
Myclobutanil	12	0.2	0.01	10
Pentachloronitrobenzene	18	18	17	17
Propiconazole	6	6	10	7
Sulfur	2	24	0	24

Table 1. 2000 Wholesale and Retail Pesticide Sales and Commercial Use Information; Sorted by Major Use Classification and Alphabetically by Common Name; June 27, 2002				
Common name	Thousands of pounds Active			# Products registered in Maine 2001
	Wholesale sales	Retail sales	Commercial use	
Thiabendazole	7	4	0	7
Thiophanate methyl	0.7	8	1	23
Triadimefon	0	0.3	2	21
Vinclozolin	1	2	0.9	2
Herbicide				
Copper sulfate pentahydrate	6	0	0	18
Acetochlor	0.6	0.3	0	13
Alachlor	0.6	0.6	0.2	7
Atrazine	44	43	13	38
Bensulfuron-methyl	0	0.9	0	0
Boron sodium oxide(B8Na2O13) tetrahydrate	0	0.6	10	18
Clethodim	0.9	0.8	0.1	1
Clopyralid	0.7	0.3	0.2	10
Cyanazine	0.3	1	0	6

Table 1. 2000 Wholesale and Retail Pesticide Sales and Commercial Use Information; Sorted by Major Use Classification and Alphabetically by Common Name; June 27, 2002				
Common name	Thousands of pounds Active			# Products registered in Maine 2001
	Wholesale sales	Retail sales	Commercial use	
Linuron	9	14	0.1	2
MCPA Dimethylamine salt	0.4	24	4	11
MCPA, 2 ethylhexyl ester	0	4	0	2
MCPB, sodium salt	1	0	0	0
Mecoprop	7	5	0.2	17
Metolachlor	65	29	4	16
Metribuzin	26	22	0	7
Napropamide	14	17	4	5
Oryzalin	3	0.8	0.3	6
Paraquat dichloride	2	14		3
Pendimethalin	56	27	16	22
Sethoxydim	4	5	2	2
Simazine	8	44	0.9	16
Sodium bentazon	6	3	0	3

Table 1. 2000 Wholesale and Retail Pesticide Sales and Commercial Use Information; Sorted by Major Use Classification and Alphabetically by Common Name; June 27, 2002				
Common name	Thousands of pounds Active			# Products registered in Maine 2001
	Wholesale sales	Retail sales	Commercial use	
Terbacil	3	4	2	1
Trifluralin	4	5	2	31
2,4-D Acetic acid, 2-ethylhexyl ester	0.3	0.6	0.3	22
2,4-D Butoxyethyl	2	0.2	0	5
2,4-D Dichlorophenoxyacetic acid	9	5	0.3	23
2,4-D Dimethyl 2- propionate	3	0.3	0	14
2,4-D Dimethylamine	20	36	11	73
2,4-D Triisopropanolamine	3	6	4	5
2,4-D TOTAL ^(a)	37.3	48.1	15.6	142
Erioglaucine	0	0.6	0	3
Copper (I) oxide	219	0	0.5	93
Dicamba, dimethylamine salt	3	3	2	42
Dicamba, diglycoamine salt	5	1	3	2

Table 1. 2000 Wholesale and Retail Pesticide Sales and Commercial Use Information; Sorted by Major Use Classification and Alphabetically by Common Name; June 27, 2002				
Common name	Thousands of pounds Active			# Products registered in Maine 2001
	Wholesale sales	Retail sales	Commercial use	
Terbacil	3	4	2	1
Trifluralin	4	5	2	31
2,4-D Acetic acid, 2-ethylhexyl ester	0.3	0.6	0.3	22
2,4-D Butoxyethyl	2	0.2	0	5
2,4-D Dichlorophenoxyacetic acid	9	5	0.3	23
2,4-D Dimethyl 2- propionate	3	0.3	0	14
2,4-D Dimethylamine	20	36	11	73
2,4-D Triisopropanolamine	3	6	4	5
2,4-D TOTAL ^(a)	37.3	48.1	15.6	142
Erioglaucline	0	0.6	0	3
Copper (I) oxide	219	0	0.5	93
Dicamba, dimethylamine salt	3	3	2	42
Dicamba, diglycoamine salt	5	1	3	2

