



**Department of
Environmental
Conservation**

**Summary Report
For
New York State
Pesticide Sales and
Applications
2021**

ACKNOWLEDGMENTS

The Department wishes to acknowledge the cooperation and assistance of Cornell University, and specifically the Pesticide Sales and Use Reporting unit within the Pesticide Management Education Program in the College of Agriculture and Life Sciences, in the preparation and development of this annual report.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	iv
I. INTRODUCTION.....	1
II. 2021 PESTICIDE REPORTING PROGRAM	
A. Reports Received	1
B. Quality Control.....	1
C. Data Qualifications	2
III. 2021 REPORTING DATA	
A. General Synopsis of Data.....	3
B. County Data Summary Tables and Maps.....	3
C. Summary of Top Ten Pesticide Products Applied or Sold	12
D. The Pesticide Sales and Use Reporting Website	15

List of Figures

Figure 1: Commercial Pesticide Applications by Volume	6
Figure 2: Commercial Pesticide Applications by Weight.....	7
Figure 3: Pesticide Sales to Private Applicators by Volume.....	10
Figure 4: Pesticide Sales to Private Applicators by Weight.....	11

List of Tables

Table 1: Summary of Total Quantities Statewide	3
Table 2: Summary of Commercial Pesticide Applications by County.....	4
Table 3: Summary of Pesticide Sales to Private Applicators by County	8
Table 4: Top Ten Pesticide Products by Volume Applied by Commercial Applicators or Technicians.....	12
Table 5: Top Ten Pesticide Products by Weight Applied by Commercial Applicators or Technicians.....	13
Table 6: Top Ten Pesticide Products by Volume Sold by Commercial Permit Holders to Certified Private Applicators	14
Table 7: Top Ten Pesticide Products by Weight Sold by Commercial Permit Holders to Certified Private Applicators	15

Executive Summary

The New York State Department of Environmental Conservation (Department), in conjunction with Cornell University, presents this summary report to the Governor and Legislature under Environmental Conservation Law Article 33, Title 12, known as the Pesticide Reporting Law (PRL). This report summarizes the pesticide sales and application data submitted to the Department for the calendar year 2021. The finalized data have been incorporated into a master database maintained by Cornell University. This database is accessible by the public and is an information source for health researchers or other users of the data.

The data show there were about 10 million records of applications and sales reported for 2021. The department received reports from 14,891 certified applicators and technicians, which is 93% of the 16,008 applicators and technicians required to submit a report for 2021.

The following is the total amount of pesticide products applied in New York State by certified commercial applicators and technicians in 2021:

- 4,466,607 Gallons of liquid formulation products
- 31,255,655 Pounds of solid formulation products
- Number of Products: 4,512

A summary of the quantity of pesticide products applied for each county can be found in Table 2 on pages 4 – 5 and in Figures 1 and 2 on pages 6 – 7.

The following is the total amount of pesticide products sold to private applicators for agricultural use in New York State in 2021:

- 1,107,960 Gallons
- 4,466,391 Pounds
- Number of Products: 1,425

The total quantity of pesticide products sold to private applicators reflects the sales of restricted use and general use pesticide products by commercial permit holders to private applicators to use for the purposes of producing an agricultural commodity. A summary of the quantity of pesticide products sold to private applicators by county can be found in Table 3 on pages 8 - 9 and in Figures 3 and 4 on pages 10 – 11.

The following is the total amount of restricted use pesticide products sold to commercial applicators for end use in New York State:

- 503,213 Gallons
- 19,069,568 Pounds
- Number of Products: 755

These numbers reflect sales by commercial permit holders to certified commercial applicators that intend to apply the pesticides.

The following is the total amount of restricted use pesticide products sold to distributors for resale in New York State:

- 1,018,268 Gallons
- 3,244,948 Pounds
- Number of Products: 527

These numbers reflect sales to commercial permit holders that intend to resell the pesticide product. Some or all of these quantities are also reflected in the quantities of products mentioned above that are sold to private or commercial applicators or used by commercial applicators and technicians.

Also provided in this report are summaries of the top ten pesticide products used and sold in New York State during 2021. See pages 12 – 15 for these summaries which include information such as the amount of the product used or sold, the product's active ingredients and the type of product.

Please note: Although the Department and Cornell University have gone to great lengths to assure the quality of the data, there are still significant concerns regarding the validity of the data received from the regulated community. Users of this data are strongly cautioned about limitations of the data. Users of the data are advised to go to the PRL Annual Reports page <https://www.dec.ny.gov/chemical/96898.html> to review information regarding data quality.

