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Division of Solid & Hazardous Materials

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**FINAL ANNUAL REPORT  
FOR  
NEW YORK STATE  
PESTICIDE SALES AND  
APPLICATIONS  
2000**

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GEORGE E. PATAKI, *Governor*

ERIN M. CROTTY, *Commissioner*

## **ACKNOWLEDGMENTS**

The Department wishes to acknowledge the cooperation and assistance of Cornell University in the preparation and development of this annual report.

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## **Executive Summary**

This report details the final 2000 pesticides sales and application data submitted under Environmental Conservation Law Article 33, Title 12, known as the Pesticide Reporting Law (PRL). The New York State Department of Environmental Conservation (Department), in conjunction with Cornell University, presents a final data summary of commercial pesticide sales and use for calendar year 2000.

The Department and Cornell have quality assured the data and added data from late submittals. These finalized data have been incorporated into a master data base maintained by Cornell University. This data base is accessible by the public and is an information source for health researchers or other users of the data.

The final data show there were greater than 5.3 million “records” of applications and sales reported for 2000, totaling greater than 1.1 billion keystrokes of data. The total amount of pesticides reported as applied by commercial applicators in 2000 was 2,936,143.16 gallons and 17,844,438.00 pounds. This compares to 2,375,449.52 gallons and 20,916,790.45 pounds applied in 1999.

**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. In addition, the Department and Cornell attempt to provide the users with best data available and, therefore, occasional revisions to the data are required. Users are advised to go to the following website for the most up-to-date data:

[www.dec.state.ny.us/website/dsh/pesticid/prl.htm](http://www.dec.state.ny.us/website/dsh/pesticid/prl.htm)

### **Pesticide Reporting Program**

The Department continued its efforts to increase the compliance rate for reporting in the year 2000, primarily through public outreach and education, supplemented by enforcement. Due to a change in the NYCRR Part 325 regulations, a new category of pesticide applicator (technicians) was required to report their pesticide applications. This change added approximately 5,000 new reporters to the system in the year 2000. However, because pesticide applications made by technicians were required to be reported by their supervisors prior to 2000, no significant increase in the total amount of pesticides applied in New York State occurred as a result of this change.

The Department, in conjunction with its computer contractor, continued to operate a user-friendly website for regulated entities to report their sales and applications data. This made it easier for those entities that keep their records in an electronic format to report their sales and applications to the Department.

For the 2000 report year, the total number of applicators, technicians and permittees reporting was:

19,207 Commercial Applicators and Technicians  
416 Commercial Permittees (Sales)

These figures indicate that 93.5 percent of the 20,541 certified applicators and technicians, and 99 percent of the 420 commercial permittees reported for 2000. The lower-than-average percentage of applicators and technicians reporting was primarily due to the fact that this was the first year that technicians were required to report their applications to the Department. Despite direct mailing, discussions at Statewide workshops and other attempts by the Department to notify the technician community of this requirement, many were still unaware of the change in regulation that required them to report. The Department will continue to provide outreach and education to this segment of the regulated community and it is anticipated that compliance with the reporting requirement will be much better next year.

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. 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 all columns;
- c) have valid certification numbers for all certified commercial applicators and technicians or a valid commercial permit number; and
- d) 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 eliminate as many constraints as possible by expanding the list of acceptance criteria. 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.

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 year 2000. An Order on Consent was sent to approximately 2,500 certified commercial pesticide applicators and commercial permit holders who did not report for year 2000. As a result of this action, many of those entities were assessed a civil penalty. Total civil penalties assessed for not reporting for the year 2000 were approximately \$50,000. Many applicators elected to voluntarily surrender their certification instead of paying a penalty. Those entities who did not settle the violation 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](http://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.

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. The Department has 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.

**The following totals are those most frequently requested:**

Total amount of pesticides applied by commercial applicators in New York State in 2000:

- 2,936,143.16 Gallons
- 17,844,438.00 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)
- Merit 0.2 Plus Turf Fertilizer (EPA Registration No. 3125-474-10404)
- Sunny Sol 150 Disinfectant (EPA Registration No. 1744-20001)

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:

- Demon TC Insecticide/Miticide (EPA Registration No. 10182-107)
- Whitmire TKO Microencapsulated Diazanone PT Insecticide/Miticide (EPA Registration No. 499-330)
- Surchlor Disinfectant (EPA Registration No. 9359-8)

Total amount of pesticides sold to private applicators for agricultural use in New York State in 2000:

- 881,817.54 Gallons
- 5,634,912.36 Pounds

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

- Lorsban Insecticide (EPA Registration No. 62719-34)
- Force 3G Insecticide (EPA Registration No. 10182-373)
- Ditane DF Agricultural Fungicide (EPA Registration No. 707-180)

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

- Prowl 3.3 EC Herbicide (EPA Registration No. 241-337)
- Roundup Ultra Herbicide (EPA Registration No. 524-475)
- Bicep Lite II Herbicide (EPA Registration No. 100-766)

Total amount of pesticides sold to distributors for resale in New York State in 2000 was:

- 267,547.03 Gallons
- 5,061,517.97 Pounds

Total amount of pesticides sold to applicators for end use in New York State in 2000 was:

- 372,610.88 Gallons
- 2,208,418.63 Pounds

**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. In addition, the Department and Cornell attempt to provide the users with best data available and, therefore, occasional revisions to the data are required. Users are advised to go to the following website for the most up-to-date data:

[www.dec.state.ny.us/website/dshm/pesticid/prl.htm](http://www.dec.state.ny.us/website/dshm/pesticid/prl.htm)

For more detailed information, please refer to the attached report.