Table 1. 2000 Wholesale and Retail Pesticide Sales and Commercial Use Information; Sorted by Major Use Classification and Alphabetically by Common Name; June 27, 2002				
Common name	Thousands of pounds Active			# Products registered in Maine 2001
	Wholesale sales	Retail sales	Commercial use	
Dicamba TOTAL ^(a)	8	4	5	44
Picloram triisopropanolamine salt	0.7	0	0.1	2
Picloram, potassium salt	0	0	1	1
Picloram TOTAL ^(a)	0.7	0	1.1	3
Butoxyethyl triclopyr	7	4	12	6
Triethylamine triclopyr	0.5	1	1	13
Triclopyr TOTAL ^(a)	7.5	5	13	19
Herbicide (desiccants)				
Diquat dibromide	1	70	0.1	13
Endothall,	0	2	0	0
Endothall, mono(N,N-Dimethylcocamine) salt	5	3	0	3
Endothall TOTAL ^(a)	5	5	0	3
Sulfuric acid	961	867	887	2
Insect repellent ^(b)				

Table 1. 2000 Wholesale and Retail Pesticide Sales and Commercial Use Information; Sorted by Major Use Classification and Alphabetically by Common Name; June 27, 2002				
Common name	Thousands of pounds Active			# Products registered in Maine 2001
	Wholesale sales	Retail sales	Commercial use	
Diethyl-meta-toluamide and other isomers	0.5	0	0	71
Insecticide				
Acephate	0.3	0.7	0.3	19
Ammonium salts of C8-18 and C18' fatty acids	0.5	0	0	4
Azinphos-methyl	4	5	2	203
Bacillus thuringiensis subsp tenebrios in potatoes	2	0	0	
Bacillus thuringiensis subsp kurstaki	0.6	0	0	25
Benzoic acid, 4 chloro, 2 benzol-2-(1,1-dimethylethyl) hydrazide	0.9	0.7	1	4
Boric acid	0.2	0	1	35
Carbaryl	31	6	3	56
Carbofuran	5	5	0	2
Chlorpyrifos	352	32	10	156
Cyfluthrin	1	0.3	4	40
Cyhalothrin	0	0.7	1	12

Table 1. 2000 Wholesale and Retail Pesticide Sales and Commercial Use Information; Sorted by Major Use Classification and Alphabetically by Common Name; June 27, 2002				
Common name	Thousands of pounds Active			# Products registered in Maine 2001
	Wholesale sales	Retail sales	Commercial use	
Diazinon	32	10	1	102
Dicofol	0	0.8	0	4
Disulfoton	10	7	0	21
Endosulfan	0.3	4	0	14
Esfenvalerate	0.8	0.6	0	21
Ethoprop	0.7	8	0.3	3
Fosetyl-AL	1	0.8	0.3	3
Imidacloprid	28	27	2	36
Kaolin	0	3	0	2
Malathion	4	2	0.4	31
Methamidaphos	4	16	0.2	2
Methomyl	2	3	0.2	5
Permethrin	4	3	0.6	203
Phosmet	21	21	8	6

Table 1. 2000 Wholesale and Retail Pesticide Sales and Commercial Use Information; Sorted by Major Use Classification and Alphabetically by Common Name; June 27, 2002				
Common name	Thousands of pounds Active			# Products registered in Maine 2001
	Wholesale sales	Retail sales	Commercial use	
Tebufenozide	1	0.3	0.3	2
Thiodicarb	3	0.3	0	1
Trichlorfon	3	0	0.1	2
Potassium salts of fatty acids	0.6	0.2	0.6	15
Plant growth regulator				
Aminoethoxyvinylglycine hydrochloride	0.7	0.2	0	2
Maleic hydrazide K+	147	121	0	5
Snail and slugs				
Metaldehyde	1	0	0	16
Solvent (Multi-use)				
Kerosene	0.6	18	0	1
Petroleum Aliphatic hydrocarbons	209	220	1	25
Sprout inhibitor Potatoes				
Chlorpropham	10	26	18	10

