

Division of Solid & Hazardous Materials

**FINAL ANNUAL REPORT
ON
1999
NEW YORK STATE
PESTICIDE SALES AND
APPLICATIONS**

July 1, 2001

GEORGE E. PATAKI, *Governor*

ERIN M. CROTTY, *Commissioner*

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Cornell University

Suffolk County Department of Health

United States Geological Survey

New York State Water Resources Institute

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Executive Summary

This report details the final 1999 pesticides sales and application data submitted under Article 33, Title 12, known as the Pesticide Reporting Law (PRL). The Department, in conjunction with work conducted by Cornell University, presents a final data summary of commercial pesticide sales and use for calendar year 1999, including: quantity sold, quantity used, category of applicator, and NYSDEC region of application.

Because many reports were submitted late and there was a very short turn-around time for managing the data received, the preliminary 1999 annual report to the Governor issued on July 1, 2000, did not include all the data. In addition, time had not allowed a thorough quality check on the data that were presented in the report. These constraints were acknowledged in the report to the Governor. Subsequent to the report issuance, the Department and Cornell has quality assured the data and added data from late submittals. These finalized data have been incorporated into the master data base. This data base will be the information source for health researchers or other users of the data.

Please note: Although the Department and Cornell have gone to great lengths to quality assure the data, there are still concerns regarding the quality of the data received from the regulated community. Users of the data should review Section III.D., Data Qualifications, prior to use.

The final data show there were greater than 5.3 million records of applications and sales reported for 1999. Due to a change in the way that certain records were data entered, this figure cannot be compared with total number of records in previous years.

Pesticide Reporting Program

The Department continued its efforts to increase the compliance rate for reporting primarily through public outreach and education, supplemented by enforcement. The Department, in conjunction with its computer contractor, also developed a user-friendly website for regulated entities to report their sales and applications data for the previous calendar year. This increased the number of reports received electronically.

The Department's long-term goal is to continually improve the reporting rate and data quality by raising the threshold for report acceptance each year. This increasing standard will parallel the learning curve for the regulated community and the Department. The objective of this approach is to maximize the quantity and quality of data available to health researchers and other users of the data.

The reporting results for calendar year 1999 were as follows:

- 95% of commercial applicators reported (14,509 out of 15,322).
- 97% of commercial permittees (i.e. distributors) reported (408 out of 421).

The Department is pleased with the reporting rate and appreciates the cooperation of the reporting community. The Department will continue to work with the reporting community to achieve maximum compliance. As a supplement to the education and outreach efforts, the Department took enforcement actions against those applicators who failed to report for 1999. An Order on Consent was sent to approximately 2,500 certified commercial pesticide applicators and commercial permit holders who did not report for 1999. Those entities were also assessed a civil penalty. Many applicators elected to voluntarily surrender their certification. Approximately 1,000 entities were subsequently sent notices and scheduled to appear at a pre-hearing conference. Those entities who did not settle the violation, subsequently had their certification, business registration, or commercial permit revoked.

The detailed data on applications and sales are voluminous, and contained in the eight separate data summaries included as part of this report (see the table of contents for a description of each summary). These detailed data summaries are available on the Department's website www.dec.state.ny.us/website/dshm/pesticid/prl.htm or on CD ROM. For a copy on CD ROM, please call 1-888-457-0110. Constraints on the data are discussed in Section III.D.

The following totals are those most frequently requested:

To make the information presented more easily understood and in response to recommendations, the Department is moving toward translating the volume (gallons) of pesticides reported into pounds. In order to convert the volume of a liquid into pounds, the specific gravity of the liquid must be known. Recently, the Department changed its product registration practices to capture the specific gravity of each liquid pesticide product as it is registered for sale or use in New York State. It will be several years before the Department is able to complete this transition and provide the information as pounds only.

Total amount of pesticides applied by commercial applicators in New York State in 1999:

- 2,375,449.52 Gallons
- 20,916,790.45 Pounds

The three largest total amounts of pesticide products applied by commercial applicators, by weight, were:

- Lesco Pre-M Plus Fertilizer (EPA Registration No. 10404-82) **
- Cynoff EC Insecticide (EPA Registration No. 279-3081)
- Merit 0.2 Plus Turf Fertilizer (EPA Registration No. 3125-474-9198) **

** These products contain small amounts of pesticides combined with large amounts of fertilizer and other ingredients. The weight reported here is the weight of all ingredients, not the weight of pesticides alone.

The three largest total amounts of pesticide products applied by commercial applicators, by volume, were:

- Dragnet FT Termiticide/Insecticide (EPA Registration No. 279-3062)
- Drexel Damoil Dormant & Summer Spray Oil (EPA Registration No. 19713-123)
- Lesco Pre-M 3.3 EC Turf Herbicide (EPA Registration No. 241-360-10404)

Total amount of pesticides sold to private applicators for agricultural use in New York State in 1999:

- 826,004.06 Gallons
- 4,163,710.92 Pounds

The three largest total amounts of pesticide products sold to private applicators, by weight, were:

- Bonide Orchard Mouse Bait (EPA Registration No. 4-152)
- AAtrex Nine-0 Herbicide (EPA Registration No. 100-585)
- Princep Caliber 90 Herbicide (EPA Registration No. 100-603)

The three largest total amounts of pesticide products sold to private applicators, by volume, were:

- AAtrex 4L Herbicide (EPA Registration No. 100-497)
- Dual 8E Herbicide (EPA Registration No. 100-597)
- Princep 4L Herbicide (EPA Registration No. 100-526)

Total amount of pesticides sold to distributors for resale in New York State in 1999 was:

- 601,078.36 Gallons
- 3,776,448.99 Pounds

Total sold for end use by applicators was:

- 112,722.19 Gallons
- 1,295,143.61 Pounds

I. INTRODUCTION

The Department, in conjunction with work conducted by Cornell University, presents a final data summary for calendar year 1999 of pesticide sales, the quantity of pesticides used, the category of applicator and region of application. This report also describes refinements made in 1999 to the pesticide reporting program and provides detailed information in eight data summaries. These summaries provide pesticide sales and use information by county, zip code and product.

It is not the Department's role, for purposes of this report, to draw any correlations between pesticide use and health impacts. This critical activity is the prerogative of independent health researchers who elect to use the data base.

II. IMPLEMENTATION OF THE PESTICIDE REPORTING PROGRAM

The Department's pesticide reporting program performs a range of functions: outreach to industry, environmental interest groups, cancer research advocacy groups and the public; interpretation and clarification of statutory and regulatory requirements; and development and execution of procedures for reporting and managing data.

A. Public Outreach and Education

The Department places primary emphasis on the education of the regulated community to encourage the highest level of compliance and to obtain the most accurate data possible. To further that goal, the Department conducted 12 workshops in 1999 at nine locations across the State: Albany, Syracuse, Rochester, Binghamton, Long Island, Suffern, New York City, Buffalo and Plattsburgh. These locations were chosen in response to suggestions from the regulated community and other interest groups. The workshops were attended by approximately 3,000 applicators and businesses. In 1999, the Department also participated in over 100 other events across the State for pesticide user groups and associations, cancer advocacy groups, environmental advocacy groups, the public and others. These events also reached thousands of interested parties. Also, the Department mass-mailed information and forms, on several occasions, to thousands of known regulated entities that were impacted by the Pesticide Reporting Law.

In addition, the Department established communication links with regulated entities through our e-mail address prl@gw.dec.state.ny.us and a toll-free hot line telephone number 1-888-457-0110. This hot line received 6,496 telephone calls between April 1, 1999 and March 31, 2000. Customers can contact the Department, have questions answered, request forms or conduct other business associated with the pesticide program.

The World Wide Web site (www.dec.state.ny.us/website/dshm/pesticid/prl.htm) for Pesticide Reporting Law information went on line in July 1998. This website provides Internet access to Pesticide Reporting Law information including a copy of the statute, forms that can be downloaded and printed, general guidance materials, and copies of the annual reports with a link to Cornell's website that contains final data for 1997 and 1998. The Department's website had an approximate total of 1572 user sessions and 4169 Pesticide Reporting Law annual report forms downloaded during 1999.

The Department continues to write and publish Technical and Administrative Guidance Memoranda (TAGMs) which provide guidance, enhance understanding of the Pesticide Reporting Law, and clarify program issues for Department staff, the public and the regulated community. The first of these Technical and Administrative Guidance Memoranda, DSHM-97-05, became effective January 20, 1998. The second TAGM (DSHM 99-10) became effective January 21, 2000. This TAGM was revised and reissued as TAGM PES 99-10, and became effective May 18, 2001.

