

npic

NATIONAL
PESTICIDE ● INFORMATION
CENTER

-2008-

Environmental & Molecular Toxicology

Oregon State
UNIVERSITY

OSU

This is the fourteenth annual report for the National Pesticide Information Center (NPIC) since it began operation at Oregon State University in April, 1995. NPIC, a service providing a variety of pesticide and pesticide-related information to the general public and professionals across the United States, Puerto Rico and the Virgin Islands, is a cooperative project between Oregon State University and the U.S. Environmental Protection Agency. This report, the 2008 Annual Report, covers the period April 1, 2008 - March 31, 2009, corresponding to NPIC's fourteenth grant year.

DISCLAIMER

Material presented in this report is based on information as provided to NPIC by individuals who have contacted NPIC for information or to report a pesticide incident. None of the information reported to NPIC has been verified or substantiated by independent investigation by NPIC staff, laboratory analysis, or any other means. Thus, if a person alleges/reports a pesticide incident, it likely will be recorded as an incident by NPIC. Based on the information provided, NPIC qualifies the information by assigning a Certainty Index (CI; an indication of the degree of certainty that the purported incident was related to pesticide exposure) ranging from 1 = "definite" to 5 = "unrelated." NPIC makes no claims or guarantees as to the accuracy of the CI or other information presented in its reports, other than that NPIC has done its best to accurately document and report the information provided to NPIC.

Submitted To:

Frank L. Davido
NPIC Project Officer
Pesticide Incident Response Officer
US EPA Office of Pesticide Programs

Submitted By:

Dave Stone, Ph.D.
Project Director

National Pesticide Information Center (NPIC)
Environmental and Molecular Toxicology
Oregon State University
333 Weniger Hall
Corvallis, OR 97331-6502
800-858-7378
www.npic.orst.edu

NPIC 2008 Annual Report

Table of Contents

EXECUTIVE SUMMARY	4
HISTORY AND INQUIRIES	6
History	6
Funding	6
OBJECTIVES	7
ACHIEVEMENTS	8
Of Special Interest.....	8
Inquiry Update.....	11
Project and Information Review	12
Website	12
Fact Sheets	14
Training and Continuing Education	17
Outreach	19
Personnel Update	23
NPIC DATA	28
Data Summary	28
Summary of Tables, Charts and Graphs	28
1. Monthly Inquiries.....	30
2. Type of Inquiry	31
3. Origin of Inquiry	32
4. Website Access	33
5. Type of Inquirer.....	36
6. Type of Question.....	37
7. Reason for Inquiry	38
8. Actions Taken.....	39
9. Inquiries by State	40
10. Top 25 Active Ingredients for All Inquiries	41
11. Top 25 Active Ingredients for Incident Inquiries	42
12. Location of Incident.....	43
13. Environmental Impact	44
14. Certainty Index.....	45
15. Description of Entities	46
16. Entity Symptoms.....	48
17. Deaths and Other Outcomes	49
18. Entity Age.....	50
REPORT ON SUBCONTRACTS	51
Oregon Poison Center	51
Animal Poison Control Center.....	51
Language Line Services, Inc.....	51

EXECUTIVE SUMMARY

Operations

- NPIC's fourteenth operational year at Oregon State University was from April 1, 2008 – March 31, 2009. During this period, NPIC received 26,440 inquiries (Table 1.1). Approximately 93% of the total inquiries were addressed over the telephone. The NPIC website continues to be an important source of objective information on pesticides. During the fourteenth operational year, the site received 2,465,802 hits (Graph 4.1), an increase of about one million hits compared to the previous year.

Notable Items

- NPIC developed the procedures necessary to implement a severity index for human incidents (started April 1, 2009). The NPIC severity index is based on criteria used by Poison Control Centers in their National Poison Data System (NPDS).
- NPIC developed a Veterinary Incident Reporting Portal (VIRP) for veterinary professionals and launched the system in October. It was developed with input from the American Veterinary Medical Association (AVMA) and EPA-OPP to collect medical information about pesticide incidents in a user-friendly format for busy practitioners.
- NPIC launched a new Spanish-language version of its website in September with input from the Migrant Clinicians Network and others. It houses over 30 web pages and NPIC is developing original content for Spanish-speaking audiences.
- The number of visitors to NPIC's website increased 68% this year compared to last year. NPIC original content includes pesticide fact sheets, PestiByte PODcasts, hot topics, common pesticide questions and web pages.
- NPIC responded to 2,558 inquiries this year regarding enforcement actions issued by the EPA to the Scotts Miracle-Gro Company. Eighty percent (80%) of the inquiries were addressed in a 14-day period, resulting in a record-breaking day (415 inquiries on May 28th) and month (4,773 total inquiries in May).

- The Foreign Language Team responded to 108 inquiries in Spanish this year. NPIC also utilized over-the-phone interpretation services to respond to 103 inquiries in several languages including Spanish, Cantonese and French.
- NPIC analyzed data for thirteen special reports requested by EPA personnel this year. These reports included specific details about incidents related to bees, ventilation (HVAC) systems, soil fumigants, total release foggers, mothballs, and pyrethroids, among others.
- NPIC published 12 new pesticide fact sheets this year, including technical fact sheets on 2,4-D, picaridin, permethrin, deltamethrin and resmethrin.
- NPIC launched a new collection of PestiByte PODcasts this year in collaboration with the Environmental Health Sciences Center (EHSC) at Oregon State University. PestiBytes are 1-2 minute audio clips based on common pesticide questions.
- NPIC increased its capacity to provide information about integrated pest management (IPM) this year in response to interest from the general public via new web content as well as participation in the International IPM Symposium and the National IPM in Schools Workgroup.

Highlights in Data

- Metaldehyde incidents decreased by 83.5% compared to last year, dropping from 189 incidents to 103. Two incidents required transfer to the Animal Poison Control Center (APCC).
- Due to the Scotts stop-sale(s), prodiamine was the top active ingredient for information inquiries this year with 1,869 informational inquiries and 27 incidents. None of the incidents were assigned a certainty index of 1 or 2 (definite or probable). The certainty index is defined on page 45.

Note: The complete record of NPIC accomplishments for the current operational year includes the 12 monthly reports and four quarterly reports (submitted earlier), in addition to this "2008 Annual Report." This report covers the NPIC grant year April 1, 2008 through March 31, 2009.