Table 1. 2000 Wholesale and Retail Pesticide Sales and Commercial Use Information; Sorted by Major Use Classification and Alphabetically by Common Name; June 27, 2002				
Common name	Thousands of pounds Active			# Products registered in Maine 2001
	Wholesale sales	Retail sales	Commercial use	
Wood preservatives				
Arsenic acid anhydride	0	0	305	3
Chromic acid	0	0	176	3
Coal tar creosote	0	0	10	2
Copper Naphthenate	0	2	0	10
Copper (II) Oxide	0	0	237	4
Sodium dichromate	0	0	1	2
Sodium fluoride	0	0	13	6

- a Herbicides such as 2,4-D, triclopyr, etc. are sold as a number of salts and esters, the amounts reported sold have been aggregated.
- b Insect repellents are exempt from reporting

Table 2. 2000 Homeowner Sales Report by Quantity of Active Ingredient, June 27,2002

Common name	Thousan d lbs	Primary Type	Total	Fed-01	ME-01
Diazinon ^(a)	31	Insecticide	2445	436	102
Glyphosate Isopropylamine salt	23	Herbicide	410	184	68
2,4-D, Dimethylamine salt and Dimethyl 2- propionate	18	Herbicide	1230	518	110
Carbaryl	9	Insecticide	2428	313	56
Mecoprop	7	Herbicide	120	73	17
Copper sulfate pentahydrate	6	Herbicide	349	91	18
Chlorothalonil	5	Fungicide	506	165	45
Dimethylamine 2-(2-methyl-4-chlorophenoxy) propionate	4	Herbicide	340	196	11
Malathion	4	Insecticide	2454	219	31
Chlorpyrifos ^(a)	3	Insecticide	2517	485	156
Trichlorfon	3	Insecticide	250	12	2
Pendimethalin	2	Herbicide	158	86	22

Table 2. 2000 Homeowner Sales Report by Quantity of Active Ingredient, June 27,2002

Common name	Thousand lbs	Primary Type	Total	Fed-01	ME-01
Metaldehyde	1	Snail and slugs	194	5	16
Petroleum Aliphatic hydrocarbons	1	Multi-use	7541	238	25
Permethrin	0.6	Insecticide	2148	872	203
Ammonium salts of C-8-18 and C18' fatty acids	0.5	Insecticide	7	5	4
Captan	0.5	Fungicide	1064	100	19
DEET (Diethyl-meta-toluamide and other isomers)	0.5	Insect repellent ^(b)	617	111	71
Imidacloprid	0.5	Insecticide	116	112	36
Acephate	0.3	Insecticide	376	142	19

a Homeowner uses are being phased out

b Exempt from reporting

Table 3. Retail Pesticide Active Ingredients (with reported sales of > 1,000 pounds) and Registration and Re-registration Status (Sorted by YR 2000 Sales)				
Active Ingredient	Registration NOTES	Sales in Thousands of pounds		
		2000	1997	1995
Sulfuric acid	RED ⁽⁵⁾ Complete ⁽¹⁾ Not listed ⁽²⁾	867	3,188	1,998
Chlorothalonil	RED signed (09/1998) ⁽²⁾	777	334	374
Mancozeb	Data call in 1995 Supported ⁽¹⁾ Special review 1989 changed agricultural use patterns	514	181	290
Aliphatic hydrocarbons	Pre-RED ⁽¹⁾	220	51	64
Maleic hydrazide, potassium salt	RED signed (06/1994) ⁽²⁾	121	49	45
Glyphosate Isopropylamine salt	RED signed (09/1993) ⁽²⁾	120	108	112
Diquat dibromide	RED signed (03/1995) ⁽²⁾	70	42	41
Metiram	Supported Pre-RED ⁽¹⁾ Special review 1989 changed agricultural use patterns	57	60	12
2,4-D (Acid plus salts and esters)	Some derivatives supported other not supported Pre RED: Pre Special review ⁽¹⁾	48	13	13
Simazine	Triazine: subject to cumulative assessment 04/2002 ⁽²⁾	44	12	9
Atrazine	Triazine: subject to cumulative assessment 04/2002 ⁽²⁾	43	49	76