The Department also has two Program Policies which clarify record keeping and reporting requirements of the Pesticide Reporting Law and existing regulations in Parts 325 and 326. Program Policy OGC-3 established a policy of enforcement discretion with regard to the New York State pesticide record keeping and reporting requirements for commercial applicators. Program Policy OGC-4 established a policy of enforcement discretion with regard to the New York State pesticide record keeping and reporting requirements for commercial permit holders, including importers, manufacturers and compounders. These two Program Policies state that the Department would allow and accept an annual report or reports submitted in accordance with the Pesticide Reporting Law, in lieu of the reports required under 6 NYCRR Parts 325.25 and 326.10. These policies also state the record keeping requirements for both commercial applicators and commercial permit holders, and help clarify statutory and regulatory requirements for the regulated community and facilitate compliance with such mandates.

B. Quality Control

The Department continues to refine the process for reporting and the system for managing reports received.

The Department refined its front-line quality control program where Department staff evaluate incoming reports to ensure basic criteria were met. The criteria were established to maximize the volume of data that would be transferrable into Cornell's master data base. To be accepted, a report must:

- a) be in the Department's standardized format;
- b) contain data in each column; and
- c) have the name and valid certification number of at least one certified commercial applicator or a valid commercial permit number; and
- a) be legible.

If a report did not meet these criteria, Department staff sought to correct the report, if possible, through telephone discussion or by mail with the person filing the report. This approach minimized the number of rejected reports. If the errors were too numerous, the report was rejected and returned to the business or applicator to be corrected and resubmitted.

The above procedures helped to eliminate some of the constraints on data quality identified in previous annual reports; however, some constraints remain. The Department intends to eventually eliminate as many constraints as possible by expanding the list of acceptance criteria each year. In this way, the acceptance threshold will rise continuously but gradually, paralleling the learning curve for the regulated community, the Department and Cornell. The goal is to maximize the quantity and quality of data available to health researchers and other users of the data.

C. Electronic Reporting

In April 1999, the Department entered into a contract with a private computer contractor to transmit the electronic media data to Cornell. The contractor developed electronic filing guidelines for distribution to regulated entities, for use in reporting 1999 and future year's data. This established a user-friendly and streamlined approach to electronic data submission.

A domain was established (www.nysprl.com), and linked from the Pesticide Reporting Law main web page. This website details guidelines for the electronic submission of data. As a result of a survey, conducted by the Department, of the computer applications in use by the regulated community, the following three electronic reporting options were made available and could be downloaded directly from the website. Option 1: Excel Reporting Form; Option 2: Visual Basic Program Reporting Form; and Option 3: Guidelines for Submitting in ASCII Text Format (a validation program is included with this option). The electronic reporting options were also made available on CD ROM upon request. To support the pesticide community with the implementation of this new program, the contractor provided a help desk that could be accessed both by telephone and e-mail.

The regulated community submitted 599 reports electronically, predominantly on computer diskettes, for calendar year 1999 sales and applications. The diskettes contained data for 497 certified commercial applicators, 29 registered businesses and 72 commercial permit holders.

The Department will continue to strongly encourage and assist in the expansion of electronic reporting by the regulated community.

D. Scannable Reports

Scannable report forms were another reporting option for commercial applicators in 1999. "Scannable" means the data on the forms might be optically scanned into the computer data base, minimizing manual entry of the data. This could be a very cost-effective reporting method for New York State, because it could improve readability and accuracy, and provide a higher level of automation for data processing.

To date, the success of the scannable reports has been mixed, with many having to be data entered instead of being scanned; however, the acceptance and use of these forms has been favorable. Approximately 2,969, or 19 percent, of all certified commercial applicators reported their activities by using this scannable form in 1999. The Department will continue to monitor the performance and cost effectiveness of the scannable reports as the program matures.

E. Data Base Refinement

The Department, in conjunction with Cornell University and a private contractor, made several improvements to optimize management of the 1999 Pesticide Reporting Law data.

1. The reports received from the regulated community in 1999 were optically imaged and stored on CD ROM for use by the Department. The maintenance of annual report images on CD ROM allows for computer indexing and quick access of individual reports by the Department. It also allows the Department to perform quality assurance activities more efficiently on the millions of records received.

2. Cornell University refined the Department's data base for tracking the pesticide reports received by the Department. This helps the Department manage the pesticide reports more effectively and maintain more accurate records of the reporting entities. This helped eliminate one of the sources of duplicate data being introduced into the data base in previous years.

3. Cornell also developed a process for creating data reports based on specific criteria requested by the Department. For example, this process can identify all certified applicators who reported making no applications, or how many applications each applicator made. The ability to sort information in a range of combinations is a valuable tool for administration and research purposes.

F. Cornell University

Under the present legislation, the pesticides sales and use computerized database system (data base) will keep track of the quantities and locations of pesticides applied by commercial applicators. It will also keep track of the quantities and intended application locations of restricted use and agricultural general use pesticides purchased by private applicators and quantities of restricted use pesticides sold by manufacturers in New York State.

The following objectives for developing and maintaining the data base will be undertaken by the Pesticide Management Education Program (PMEP) at Cornell:

1. Work closely with the NYSDEC on the design and implementation of a data base for pesticide use information submitted on reporting forms. This system will utilize a data entry firm or other consultants contracted by the NYSDEC.
2. Work closely with the NYSDEC on the design and implementation of a pesticide sales and use computerized data base system data base for pesticide use information submitted on disk, CD ROM, or electronically. Develop data entry and electronic file specifications to facilitate the transmission of electronic information from the contractor to Cornell for those contracted firms selected by the NYSDEC that will be processing pesticide application and sales reporting forms, including Optical Character Recognition (scannable) forms.
3. Provide technical expertise to the NYSDEC and act in an advisory capacity relating to the development and implementation of the data base. Assist the NYSDEC in reviewing contracts, requests for proposals, etc., relating to the development of the data base and reporting methods.
4. The data base is dependent on related pesticide information from other satellite computer systems. Cornell will work closely with the NYSDEC in designing/redesigning, developing and implementing these satellite data bases (business registration, certification, commercial permits, product registration, including the imaging/index querying of pesticide product labels) as a function of the data base.

Initially this will include the design/redesign and development functions and incorporating existing data that relate to the data base. Access will include internal NYSDEC and Cornell use and management of the information/data so that confidentiality is maintained.

5. For first and second-year reporting, Cornell provided a website link for accessibility to the pesticide application/sales summaries per the statute. Through a data warehouse server, Cornell has designed and implemented an interactive mechanism for querying/displaying pesticide use information for the NYSDEC, New York State Department of Health (NYSDOH), Cornell, qualified researchers and for members of the public as mandated by the pesticide reporting legislation. Any information provided by Cornell from the data base will only be as directed by the NYSDEC.

6. Provide/assist NYSDEC with data reports and other information in response to requests from the Health Research Science Board, NYSDEC internal personnel, the NYSDOH, the New York State legislature, other state agencies, the public and other parties.

7. Provide assistance/input to the NYSDEC on the preparation of the Pesticide Annual Report which is due to the Governor and Legislature by July 1 of each year. This will include all data provided by the DEC, and any of its contractors, to Cornell within established timeframes for inclusion in the data base. These data are to be provided to the DEC within timeframes as established between the DEC and Cornell, which will allow the DEC sufficient time to receive the data, incorporate it into the format of the report and have the report generated. These data are to be sorted by county, zip code, etc., as mandated in Chapter 279, Laws of 1996. Cornell will also provide any narrative portions for inclusion in the report that are relevant to the operation of the program for that year.

8. Provide information to NYSDEC regarding the number of keystrokes accepted and other relevant information from NYSDEC contractors, needed by NYSDEC to verify the amount of data provided by the contractors to Cornell.

Procedures

In order to accomplish the objectives, a Cornell project team consisting of a Project Leader, two Senior Program Analysts, three System Analysts/Programmers, and an Office System Specialist has been formed. Funding for a fourth System Analyst/Programmer dedicated for the pesticide product label imaging project is being requested for SFY 2001/2002 (and subsequent years) per the previously cited Work Plan Objectives. This team will implement the system design as specified by the Project Leader.

In order to specify the design, the Project Leader and Senior Program Analysts will work with the NYSDEC to determine the system requirements. They will consult with the regulated community and other end users of the system in order to clarify their requirements for the system. They will analyze these requirements and present system design alternatives to the NYSDEC. They will also research and choose the software and hardware components that will best implement the system requirements. After the system design has been completed, the lead programmer will oversee the project team as it builds the pesticide reporting system.

The Division of Information Services (DIS) within the NYSDEC will also assist Cornell in modeling the pesticide data into a normalized form that will facilitate integration with the data from other departmental systems.

All final decisions on the design and implementation of the pesticide reporting system will reside with the NYSDEC.

Project Activities

The preliminary system design and Data base have been specified and delivered to the NYSDEC. Cornell is continually in the process of refining this design and data base in conjunction with the NYSDEC. The initial development phase, now completed, will be followed by further system enhancements, reevaluations based on first, second and third-year reporting, and maintenance and operations of the system.