EXECUTIVE SUMMARY

- NPIC received 486 inquiries related to bed bugs, continuing a five-year upward trend. Bed bug inquiries increased by 25% in 2008.
- NPIC received 447 inquiries related to controlling fleas and ticks on or around pets. Half of these were incidents (223).
- Over half of cyphenothrin incidents (50/76) and incidents involving pyriproxyfen (43/77) were assigned a certainty index of 1 or 2 (definite or probable). Most of these incidents involved pets.
- For informational inquiries, pesticide use (33.4%) and health-related inquiries (30.7%) were the most commonly asked questions. Regulatory compliance comprised 12.7% of questions (Chart 6.1).
- The highest number of inquiries to NPIC came from California, Texas and New York (Graph 9.1). Of the EPA regions, NPIC received the most inquiries from EPA Region 5, followed by EPA Region 4 and Region 2 (Graph 9.2).
- Examples of pesticide incident inquiries include:

Inquiries

- Most of the inquiries to NPIC came from the general public (88.4%), followed by government organizations (3.3%) and human and animal medical personnel (2.0%). See Table 5.1.
- While most of NPIC inquiries were informational (80.0%), there were 3,444 (13.0%) reports of pesticide incidents in 2008-09 (Table 2.1).
- The top active ingredients involved with incidents were: naphthalene (613), paradichlorobenzene (211), permethrin (205), zinc phosphide (147) and pyrethrins (132) (Table 11.1).
- For the top 25 active ingredients involved in incident inquiries, 11.3% of incidents were assigned a certainty index of 1 or 2, which designates a definite or probable association with the pesticide in question (Table 11.1).
- There were 4,033 entities involved in incidents reported to NPIC: 49.0% were human, 30.5% were animals and 21.2% were classified as other (structural or environmental) (Chart 15.1).
- Among the 1,946 humans involved in pesticide incident inquiries, no deaths were reported. Forty-six (46) animal deaths were reported, with four of the incidents assigned a certainty index of 1 or 2 (Table 17.1).
- For human incidents, 26.2% involved children less than 5 years of age. Approximately 13.5% of incidents involved adults that were 65 years or older (Graph 18.1).

Caller reported she was spraying some items with a training aid (denatonium benzoate) to keep her dog from chewing and some got in her mouth. Caller said there is now a strong bitter taste, asked what to do to get rid of it and if there were possible toxic effects.

Caller said he was about to put concentrated pool tabs into his swimming pool, but when he opened the container, a strong chlorine odor was released. He was dizzy and he is now having trouble breathing and coughing. Caller asked what to do.

Web Corner

NPIC's website received about 2.47 million hits in this grant year, which represents a 68% increase since the previous year (1.47 million hits). See Graph 4.1.

NPIC launched a new Spanish-language version of its website in September 2008 with input from the Migrant Clinicians' Network and others. With over 30 pages and 300 links, the effort was over a year in the making.

The five top countries that accessed NPIC's website in 2008-09 were: 1) United States, 2) Canada, 3) China, 4) Great Britain and 5) India.

NPIC received 278,136 hits to their active ingredient fact sheets (Graph 4.4), an increase of 41%. Boric Acid was the most accessed fact sheet, followed by pyrethrins, permethrin and fipronil.

HISTORY AND INQUIRIES

History

The pesticide information service began in 1978 with Texas Tech University Health Sciences Center associated Pesticide Hazard Assessment Project (PHAP) in San Benito, Texas. This service, offered via telephone, was originally used to report pesticide incidents in EPA Region VI through the Pesticide Incident Monitoring System (PIMS). Later, callers from across the U.S. began using the service to obtain information on pesticides. In 1980, the network was designated as the National Pesticide Information Clearinghouse (NPIC). In 1984, NPIC added the 24 hour responsibilities of South Carolina's National Pesticide Telecommunications Network (NPTN) and changed its name to NPTN.

The NPTN system remained in San Benito until April 1986, when it moved to the Department of Preventative Medicine and Community Health of the Texas Tech University Health Sciences Center in Lubbock, Texas. NPTN remained at Texas Tech through March 1995. Following a competitive renewal process for the grant supporting the Cooperative Agreement between the U.S. Environmental Protection Agency and the co-sponsoring university, NPTN moved to Oregon State University on April 1, 1995.

In addition to the telephone, NPTN began to place major emphasis on the internet and e-mail as means of disseminating pesticide information, and as alternate routes of contact with NPTN. To more accurately reflect the nature of its service, NPTN was renamed National Pesticide Information Center (NPIC) in 2001. In March 2006, NPIC assumed responsibility for responding to inquiries about antimicrobial products.

On July 1, 2007, Dr. Terry Miller stepped down as the Director of NPIC. Dr. David Stone, from the Department of Environmental & Molecular Toxicology at Oregon State University, assumed the role of NPIC Director.

In Fall 2007, NPIC added multi-lingual capabilities through a contract with Language Line Services, Inc. This service enables NPIC specialists to provide risk communication in over 170 different languages. In November 2007, NPIC launched a new website design in order to provide a more user-friendly interface for the public and professionals. NPIC released a comprehensive Spanish-language version of its website in September 2008.

Inquiries and Resources

NPIC receives inquiries from across the U.S. and from Puerto Rico, the Virgin Islands, Canada, Mexico and numerous other countries. Approximately 90% of the inquiries to NPIC are from the general public. NPIC receives requests for information about: the health implications of pesticide use, pesticide toxicology, environmental chemistry, regulations, use practices, product information, environmental effects of pesticides, pesticide safety, protective equipment, cleanup and disposal, and current pesticide-related issues in the news.

NPIC maintains an extensive collection of hard-copy and electronic resources. NPIC specialists have access to the full resources of the Oregon State University Library, which includes electronic access to hundreds of academic journals, databases, and indexing services. NPIC created InfoBase, a custom search engine that spiders selected websites and databases for archival and searching capabilities. InfoBase is available to the public, facilitating the search of EPA-OPP dockets, the CFR, and the EPA and NPIC websites.

NPIC's library includes: a comprehensive Active Ingredient (AI) file collection containing detailed scientific and regulatory information on over 980 active ingredients; 265 General Files that contain topic information such as "drift" and "IPM"; numerous compendia of pesticide information (e.g., *Code of Federal Regulations - 40 CFR Parts 150-189*; *Common Sense Pest Control*; *Crop Protection Handbook*; *Disinfection, Sterilization and Preservation*; *Herbicide Handbook*; *Clinical Veterinary Toxicology*; *Metabolic Pathways of Agrochemicals*; *Pest Control Operations*; *The Pesticide Manual*; *Toxicology - The Science of Poisons*; and the *WHO Environmental Health Criteria series*); electronic access to EXTOXNET (EXtention TOXicology NETwork), CHEMBANK (HSDB, RTECS, IRIS), and PESTBANK; and on-line literature-searching capabilities (e.g. Medline; TOXNET; PubMed).

Funding

Funding for NPIC is provided by the U.S. Environmental Protection Agency, Office of Pesticide Programs, with substantial support by Oregon State University in the form of cost-sharing, salary, support, and facilities.

OBJECTIVES

The primary mission of the National Pesticide Information Center is to serve as a source of objective, science-based information on a wide variety of pesticide-related subjects, including:

- recognition and management of pesticide poisonings
- health and environmental effects
- toxicology
- environmental chemistry
- pesticide products

In addition, NPIC provides referrals for:

- safety practices
- clean-up and disposal
- emergency treatment
- investigation of pesticide incidents
- laboratory analysis

A major goal of NPIC is to promote informed decision-making on the part of the inquirer.

Services provided by NPIC are available 10 hours/day from 6:30 am - 4:30 pm Pacific Time, 7 days per week (excluding holidays), via a toll-free telephone number, and 24 hours/day via e-mail and the internet, to anyone in the United States and its territories. NPIC is sponsored cooperatively by Oregon State University and the U.S. Environmental Protection Agency.

NPIC is open to questions from the public and professionals. It is staffed by highly qualified and trained specialists who have the toxicology and environmental chemistry training needed to provide knowledgeable answers to questions about pesticides.