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Table 3. Retail Pesticide Active Ingredients (with reported sales of > 1,000 pounds) and Registration and Re-registration Status (Sorted by YR 2000 Sales)				
Active Ingredient	Registration NOTES	Sales in Thousands of pounds		
		2000	1997	1995
Captan	RED signed (09/1999) ⁽²⁾	34	46	51
Chlorpyrifos	IRED ⁽⁶⁾ signed (09/2001) ⁽²⁾	32	13	22
Copper compounds	Some derivatives supported other not supported Pre RED ⁽¹⁾	31	61	55
Hexazinone	RED signed (09/1994) ⁽²⁾	30	35	29
Metolachlor	RED signed (12/1994) ⁽²⁾	29	35	41
MCPA	Some derivatives supported other not supported Pre RED ⁽¹⁾	28	18	11
Pendimethalin	RED signed (04/1997) ⁽²⁾	27	38	23
Imidacloprid	New Active ingredient (1994) ⁽¹⁾	27	7	10
Chlorpropham	RED signed (09/1995) ⁽²⁾	26	9	11
Sulfur	RED signed (03/1991) ⁽²⁾	24	1	3
Metribuzin	RED signed (06/1997) ⁽²⁾	22	15	43

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Table 3. Retail Pesticide Active Ingredients (with reported sales of > 1,000 pounds) and Registration and Re-registration Status (Sorted by YR 2000 Sales)				
Active Ingredient	Registration NOTES	Sales in Thousands of pounds		
		2000	1997	1995
Maneb	Supported Pre-RED ⁽¹⁾ Special review 1989 changed agricultural use patterns	21	122	229
Phosmet	IRED signed (10/2001) ⁽²⁾	21	20	34
Pentachloronitrobenzene	Supported Pre-RED ⁽¹⁾	18	0	1
Napropamide	Supported Pre-RED ⁽¹⁾	17	7	23
Methamidaphos	Technical briefing- public meeting (12/2000) ⁽²⁾	16	24	34
Paraquat dichloride	RED signed (08/1997) ⁽²⁾	14	6	6
Linuron	RED signed (12/1994) ⁽²⁾	14	11	18
Fentin hydroxide (triphenyltin hydroxide)	Supported Pre-RED ⁽¹⁾	13	5	3
Diazinon	60 Day Public participation period of risk management completed on (03/2001) ⁽²⁾	10	3	2
Metalaxyl-M	RED signed (09/1994) ⁽²⁾	9	96	11
Ethoprop	60 Day Public participation period of risk management completed on (11/1999) ⁽²⁾	8	9	8

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Table 3. Retail Pesticide Active Ingredients (with reported sales of > 1,000 pounds) and Registration and Re-registration Status (Sorted by YR 2000 Sales)				
Active Ingredient	Registration NOTES	Sales in Thousands of pounds		
		2000	1997	1995
Thiophanate methyl	Supported Pre-RED ⁽¹⁾	8	4	5
Disulfoton	60 Day Public participation period of risk management completed on (05/2000) ⁽²⁾	7	17	28
Carbaryl	Supported Pre-RED ⁽¹⁾	6	13	13
Propiconazole	Section 18 on Blueberries	6	0	0
Diuron	Supported Pre-RED ⁽¹⁾	6	0	0
Trifluralin	RED signed (09/1995) ⁽²⁾	5	2	2
Triclopyr (salts and esters)	RED signed (09/1997) ⁽²⁾	5	22	5
Carbofuran	Supported Pre-RED ⁽¹⁾	5	0	0
Mecoprop	Some derivatives supported other not supported Pre RED ⁽¹⁾	5	0	0
Sethoxydim	Supported Pre-RED ⁽¹⁾	5	2	1
Azinphos-methyl	Organophosphate IRED Signed 10/2001) ⁽²⁾	5	13	17