For more information about the 2021 data and to use the searchable database, users can access this information at Cornell's Pesticide Sales and Use Reporting website: <https://psur.cce.cornell.edu/>.

I. INTRODUCTION

The New York State Department of Environmental Conservation (Department), in conjunction with work conducted by Cornell University, presents this summary report of the final pesticide sales and application data for calendar year 2021 submitted under Environmental Conservation Law Article 33, Title 12, known as the Pesticide Reporting Law (PRL). This report summarizes the data as submitted to the Department, with some corrections as noted below. The finalized data have been incorporated into a master database maintained by Cornell University. This database is accessible to the public and is an information source for health researchers and other users of the data.

II. 2021 Pesticide Reporting Program

A. Reports Received

As of August 18, 2022, the total number of commercial applicators, technicians and permittees reporting for the calendar year 2021 was:

14,891 Commercial Applicators and Technicians
250 Commercial Permittees (Sales)

These figures indicate that 93% of the 16,008 certified applicators and technicians, and 99% of the 253 commercial permittees reported for 2021. The Department will continue to provide outreach and education to the regulated community to achieve maximum compliance with the reporting requirement.

B. Quality Control

The Department continues to enhance and streamline the process for reporting, as well as the system for managing the 16,000 reports that are received annually.

Department staff continue to use a system of front-line quality control procedures to evaluate incoming reports to ensure basic criteria are met, regardless of whether the report was submitted on paper or electronically. Paper reports are checked for certain criteria to maximize the volume of data that will be transferrable into Cornell's master database. If a report did not meet these criteria, Department staff sought to correct the report with the person filing the report. If the errors were too numerous, the report was rejected and returned to the business or applicator to be corrected and resubmitted. Electronic reports are subjected to several validation processes including validating file format and certain data

values. This process enables staff to contact report submitters for corrections in a timely manner.

As part of our standard quality assurance processes, the Department and Cornell identified reports that contained quantities that appeared to fall outside of accepted parameters. Staff reviewed reports containing these “out-of-range” quantities and the responsible applicators and businesses were contacted. Reporting errors were corrected by staff with the approval of the applicator or business. These corrected data were forwarded to Cornell to replace the original reports in the database.

C. Data Qualifications

The reporting community, the Department and Cornell University work together to provide the best information possible for health researchers. However, the data is neither perfectly accurate nor complete. Although the Department and Cornell have gone to great lengths to assure the quality of the data, there are still significant concerns regarding the validity of the data received from the regulated community. Users of this data are advised to go to the PRL Annual Reports page (<http://dec.ny.gov/chemical/96898.html>) to review information regarding data quality.

III. 2021 Reporting Data

A. General Synopsis of Data

The following table provides a summary of pesticide sales and use reported by commercial applicators and technicians and commercial permit holders:

Table 1
Calendar Year 2021
Summary of Total Quantities Statewide

Category	Number of Pesticide Products	Quantity (Gallons)**	Quantity (Pounds)**
Applied by Commercial Applicators and Technicians	4,512	4,466,607	31,255,656
Sold to Private Applicators	1,425	1,107,961	4,466,392
Sold for End Use*	755	503,214	19,069,569
Sold for Resale*	527	1,018,268	3,244,948

* Restricted use pesticides only

** The total quantity of pesticides commercially applied and sold is a combination of the amount expressed in gallons and the amount expressed in pounds reported above. In other words, the quantity in gallons is separate from the quantity in pounds.

B. County Data Summary Tables and Maps

The following tables and maps summarize commercial pesticide applications and sales for 2021 by county:

Table 2
Calendar Year 2021
Summary of Commercial Pesticide Applications by County*

County	Number of Pesticide Products	Amount (Gallons)**	Amount (Pounds)**
Albany	745	118,563	1,164,147
Allegany	282	5,434	34,633
Bronx	732	62,238	161,452
Broome	465	10,698	194,760
Cattaraugus	374	12,440	106,165
Cayuga	605	70,196	93,381
Chautauqua	481	12,770	186,121
Chemung	350	6,337	112,048
Chenango	295	9,016	28,335
Clinton	260	18,134	25,666
Columbia	488	8,797	123,690
Cortland	350	88,147	57,541
Delaware	319	3,833	8,832
Dutchess	849	20,927	1,259,226
Erie	962	64,578	2,219,983
Essex	330	164,326	59,231
Franklin	242	9,906	26,314
Fulton	304	2,267	44,506
Genesee	561	39,317	88,966
Greene	335	7,254	426,555
Hamilton	130	396	1,394
Herkimer	328	12,018	56,752
Jefferson	386	73,603	75,199
Kings	745	53,374	186,771
Lewis	201	15,363	11,533
Livingston	522	28,699	61,772
Madison	424	10,219	106,608
Monroe	1,035	123,495	2,521,337
Montgomery	350	10,779	94,300
Nassau	1,296	222,361	1,653,514
New York	782	335,879	294,365
Niagara	662	312,586	579,738