Prior to July 1, 1998, the system was fully functional in terms of accepting data from the data entry contractor; however, file specification testing with the data entry contractor, including transmission of information provided by the NYSDEC between the data entry contractor and Cornell, is still ongoing.

Cornell has developed a New York State database of currently registered and archive (registered since 1987) pesticide products that can be queried by various indexes, including active ingredient, product label name, EPA registration number, and registrant/manufacturer/payer. Also, a recertification course calendar database has been developed for those certified pesticide applicators who need to attend courses that provide recertification credits in their appropriate category(ies). It can be queried by category, course name, and by states offering certification reciprocity.

G. New York State Department of Health (NYSDOH) and Health Research Science Board (HRSB)

The Health Research Science Board was established within NYSDOH by legislation in 1996 (Chapter 279 of the Laws of 1996), with amendments in 1997 (Chapter 219 of the Laws of 1997). The Board's major responsibilities include: awarding grants for research and education projects financed by the Breast Cancer Research and Education Fund, and advising on pesticide-related issues and the operations of the Pesticide Sales and Use Database. NYSDOH assisted the Board in producing several documents in fulfillment of its duties.

Pesticide Use and Pesticide Exposure. One of the duties of the Board is to consider, based on evolving scientific evidence, whether a correlation exists between pesticide use and pesticide exposure. As part of that consideration, the Board is to make recommendations as to methodologies that could be used to establish such a correlation. The Board issued a report entitled "Pesticide Use and Pesticide Exposure" in August 1999 and updated the references in December 2000. The report discusses issues surrounding estimating exposures from pesticide use data, as well as from biological monitoring, environmental sampling, and production data. The report includes a list of references from peer-reviewed journals or government publications that could assist those interested in the question of whether pesticide use correlates with pesticide exposure. Because of the changing state of knowledge on this topic, the Board issued the report as a "living document" to be updated as frequently as appropriate. A copy can be requested by calling NYSDOH toll free at 1-800-458-1158.

Pesticide Reporting and Pesticide Use. The Board issued a report entitled "Comparison of Pesticide Reporting and Pesticide Use" in February 2000 in fulfillment of the following duty: "After two years of pesticide reporting, the Board shall compare the percentage of agricultural crop production general use pesticides being reported to the total amount of such pesticides being used in this state as estimated by Cornell University, Cornell Cooperative Extension, DEC [New York State Department of Environmental Conservation, NYSDEC] and EPA [U.S. Environmental Protection Agency]" [Public Health Law 2411 (1)(g)]. The Board contacted the agencies listed in the legislation and the New York State Department of Agriculture and Markets (NYSDAM) and requested information useful in conducting this comparison. The report suggested that sales to private applicators could be used to estimate the amount of general pesticides used or applied to agricultural crops, although these estimates would be uncertain. This conclusion was reached after comparing NYSDEC data for reporting year 1997 (sales to private applicators) to NYSDAM data (pesticide use on fruit), focusing on nine specific active ingredients (7 general use pesticides and 2 restricted use pesticides). Although a consistent relationship between reporting and use was not found for all nine active ingredients, for 8 of the 9 active ingredients, total reporting of sales and

use to NYSDEC was ½ to 1⅓ times the amount of use on fruit from NYSDAM. A copy of the report can be requested by calling NYSDOH toll-free at 1-800-458-1158.

Evaluation of Pesticide Reporting and Board Recommendations. Another duty of the Board is to include in its 1999-2000 biennial report to the Legislature, “an evaluation of the basis, efficiency and scientific utility of the information derived from pesticide reporting” and recommendations as to “whether such system should be modified or continued.” The Board is also instructed to consider “whether private citizen use of residential pesticides should be added to the reporting requirements” (Public Health Law section 2413). To fulfill this mandate, the Board prepared the document “Survey Results and Recommendations: Pesticide Reporting Law” in December 2000, in which the results of a survey of interested parties are discussed and recommendations are made. After modifications by the Board, the report was finalized in February 2001.

The survey requesting written comments on pesticide reporting was sent to 302 interested parties, including government agencies, environmental groups, breast cancer advocacy groups, professional and trade organizations, and business groups; 24 responses were received. The Board found that although the pesticide data have not been used in health-related studies, the data have been used in other ways that contribute to public health, such as the development of programs related to farmworker safety and health and water quality assessment. The organizations submitting comments identified several ways in which the database could be improved or made more complete. An area of concern of many survey respondents was that the current database is incomplete (e.g., doesn't include data on private applicator use or homeowner sales and use) and that the lack of completeness limits the usefulness of the data. The Board believes that to maximize the use of the data, consideration should be given to including additional data in the data base. The Board believes that no large-scale changes in reporting should be made (e.g., reporting of homeowner use) without studying options developed by the agencies, followed by pilot studies of the proposed modifications, when appropriate. The Board made eight specific recommendations, which can be found in the report. A copy of the report can be requested by calling NYSDOH toll-free at 1-800-458-1158.

Information for Researchers. Another of the Board's responsibilities is to review requests by researchers engaged in human health-related projects for access to confidential Pesticide Sales and Use Data Base information maintained by Cornell and the Department. The Board prepared an information sheet that describes the pesticide sales and use data base and summarizes in everyday language the three documents for researchers requesting confidential information from the data base: Request for Pesticide Registry or Pesticide Application Information; Guidelines to Restrict the Dissemination by Researchers of Confidential Pesticide Registry and Pesticide Application Information; and Agreement to Maintain Confidentiality. The information sheet was prepared because the documents contain some legal language that may be unfamiliar to researchers. The

information sheet and a letter were mailed to the administrators of 324 college and universities in New York State, with the request that copies be forwarded to researchers working in the areas of environmental sciences, biological sciences, public health, epidemiology, medicine, or any other discipline, who may find these data useful to their research. No requests for confidential information were received by the Board as of May 31, 2001.

Breast Cancer Research and Education Fund. Breast cancer research and education grant awards are supported by voluntary donations made via a check-off on a New York State income tax form, proceeds from the “Drive for the Cure” specialty license plate, as well as direct donations to the Fund. Through December 2000, more than \$2.4 million have been donated through the check-off. Proceeds from the “Drive for the Cure” specialty plate, available since mid-2000, have started to accumulate. In October 2000, Governor George E. Pataki signed legislation authorizing the State to match dollar for dollar donations made on the Income Tax check-off as well as proceeds from the “Drive for the Cure” specialty license plate. This legislation will double the resources available to support meritorious research and education projects.

Update from Grant Awardees and Second Request for Proposals. The Board was updated on progress of its 1998 awardees through a poster-session held in December 1999, and through oral presentations made in 2001. Most 1998 EMPIRE grant awards and all Postdoctoral Fellowship awards will be completed by the end of State Fiscal Year 2000-2001. Project summaries can be obtained from the Board’s executive secretary at (518) 486-6886.

In 2000, the Board developed its second Request for Proposals (RFP). The Board will again solicit proposals for EMPIRE (**E**mpowerment through **I**nnovative **R**esearch and **E**ducation) grants, a pilot grant mechanism, and for Postdoctoral Fellowship awards. In March 2001, the RFP was distributed to over 600 individuals, hospitals and universities, research institutions and community-based organizations throughout New York State. The Board anticipates having \$2.0 million available to support awards of up to \$50,000 per year for up to two years.

Information on the Pesticide Poisoning Registry

The NYSDOH Pesticide Poisoning Registry was established in 1990 as a surveillance system used to collect reports of pesticide poisoning incidents and to help prevent overexposure to pesticides through outreach and intervention. The Registry is also used to increase the medical community's awareness of pesticide-related health effects. Clinical laboratories, physicians and health facilities are mandated to report pesticide poisonings to NYSDOH under Part 22 of the New York State Sanitary Code. NYSDOH staff investigate and intervene in any situation with a continued risk of

pesticide poisoning. Intervention is structured around individual cases. Environmental sampling and investigations, industrial hygiene consultation, and medical consultation are available, if needed. In cases of occupational exposure, intervention is coordinated with the employer if possible. Patients may be referred to one of the clinics of the New York State Occupational Health Clinic Network or to another qualified provider. Summary information on types and circumstances of exposure related to reported poisonings are issued periodically. A copy of the most recent report can be requested by calling NYSDOH toll-free at 1-800-458-1158.

H. Breast Cancer Environmental Risk Factors (BCERF)

Cornell University Program on Breast Cancer and Environmental Risk Factors in New York State (BCERF)

The Cornell University Program on Breast Cancer and Environmental Risk Factors (BCERF) is part of Cornell's Institute for Comparative and Environmental Toxicology (ICET), a program of the Center for the Environment. BCERF was created in 1995 to respond to growing public concern regarding elevated breast cancer rates in certain counties in New York State. From its inception, BCERF has addressed the relationship between environmental risk factors and breast cancer through a variety of research and education strategies. BCERF is critically evaluating the scientific information on pesticides, other chemicals, diet, and the relationship of these factors to breast cancer risk. This translational research allows for the synthesis and interpretation of a wide range of research on these environmental factors, and whether they may affect breast cancer risk. The pesticides being evaluated include those used in agriculture, home, lawn and garden pest control, and on recreational sites. These critical evaluations identify existing knowledge gaps, which are the basis of recommendations to state and federal agencies for needed research.