## **I. INTRODUCTION**

The Department, in conjunction with work conducted by Cornell University, presents a final data summary for calendar year 2000 of pesticide sales and use. This report also describes refinements made in 2000 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 and regulatory compliance.

### **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 workshops at nine locations across the State: Albany, Syracuse, Rochester, Binghamton, Long Island, Purchase, New York City, Buffalo and Saranac Lake. 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 2000, the Department also participated in many other events across the State for pesticide user groups and associations, cancer advocacy groups, environmental advocacy groups, the public and others. These events 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 continued to communicate with regulated entities through an e-mail address ([prl@gw.dec.state.ny.us](mailto:prl@gw.dec.state.ny.us)) and a toll-free telephone number (1-888-457-0110). Through these outlets, customers can contact the Department, have questions answered, request report forms or conduct other business associated with the pesticide program.

The Department's website ([www.dec.state.ny.us/website/dshm/pesticide/prl.htm](http://www.dec.state.ny.us/website/dshm/pesticide/prl.htm)) is also available for Pesticide Reporting Law information. 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 past annual reports, with a link to Cornell's website that contains final data for 1997, 1998, 1999 and now 2000. Also available on the website are the Department's Technical and Administrative Guidance Memoranda (TAGMs) which provide guidance and clarify program issues for Department staff, the public and the regulated community. The first of these TAGMs, relating to the Pesticide Reporting Law DSHM-97-05, became effective January 20, 1998. The second TAGM (DSHM 99-10) became effective January 21, 2000 and was revised and reissued as TAGM PES 99-10, effective May 18, 2001.

In addition, 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 and streamline the process for reporting, and the system for managing the 20,000 reports that are annually 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 all columns;

- c) have valid certification numbers for all certified commercial applicators and technicians or a valid commercial permit number; and
- d) 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 eliminate as many constraints as possible by expanding the list of acceptance criteria. 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**

The Department, in conjunction with its computer contractor, continued to operate a user-friendly website for regulated entities to report their sales and applications data. This made it easier for those entities that keep their records on computer to report their sales and applications to the Department. The contractor developed electronic filing guidelines for distribution to regulated entities, for use in reporting year 2000 data. This established a user-friendly and streamlined approach to electronic data submission. This facilitates the transmission of electronic media data to Cornell.

A domain was established ([www.nysprl.com](http://www.nysprl.com)) and linked from the Pesticide Reporting Law main web page. This website details guidelines for the electronic submission of data. As the result of a survey conducted by the Department of the computer applications in use by the regulated community, the following three electronic reporting options are available and can 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 are also available on CD ROM upon request. To assist the pesticide community with electronic reporting, the contractor provides a help desk that can be accessed both by telephone and e-mail.

The regulated community submitted 905 reports electronically for year the 2000 sales and applications. These electronic submissions contained data for 1,581 certified commercial applicators and 75 commercial permit holders, totaling 644,909 records. Apparently, the Department's strategy of encouraging commercial pesticide applicators to report electronically was successful, as there was an increase of 294% in the number of applicators reporting electronically from the year 1999 to 2000. 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 available to commercial applicators for reporting year 2000. "Scannable" means that the data on the forms might be optically scanned into the computer data base, minimizing manual entry of the data. It was hoped this would be a cost-effective reporting method for New York State, because it could improve accuracy and reduce manual data entry costs.

To date, the performance of the scannable reports has not been good, with much of the data contained on these forms having to be manually entered instead of being scanned. This is primarily due to the inability of the optical character recognition software to read the handwriting on the scannable forms. The existing supply of scannable report forms was available for use through the 2001 reporting year. The Department will review the performance of the scannable report forms and determine the cost effectiveness and feasibility of continuing this reporting format.

#### **E. Cornell University**

Under the present legislation, the Pesticides Sales and Use Computerized Data Base 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 have been undertaken by the Pesticide Management Education Program (PMEP) at Cornell:

1. Work closely with the Department 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 Department.

2. Work closely with the Department on the design and implementation of a data base for pesticide use information submitted on disk, CD ROM, or electronically. Developed 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 Department that will be processing pesticide application and sales reporting forms, including Optical Character Recognition (scannable) forms.
3. Provide technical expertise to the Department and act in an advisory capacity relating to the development and implementation of the data base. Assist the Department 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 Department 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 Department and Cornell use and management of the information/data so that confidentiality is maintained.
5. Cornell has 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 Department, 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 Department.
6. Provide/assist Department with data reports and other information in response to requests from the Health Research Science Board, Department internal personnel, the NYSDOH, the New York State Legislature, other State agencies, the public and other parties.
7. Provide assistance/input to the Department on the preparation of the Pesticide Annual Report. This will include all data provided by the Department, and any of its contractors, to Cornell within established time frames for inclusion in the data base. These data are to be provided to the Department within time frames as established between the Department and Cornell, which will allow the Department 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 by ECL Article 33, Title 12. 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 the Department regarding the number of keystrokes accepted and other relevant information from Department contractors needed by the Department 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. 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 Department 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 Department. 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 Department 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 Department.