County	Number of Pesticide Products	Amount (Gallons)**	Amount (Pounds)**
Oneida	598	27,917	601,459
Onondaga	821	182,566	1,335,231
Ontario	990	28,502	372,133
Orange	808	19,660	964,963
Orleans	468	13,137	56,639
Oswego	410	235,283	90,597
Otsego	296	5,391	33,656
Putnam	550	9,750	416,703
Queens	792	98,021	239,852
Rensselaer	557	138,643	280,740
Richmond	505	917,470	122,126
Rockland	859	34,372	1,017,597
Saratoga	653	66,563	2,055,835
Schenectady	504	8,939	614,691
Schoharie	250	5,167	9,528
Schuyler	221	2,095	17,290
Seneca	371	8,659	22,070
St Lawrence	311	46,502	31,504
Steuben	446	14,808	105,075
Suffolk	1,743	272,898	6,523,568
Sullivan	361	4,467	57,632
Tioga	288	2,469	32,047
Tompkins	630	9,394	108,532
Ulster	613	7,921	273,625
Warren	425	42,365	513,320
Washington	379	66,563	96,052
Wayne	585	118,386	260,471
Westchester	1,269	108,284	2,859,035
Wyoming	418	32,850	22,680
Yates	317	2,841	29,759

* The above table does not include quantities which were reported where the county information was either missing, invalid or illegible.

** The total quantity of pesticides sold in a county is a combination of the gallons and pounds reported above. In other words, the quantity in gallons is separate from the quantity in pounds.

Population Density Legend:

- less than 10,000
- 10,000 - 50,000
- 50,000 - 100,000
- 100,000 - 200,000
- 200,000 - 400,000
- more than 400,000