NPIC specialists deliver information in a user-friendly manner, and are adept at communicating scientific information to the lay public. Specialists can help inquirers interpret and understand toxicology and environmental chemistry information about pesticides. The services provided by NPIC are strictly informational and NPIC has no regulatory or enforcement capability or authority.

Objectives

The objectives of NPIC are:

- 1) To operate a toll-free telephone service to inquirers in the United States, Puerto Rico, and the Virgin Islands, including a recording device to capture off-hour inquiries.
- 2) To provide access to NPIC and pesticide-related information via the internet and e-mail.
- 3) To serve as a source of factual, unbiased information on pesticide chemistry, toxicology, and environmental fate to all who inquire, including industry, government, medical, and agricultural personnel, in addition to the general public.
- 4) To provide the medical community with diagnostic and crisis management assistance involving pesticide incidents in situations pertaining to both human and animal patients.
- 5) To acquire accurate and complete information on all inquiries considered to be pesticide incidents.
- 6) To computerize all inquiry information and pesticide incident data for easy retrieval.

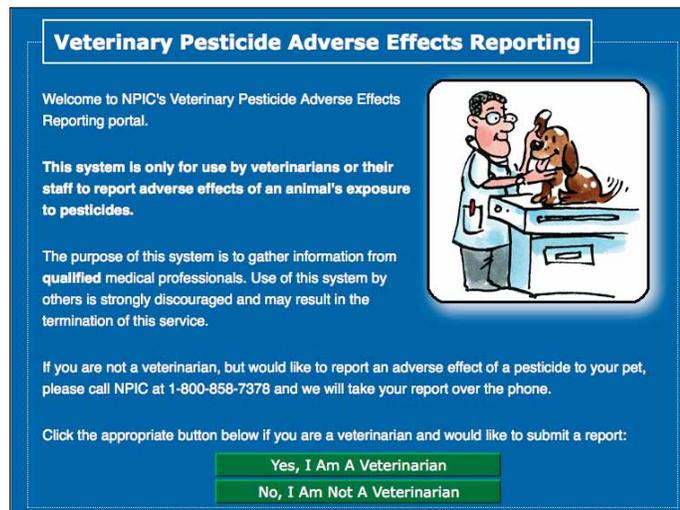


Open minds. Open Doors.™

ACHIEVEMENTS

Of Special Interest

Veterinary Incident Reporting Portal (VIRP) - NPIC developed a web-based portal for veterinarians to report adverse reactions to pesticides, and launched the new site on October 7, 2008. The URL is <http://npic.orst.edu/vet>.



Sean Ross and Dr. Stone developed the new tool with input from the EPA Office of Pesticide Programs, the AVMA Clinical Practitioners Advisory Committee and the AVMA Council on Biologic and Therapeutic Agents. The VIRP is designed to collect veterinary medical information including the animal's breed, age, symptoms, treatment, specific pesticide information and case outcome.

The VIRP was designed to collect reports submitted only by veterinary professionals, and to be efficient for busy practitioners. See page 19 to learn how NPIC promoted the new portal by reaching out to veterinary professionals this year.

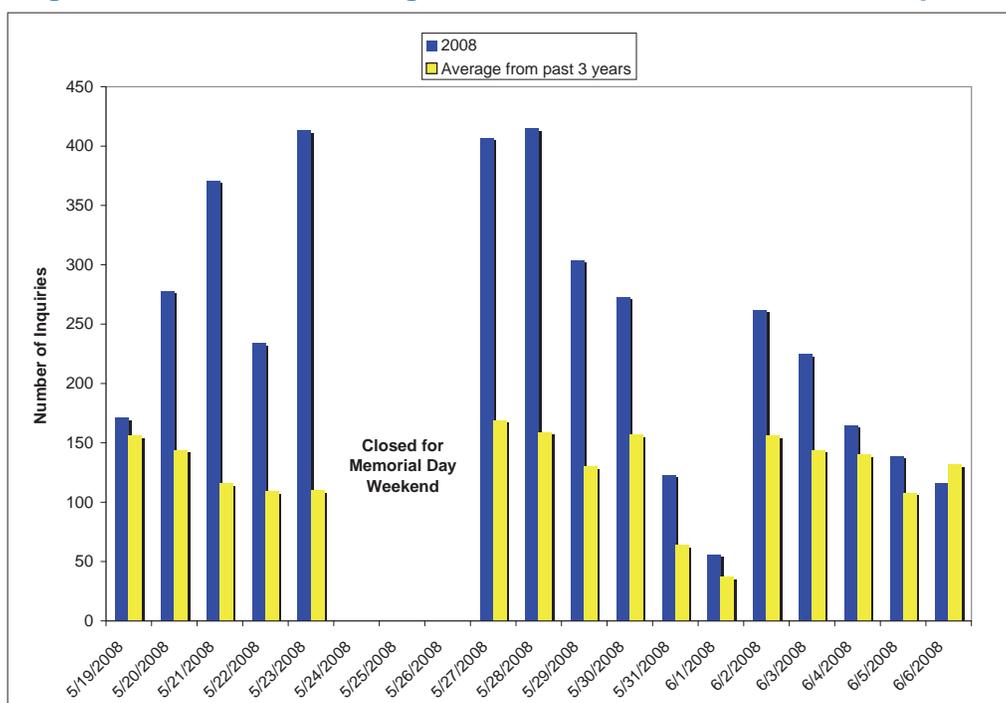
Scotts Stop-Sale - In the Spring of 2008, EPA began issuing enforcement actions against The Scotts Miracle-Gro Company (Scotts) as a result of problems identified with the registration status and/or labeling of certain products. NPIC responded to 2,558 inquiries about the Scotts stop-sale this grant year. See Figure 1 below.

EPA Region V and EPA Headquarters issued a press release on April 23rd listing two hotlines for more information: EPA Region 5 and NPIC. NPIC agreed to serve as the primary hotline on May 2nd.

NPIC responded to this emergent issue by adjusting staff and activity schedules. NPIC provided risk communication in a challenging situation where the active ingredient(s) in question were not disclosed.

NPIC provided daily or weekly updates on stop-sale-related phone traffic to Project Officer, Frank Davido, from April 28th through the end of August. NPIC highlighted the Scotts stop-sale on its website in the "New & Notable" section, and updated the text and links as

Figure 1 - Record-breaking call volume related to Scotts stop-sale



ACHIEVEMENTS

new information became available. In addition, NPIC developed quick reference guides about the toxicology and health effects associated with prodiamine and trifluralin, as soon as they were identified as the active ingredients of concern.

Foreign Language Capabilities - NPIC launched a new Spanish-language version of its website in September at <http://npic.orst.edu/es>. The Migrant Clinicians Network and several other reviewers provided valuable feedback about the site contents before its release. With 34 pages and over 300 links, the effort was over a year in the making. See page 19 for a description of NPIC efforts to reach out to Spanish-speakers.

During this grant year, NPIC hired three additional Spanish-speaking pesticide specialists. They formed a new team, led by Rachelle Travers, to translate NPIC publications into Spanish, build and maintain a Spanish-language website and respond to pesticide inquiries received in Spanish. Together, they responded to 108 inquiries in Spanish by phone or email.