## **Project Activities**

The preliminary system design and data base have been specified and delivered to the Department. Cornell is continually in the process of refining this design and data base in conjunction with the Department. The initial development phase, now completed, is being followed by further system enhancements, reevaluations based on years of reporting, and maintenance and operations of the system.

Cornell has developed a New York State data base of currently registered and archived (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 data base 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.

#### **F. New York State Department of Health (NYSDOH) and Health Research Science Board (HRSB)**

The HRSB 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 Data Base. NYSDOH assisted the Board in producing several documents in fulfillment of its duties.

***Evaluation of Pesticide Reporting and Board Recommendations*** - One of the duties of the Board is to report to the Legislature in the biennial report on "an evaluation of the basis, efficiency and scientific utility of the information derived from pesticide reporting" and to make recommendations as to "whether such system should be modified or continued." In May 2000, the Board surveyed interested parties and prepared the document "Survey Results and Recommendations: Pesticide Reporting Law." The report contains eight specific recommendations and was finalized in February 2001. A copy of the report and a summary of the status of agency actions on the recommendations can be requested by calling the NYSDOH toll-free, at 1-800-458-1158.

In preparation for the 2003 biennial report, the Board has mailed a short survey form to interested parties. The survey asks about how the pesticide data are being used, whether or not the data are helpful and how the data could be made more helpful or easier to use. The survey form is also available at the Department and Cornell web sites. A survey form or more information can be obtained by calling NYSDOH toll-free, at 1-800-458-1158.

***Information for Researchers*** - The 2000 survey of interested parties 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 to water quality assessment. One of the recommendations in the report was "to continue to inform researchers...of the availability of the pesticide data for research." Previous mailings to academic institutions

about the pesticide data had been addressed to the president of the institution, with the request that the letter be forwarded to any researcher who may have an interest in the data base. The Board decided to target researchers more specifically by mailing directly to the department heads of undergraduate and graduate departments of biology, chemistry, environmental science, environmental health, epidemiology, toxicology, public health and preventive and environmental medicine. The mailing was also sent to breast cancer advocacy groups and the sponsored program offices of colleges and universities in New York State.

The mailing included a small poster publicizing the data base, with tear-off sheets containing information on the website where the data are found and the phone number and mailing address of HRSB staff, an information sheet for researchers and a brochure describing the duties of the Board. The packet was mailed to 605 groups in October/November 2001.

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. No requests for confidential information were received by the Board as of December 31, 2002.

***Breast Cancer Research and Education Fund*** - Breast cancer research and education grant awards are supported by voluntary donations made through a check-off on New York State Income Tax Returns. In addition, proceeds generated by the Department of Motor Vehicles from the "Drive for the Cure" specialty license plates, as well as direct donations to the fund, help to support breast cancer research through the Fund. Through December 2001, donations totaled more than \$3.1 million through the check-off. 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. Currently, the Breast Cancer Research and Education Fund is supporting 27 groundbreaking research and education projects that are designed to help educate New Yorkers about, and find a cure for, breast cancer.

***Update from Grant Awardees and Second Request for Proposals*** - Most 1998 EMPIRE grant awards and all Postdoctoral Fellowship awards have been completed. 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

solicited 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 is providing \$2.7 million to support 27 awards of \$50,000 per year for two years.

In June 2002, the HRSB issued a request for applications for breast cancer education, community-based demonstration projects. The HRSB is particularly interested in funding projects concerning the significance of exposure to environmental contaminants, dietary factors and genetic predispositions. The collaborations between community-based organizations and academic institutions fostered by this funding program should lead to education that is appropriate to communities, medically and scientifically accurate and demonstrably effective in increasing knowledge and promoting healthy behaviors. The funding of four education projects was announced in Buffalo on October 30, 2002, by Lt. Governor Mary Donahue. The Board authorized project budgets to \$75,000, pending approval by the Office of the State Comptroller. Contracts are expected to start on or about March 1, 2003, and last for 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.

## **G. Breast Cancer Environmental Risk Factors**

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

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
- 45 *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, field-tested in 58 sites across the state.

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, held 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 website ([www.cfe.cornell.edu/bcerf](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 6,500 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](mailto: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.

## **H. 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 New York State. The Department works with the United States Geological Survey (USGS), the NYS Water Resources Institute (NYSWRI) and any other parties necessary to accomplish these goals.

Given the very broad mandate in the PRL and the large area of New York State to be investigated, the Department decided to first investigate the impacts of long-term pesticide use in several areas with high groundwater 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 (SCDOHS) and the NYSWRI to perform various ground and surface water studies. Once adequate information has been gathered from these areas, the focus of the program will move toward 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/> for information.

The SCDOHS has been investigating the impact of pesticide use on groundwater in Suffolk County, Long Island. It has also analyzed a limited number of samples of groundwater from Nassau County, Long Island.

For the most recent report by the Suffolk County Department of Health Services, e-mail [ppr@gw.dec.state.ny.us](mailto:ppr@gw.dec.state.ny.us) or call 1-518-402-8768.

The NYSWRI is assessing the status, trends and health impacts of any pesticide contamination in the groundwater of aquifers in upstate New York. It is also developing a five-year plan for evaluating the health and environmental impacts of groundwater in upstate New York.