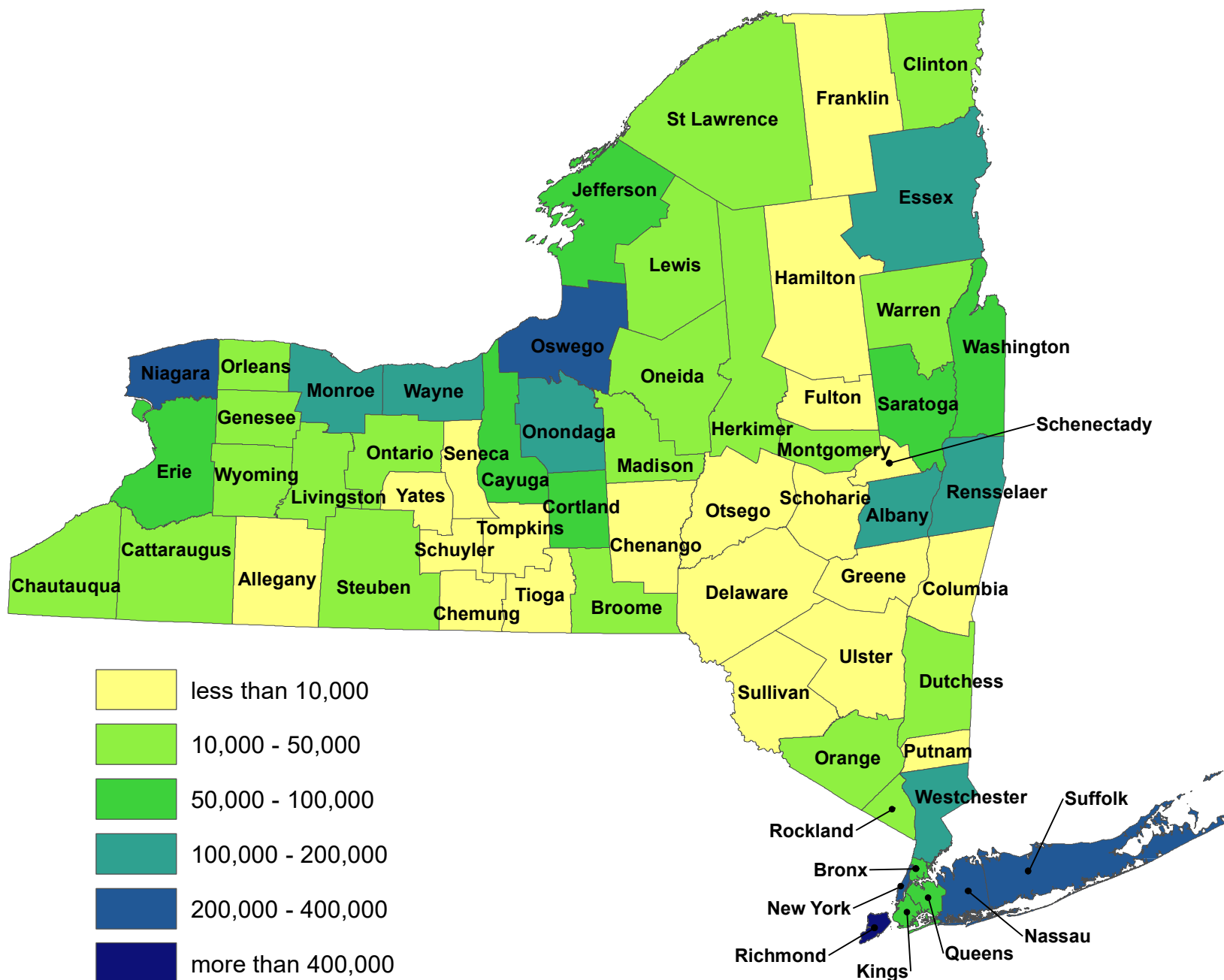


Figure 2
Commercial Pesticide Applications by Weight (Pounds) in 2021

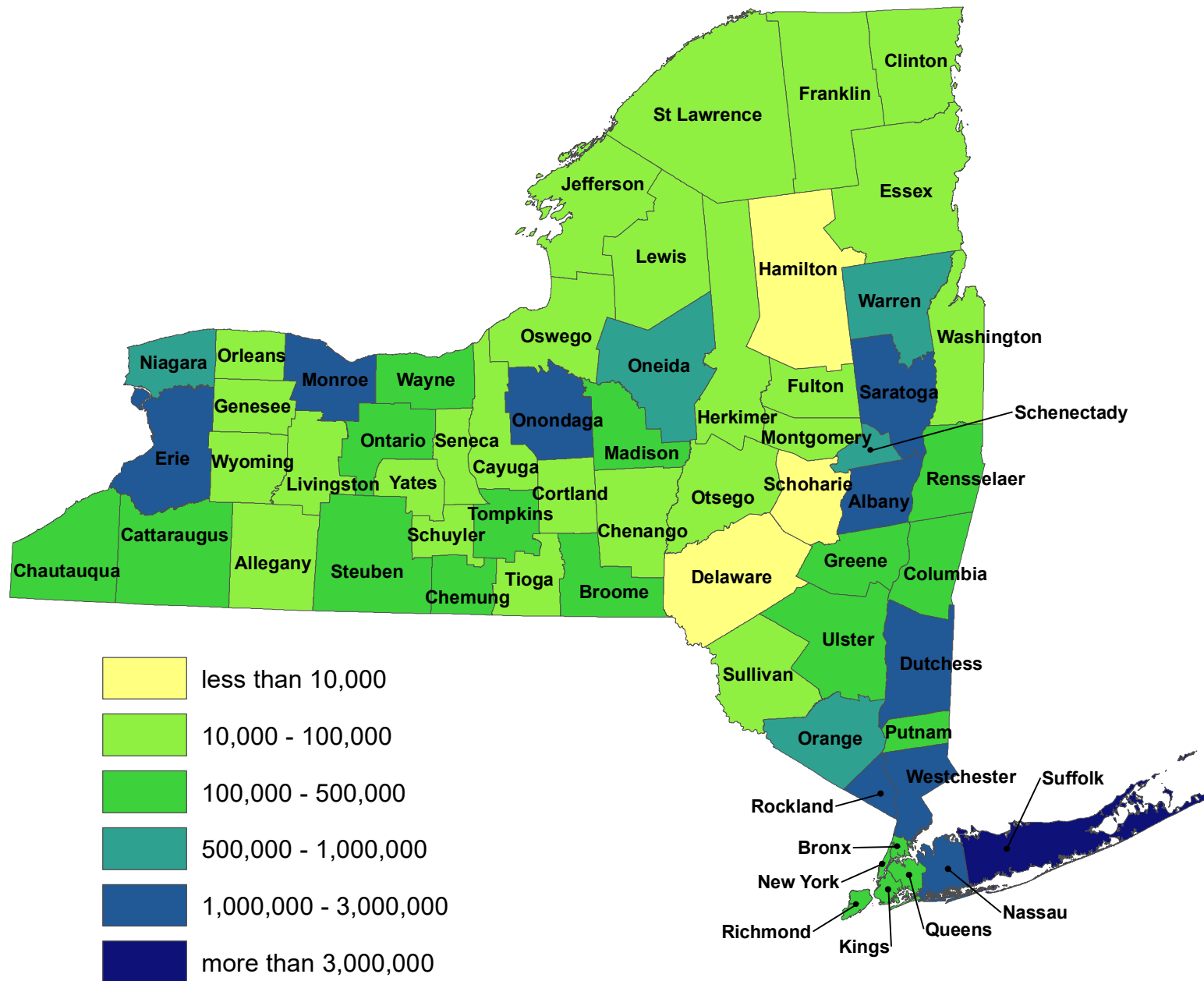


Table 3
Calendar Year 2021
Summary of Pesticide Sales to Private Applicators by County

County	Number of Pesticide Products	Amount (Gallons)**	Amount (Pounds)**
Albany	205	2,237	15,678
Allegany	47	2,466	305
Bronx	2	1	0
Broome	92	1,982	2,194
Cattaraugus	128	4,511	6,777
Cayuga	339	27,726	79,566
Chautauqua	224	22,750	123,172
Chemung	82	1,325	1,388
Chenango	71	903	15,458
Clinton	155	23,412	148,225
Columbia	328	22,145	151,662
Cortland	40	1,382	1,274
Delaware	47	825	14,615
Dutchess	297	10,084	102,913
Erie	368	20,223	46,134
Essex	56	427	6,468
Franklin	85	12,065	20,487
Fulton	87	917	4,012
Genesee	352	90,321	61,161
Greene	154	4,306	3,012
Hamilton	0	0	0
Herkimer	127	7,630	2,258
Jefferson	123	24,313	15,885
Kings	6	110	1,006
Lewis	67	3,226	3,733
Livingston	253	62,941	32,410
Madison	155	9,025	4,931
Monroe	461	35,241	288,165
Montgomery	191	15,908	2,764
Nassau	22	142	38,414
New York	8	51	1,000
Niagara	363	43,452	122,654