BCERF translates these scientific findings and data into understandable and accessible information. Educational products include:

- A set of five *Tip Sheets* offering the very basics
- 40 *Fact Sheets* covering environmental risk factors and related information in greater detail
- A quarterly newsletter, *The Ribbon*, with a symposium-like format addressing current themes in related research and policy areas
- A *Tool Kit* of educational curricula, recently field-tested in 58 sites across the state and currently in production.

In addition, BCERF continuously supports diverse community efforts to use what is known about breast cancer risk factors for risk reduction.

The *Ad Hoc Discussion Group* meetings, three times per year, continue to provide an interactive forum where activists, educators, researchers and other stakeholders can express their concerns and learn from one another. BCERF has recently been encouraged by members of the Senate to broadly publicize these important education events in the communities in which they take place, and is now doing so.

BCERF maintains a World Wide Web site <http://www.cfe.cornell.edu/bcerf/> with this science-based information and links to other information sources. The BCERF website includes a searchable bibliography with over 6,000 references on breast cancer and environmental risk factors. Recent evaluation efforts show that in addition to providing critical links to information needed by researchers and health professionals, the website also reaches students and those personally touched by cancer, in great numbers.

BCERF may be contacted by e-mail at breastcancer@cornell.edu or by telephone at (607) 254-2893. The BCERF Program Office is located at 112 Rice Hall, Cornell University, Ithaca, New York 14853.

I. Water Monitoring Program

The PRL (§33-0714) requires the Department to conduct a water quality monitoring program on Long Island and throughout the State to provide an adequate understanding of the health and environmental impacts of pesticide use in the State. The Department uses this program to make pesticide registration decisions, review suspensions and cancellations of state pesticide registrations and assess the status, trends and health impacts of any pesticide contamination in the ground and surface water of NYS. The Department works with the United States Geological Survey (USGS), the NYS Water Resources Institute and any other parties necessary to accomplish these goals.

Given the very broad mandate in the PRL and the large area of NYS to be investigated, the Department decided to first investigate the impacts of long-term pesticide use in several areas with high ground water usage. These areas generally include current and past agricultural use areas, golf courses, vineyards, and urban areas with high pesticide use. To that end, the Department contracted with the USGS, the Suffolk County Department of Health Services and the NYS Water Resources Institute to perform various ground and surface water studies. Once adequate information has been gathered from these areas, the focus of the program will move towards other areas of the state to determine impacts from pesticide use to ground and surface water.

The USGS has primarily been investigating the impact of pesticide use on surface water used for drinking water in upstate New York. For the USGS reports go to <http://ny.usgs.gov/>.

The Suffolk County Department of Health Services has been investigating the impact of pesticide use on ground water in Suffolk County, Long Island. They have also analyzed a limited number of samples of ground water from Nassau County, Long Island. For the most recent report by the Suffolk County Department of Health Services is available in .pdf format at the Finalized 1999 Report on Pesticide Applications and Sales web pages.

The New York State Water Resources Institute investigated the applicability of computer modeling on a watershed basis to determine pesticide environmental fate. For the report, go to <http://www.cfe.cornell.edu/wri/projects/pesticides/>.

J. Enforcement Activities

1999 Reporting Year Enforcement

The Department implemented a series of methods in 1999 to bring regulated entities into compliance with reporting as required under the Pesticide Reporting Law. Reporting forms and information on requirements were made more readily available through the Internet and e-mail. A reminder notice stating the annual report was due by February 1 was issued to maximize the number of reports submitted. In addition, a revised tracking program assisted the Department in overseeing compliance by identifying applicators who have failed to report. An Order on Consent was sent to approximately 2,500 Certified Commercial Pesticide Applicators and Commercial Permit Holders who did not report for 1999. Those entities were also assessed a civil penalty. Many applicators elected to voluntarily surrender their certification. Approximately 1,000 entities were sent notices and scheduled to appear at a pre-hearing conference. Those entities who did not settle the violation at the pre-hearing conference, have cases pending before an Administrative Law Judge.

The Department also addressed other areas of concern regarding pesticide activities discovered while reviewing annual reports (i.e., expired or unregistered businesses; unregistered products; non-certified applicators; etc.)

III. REPORTING DATA

A. Reports Received

For the 1999 report year, the total final number of applicators and permittees reporting were:

14,509 Commercial Applicators
408 Commercial Permittees (Sales)

These figures indicate that 95 percent of the 15,322 certified applicators and 97 percent of the 421 commercial permittees reported for 1999. The Department is pleased with the compliance rates, commends the reporting community on its success, and pledges to work with industry to further encourage reporting and improve data quality.

B. General Synopsis of Data

The following tables provide an overview of major data categories:

Table 1

Calendar Year 1999
Final Summary of Total Quantities Statewide

| Category | Number of Pesticide Products | Amount | |
|-----------------------------------|-------------------------------------|-------------------|--------------------|
| Applied by Commercial Applicators | 3,159 | 2,375,449.52 gal. | 20,916,790.45 lbs. |
| Sold for Resale* | 376 | 601,078.36 gal. | 3,776,448.99 lbs. |
| Sold for End Use* | 512 | 112,722.19 gal. | 1,295,143.61 lbs. |
| Sold to Private Applicators | 948 | 826,004.06 gal. | 4,163,710.92 lbs. |

*Note: Restricted use pesticide only

Table 2
Calendar Year 1999
Final Summary Quantity by County
(Applications by Commercial Applicators Only)

| County | Amount** | |
|-------------|-----------------|-------------------|
| Albany | 55,400.32 gal. | 285,320.61 lbs. |
| Allegany | 1,442.55 gal. | 10,449.15 lbs. |
| Bronx | 14,756.87 gal. | 168,093.79 lbs. |
| Broome | 8,186.42 gal. | 124,798.11 lbs. |
| Cattaraugus | 5,287.32 gal. | 63,791.71 lbs. |
| Cayuga | 39,943.20 gal. | 140,730.37 lbs. |
| Chautauqua | 10,688.58 gal. | 98,719.58 lbs. |
| Chemung | 1,293.64 gal. | 58,841.05 lbs. |
| Chenango | 7,913.91 gal. | 216,519.71 lbs. |
| Clinton | 3,459.53 gal. | 43,998.80 lbs. |
| Columbia | 16,458.89 gal. | 55,622.95 lbs. |
| Cortland | 4,013.59 gal. | 836,317.49 lbs. |
| Delaware | 6,262.89 gal. | 18,638.96 lbs. |
| Dutchess | 22,990.99 gal. | 856,550.82 lbs. |
| Erie | 181,055.59 gal. | 766,889.23 lbs. |
| Essex | 3,284.76 gal. | 110,424.74 lbs. |
| Franklin | 3,760.58 gal. | 14,623.34 lbs. |
| Fulton | 2,507.22 gal. | 25,610.60 lbs. |
| Genesee | 21,461.12 gal. | 44,873.19 lbs. |
| Greene | 1,475.39 gal. | 25,032.48 lbs. |
| Hamilton | 862.50 gal. | 16,352.17 lbs. |
| Herkimer | 28,027.99 gal. | 56,164.44 lbs. |
| Jefferson | 14,254.55 gal. | 109,648.90 lbs. |
| Kings | 96,674.98 gal. | 2,057,478.59 lbs. |
| Lewis | 7,659.31 gal. | 130,916.37 lbs. |
| Livingston | 5,214.47 gal. | 45,020.98 lbs. |
| Madison | 7,530.57 gal. | 47,129.50 lbs. |
| Monroe | 139,319.81 gal. | 1,033,954.19 lbs. |
| Montgomery | 4,228.49 gal. | 47,445.19 lbs. |
| Nassau | 285,570.93 gal. | 1,667,061.09 lbs. |
| New York | 62,403.08 gal. | 599,461.63 lbs. |
| Niagara | 30,531.35 gal. | 180,664.90 lbs. |
| Oneida | 9,354.08 gal. | 86,840.03 lbs. |
| Onondaga | 18,698.03 gal. | 382,320.74 lbs. |
| Ontario | 26,895.73 gal. | 109,151.16 lbs. |
| Orange | 16,806.96 gal. | 280,567.35 lbs. |
| Orleans | 3,336.75 gal. | 26,397.63 lbs. |