## **I. Enforcement Activities**

### **2000 Reporting Year Enforcement**

The Department used a variety of methods in 2000 to bring regulated entities into compliance with reporting as required under the Pesticide Reporting Law. Reporting forms and information were available through the internet, toll-free telephone and e-mail. Due to the fact that this was the first year that technicians had to report their applications to the Department, a reminder notice stating the annual report was due by February 1 was direct mailed to all technicians, in order to maximize the number of reports submitted. A general mailing to all certified applicators about the deadline was also sent. Reporting by technicians and applicators was also a featured topic at the nine Statewide workshops conducted by the Department.

As a supplement to the education and outreach efforts, the Department took enforcement actions against those applicators and commercial permit holders who failed to report for 2000. An Order on Consent was sent to approximately 2,500 certified commercial pesticide applicators and commercial permit holders who did not report for 2000. As a result of this action, many of those entities were assessed a civil penalty. Total civil penalties assessed for not reporting in the year 2000 were approximately \$50,000. Many applicators elected to voluntarily surrender their certification instead of paying a penalty. The result of this surrender is they are no longer certified to make commercial pesticide applications. Those entities who did not settle the violation, had their certification, business registration, or commercial permit revoked. These actions result in the loss of certification to make commercial pesticide applications, sales or conduct the business of a commercial pesticide applicator.

In addition, the Department also addressed other areas of concern regarding pesticide activities discovered while reviewing annual reports (i.e., expired or unregistered businesses; application of unregistered pesticide products; applications of pesticides by noncertified applicators; etc.).

### III. REPORTING DATA

#### A. Reports Received

For the 2000 report year, the total number of applicators, technicians and permittees reporting was:

19,207 Commercial Applicators and Technicians  
416 Commercial Permittees (Sales)

These figures indicate that 93.5 percent of the 20,541 certified applicators and technicians, and 99 percent of the 420 commercial permittees reported for 2000. The lower-than-average percentage of applicators and technicians reporting was primarily due to the fact this was the first year technicians were required to report their applications to the Department. Despite direct mailings, discussions at Statewide workshops and other attempts by the Department to notify the technician community of this requirement, many were still unaware of the change in regulation requiring them to report. The Department will continue to provide outreach and education to the regulated community and it is anticipated that compliance with the reporting requirement will improve.

#### B. General Synopsis of Data

The following tables provide an overview of major data categories:

Table 1  
Calendar Year 2000  
Final Summary of Total Quantities Statewide

| Category                          | Number of Pesticide Products | Amount            |                    |
|-----------------------------------|------------------------------|-------------------|--------------------|
| Applied by Commercial Applicators | 3,296                        | 2,936,143.16 gal. | 17,844,438.00 lbs. |
| Sold for Resale*                  | 358                          | 267,547.03 gal.   | 5,061,517.97 lbs.  |
| Sold for End Use*                 | 331                          | 372,610.88 gal.   | 2,208,418.63 lbs.  |
| Sold to Private Applicators       | 1045                         | 881,817.54 gal.   | 5,634,912.36 lbs.  |

\*Note: Restricted use pesticide only

Table 2  
Summary of Commercial Pesticide Applications by County  
for Calendar Year 2000

| County      | Amount**        |                   |
|-------------|-----------------|-------------------|
| Albany      | 92,854.78 gal.  | 406,100.95 lbs.   |
| Allegheny   | 1,920.55 gal.   | 14,171.34 lbs.    |
| Bronx       | 35,961.73 gal.  | 142,494.49 lbs.   |
| Broome      | 8,334.44 gal.   | 224,591.29 lbs.   |
| Cattaraugus | 6,857.51 gal.   | 69,249.37 lbs.    |
| Cayuga      | 27,522.54 gal.  | 54,955.03 lbs.    |
| Chautauqua  | 11,446.10 gal.  | 119,094.60 lbs.   |
| Chemung     | 3,804.04 gal.   | 93,942.27 lbs.    |
| Chenango    | 4,359.73 gal.   | 137,954.37 lbs.   |
| Clinton     | 4,424.80 gal.   | 43,657.90 lbs.    |
| Columbia    | 13,270.21 gal.  | 62,728.02 lbs.    |
| Cortland    | 4,227.11 gal.   | 20,306.38 lbs.    |
| Delaware    | 4,709.96 gal.   | 17,996.70 lbs.    |
| Dutchess    | 15,888.38 gal.  | 373,438.49 lbs.   |
| Erie        | 110,807.20 gal. | 858,109.25 lbs.   |
| Essex       | 2,873.25 gal.   | 133,109.06 lbs.   |
| Franklin    | 5,599.20 gal.   | 24,911.70 lbs.    |
| Fulton      | 847.26 gal.     | 18,306.23 lbs.    |
| Genesee     | 21,041.95 gal.  | 46,968.18 lbs.    |
| Greene      | 1,174.18 gal.   | 977,022.66 lbs.   |
| Hamilton    | 534.13 gal.     | 18,704.42 lbs.    |
| Herkimer    | 27,362.72 gal.  | 153,334.58 lbs.   |
| Jefferson   | 12,674.17 gal.  | 110,424.26 lbs.   |
| Kings       | 645,754.12 gal. | 409,550.52 lbs.   |
| Lewis       | 6,830.19 gal.   | 91,668.76 lbs.    |
| Livingston  | 10,563.70 gal.  | 17,722.23 lbs.    |
| Madison     | 9,978.16 gal.   | 59,964.05 lbs.    |
| Monroe      | 150,370.67 gal. | 1,083,771.78 lbs. |
| Montgomery  | 5,217.09 gal.   | 63,233.33 lbs.    |
| Nassau      | 266,711.94 gal. | 1,227,430.84 lbs. |
| New York    | 114,067.92 gal. | 594,804.52 lbs.   |
| Niagara     | 40,444.04 gal.  | 176,407.87 lbs.   |
| Oneida      | 9,976.59 gal.   | 180,840.78 lbs.   |
| Onondaga    | 29,643.25 gal.  | 657,229.24 lbs.   |
| Ontario     | 13,970.44 gal.  | 104,853.18 lbs.   |