County	Number of Pesticide Products	Amount (Gallons)**	Amount (Pounds)**
Oneida	229	25,873	46,907
Onondaga	382	24,511	59,876
Ontario	501	40,232	51,018
Orange	338	36,956	73,426
Orleans	378	70,863	305,464
Oswego	234	22,109	41,542
Otsego	138	2,602	8,001
Putnam	28	100	20,107
Queens	10	20	280
Rensselaer	218	7,940	9,303
Richmond	1	452	0
Rockland	59	1,431	2,419
Saratoga	164	3,146	9,402
Schenectady	84	438	1,572
Schoharie	154	2,698	31,208
Schuyler	196	7,959	25,346
Seneca	319	34,405	77,224
St Lawrence	86	24,570	21,304
Steuben	303	39,569	123,244
Suffolk	505	57,242	190,222
Sullivan	38	132	10,852
Tioga	83	5,502	883
Tompkins	169	3,908	7,026
Ulster	350	27,242	303,279
Warren	10	11	52
Washington	134	4,664	31,730
Wayne	496	124,999	1,397,817
Westchester	125	1,048	13,794
Wyoming	223	53,240	41,329
Yates	447	31,864	244,041

* The above table does not include quantities which were reported where the county information was either missing, invalid or illegible.

** The total quantity of pesticides sold in a county is a combination of the gallons and pounds reported above. In other words, the quantity in gallons is separate from the quantity in pounds.