- Kristina Wick minored in Spanish and studied abroad in Spain. She's interested in occupational health and safety, and she's pursuing a Masters degree in Public Health while working at NPIC.
- Humberto Nation is a native Spanish speaker, originally from Mexico City. He has a Bachelor of Science degree in Chemistry, and a Master of Science degree in Environmental Hydrogeology and Geochemistry.
- Carmen Boone is also a native Spanish speaker, originally from Peru, where she earned her undergraduate degree in Chemistry. She also has a Master's degree in Food Science and Technology.

Under contract with NPIC, Language Line Services, Inc. provides real-time access to over-the-phone interpretation services, seven days per week. This service is available in over 170 different languages, including Spanish, Mandarin, Mixteco, Russian and Korean. Interpreters are familiar with medical terminology, so they are capable of translating technical information about the potential health effects of pesticides. This grant year, NPIC utilized the service to provide risk communication to 103 people in multiple languages including Spanish, Cantonese and French.

Project Officer Site Visit - Frank Davido, Project Officer for NPIC, visited OSU on October 21-23, 2008 to meet with NPIC management and staff. Additional meetings were held with the Department Chair of Environmental and Molecular Toxicology and the Associate Dean of the College of Agricultural Sciences. NPIC staff delivered several presentations highlighting new developments, PODcasts, outreach, quality control procedures and observed trends in incident data. Mr. Davido was also welcomed by the interim Dean of the College of Agricultural Sciences, Bill Boggess and John Cassidy, the Vice President of Research, at Oregon State University.

Special Reports Provided to EPA - NPIC provides special reports from its Pesticide Inquiry Database (PID) to EPA personnel, typically in less than one week after requested. This year, NPIC developed and delivered the following reports:

- All inquiries involving endosulfan
- All incidents related to BK Roach Killer
- All incidents related to 23 pyrethroid active ingredients
- All incidents related to imidacloprid
- Animal incidents involving metaflumizone
- All incidents involving bees
- All human incidents involving diazinon
- All incidents involving naphthalene or paradichlorobenzene
- All incidents involving HVAC systems
- All inquiries related to the Scotts stop-sale (See page 8)
- All incidents involving mothballs, stratified by age (adult or child)
- All incidents related to soil fumigants
- All incidents related to total release foggers

PestiBytes - NPIC entered into collaboration with the Community Outreach and Education Core of the Environmental Health Sciences Center (EHSC) at OSU. The EHSC is funded by the National Institute of Environmental Health Sciences (NIEHS), and shares the common goal of "promoting informed decision-making through education." Working together, NPIC staff and the Outreach Coordinators from EHSC (Sandra Uesugi and Naomi Hirsch) developed the framework to start producing PODcasts related to pesticides. PestiBytes are 1-2 minute audio clips based on common pesticide questions.



ACHIEVEMENTS

PestiBytes feature NPIC specialists discussing questions that are commonly asked by the general public. NPIC published five (5) PestiBytes this grant year; see page 16 for a list of titles and topics. When released, each PODcast is posted on the NPIC website, the EHSC website and the OSU channel on iTunes®. NPIC plans to record Spanish-language versions of each PestiByte PODcast.

Integrated Pest Management - In response to an increase in questions from the public, NPIC has increased its capacity to provide information about Integrated Pest Management (IPM). NPIC continues

to provide objective, science-based information by discussing the importance of pest identification, the action threshold concept and resources for understanding the biology of common household pests.

NPIC further developed its web page dedicated to helping people find pest control fact sheets that emphasize an IPM approach. The web page, developed in 2007, serves as a nationwide hub for household pest control information developed by Extension professionals from various Universities enabling people to find locally relevant information.

Figure 2 - NPIC poster presented at the International IPM Symposium in March 2009

The National Pesticide Information Center: Integrating Risk Communication with IPM Resources for the General Public

Melody L. Johnson, B.S., Kaci J. Agle, M.S., Dave Stone Ph.D.
Department of Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR

Abstract

The National Pesticide Information Center (NPIC) is a cooperative agreement between Oregon State University and the Environmental Protection Agency. NPIC's mission is to promote informed decision-making by delivering objective, science-based information on pesticides. NPIC operates a nationwide toll-free service that annually receives over 25,000 calls. Over 90% of inquiries come from the general public; most are related to pest control. Annually, NPIC receives over 2.2 million web-hits, with "Pest control" as the most popular site. Our website includes well-referenced information about home and garden pests such as rodents, bedbugs and weeds. NPIC continues to develop and expand a pest-specific **IPM factsheet finder** designed to connect people with local extension resources.

Our specialists convey science-based pest control information including the importance of pest identification, the concept of an action threshold and key facts about pest biology. In addition, specialists can compare the toxicity of various products and discuss ways to minimize exposure, thereby reducing the risk to people, pets, the environment, and beneficial organisms. NPIC is capable of communicating these issues in over 170 languages by working with interpreters trained in medical and scientific terminology. In 2008, NPIC observed an increasing trend in public inquiries related to bedbugs, school IPM and products suitable for organic gardening. Given the scope and demographics of our callers, we are well positioned to link the public with IPM information and provide complimentary risk communication.

NPIC and IPM

When people ask NPIC for pest control advice, specialists ask questions to assess each situation and its unique challenges.

Based on their assessment, the specialist may:

- > Discuss the importance of proper pest ID, and provide resources to help the person properly ID the pest problem
- > Discuss the concept of action thresholds
- > Determine whether any sensitive people, pets, or plants require consideration before the treatment method can be selected
- > Locate and discuss pest-specific fact sheets that were developed as locally as possible

NPIC has developed a nationwide fact-sheet finder that includes pest control fact sheets. These pest-specific fact sheets describe pest biology and management. Often, these are developed by local extension services, NGOs, and others.

Interested individuals may not know how to find these locally relevant resources or even know they exist, but specialists can direct inquirers to the appropriate local resources based on their situation.

NPIC has developed websites for several pests in response to inquiries. These websites feature fact sheets about their biology and management, which often include IPM practices.

Information Delivery

NPIC can deliver information verbally, in written form, and in an audio format as a PODcast. PestiByte PODcasts are short (1-2 minute) interviews with NPIC pesticide specialists on a topic. NPIC also publishes brochures, pesticide fact sheets, medical profiles, pest information and more on the website, in addition to links to helpful resources.

Specialists are trained to discuss minimizing exposure to pesticides in order to reduce risk. Depending on the situation, the NPIC specialist may discuss:

- > Potential routes of exposure
- > Ventilation after indoor application
- > Avoiding treated areas until they are dry
- > Removing children's toys and pet dishes from treated areas
- > Exposure considerations for sensitive populations such as children, pregnant women, and the elderly.

Audience

The predominate audience that contacts NPIC is the general public (over 90% of inquiries). Other inquirers include the public health officials, extension services, researchers, farm workers, government officials, medical staff, retail stores, and others. NPIC answers questions from all 50 states, Puerto Rico, the Virgin Islands and multiple countries. NPIC has bi-lingual capacity and contracts with a service that can interpret 170+ languages.

Trends in Public Inquiries

NPIC has observed an increasing trend in public inquiries related to bedbugs, IPM and products suitable for organic gardening.