| County       | Amount**        |                   |
|--------------|-----------------|-------------------|
| Orange       | 15,635.91 gal.  | 288,703.10 lbs.   |
| Orleans      | 3,125.78 gal.   | 13,100.50 lbs.    |
| Oswego       | 57,772.02 gal.  | 119,569.73 lbs.   |
| Otsego       | 6,543.01 gal.   | 30,949.16 lbs.    |
| Putnam       | 9,731.68 gal.   | 110,592.78 lbs.   |
| Queens       | 174,746.94 gal. | 235,502.01 lbs.   |
| Rensselaer   | 49,041.41 gal.  | 156,990.94 lbs.   |
| Richmond     | 8,386.86 gal.   | 257,384.94 lbs.   |
| Rockland     | 43,785.44 gal.  | 686,377.90 lbs.   |
| Saratoga     | 145,331.18 gal. | 647,222.94 lbs.   |
| Schenectady  | 23,406.24 gal.  | 201,627.07 lbs.   |
| Schoharie    | 1,338.72 gal.   | 7,116.24 lbs.     |
| Schuyler     | 1,186.86 gal.   | 6,017.49 lbs.     |
| Seneca       | 2,717.85 gal.   | 13,792.47 lbs.    |
| St. Lawrence | 11,946.17 gal.  | 890,612.44 lbs.   |
| Steuben      | 6,091.19 gal.   | 86,393.82 lbs.    |
| Suffolk      | 351,809.57 gal. | 2,628,760.09 lbs. |
| Sullivan     | 14,041.93 gal.  | 72,524.78 lbs.    |
| Tioga        | 2,623.08 gal.   | 28,565.88 lbs.    |
| Tompkins     | 7,752.29 gal.   | 61,079.96 lbs.    |
| Ulster       | 7,367.17 gal.   | 83,054.45 lbs.    |
| Warren       | 4,004.45 gal.   | 210,686.64 lbs.   |
| Washington   | 11,348.67 gal.  | 136,380.77 lbs.   |
| Wayne        | 42,268.48 gal.  | 110,668.50 lbs.   |
| Westchester  | 189,608.36 gal. | 1,786,829.33 lbs. |
| Wyoming      | 10,874.02 gal.  | 33,143.46 lbs.    |
| Yates        | 1,078.00 gal.   | 6,902.59 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 2000 pesticide sales, the quantity of pesticides used, the category of applicator and region of application. Detailed information is 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 2000 Commercial Applicator pesticide applications in New York State (summarized by product).

Data Summary 2 provides the final data for 2000 Commercial Applicator pesticide applications in New York State (summarized by county).

Data Summary 3 provides the final data for 2000 Commercial Applicator pesticide applications in New York State (summarized by zip code).

Data Summary 4 provides the final data for 2000 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 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 2000 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 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 2000 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 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 2000 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 2000 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. In addition, the Department and Cornell attempt to provide the users with best data available and, therefore, occasional revisions to the data are required. Users are advised to go to the website, [www.dec.state.ny.us/website/dshh/pesticid/prl.htm](http://www.dec.state.ny.us/website/dshh/pesticid/prl.htm) for the most up-to-date data. 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 by the Department. 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 PRL 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 data base as “Illegible” (see Data Management Methodology section).
- 3) Use of zip code to define application and sales locations creates 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 is problematic for the businesses and applicators.

- 4) 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.
- 5) 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 PRL. 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.
- 6) 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 those pesticides is not currently available. Therefore, the reports list both measurements, as they were 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.
- 7) 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.
- 8) 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. The Department and Cornell review reports in an attempt to identify obvious occurrences of this error, however, not all occurrences are obvious. This error can inflate the estimates of total pesticides applied in a given year.
- 9) 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.
- 10) Commercial Permit Holders (sellers of restricted pesticides), under the PRL, 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 noncommercial permit holders. Those sales, and the associated use information, would not be captured by the PRL in those situations.

### **E. Data Management Methodology**

The following statements summarize the methodology that was used to produce the Pesticide Annual Report data for 2000:

- < 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**

- A. Glossary
- B. 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.