Figure 3
Pesticide Sales to Private Applicators by Volume (Gallons) in 2021

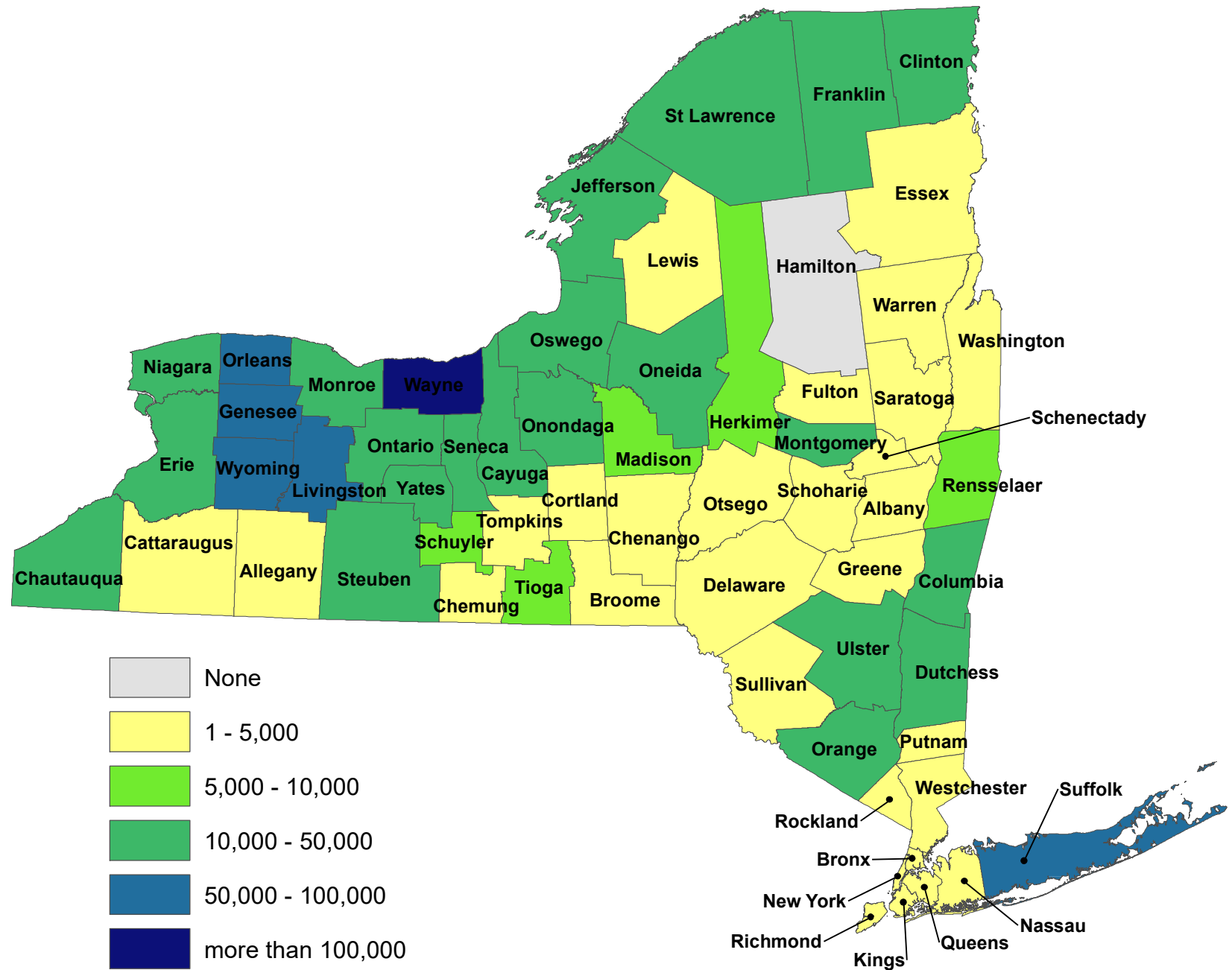
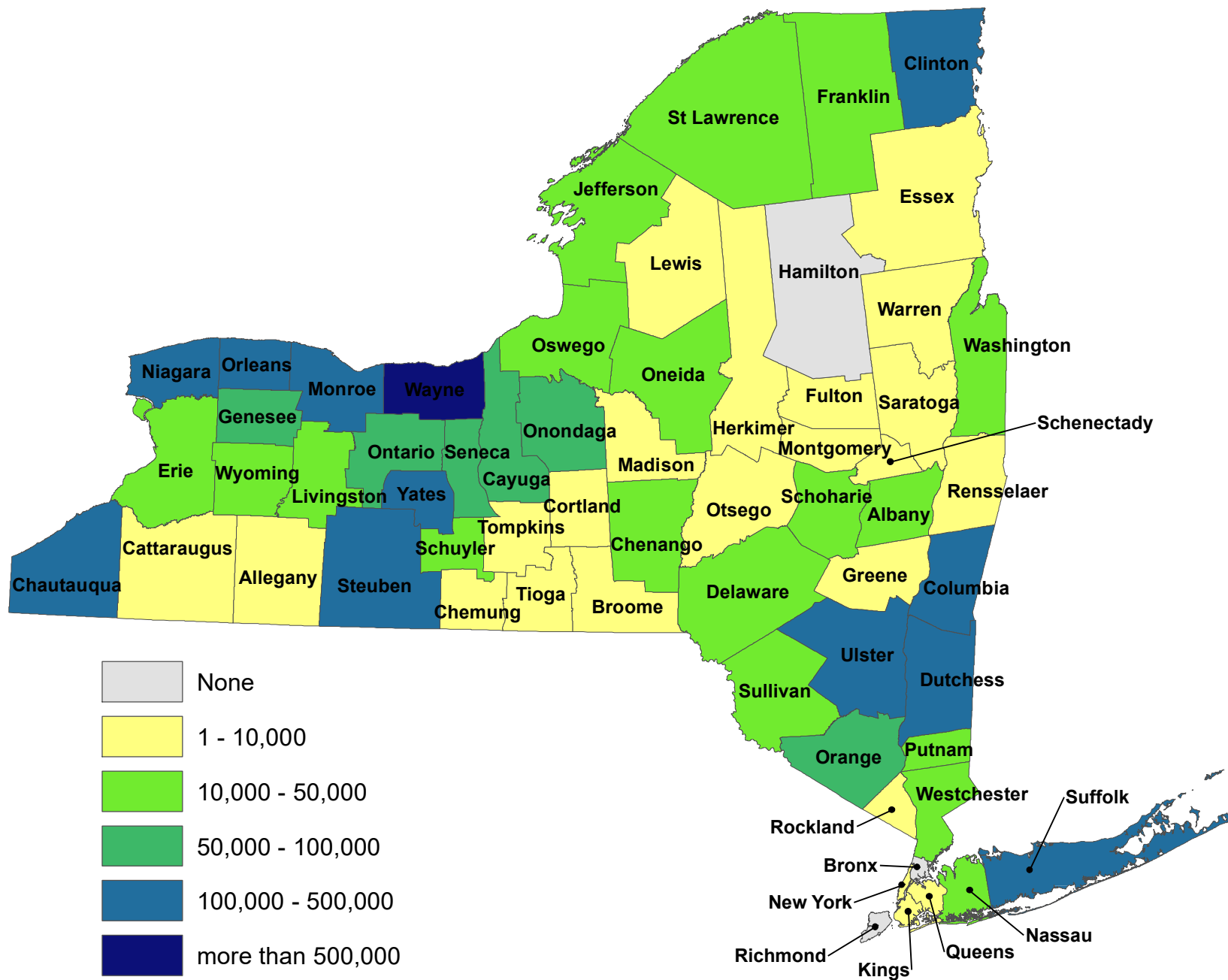