Conclusions

While IPM information has been developed and disseminated for agricultural and commercial (school) decision-makers, the general public needs a resource to assist in locating and understanding objective, science-based IPM information that is locally relevant. Utilizing an established national audience, multi-lingual capability and qualified staff, NPIC is well positioned to link the public with IPM information and to provide complimentary risk communication.

ACKNOWLEDGEMENTS
This project is funded by US EPA's Office of Pesticide Programs and OSU. The daily success and operation of NPIC is a function of talented and dedicated staff.

Understanding Mosquitoes

Bed Bugs

Understanding Mosquitoes

Bed Bugs

ACHIEVEMENTS

Rachelle Travers worked with a team of pesticide educators to create a two-day IPM training curriculum for Spanish-speaking landscapers. The team was led by Becky Hines of Washington State University, and funded through the Western IPM Center (USDA). Ms. Travers developed the module related to insect IPM and attended the pilot training in October.

Kaci Agle, Bryan Harper and Melody Johnson attended the International IPM Symposium in March in Portland, Oregon. They presented a poster and exhibited a booth to raise awareness of NPIC services among researchers, regulators and IPM educators. See Figure 2 on page 10.



Kaci - Project Coordinator

Kaci Agle participated in a nationwide workgroup to review new IPM training materials for public housing employees. Ms. Agle later attended the training when it was delivered for employees of the King County (Seattle) public housing authorities in December. She also participated in a National IPM in Schools Workshop led by Sherry Glick of the EPA. Leveraging recent training opportunities and her academic background in IPM, Ms. Agle is developing expanded IPM training for new and existing pesticide specialists at NPIC.

Inquiry Update

NPIC responded to 26,440 inquiries, 3,444 of which were classified as pesticide incidents (13%). A pesticide spill, a misapplication, a contamination of a non-target entity, or any purported exposure to a pesticide (regardless of injury) is classified as an incident. Based on information provided by the inquirer, and with reference to established criteria, all incident inquiries are

assigned a certainty index (CI). This is NPIC's assessment as to whether the effects were definitely (1), probably (2), possibly (3), unlikely (4) or not related (5) to the reported pesticide exposure.

Pesticide specialists assign a certainty index to each incident inquiry. Dr. Daniel Sudakin reviews the certainty index for all human incidents. Melody Johnson reviews the certainty index for all human, animal and other incidents.

Topics of interest in this grant period included questions or concerns related to the Scotts stop-sale (2,558), mothball products (1,446), mosquitoes (600), bed bugs (456), fleas and ticks (447), and metaldehyde products (167).

Metaldehyde - NPIC observed an 83% reduction in the number of incidents related to metaldehyde this year (103) compared to last year (189). Metaldehyde fell from 3rd to 10th on NPIC's Top Ten list of active ingredients involved in incidents (Graph 11.1 on page 42). Two (2) metaldehyde incident calls were transferred to the Animal Poison Control Center (APCC); six (6) were assigned a certainty index of 1 or 2 (definite or probable).

Bed Bugs - NPIC has been tracking a steady rise in the number of inquiries related to bed bugs, which are increasing in national significance. The number of bed bug-related inquiries to NPIC rose from 217 (grant year 06-07) to 388 (grant year 07-08) to 456 this grant year. Many of these inquiries were related to control measures and the potential health effects of pesticides.

Scotts Miracle-Gro Stop-Sale - NPIC responded to 2,558 inquiries this year related to the Scotts stop-sale (See page 8). The Scotts Miracle-Gro Company sent letters to lawn care customers regarding a recalled product that had been applied to their lawns (EPA registration number 538-304). NPIC's phone number was included in those letters, resulting in 1,925 (75%) of the total inquiries. The active ingredient in one of the affected products, prodiamine, was the number one AI for all inquiries this grant year (See page 41).

Mothball Products - During the year, NPIC received 1,446 inquiries regarding the use of mothballs. Of these inquiries, 783 were mothball-related incidents, including 496 reports of misapplication. Inquiries primarily involved off-label use of mothballs to repel cats, rats, squirrels and snakes in and around the home. Two hundred thirty-two (232) inquiries were coded as

ACHIEVEMENTS

“incident prevention,” whereby the inquirer describes the intent to use mothballs for an off-label use and NPIC provided information in an attempt to avert the inappropriate application.

Naphthalene and paradichlorobenzene are the active ingredients currently found in mothballs. Six hundred thirteen (613) incidents were reported involving naphthalene, including 469 human incidents. For paradichlorobenzene, 211 incidents were reported, most of which (159) involved humans. Some incidents involved both active ingredients. Between them, 41 incidents were assigned a certainty index of 1 or 2 (definite or probable). The certainty index is defined on page 45.

Mosquitoes - NPIC responded to 600 inquiries related to mosquitoes during this grant period. Most of these inquiries involved questions about the potential effects from using products to kill or repel mosquitoes or callers seeking a product recommendation, which NPIC does not provide.

Fleas and Ticks - During the grant period, NPIC received 447 inquiries related to controlling fleas and ticks on or around pets. Half of these inquiries (223) were coded as incidents. The informational inquiries primarily involved questions about what types of products can be used on pets or around the home and yard and what are the potential health effects from use of these products.

Project and Information Review

Pesticide Incident Database (PID) - Suzanne Phillips received substantial training from Melody Johnson and assumed the role of Pesticide Inquiry Database (PID) Facilitator in 2009. NPIC continued to emphasize quality control in data collection, coding, and archiving of inquiry data. The PID team led the effort by regularly providing updates and training exercises focused on data quality. Human Incident Reports were generated regularly, reviewed by the PID Facilitator and by Dr. Sudakin, and posted to the NPIC internal website (Inet) for review by the staff. This provides specialists with the opportunity to continue good practices and informs future decisions. In addition, reviews for trainees and new specialists were generated with team feedback.

In response to the EPA stop-sale of certain Scotts Lawn Care products, Ms. Johnson delivered weekly inquiry updates to NPIC’s Project Officer, Frank Davido, from May through August.

The PID team implemented a new procedure aimed at improving overall quality. Each pesticide specialist received a thorough assessment and recommendations were made for improvement.



Suzanne - PID Facilitator

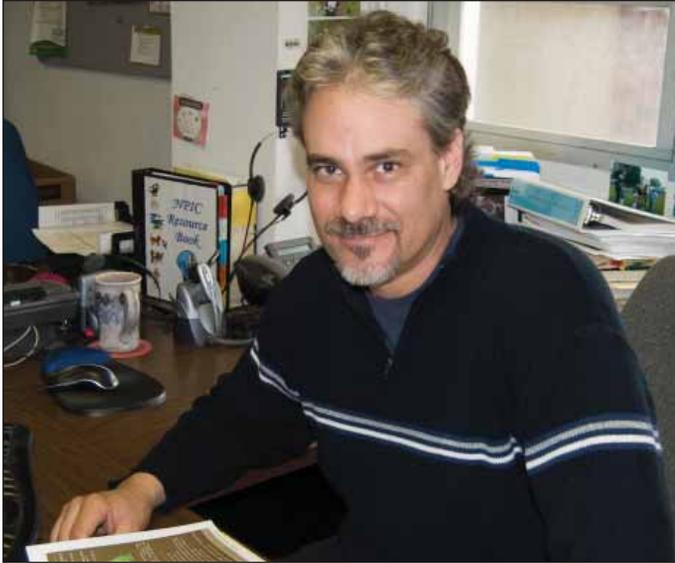
The PID team worked with the NPIC Executive Committee to implement a severity index (implemented on April 1, 2009). NPIC will evaluate symptoms reported for human incidents and assign a severity index ranging from “Asymptomatic” to “Death.” The NPIC severity index modeled criteria used by poison control centers in their National Poison Data System (NPDS). The PID team developed definitions, decision-making aids, training documents and database modifications to facilitate the new system.