“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) 402-8748 |
| 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 |

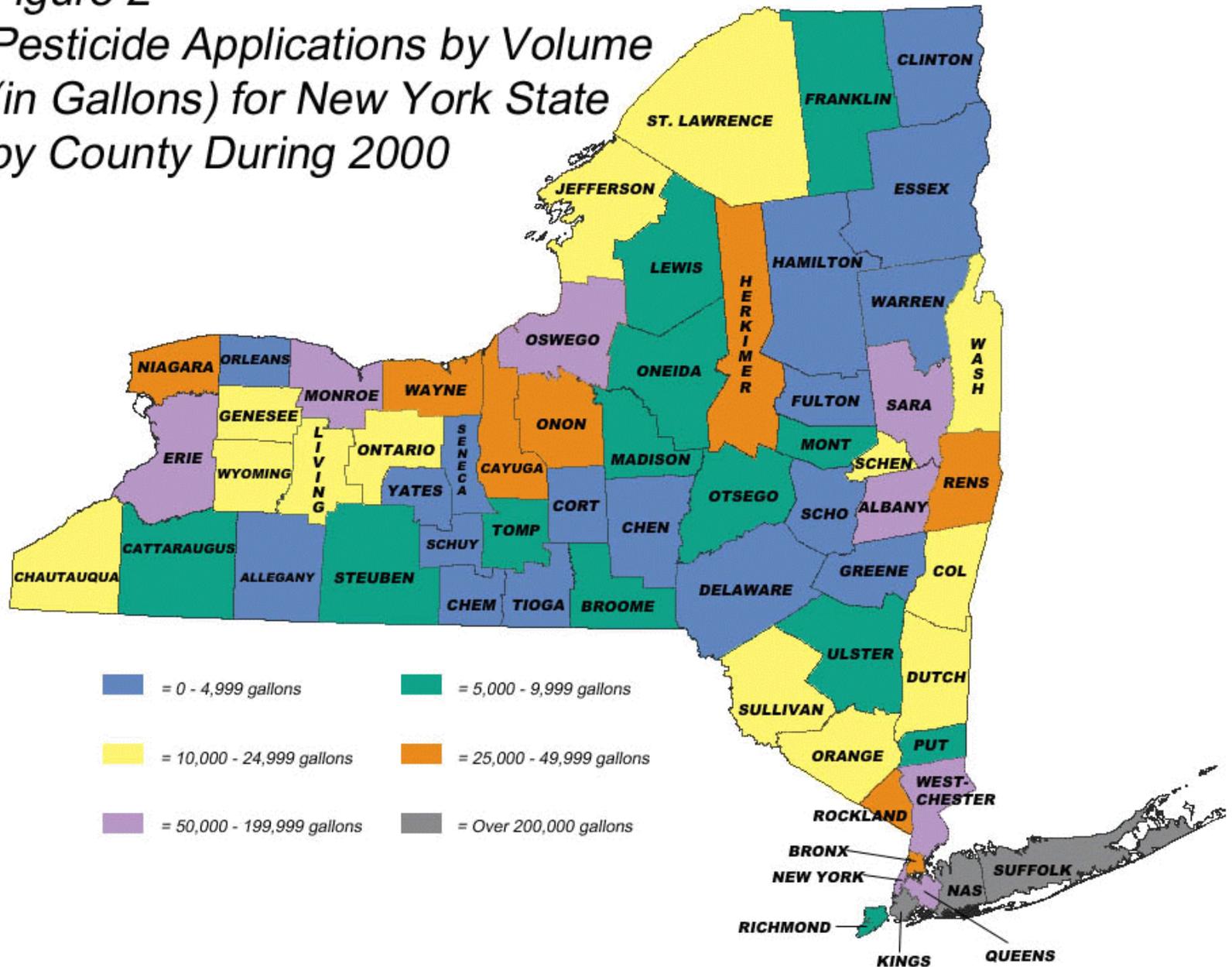
|   |                |
|---|----------------|
| <u>Breast Cancer and Environmental Risk Factors</u> ..... | (607) 254-2893 |
|---|----------------|