Figure 4
Pesticide Sales to Private Applicators by Weight (Pounds) in 2021



C. Summary of Top Ten Pesticide Products Applied and Sold

The following tables summarize the top ten pesticide products applied by certified commercial applicators or technicians and the top ten pesticide products sold by commercial permit holders to certified private applicators. Each table presents information about each top ten product including the EPA registration number for each product, the quantity sold or the quantity applied, the percentage that the product quantity represents compared with the total quantities all products sold or all products applied, the active ingredients in each product, the percentage of that active ingredient in the product as well as the product's main type of use.

These summaries are product based. The amount of product applied or sold is the quantity reported for the product(s) with the corresponding EPA registration number. These products contain different amounts of active ingredients. The weight or volume reported here is the amount of all ingredients, not the amount of active ingredients alone.

Table 4

Calendar Year 2021

Top Ten Pesticide Products by Volume (Gallons)
Applied by Commercial Applicators or Technicians

EPA Registration Number	Quantity (GL)	Percentage of All Products	Active Ingredients	Percentage of Active Ingredient	Product Type
35317-20001	565,519	12.7%	sodium hypochlorite	12.50%	antimicrobial
59074-20001	405,987	9.1%	sodium hypochlorite	12.50%	antimicrobial
74655-34	314,820	7.1%	ammonium carbamate	19.50%	antimicrobial
9359-2	282,058	6.3%	sodium hypochlorite	12.50%	antimicrobial
1448-433	262,859	5.9%	ammonia	7.59%	antimicrobial
1706-179	92,337	2.1%	sodium bromide sodium hypochlorite	9.23% 6.36%	antimicrobial, fungicide
75506-12	69,608	1.6%	copper carbonate, basic propiconazole tebuconazole	43.40% 0.50% 0.50%	wood preservative
279-3141	62,246	1.4%	permethrin	36.80%	insecticide
1706-240	61,336	1.4%	ammonium Sulfate	20.00%	antimicrobial
63838-5	51,573	1.2%	sodium bromide sodium hypochlorite	10.28% 7.45%	antimicrobial
Top 10 Products	2,168,343	48.8%			
All Products	4,466,607				