Monthly and Quarterly Reports - NPIC provides regular updates to the Office of Pesticide Programs through its Project Officer, Frank Davido. NPIC publishes monthly, quarterly and annual reports, which include updates on project activity and a detailed traffic report to describe the number and type of inquiries to NPIC. Monthly reports include strange and/or interesting inquiries; quarterly reports include details for any reported deaths (human or animal) that may or may not have been related to pesticides. Special reports are available upon request. See page 9 for a list of special reports provided to OPP this year.

NPIC Website - NPIC received 2,465,802 total web hits this grant year, compared to 1,471,883 hits last year, which represents a 68% increase in web traffic. NPIC launched a new Spanish-version of its website in September, which received over 25,000

ACHIEVEMENTS

hits in five months. Sean Ross, the Supervisor of NPIC Information Resources Capability (SNIRC) and Bryan Harper, the Website Facilitator, cooperated to maintain and develop the NPIC website, which contains over 150 pages of pesticide-related information and resources.



Bryan H. - Website Facilitator

NPIC developed and posted eighteen (18) new web pages to the English site this year featuring science-based information, important tips and links to additional resources. New web pages included:

- Choosing and Using Insect Repellents
- Controlling Rodents
- Herbicides and Weed Control
- Bee Colony Collapse Disorder
- Understanding and Controlling Lice
- Pesticide Risks and Resources for Natural Disasters
- Controlling Bed Bugs
- Common Pesticide Questions
- Pesticide Quick FAQs (Frequently Asked Questions)
- NPIC Outreach Materials
- Reading Pesticide Labels
- Reporting Pesticide Problems
- PestiByte PODcasts
- Understanding and Controlling Mosquitoes
- Mosquito Control Methods
- Pesticides Used in Mosquito Control
- Diseases Transmitted by Mosquitoes
- Understanding and Controlling Cockroaches

NPIC developed and posted eight (8) new web pages to the Spanish site this year featuring health and safety information, important tips and links to additional resources. These were added to the website after the initial launch of the Spanish website, which included over 30 pages and 300 resources. New Spanish web pages included:

- Poison Prevention
- Slug & Snail Control
- Pesticide Regulations
- Controlling Bed Bugs
- Understanding and Controlling Lice
- Common Pesticide Questions
- Pesticide Quick FAQs
- NPIC Outreach Materials

Dozens of links were added throughout the year as new resources were published about pesticides or related topics. Each new link was evaluated for appropriateness by a pesticide specialist, the Website Facilitator and the Project Coordinator. NPIC maintained and updated its pesticide manufacturer database containing contact information for 440 manufacturers. In addition, hundreds of broken external links were replaced or repaired throughout the year.

Foreign Language Team - NPIC established a new project team this year dedicated to providing NPIC services in languages other than English. Goals include the translation of NPIC publications, further development of NPIC's Spanish website and the creation of Spanish PODcasts. Together, they responded to 108 inquiries in Spanish this grant year, including ten (10) by e-mail.



Humberto - Foreign Language Team Member

ACHIEVEMENTS

Team members translated Common Pesticide Questions (CPQs) and NPIC web pages throughout the year and developed a peer-review system to ensure accuracy. By the end of the grant year, the team completed translations for five (5) CPQs and five (5) web pages, and the Spanish-version of the NPIC website. In addition, several documents were translated and submitted into the peer-review process.

InfoBase - NPIC further developed the InfoBase, an electronic repository of pesticide-related information. NPIC continues to retrieve and catalogue the pesticide-related dockets housed at www.regulations.gov. Specialists, and the general public, use a user-friendly interface to browse, search and link to those dockets.

NPIC continued scanning hard-copy files for inclusion in the InfoBase. These pages were converted to electronic files (PDF) using PrimeOCR (Prime Recognition Systems) to allow for optical character recognition (OCR). The resulting files were indexed by RetrievalWare. Using a system designed by NPIC, these resources were associated with relevant meta-data and indexed for efficient access by NPIC staff.

Before each file was scanned, NPIC evaluated each document to ensure that it was credible, appropriately referenced and its “meta-data” were correctly reflected in a corresponding database. This year, NPIC finished scanning all AI and general files, initiating the maintenance phase of the project. During this grant year, NPIC scanned 1,819 documents for inclusion in the InfoBase.

Fact Sheets – Bryan Luukinen serves as the Fact Sheet Team Facilitator with Jennifer Gervais serving as a Senior Editor. They continued to improve design templates for general and technical fact sheets this year by evaluating and improving language, visual layout and referencing protocols. NPIC purchased ChemDraw Pro™ to create original images of molecular structures to include in technical fact sheets. For general fact sheets, NPIC collaborated with a graphic artist to develop custom images that demonstrate key concepts.



Bryan L. - Fact Sheet Facilitator

During this grant year, NPIC completed twelve (12) fact sheets:

Technical fact sheets:

- Resmethrin
- 2,4-D
- Capsaicin
- Diazinon
- Picaridin
- Permethrin
- Deltamethrin

General fact sheets:

- DEET
- 2,4-D
- Capsaicin
- Diazinon
- Signal Words (Topic)

npic
NATIONAL PESTICIDE INFORMATION CENTER

DEET GENERAL FACT SHEET

What is DEET?
DEET is an insect repellent that is used in products to prevent bites from insects such as mosquitoes, biting flies, fleas and small flying insects. DEET is a colorless liquid that has a faint odor and does not dissolve easily in water. DEET was developed by the U.S. Army in 1946 for protection of soldiers in insect-infested areas. Insect repellents containing DEET have been used by the general public in the United States since 1957.

What are Some Products that Contain DEET?
DEET has been used in a number of insect repellent products including liquid sprays, lotions, and sticks. It has been estimated that about 30% of the U.S. population uses one or more products that contain DEET every year.

How does DEET work?
Scientists do not know exactly how DEET works on all insects. Some insects sense people by detecting the chemicals from our bodies and in the air that we breathe out. It has been shown that insects exposed to DEET are not able to locate a person or animal because they cannot detect them.

How Might I Be Exposed to DEET?
There are four ways that people can be exposed to chemicals: contacting their skin, contacting their eyes, breathing them in, or eating them. DEET is often used directly on skin. DEET may also be inhaled when sprays are used around the body and in indoor spaces where the vapors can remain for some time. It may also be possible to swallow DEET if the hands are not washed after using DEET on skin. People have had adverse reactions to DEET when they applied it to parts of their body that contacted other skin surfaces, and when they applied it to skin that was under clothing. Exposure to DEET can be limited by reading the pesticide label and following all of the directions.