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Table 3. Retail Pesticide Active Ingredients (with reported sales of > 1,000 pounds) and Registration and Re-registration Status (Sorted by YR 2000 Sales)				
Active Ingredient	Registration NOTES	Sales in Thousands of pounds		
		2000	1997	1995
Endothall	Some derivatives supported other not supported Pre RED ⁽¹⁾	5	4	1
Endosulfan	Preliminary risk assessment released (09/2001) ⁽²⁾	4	3	15
Thiabendazole	RED signed (09/1999) ⁽²⁾	4	0	0
Dicamba	Some derivatives supported other not supported Pre RED ⁽¹⁾	4	3	4
Terbacil	RED signed (09/1997) ⁽²⁾	4	0	0
Permethrin	Supported Pre-RED ⁽¹⁾	3	1	3
Methomyl	RED signed (03/1998) ⁽²⁾	3	2	3
Kaolin	New Active ingredient (1998) ⁽⁴⁾	3	0	0
Bentazon	RED signed (09/1994) ⁽²⁾	3	0	2
Dimethanamid	New Active ingredient (1993) ⁽¹⁾	2	2	3
Vinclozolin	RED signed (09/2000) ⁽²⁾	2	0	0

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Table 3. Retail Pesticide Active Ingredients (with reported sales of > 1,000 pounds) and Registration and Re-registration Status (Sorted by YR 2000 Sales)				
Active Ingredient	Registration NOTES	Sales in Thousands of pounds		
		2000	1997	1995
Malathion	60 Day Public participation period of risk management completed on (02/2001) ⁽²⁾	2	3	3
EPTC	RED signed (09/1999) ⁽²⁾	2	7	16
Benomyl	Voluntarily cancelled (8/2001) ⁽²⁾	2	8	5
Azoxystrobin	New Active ingredient 1997 ⁽¹⁾	2	0	0
Alachlor	Pre-RED ⁽¹⁾	1	0	6
Cyanazine	Triazine: subject to cumulative assessment 04/2002 ⁽²⁾	1	1	8
Cymoxanil	New product (1998) ⁽³⁾	1	0	0
Imazapyr, isopropylamine salt	New Active ingredient (1987) ⁽¹⁾	1	0	0
Fludioxonil	New Active ingredient (1996) ⁽¹⁾	1	0	0
Metam sodium	Supported Pre-RED ⁽¹⁾	1	2	3
Dodine	Pre-RED ⁽¹⁾	0	2	2
Fenvalerate	Pre-RED ⁽¹⁾	0	0	1
Piperonyl Butoxide	Pre-RED ⁽¹⁾	0	0	5

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Table 3. Retail Pesticide Active Ingredients (with reported sales of > 1,000 pounds) and Registration and Re-registration Status (Sorted by YR 2000 Sales)				
Active Ingredient	Registration NOTES	Sales in Thousands of pounds		
		2000	1997	1995
Thiodicarb	Pre-RED ⁽¹⁾	0	0	1
Isofenphos	Tolerances revoked and registrations cancelled (05/1999) ⁽²⁾	0	0	1
Actetochlor	New Use 1994 ⁽¹⁾	0	0	2
Propamocarb hydrochloride	RED signed (09/1995) ⁽²⁾ Section 18 Potatoes	0	0	2
Fonofos	Voluntary cancellation will propose to revoke tolerances (03/1999) ⁽²⁾	0	0	2
Parathion, ethyl	60 Day Public participation period of risk management completed on (05/2000) ⁽²⁾	0	0	8
Methoxychlor	Supported Pre-RED ⁽¹⁾	0	9	3
DCPA	RED signed (09/1995) ⁽²⁾	0	2	3
Propargite	RED signed (09/2001) ⁽²⁾	0	0	6
Formetanate hydrochloride	Supported Pre-RED ⁽¹⁾	0	0	3
Triadimefon	Supported Pre-RED ⁽¹⁾	0	0	1
Ethalfuralin	RED signed (12/1994) ⁽²⁾	0	6	0

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Active Ingredient	Registration NOTES	Sales in Thousands of pounds		
		2000	1997	1995
Cryolite	RED signed (06/1996) ⁽²⁾	0	0	3
Triforine	Supported Pre-RED ⁽¹⁾	0	9	4
Oxamyl	IRED signed (12/2000) ⁽²⁾	0	0	2
Ziram	Cancelled	0	0	1
Phorate	IRED signed (03/2001) ⁽²⁾	0	0	1

- (1) EPA (1998) Status of Pesticides in Registration, Re-registration and Special review.
- (2) EPA Re-registration website: <http://www.epa.gov/pesticides/reregistration/status2.htm#M>
- (3) EPA Fact Sheet for Cymoxanil (1998)
- (4) EPA Biopesticide Fact Sheet for Kaolin

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