Table 5
Calendar Year 2021
Top Ten Pesticide Products by Weight (Pounds)
Applied by Commercial Applicators and Technicians

EPA Registration Number	Quantity (LB)	Percentage of All Products	Active Ingredients	Percentage of Active Ingredient	Product Type
100-1456-82757	1,609,000	5.2%	prodiamine	0.29%	herbicide
100-1456-90561	1,425,389	4.6%	prodiamine	0.29%	herbicide
60063-43-41124	1,191,183	3.8%	prodiamine	0.42%	herbicide
432-1349-93243	1,067,797	3.4%	imidacloprid	0.20%	insecticide
10404-89	965,535	3.1%	prodiamine	0.43%	herbicide
432-1349-10404	913,829	2.9%	imidacloprid	0.20%	insecticide
10404-85	803,718	2.6%	dithiopyr	0.10%	herbicide
62719-488-90561	793,050	2.5%	dithiopyr	0.19%	herbicide
432-1417-34704	785,233	2.5%	bifenthrin imidacloprid	0.10% 0.125%	insecticide
53883-207-47956	673,853	2.2%	dithiopyr	0.13%	herbicide
Top 10 Products	10,228,587	32.8%			
All Products	31,255,656				

Table 6
Calendar Year 2021
Top Ten Pesticide Products by Volume (Gallons)
Sold by Commercial Permit Holders to Certified Private Applicators

EPA Registration Number	Quantity (GL)	Percentage of All Products	Active Ingredients	Percentage of Active Ingredient	Product Type
524-549	89,443	8.1%	potassium salt of glyphosate	48.70%	herbicide
100-1466	64,861	5.9%	bicyclopyrone atrazine s-metolachlor mesotrione	0.65% 10.93% 23.40% 2.60%	herbicide
34704-890	50,196	4.5%	isopropylamine salt of glyphosate	41.00%	herbicide
71368-20	44,728	4.0%	isopropylamine salt of glyphosate	41.00%	herbicide
100-1282	24,264	2.2%	s-metolachlor mesotrione glyphosate	20.5% 2.05% 20.5%	herbicide
34704-69	23,419	2.1%	atrazine	42.60%	insecticide
352-922	22,893	2.1%	potassium salt of glyphosate	48.70%	herbicide
241-418	19,250	1.7%	pendimethalin	38.70%	herbicide
62719-693	19,169	1.7%	clpyralid acetochlor mesotrione	2.70% 31.00% 3.30%	herbicide
62719-556	18,684	1.7%	dimethylammonium salt of glyphosate	50.20%	herbicide
Top 10 Products	376,907	34.0%			
All Products	1,107,960				

Table 7
Calendar Year 2021
Top Ten Pesticide Products by Weight (Pounds)
Sold by Commercial Permit Holders to Certified Private Applicators

EPA Registration Number	Quantity (LB)	Percentage of All Products	Active Ingredients	Percentage of Active Ingredient	Product Type
74267-4	764,785	17.1%	bacillus pumilus, strain GHA 180	0.01%	fungicide
66222-58	599,708	13.4%	captan	78.20%	fungicide
279-3580	352,530	7.9%	mancozeb	75.00%	fungicide
70506-185	335,671	7.5%	mancozeb	75.00%	fungicide
34704-1063	202,380	4.5%	mancozeb	75.00%	fungicide
34704-1075	188,789	4.2%	captan	80.00%	fungicide
61282-49	139,520	3.1%	zinc phosphide (ZN3P2)	2.00%	rodenticide
70506-201	129,068	2.9%	basic copper sulfate	71.10%	fungicide
61282-56	119,500	2.7%	zinc phosphide (ZN3P2)	2.00%	rodenticide
70506-187	114,481	2.6%	sulfur	80.00%	fungicide
Top 10 Products	2,946,432	65.9%			
All Products	4,466,392				

D. The Pesticide Sales and Use Reporting Website

The summarized data from the 2021 reporting year, as well as previous years dating back to 1997, can be accessed using the Pesticide Sales and Use Reporting Program's website provided by Cornell University. Users of this website can generate summarized data by performing searches of the pesticide sales and use database. Users can generate reports by product or active ingredient and can filter their searches by county, zip code, sales, or applications. Results of these searches can be viewed online or downloaded to a computer. Cornell's Pesticide Sales and Use Reporting Website can be accessed at this link: <https://psur.cce.cornell.edu/>