What are Some Symptoms from a Brief Exposure to DEET?
When products containing DEET get into the eyes, they may cause irritation, pain and watery eyes. People that have left DEET products on their skin for extended periods of time have experienced irritation, redness, a rash and swelling. People that have swallowed products containing DEET have experienced stomach upset, vomiting and nausea. Very rarely, exposure to DEET has been associated with seizures in people. Most of these reactions have happened after drinking products with DEET in them or using the products in ways that do not follow the directions on the label.

NPIC General Fact Sheets are designed to provide scientific information to the general public. This document is intended to promote informed decision-making. Please refer to the Technical Fact Sheet for more information.

National Pesticide Information Center 1.800.858.7378 1

ACHIEVEMENTS



Jennifer - Senior Fact Sheet Editor

The following technical fact sheets were begun during this grant year: Acephate, Aliphatic Solvents, Carbaryl, Chlorpyrifos, D-phenothrin, Glyphosate, Malathion, Paradichlorobenzene, Naphthalene, Bifenthrin, Imidacloprid, Boric Acid, Metaldehyde, Pyrethrins and Zinc Phosphide.

The following general fact sheets were begun during this grant year: Resmethrin, Picaridin, Permethrin, Deltamethrin, Acephate, Carbaryl, Chlorpyrifos and Glyphosate.

The following topic fact sheets were begun during this grant year: Rodenticides, Indoor Pesticide Residue, Ways to Minimize Exposure, and Pesticides in Indoor Air.

Common Pesticide Questions (CPQs) - Case Profiles were renamed “Common Pesticide Questions” in 2008. Andrea Christiansen served as the project’s Facilitator. The titles of individual CPQs were changed to a question-and-answer format. Cameron Carlson designed and implemented a new visual layout template to increase the visual appeal of the publications. In addition, the CPQ website was overhauled to facilitate ease of use and information retrieval.

NPIC collaborated with a graphic artist to develop custom images for the CPQ collection. A unique image serves as an icon for each one, drawing viewers to click on interesting topics.

NPIC developed and posted the following CPQs this year:

- How Can I Wash Pesticides from Fruits and Veggies?
- When to Plant After Using Weed Killer?
- How Do I Clean and Disinfect Toys?
- Dirty Work Clothes: How Should I Wash Out Pesticides?
- With a Baby on the Way... Is it Okay to Spray?

NPIC updated five CPQs this year to reflect regulatory changes and/or language improvements. The whole collection of 22 publications was revised to incorporate new images and design elements.

PestiByte PODcasts - NPIC entered into collaboration with the Community Outreach and Education Core of the Environmental Health Sciences Center (EHSC) at OSU. The EHSC is funded by the National Institute of Environmental Health Sciences (NIEHS), and shares the common goal of “promoting informed decision-making through education.” Working together, NPIC staff and the Outreach Coordinators from EHSC (Sandra Uesugi and Naomi Hirsch) developed the framework to start producing PODcasts related to pesticides. PestiBytes are 1-2 minute audio clips, often based on common pesticide questions.

PREGUNTAS COMUNES PESTICIDAS

¿Cuándo plantar después de usar un herbicida?

Julia compró su primera casa a tiempo para la primavera y estaba emocionada por plantar un jardín. Julia encontró el lugar perfecto, pero la maleza y el césped habían crecido en exceso. Julia estaba impaciente por despejar el área y preparar el suelo para su jardín, así que pidió consejo a su comerciante local. El representante de ventas le recomendó un **pesticida** llamado “Round Up”. Le dijo que aplicara el producto a las plantas no deseadas de acuerdo a las instrucciones en la etiqueta, y que debería empezar a ver resultados dentro de un par de días.

Al día siguiente, Julia roció la maleza y el césped con Round Up. Después de unos días Julia se emocionó al ver que la maleza comenzaba a marchitarse y perder su color verde. Sin embargo, Julia comenzó a preguntarse lo que esto significaría para las plantas deseables que estaban alrededor del área y para las verduras que pronto sembraría en el mismo suelo. ¿Podría Round Up moverse por el suelo y dañar sus flores? ¿Acaso permanecería en el suelo evitando que sus verduras crecieran o causando que se marchitaran como las hierbas? ¿Cuánto tiempo debería esperar para plantar su jardín? Julia tenía muchas preguntas y decidió llamar al [Centro Nacional de Información de Pesticidas](#) (NPIC) para obtener respuestas.

[Haga clic aquí](#) para descubrir lo que Julia aprendió cuando llamó a NPIC.

Llámenos gratuitamente al **1.800.858.7378**
los 7 días de la semana de 6:30 a.m. a 4:30 p.m. Hora del Pacífico.
Visítenos en internet a <http://npic.orst.edu/index.es.htm>

ACHIEVEMENTS

NPIC posted the following PestiBytes this year:

- What Should I Do During Mosquito Spraying?
- Should Kids Use Bug Spray?
- A Mothball Mishap?
- How Can I Wash Pesticides From Fruit and Veggies?
- About NPIC

PestiByte PODcasts

Listen to the voice of NPIC! Our new PestiBytes PODcasts feature NPIC specialists discussing [common pesticide questions](#) from people like you. PestiBytes are short (1-2 minute) interviews with NPIC pesticide specialists on each of the topics. Watch for more to come!

Available PestiByte PODcasts:



What Should I Do During Mosquito Spraying? Episode 5 - A specialist answers questions about why city health departments might spray for mosquitoes and ways people can avoid contact with the mosquito spray. [Download and Listen](#), [View Transcript](#) - 1:39 min., 1.50MB



Should Kids Use Bug Spray? Episode 4 - A specialist lists precautions a parent might take if they choose to use insect repellents on children. [Download and Listen](#), [View Transcript](#) - 2:07 min., 1.94MB



A Mothball Mishap? Episode 3 - A specialist debunks mothball myths and describes how improper use of mothballs can lead to unpleasant or even unhealthy results. [Download and Listen](#), [View Transcript](#) - 1:32 min., 1.41MB



How Can I Wash Pesticides From Fruit and Veggies? Episode 2 - A specialist discusses how to best wash pesticide residues from produce, including potential risks of using household products to clean fruit and vegetables. [Download and Listen](#), [View Transcript](#) - 1:41 min., 1.54MB



About NPIC Episode 1 - Our director discusses how NPIC can assist people when making decisions about pesticides. Ways to contact NPIC are provided. [Download and Listen](#), [View Transcript](#) - 2:07 min., 1.95MB

NPIC developed a new web page showcasing the whole PestiBytes collection at <http://npic.orst.edu/pesti-bytes>. The PestiByte Facilitator, Andrea Christiansen, developed procedures to facilitate regular additions to NPIC's collection of PODcasts. She trained staff and developed guidance documents. The team plans to develop PestiBytes in Spanish in 2009.

Active Ingredient (AI) Files – NPIC acquired 825 new documents for inclusion in the AI file collection this year, including all relevant EPA Fact Sheets, Risk Assessments and Reregistration Eligibility Decisions (REDs). NPIC added five (5) new AI files to its collection, totaling 985 files at the conclusion of the grant year. The AI committee updated eight (8) AI files by adding new and relevant data obtained from literature searches. NPIC added 17 REDs to the collection, which now contains 448 REDs, IREDs and TREDs. NPIC started a new collection of Registration Review Documents (RRDs) in order to continue seeking the latest science and regulatory information available. Ten (10) documents were added to the new RRD collection this year.