| County | Amount** | |
|--------------|-----------------|-------------------|
| Oswego | 57,887.55 gal. | 102,627.19 lbs. |
| Otsego | 8,902.82 gal. | 21,830.57 lbs. |
| Putnam | 5,546.10 gal. | 80,970.06 lbs. |
| Queens | 45,418.64 gal. | 462,795.06 lbs. |
| Rensselaer | 14,915.18 gal. | 76,690.78 lbs. |
| Richmond | 16,781.97 gal. | 26,621.62 lbs. |
| Rockland | 40,566.49 gal. | 405,681.45 lbs. |
| Saratoga | 198,129.10 gal. | 401,040.91 lbs. |
| Schenectady | 12,930.13 gal. | 136,801.36 lbs. |
| Schoharie | 3,102.97 gal. | 5,163.47 lbs. |
| Schuyler | 2,326.87 gal. | 20,336.49 lbs. |
| Seneca | 5,431.80 gal. | 15,835.63 lbs. |
| St. Lawrence | 11,043.97 gal. | 1,048,198.38 lbs. |
| Steuben | 6,406.89 gal. | 64,827.09 lbs. |
| Suffolk | 373,234.27 gal. | 2,144,603.09 lbs. |
| Sullivan | 11,933.07 gal. | 61,537.46 lbs. |
| Tioga | 3,400.89 gal. | 15,490.82 lbs. |
| Tompkins | 10,869.62 gal. | 61,980.79 lbs. |
| Ulster | 6,881.41 gal. | 85,120.34 lbs. |
| Warren | 10,646.41 gal. | 155,420.69 lbs. |
| Washington | 18,579.59 gal. | 31,413.27 lbs. |
| Wayne | 13,165.39 gal. | 72,054.45 lbs. |
| Westchester | 179,998.83 gal. | 1,883,785.65 lbs. |
| Wyoming | 14,151.13 gal. | 58,367.80 lbs. |
| Yates | 1,120.31 gal. | 3,521.54 lbs. |

**Note: The quantity of pesticides commercially applied in a county is the sum of the gallons and pounds reported above. In other words, the gallons and pounds in the chart do not reflect two ways of speaking about a single volume of pesticides.

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

C. Data Summaries Overview

In conjunction with Cornell University, the Department has summarized final data for calendar year 1999 pesticide sales, the quantity of pesticides used, the category of applicator and region of application. Detailed information are provided in eight data summaries. These final summaries can be found at the end of this report.

- Data Summary 1 provides the final data for 1999 Commercial Applicator pesticide applications in New York State (summarized by product).
- Data Summary 2 provides the final data for 1999 Commercial Applicator pesticide applications in New York State (summarized by county).
- Data Summary 3 provides the final data for 1999 Commercial Applicator pesticide applications in New York State (summarized by zip code).
- Data Summary 4 provides the final data for 1999 Commercial Permittees (Including Importers, Manufacturers and Compounders) Restricted Use Pesticide Sales to Commercial Permit Holders for Resale (summarized by product). These are data summaries of sales made by pesticide sales distributors that are licensed to sell restricted use pesticides, to other pesticide sales distributors who are also licensed to sell restricted use pesticides. The data are summarized by pesticide product.
- Data Summary 5 provides the final data for 1999 Commercial Permittees (Including Importers, Manufacturers and Compounders) Restricted Use Pesticide Sales to Commercial Applicators for End Use (summarized by product). These are data summaries of sales made by pesticide sales distributors that are licensed to sell restricted use pesticides, to commercial pesticide applicators who are licensed to purchase and apply restricted use pesticides. The data are summarized by pesticide product.
- Data Summary 6 provides the final data for 1999 Commercial Permittees Sales of Restricted Use Pesticides and General Use Agricultural Pesticides to Private Applicators (summarized by product). These are data summaries of sales, to certified private applicators, of restricted use pesticides and general use pesticides used in agricultural crop production. These sales were made by pesticide sales distributors that are licensed to sell both restricted use pesticides and general use pesticides identified as being used in agricultural crop production. The data are summarized by pesticide product.
- Data Summary 7 provides the final data for 1999 Commercial Permittees Sales of Restricted Use Pesticides and General Use Agricultural Pesticides to Private Applicators (summarized by county).

- Data Summary 8 provides the final data for 1999 Commercial Permittees Sales of Restricted Use Pesticides and General Use Agricultural Pesticides to Private Applicators (summarized by zip code).
- Supplement to Data Summaries provides a list of Pesticide Products by Name and EPA Registration Number.

As required by law, these final summaries exclude the name, address or any other information that would otherwise identify a commercial or private applicator, any person who sells or offers for sale restricted use or general use pesticides to a private applicator, or any person who received the services of a commercial applicator.

D. Data Qualifications

The reporting community, the Department, its computer consultants, and Cornell University work together to provide the best information possible for the health researchers. However, the data is neither perfect nor complete. Users of the data are cautioned about limitations of the data, including the following:

- 1) The information, as reported by the applicators and distributors, is accepted. Neither the Department nor Cornell can attest to the accuracy of the data provided. However, the data are reviewed for obvious or likely errors and follow up with the applicators and distributors is conducted and corrections are made where possible.
- 2) The Department is aware that duplicate data were introduced into the data base. However, an improved process for tracking pesticide reports has reduced the problem since 1997. Any pesticide reports identified by the reporting entities as duplicates were removed. However, duplicate reports that were submitted without notifying the Department that it was a duplicate report, could enter the data base undetected. The incidence of this is probably quite low. This is because the Department has improved its report tracking system and is better able to target its requests to resubmit reports to entities that have had their reports returned for clarification or completion. Duplicates would lead to an overestimate of pesticide use or sales.

- 3) The Pesticide Reporting Law requires the Department to accept data from the regulated community on handwritten forms. Some of the data on these forms were difficult for the data entry operators to decipher. The quality of these data are not as reliable as data submitted on typed or computer-generated forms. Data that are unreadable are stored in the database as “Illegible” (see Data Management Methodology section).
- 4) Use of zip code to define application and sales locations created a number of problems. Zip codes are postal delivery locations. Large wilderness areas or farmland may have few if any delivery points. Since mail is not delivered to these locations, they are technically not located in a zip code. Determination of what zip code to report for an application or intended application in one of these locations was problematic for the businesses and applicators.
- 5) Some zip codes contain more than one contiguous location. Without more accurate address data than are currently collected, there is no way to divide application or intended application quantities between the separate locations included in these zip codes.
- 6) Data reported for selected zip codes have not been reported under that zip code. These selected zip codes are unique to a location and could be used to identify where an application or intended application occurred. Identification of the specific location of a pesticide application is not allowed by the Pesticide Reporting Law. In these instances, these data have been reported under the “Private” zip code. Note that this manipulation was not necessary for the data reported by county. All the data has been reported under the county that was submitted on the report form by the business or applicator.
- 7) Quantities for some pesticides were reported using both weight- and volume-based units of measure. The information to determine which type of measurement unit should be used to report that particular pesticide are not currently available. Therefore, the reports list both measurements, as it was reported to the Department. Rather than reject quantities reported under a unit of measure inappropriate for a particular product, the reports list both measurements, as they were reported to the Department.
- 8) Products with a quantity of zero reflect that applications or intended applications of the product were made, but that the quantity was indecipherable on the report form.

- 9) The data base may contain an overestimate of the volume of pesticides actually used or sold. Several factors contribute to this potential overestimate. Data are not available to indicate the quantity of pesticides that may be involved in the factors identified below.
- It is fairly common for private applicators to return unused pesticides. They may even do so in a different year than the one in which they made the initial purchase. The current reporting system does not account for returns. Only the original sale is reported.
 - Commercial permittees report sales of restricted pesticides to other distributors. These distributors sell the same pesticide a second time, possibly to another distributor, who may sell it yet a third time. Each sale is reported. There is no way of identifying reports of multiple sales of a single volume of pesticide.
 - Many products are routinely diluted with an inert material prior to application. Some applicators report the diluted amount of material applied, not the undiluted amount as required by the Department. This error can inflate the estimates of total pesticides applied in a given year.
- 10) Data are not reported by active ingredient. This makes the data base different from most other pesticide use tracking data bases, which may cause difficulties in comparing these data with data from other states. The Department is working toward reporting by active ingredient.
- 11) Commercial Permit Holders (sellers of restricted pesticides), under the Pesticide Reporting Law, must record and report sales of general use agricultural pesticides to certified private applicators. However, certified private applicators can purchase general use agricultural pesticides from non-commercial permit holders. Those sales and the associated use information would not be captured by the Pesticide Reporting Law in those situations.

E. Data Management Methodology

The following statements summarize the methodology that was used to produce the Pesticide Annual Report data for 1999:

- Pesticide products were summarized using the EPA registration number, not the product name.
- It is not uncommon for a pesticide product to be registered with one EPA number, but multiple product names. All registered product names are

listed in a separate report. (Supplement to Data Summaries - Pesticide Products by Name and EPA Registration Number).