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 |

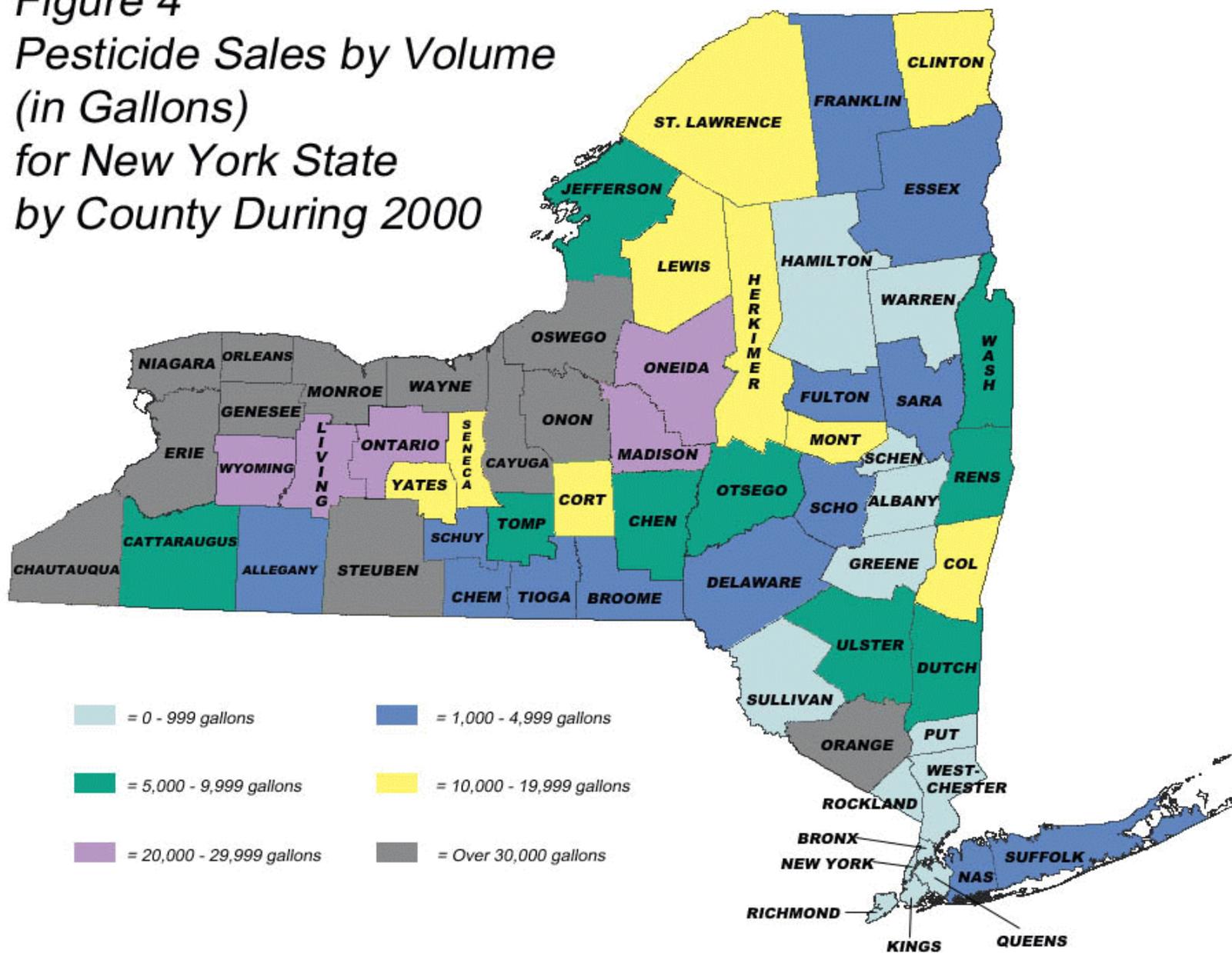


Figure 2  
 Pesticide Applications by Volume  
 (in Gallons) for New York State  
 by County During 2000





**Figure 4**  
**Pesticide Sales by Volume**  
**(in Gallons)**  
**for New York State**  
**by County During 2000**



**Figure 5**

**Relative Use (in Pounds) of the Reported Top Ten Pesticide Products  
Applied by Certified Commercial Applicators - 2000\***

| <b>EPA Registration Number</b>                                   | <b>Product Name</b>   | <b>Weight Quantity (pounds)</b> | <b>Percentage of All Products</b> |
|--|---|---------------------------------|-----------------------------------|
| 10404-82 **  | Lesco Pre-M Plus Fertilizer Insecticide/Miticide            | 1,739,228.69                    | 9.75%                             |
| 3125-474-10404 **  | Merit 0.2 Plus Turf Fertilizer Insecticide/Miticide         | 800,917.89                      | 4.49%                             |
| 1744-20001   | Sunny Sol 150 Disinfectant                                  | 681,230.00                      | 3.82%                             |
| 59074-20001  | Hypochlor Disinfectant                                      | 492,281.00                      | 2.76%                             |
| 62190-9  | Dricon Fire Retardant Fungicide                             | 484,000.00                      | 2.71%                             |
| 62190-14   | Wolmanac Concentrate 60% Insecticide/Miticide               | 441,600.00                      | 2.47%                             |
| 538-214-10404**  | Proturf Fertilizer Plus Weed Control Herbicide              | 394,499.17                      | 2.21%                             |
| 3125-474-9198**  | Merit 0.2 Plus Turf Fertilizer Insecticide/Miticide         | 394,272.94                      | 2.21%                             |
| 538-213**  | Proturf Fertilizer Plus Pre-Emergent Weed Control Herbicide | 333,306.54                      | 1.87%                             |
| 10404-29**   | Lesco Dursban 0.74% Plus Fertilizer Insecticide/Miticide    | 277,694.83                      | 1.56%                             |
| Top 10 Products - Total Quantity (Pounds) Used:                  |   | 6,039,031.06                    | Pounds                            |
| All Products - Total Quantity (Pounds) Used:                     |   | 17,844,438.00                   | Pounds                            |
| Top 10 Products as a Percentage of Total Quantity (Pounds) Used: |   |                                 | 33.84%                            |

\* Excluding Illegible, Invalid, Irregular, and Unreported Categories (See Page 21 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.