- Reported EPA registration numbers that contained alphabetic characters were processed as California EPA registration numbers. This was done by removing the revision code that California incorporates in the number, and then processing the EPA company, product, and distributor (if present) numbers in the same manner as the federal EPA registration number.
- All quantities are rounded to two decimal positions before the values are used for the Annual Report.
- The Data Summaries include data that were reported incompletely or incorrectly. These data have been identified by using a set of standard descriptions. The reason for including the data is that partial data may still have some informational value. The descriptions used are:
 - “Unreported” – no value reported for this field
 - “Illegible” – unreadable value reported for this field
 - “Invalid” – an invalid EPA Registration Number is a number that did not match those EPA Registration Numbers for pesticide products registered in New York State for a particular reporting year. An invalid County or Zip Code is a county or zip code that does not exist in New York State
 - “Irregular” – two values reported for one field on the report form or a value that could not be mapped to the report form field for any reason

IV. APPENDICES

Glossary
Contact List

Appendix A

Glossary

(From ECL and 6NYCRR Parts 325 and 326)

“Business registration” means the requirement of each person or business providing services of commercial application of pesticides, either entirely or as a part of the business, to register with the Department.

“Commercial application” means any application of any pesticide except as defined in private or residential application of pesticides.

“Certified commercial pesticide applicator” means a certified applicator who is certified by the department to use or supervise the use of any commercial application of pesticides or to sell or supervise the sale of a restricted use pesticide as described in subdivision 325.16(1).

“Certified commercial pesticide technician” means an individual who is at least 17 years of age and is certified to engage in the following:

- (1) commercial use of any general use or unclassified pesticide without supervision; or
- (2) use of any pesticide when working under the direct supervision of a certified commercial pesticide applicator.

“Commercial permit” means the permit issued by the commissioner, pursuant to Environmental Conservation Law, section 33-0901, for the distribution, sale, offer for sale, purchase for the purpose of resale, or possession for the purpose of resale, of a restricted pesticide.

“General use pesticide” means a pesticide which does not meet the state criteria for a restricted pesticide as established under authority of section 33-0303 of Article 33 of the New York State Environmental Conservation Law.

“Pesticide” means:

- a. Any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest; and
- b. Any substance or mixture of substances intended for use as a plant regulator, defoliant or desiccant.

“Metabolite” means any substance produced in or by living organisms by biological processes and derived from a pesticide.

“Private application” means any application of any pesticide for the purpose of producing an agricultural commodity

- a. On property owned or rented by the applicator or the applicator’s employer, or
- b. If applied without compensation other than the barter of personal services between producers of agricultural commodities, on property owned or rented by a party to such a barter transaction.

“Restricted use pesticide” means a pesticide that is classified for restricted use under the provisions of article 33 of the Environmental Conservation Law or under section 3(d)(1)(C) of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended.

Appendix B
Contact List
for More
Information on Pesticides

New York State Department of Environmental Conservation

| | |
|---|-----------------|
| Pesticide Certification, Registration, Permits | (518) 402-8753 |
| Pesticide Annual Reporting | 1-888- 457-0110 |
| Pesticide Product Registration | (518) 402-8768 |
| Pesticide Compliance and Integrated Pest Management | (518) 402-8781 |

New York State Department of Health

| | |
|--|----------------|
| Environmental Health Information | 1-800-458-1158 |
| Health Research Science Board | (518) 402-7511 |

| | |
|---|----------------|
| <u>Breast Cancer and Environmental Risk Factors</u> | (607) 254-2893 |
|---|----------------|

Pesticide Management Education Program (Cornell University)

| | |
|---|--|
| Pesticide Management Education | George Good, Director - (607) 255-1866 |
| Pesticide Reporting Law Data Base | William Smith, Project Leader - (607) 255-1865 |

Figure 1
Pesticide Applications by Weight (in Pounds) for New York State by County During 1999

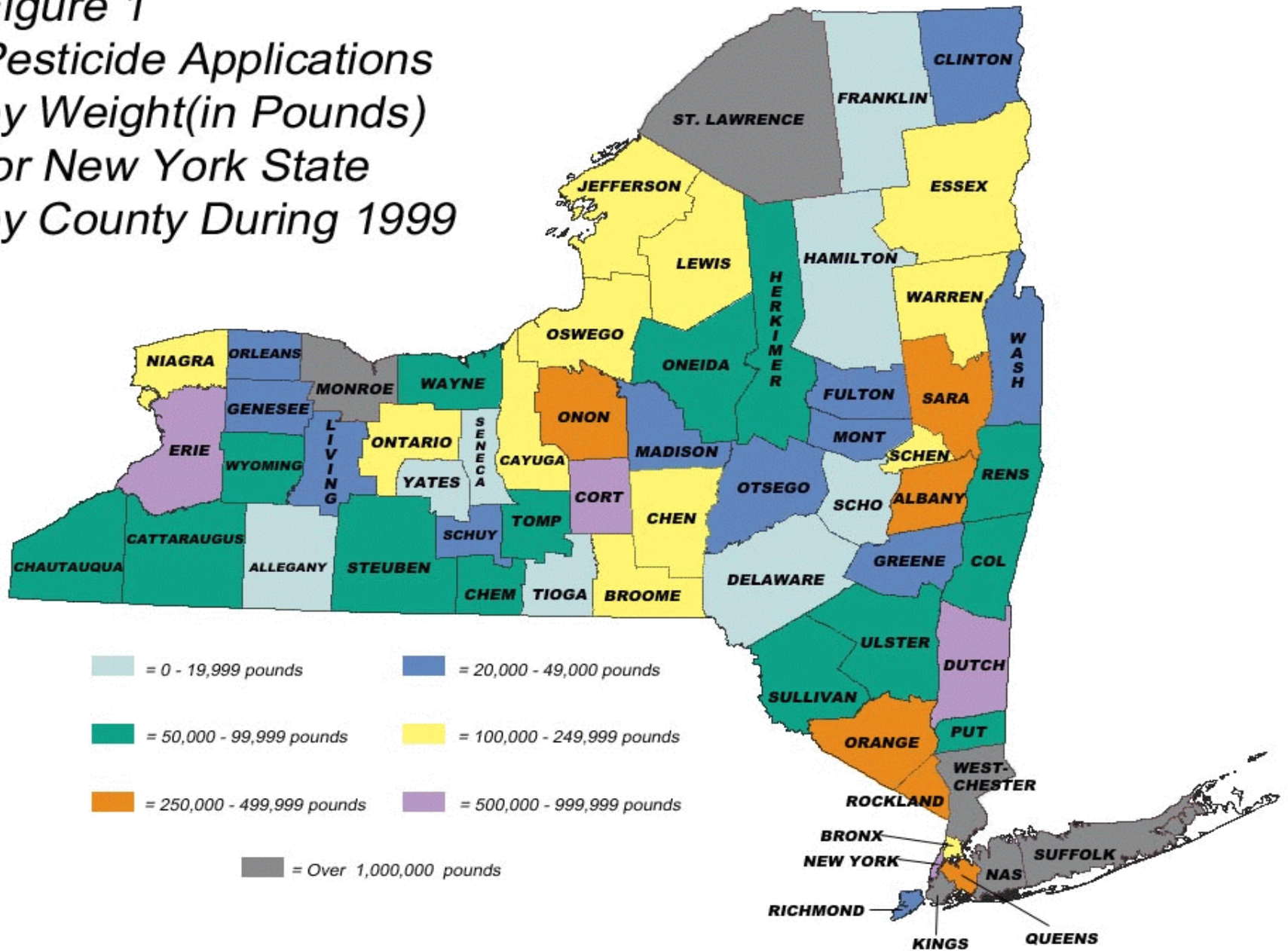


Figure 2
Pesticide Applications by Volume
(in Gallons) for New York State
by County During 1999