**Figure 6**

**Relative Use (in Gallons) of the Reported Top Ten Pesticide Products  
Applied by Certified Commercial Applicators - 2000\***

| <b>EPA Registration Number</b>                                    | <b>Product Name</b>   | <b>Weight Quantity (gallons)</b> | <b>Percentage of All Products</b> |
|---|---|----------------------------------|-----------------------------------|
| 10182-107   | Demon TC Insecticide/Miticide                                   | 556,812.32                       | 18.96%                            |
| 499-330   | Whitmire TKO Microencapsulated Diazinon PT Insecticide/Miticide | 183,736.02                       | 6.26%                             |
| 9359-8  | Surchlor (10.5%) Disinfectant                                   | 126,642.00                       | 4.31%                             |
| 52483-1   | Hypochlorite Solution Disinfectant                              | 115,366.00                       | 3.93%                             |
| 279-3062  | Dragnet FT Termiticide/Insecticide                              | 106,916.51                       | 3.64%                             |
| 572-83  | Rockland Horticultural Spray Oil Insecticide/Miticide           | 81,375.83                        | 2.77%                             |
| 19713-123   | Damoil Dormant and Summer Spray Oil Insecticide/Miticide        | 71,495.54                        | 2.44%                             |
| 9386-11-47033   | AMA 30 Microbiocide   | 59,173.45                        | 2.02%                             |
| 279-3141  | Astro Insecticide/Miticide                                      | 57,452.15                        | 1.96%                             |
| 1744-20001  | Sunny Sol 150 Disinfectant                                      | 54,492.99                        | 1.86%                             |
| Top 10 Products - Total Quantity (Gallons) Used:                  |   | 1,413,462.81                     | Gallons                           |
| All Products - Total Quantity (Gallons) Used:                     |   | 2,936,143.16                     | Gallons                           |
| Top 10 Products as a Percentage of Total Quantity (Gallons) Used: |   |                                  | 48.14%                            |

\* Excluding Illegible, Invalid, Irregular, and Unreported Categories (See Page 21 for Definitions)

**Figure 7**

**Relative Amount (in Pounds) of Reported Top Ten Restricted  
and General Use Agricultural Pesticide Products Sold by  
Commercial Permit Holders to Certified Private Applicators - 2000\***

| <b>EPA Registration Number</b>                                   | <b>Product Name</b>               | <b>Weight Quantity (pounds)</b> | <b>Percentage of All Products</b> |
|--|-----------------------------------|---------------------------------|-----------------------------------|
| 62719-34   | Lorsban Insecticide               | 675,690.00                      | 11.99%                            |
| 10182-373  | Force 3G Insecticide              | 611,195.10                      | 10.85%                            |
| 707-180  | Dithane DF Agricultural Fungicide | 337,869.00                      | 6.00%                             |
| 4581-370   | Penncozeb 75 DF Fungicide         | 250,890.00                      | 4.45%                             |
| 524-403  | Partner WDG Herbicide             | 183,069.32                      | 3.25%                             |
| 352-449  | Manzate 200 DF Fungicide          | 137,309.00                      | 2.44%                             |
| 19713-235  | Drexel Captan 50 W Fungicide      | 131,935.00                      | 2.34%                             |
| 241-314  | Counter CR Insecticide/Miticide   | 120,310.00                      | 2.14%                             |
| 10182-145-51036  | Captan 50 WP Fungicide            | 98,610.00                       | 1.75%                             |
| 49832-3-34704  | Microfine Sulfur Fungicide        | 98,160.00                       | 1.74%                             |
| Top 10 Products - Total Quantity (Pounds) Sold:                  |                                   | 2,645,037.42                    | Pounds                            |
| All Products - Total Quantity (Pounds) Sold:                     |                                   | 5,634,912.36                    | Pounds                            |
| Top 10 Products as a Percentage of Total Quantity (Pounds) Sold: |                                   |                                 | 46.94%                            |

\* Excluding Illegible, Invalid, Irregular, and Unreported Categories (See Page 21 for Definitions)

**Figure 8**

**Relative Amount (in Gallons) of Reported Top Ten Restricted and General Use Agricultural Pesticide Products Sold by Commercial Permit Holders to Certified Private Applicators - 2000\***

| <b>EPA Registration Number</b>                                    | <b>Product Name</b>                                       | <b>Weight Quantity (gallons)</b> | <b>Percentage of All Products</b> |
|---|---|----------------------------------|-----------------------------------|
| 241-337   | Prowl 3.3 EC Herbicide                                    | 105,842.38                       | 12.00%                            |
| 524-475   | Roundup Ultra Herbicide                                   | 85,706.86                        | 9.72%                             |
| 100-766   | Bicep Lite II Herbicide                                   | 57,918.36                        | 6.57%                             |
| 19713-123   | Damoil Dormant and Summer Spray Oil Insecticide/Miticide  | 36,223.00                        | 4.11%                             |
| 100-497   | Attrex 4L and 4LC Herbicides                              | 31,689.38                        | 3.59%                             |
| 100-827   | Bicep Lite II Magnum Herbicide                            | 24,259.12                        | 2.75%                             |
| 363-15  | The 4C Brand Coopersote Creosote Oil Insecticide/Miticide | 21,132.00                        | 2.40%                             |
| 10182-220   | Eptam 7-E Selective Herbicide                             | 19,231.23                        | 2.18%                             |
| 862-11-34704  | Sun Sunspray 6E Insecticide/Miticide                      | 18,058.00                        | 2.05%                             |
| 62719-239   | Broadstrike and Dual Herbicide                            | 15,904.25                        | 1.80%                             |
| Top 10 Products - Total Quantity (Gallons) Sold:                  |   | 415,964.58                       | Gallons                           |
| All Products - Total Quantity (Gallons) Sold:                     |   | 881,817.54                       | Gallons                           |
| Top 10 Products as a Percentage of Total Quantity (Gallons) Sold: |   |                                  | 47.17%                            |

\* Excluding Illegible, Invalid, Irregular, and Unreported Categories (See Page 21 for Definitions)