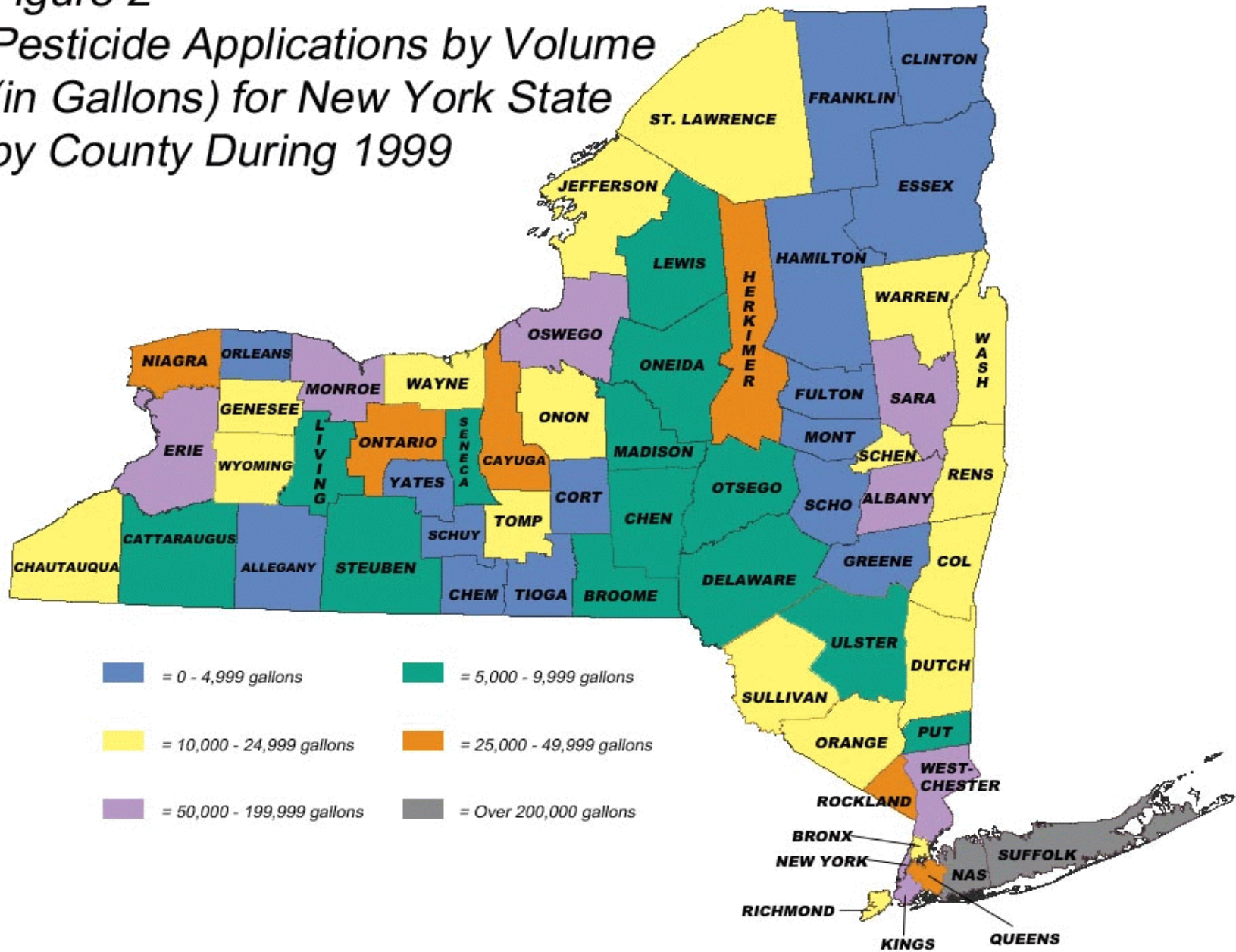


Figure 3
Pesticide Sales by Weight
(in Pounds) for New York State
by County During 1999

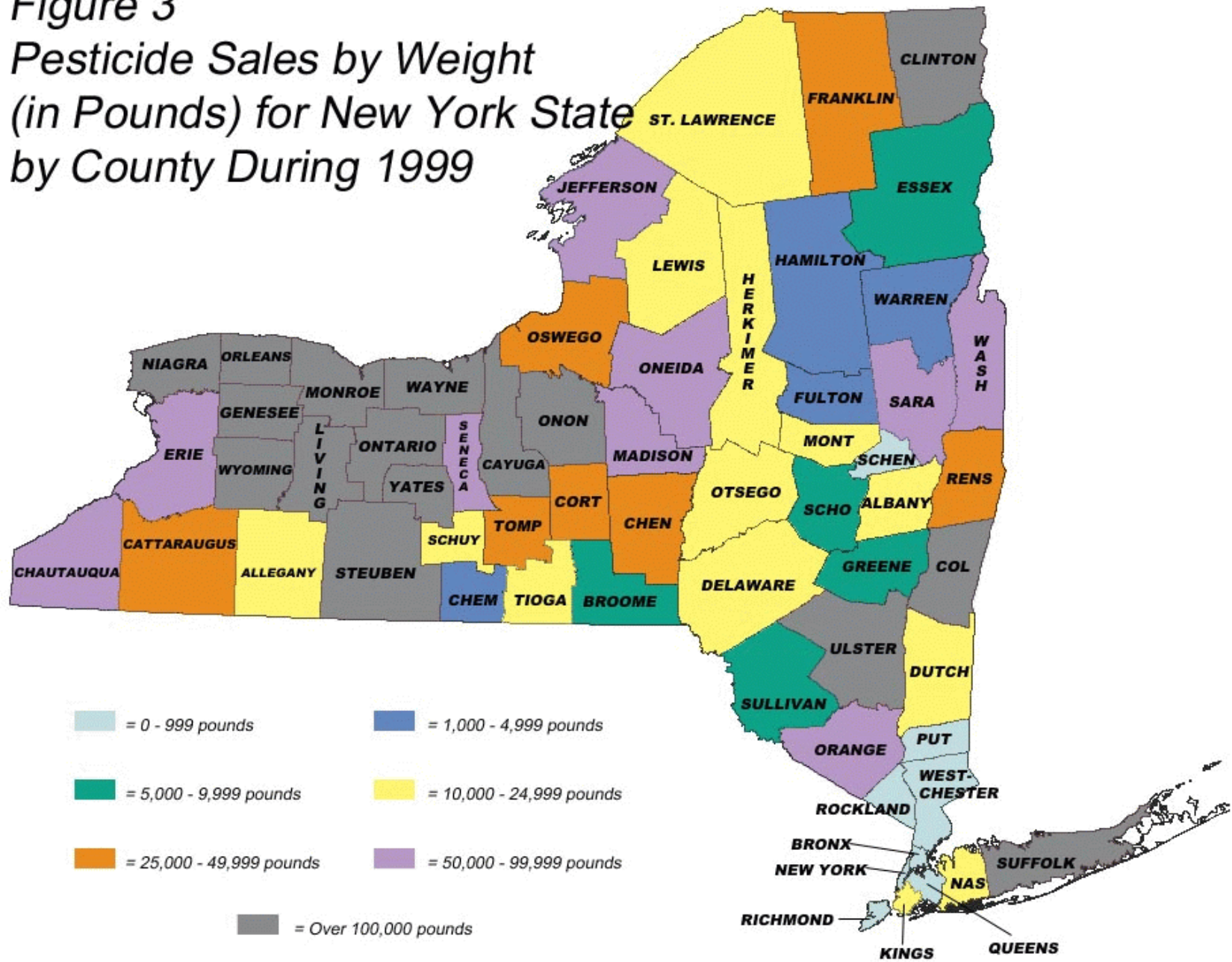
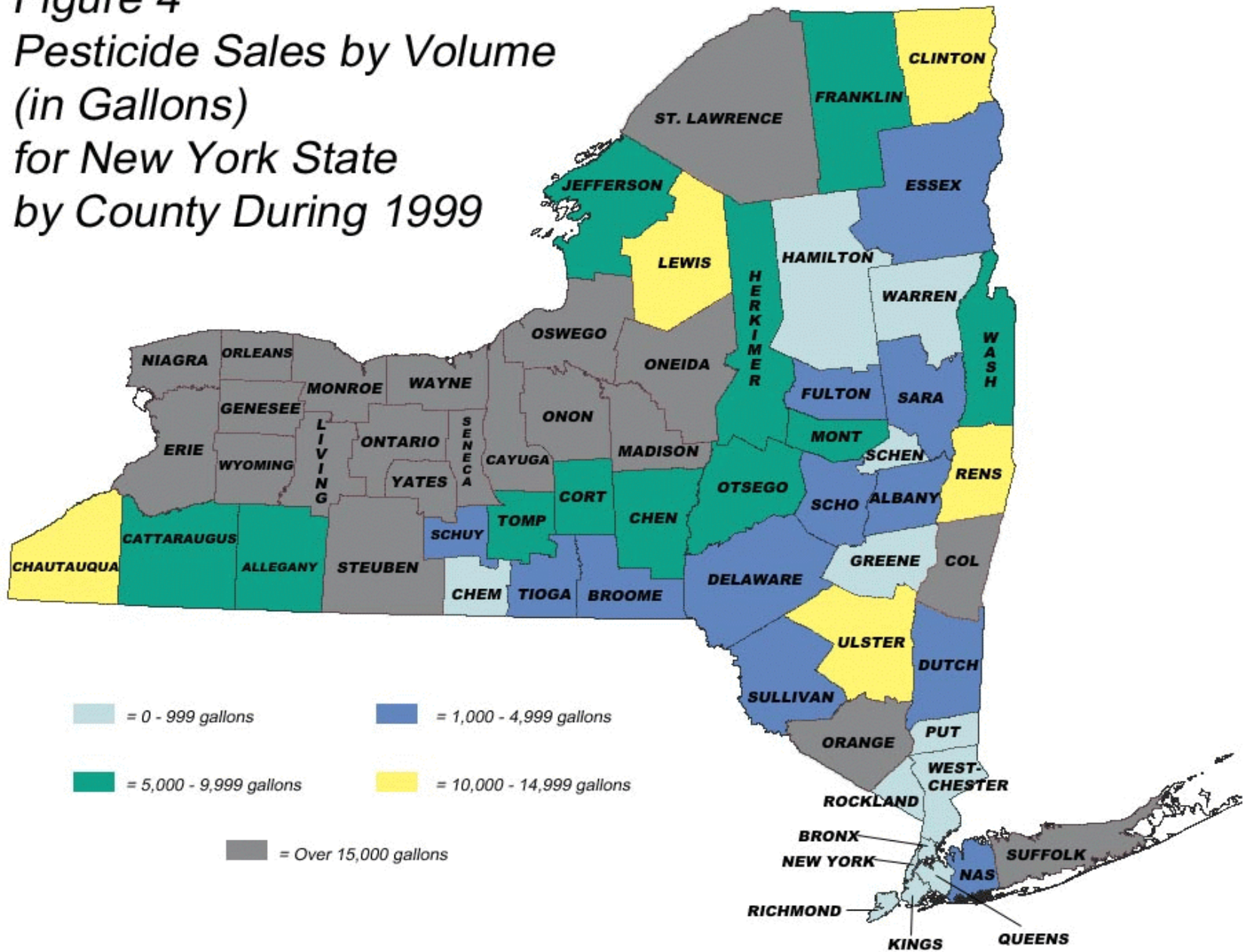


Figure 4
 Pesticide Sales by Volume
 (in Gallons)
 for New York State
 by County During 1999



**Relative Use (in Pounds) of the Reported Top Ten Pesticide Products
Applied by Certified Commercial Applicators - 1999***

July 1, 2001

| EPA Registration Number | Product Name | Weight Quantity (pounds) | Percentage of All Products |
|--|--|---------------------------------|-----------------------------------|
| 10404-82 ** | Pre-M Plus Fertilizer w/ 1.31% Pendimethalin Pendulum .75% Plus Fertilizer | 1,816,011.80 | 8.68% |
| 279-3081 | Cynoff EC Insecticide | 1,768,853.33 | 8.46% |
| 3125-474-9198 ** | Tee Time Fertilizer w/Merit Insecticide The Andersons Fertilizer w/Merit Insecticide | 1,066,237.20 | 5.10% |
| 10465-28 | CCA Type C Wood Preservative 60% | 816,036.22 | 3.90% |
| 1744-20001 | Sunnysol 150 (Sodium Hypochlorite) | 807,022.90 | 3.86% |
| 59074-20001 | Hypochlor Super-Chlor | 748,518.00 | 3.58% |
| 3125-474-10404 ** | Lesco Merit 0.2 Plus Elite Fertilizer Lesco Merit 0.2 Plus Mini Fertilizer Lesco Merit 0.2 Plus Fertilizer | 438,558.72 | 2.10% |
| 538-214-10404 ** | Lesco Fertilizer Plus Pre-M | 435,189.11 | 2.08% |
| 1471-62 | Balan 2.5G | 389,085.45 | 1.86% |
| 10404-29 ** | Dursban 0.74% Plus Various Fertilizer Combinations | 355,216.30 | 1.70% |
| Top 10 Products - Total Quantity Used: | | 8,640,729.02 | Pounds |
| All Products - Total Quantity Used: | | 20,916,790.45 | Pounds |
| Top 10 Products as a Percentage of Total Usage: | | | 41.31% |

* Excluding Illegible, Invalid, Irregular, and Unreported Categories (See Page 22 for Definitions)

** These products consist of small amounts of pesticides combined with large amounts of fertilizer. The weight reported here is the weight of all ingredients not just pesticides.

**Relative Use (in Gallons) of the Reported Top Ten Pesticide Products
Applied by Certified Commercial Applicators - 1999***

July 1, 2001

| EPA Registration Number | Product Name | Weight Quantity (gallons) | Percentage of All Products |
|--|--|----------------------------------|-----------------------------------|
| 279-3062 | Dragnet FT Dragnet SFR Termiticide/Insecticide | 138,086.18 | 1.40% |
| 19713-123 | Drexel Damoil | 116,289.69 | 1.18% |
| 241-360-10404 | Lesco Pre-M 3.3 EC Turf Herbicide | 73,078.29 | 0.74% |
| 241-337 | Prowl 3.3 EC Herbicide | 65,911.14 | 0.67% |
| 10182-361 | Demand CS Insecticide | 58,789.63 | 0.60% |
| 524-475 | Roundup Ultra Herbicide Roundup Pro Herbicide MON 78300 Herbicide | 51,951.56 | 0.53% |
| 572-83 | Rockland Horticultural Spray Oil | 47,239.52 | 0.48% |
| 62719-166 | Dursban Pro | 45,854.03 | 0.47% |
| 48234-12 | Systec 1998 | 45,207.29 | 0.46% |
| 45639-1 | Ficam W | 44,629.62 | 0.45% |
| Top 10 Products - Total Quantity Used: | | 8,121,690.44 | Gallons |
| All Products - Total Quantity Used: | | 9,845,476.45 | Gallons |
| Top 10 Products as a Percentage of Total Usage: | | | 82.49% |

* Excluding Illegible, Invalid, Irregular, and Unreported Categories (See Page 22 for Definitions)

**Relative Amount (in Pounds) of Reported Top Ten Restricted and General Use
Agricultural Pesticide Products Sold by Commercial Permit Holders to
Certified Private Applicators - 1999***

July 1, 2001

| EPA Registration Number | Product Name | Weight Quantity (pounds) | Percentage of All Products |
|--|---|---------------------------------|-----------------------------------|
| 62719-34 | Lorsban 15G Granular Insecticide | 534,288.65 | 12.83% |
| 10182-373 | Force 3G Insecticide | 452,665.00 | 10.87% |
| 707-180 | Dithane DF Dithane DF Rainshield Agricultural Fungicide Dithane T/O Rainshield Fungicide Dithane T/O Turf & Ornamental Fungicide | 294,219.50 | 7.07% |
| 524-403 | Partner Custom Blend WDG Herbicide Partner WDG Herbicide | 158,925.94 | 3.82% |
| 352-449 | Manzate 200 DF Fungicide | 154,640.48 | 3.71% |
| 19713-235 | Drexel Captan 50W | 150,812.00 | 3.62% |
| 241-314 | Counter CR Systemic Insecticide -Nematicide | 108,023.00 | 2.59% |
| 4-152 | Bonide Orchard Mouse Bait | 94,808.00 | 2.28% |
| 5785-22-37733 | Bro-Mean C-2Pre | 80,000.00 | 1.92% |
| 4581-370 | Penncozeb 75DF Fungicide | 79,257.00 | 1.90% |
| Top 10 Products - Total Quantity Used: | | 2,107,639.57 | Pounds |
| All Products - Total Quantity Used: | | 4,163,710.92 | Pounds |
| Top 10 Products as a Percentage of Total Usage: | | | 50.62% |

* Excluding Illegible, Invalid, Irregular, and Unreported Categories (See Page 22 for Definitions)

**Relative Amount (in Gallons) of Reported Top Ten Restricted and General Use
Agricultural Pesticide Products Sold by Commercial Permit Holders to
Certified Private Applicators - 1999***

July 1, 2001

| EPA Registration Number | Product Name | Weight Quantity (gallons) | Percentage of All Products |
|--|---|----------------------------------|-----------------------------------|
| 241-337 | Prowl 3.3 EC Herbicide | 112,591.29 | 13.63% |
| 100-766 | Bicep Lite II | 86,307.95 | 10.45% |
| 524-475 | Roundup Ultra Herbicide Roundup Pro Herbicide MON 78300 Herbicide | 74,269.15 | 8.99% |
| 19713-123 | Drexel Damoil | 46,372.00 | 5.61% |
| 100-497 | Aatrex 4L | 33,670.13 | 4.08% |
| 363-15 | C4 Brand Coopersote Creosote Oil | 32,978.00 | 3.99% |
| 62719-239 | Broadstrike & Dual | 23,445.25 | 2.84% |
| 100-710 | Bicep II | 22,475.03 | 2.72% |
| 10182-220 | Eptam 7-E Selective Herbicide | 14,833.88 | 1.80% |
| 19713-11 | Drexel Atrazine 4L Herbicide | 13,685.20 | 1.66% |
| Top 10 Products - Total Quantity Used: | | 460,627.88 | Gallons |
| All Products - Total Quantity Used: | | 826,004.06 | Gallons |
| Top 10 Products as a Percentage of Total Usage: | | | 55.77% |

* Excluding Illegible, Invalid, Irregular, and Unreported Categories (See Page 22 for Definitions)