Bryan Harper trained Kristina Wick and Humberto Nation to monitor the Federal Register (epa-pest), and to monitor associated dockets for current science and regulatory information. Student assistants took a comprehensive inventory to ensure that all files were present and appropriately filed. Aging files were replaced and corrections were made in the files and its companion database.

General Files - NPIC maintains 265 general files that span the range of pesticide-related topics. Examples include Agent Orange, the Endocrine Disrupter Screening Program, Drift and Multiple Chemical Sensitivity. Suzanne Phillips coordinated the efforts of student assistants performing data entry, quality control activities and filing.

NPIC added 15 new files and over 800 new documents to the General File collection this year, and the team finished a multi-year effort to evaluate, update and scan the entire collection for easy electronic access by staff.

NPIC scanned 56 files this year. Prior to scanning a general file, Ms. Phillips performed quality assurance/quality control steps to ensure that the documents were appropriately science-based and the bibliographic data were accurately represented in the files' companion database.

Intranet (Inet) - NPIC's internal web pages, referred to as the Inet, were updated weekly to provide the team with real-time access to updated schedules, standard operating procedures, coding guidance and quick-reference tools. Human incident reports were also posted to the Inet regularly.

NPIC maintained and improved its collection of Standard Operating Procedures (SOPs) this year, making changes to dozens of procedures throughout the course of the grant year. Several processes were stream-lined and/or updated to reflect new language capabilities and safety procedures. Three SOPs were significantly updated, including "Transferring Limited English Speaking Callers," "NPIC Staff Procedure During a Power Outage" and "Reporting Human Deaths, Group Illnesses, or Group Deaths."

Resource Book - NPIC expanded and updated the Resource Book throughout the year. This hard-copy resource provides specialists with quick access to frequently requested information, including contact information for health departments, educational resources, local, state, and federal agencies, state con-

ACHIEVEMENTS

tacts for WPS questions, healthy homes-state program coordinators, organic certifiers, household hazardous waste contacts, occupational, and wildlife agencies. Andrea Christiansen led the project this year, and she supervised a thorough update of the Resource Book. The team verified contact information, websites and mailing addresses for thousands of resources including local OSHA offices, state wildlife agencies, California Agricultural Commissioners, university extension resources and more.

This year, NPIC converted all of the Resource Book contents into a web-accessible format in order to facilitate more timely updates and ease of access and posted it to NPIC's internal website. A new tracking system for the Resource Book was organized and implemented to support consistency and to facilitate future updates.

Training and Continuing Education

Training - Bryan Harper and Kaci Agle undertook a substantive revision of NPIC's training manual, which includes over a dozen chapters and 200 pages. Sections were reorganized and content updated to reflect modern pesticide use patterns and hot topics. The manual was reorganized into discrete sections with corresponding checklists for additional instruction and verification of learning objectives. The new version focuses more on computer resources than the previous version and will likely cut 2 to 5 days off the training process.

Trainer - Bryan Harper completed a rigorous training process and assumed the role of Primary Trainer for pesticide specialists.

Specialists – Four pesticide specialists completed the training program, and one started the program during this grant year. The training program includes a comprehensive training manual, several facilitated exercises, mentored practice in risk communication and fourteen sessions of one-on-one instruction from the Primary Trainer. To maintain consistency and leverage the value of NPIC's diverse team, all pesticide specialists participate in the training program, devoting 5-10 hours of their time to each new specialist.

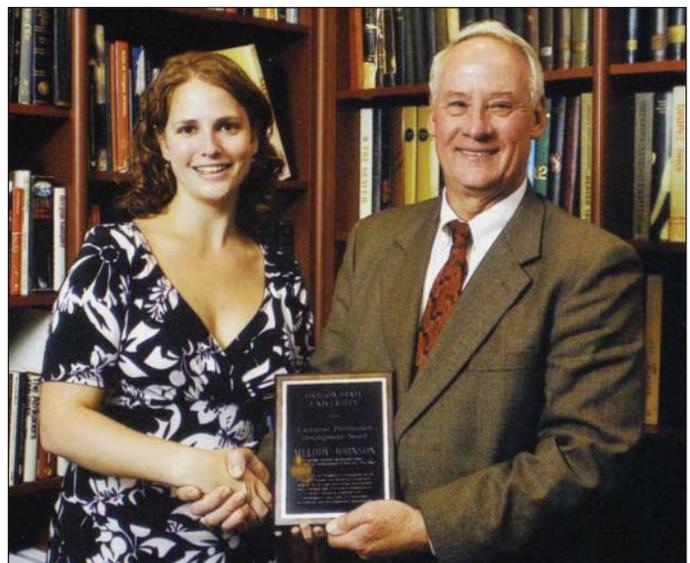
Each new specialist who has not been formally trained in toxicology attended university courses as part of a three-term series in graduate-level toxicology. These courses are offered within the Environmental & Molecular Toxicology Department at OSU. One specialist attended Fundamentals of Toxicology (TOX 511), two

specialists attended Target Organ Toxicology (TOX 512) and Environmental Toxicology and Risk Assessment (TOX 513).

Student Assistants –Two undergraduate students at OSU completed the student assistant training program this year. Student assistants provide administrative/clerical support to NPIC. To incorporate lessons learned from the first training event, NPIC revised and updated its training manual for student workers.

Continuing Education - NPIC places emphasis on continuing education for pesticide specialists in order to maintain the highest level of service, relying on the most up-to-date science and regulatory information. Building and maintaining a strong knowledge base is a significant part of each specialist's duties.

Melody Johnson was awarded the University Professional Development Award by Oregon State University President, Ed Ray, in September 2008. The award recognized her achievements in promoting an atmosphere of learning and inquiry at NPIC. Ms. Johnson became the Facilitator of Continuing Education in 2006. After two years, the emphasis on professional development has increased. Three out of four weekly staff meetings include some kind of professional development event.



Melody - Continuing Education Facilitator

NPIC hosted or attended 31 continuing education events this year. Examples include campus seminars, invited speakers, regional conferences and staff development initiatives. See Figure 3 on the next page for a more details.

ACHIEVEMENTS

Figure 3 - Continuing Education Events (April 1, 2008 - March 31, 2009)

Date	Speaker/Source	Speaker's Affiliation	Event Title
4/24/08	Tim Stock	Pesticide Safety Education Coordinator, OSU	Pesticides in Cambodia: snapshots from a single day
5/12/08	Dr. Paul Jepson and Dr. Hans Luh	Integrated Plant Protection Center	Risk Assessment in Agriculture
5/29/08	Rose Kachedoorian and Dr. Joe DeFrancesco	Oregon Department of Agriculture and OSU Extension	Crop Groups and Tolerances
7/3/08	Angie Perez	OSU	Bioavailable metals in agricultural soils and crops
8/21/08	Dr. Stacey Harper	OSU	Nanopesticides and Environmental Governance
8/21/08	Bryan Luukinen	NPIC Specialist	Issues in Organic Agriculture, or "What's on my plate and how did it get there?"
8/28/08	Andrea Christiansen	NPIC Specialist	Cancer and Risk Communication
9/11/08	Chris Wirth	Multnomah County Vector Control	Vector Surveillance and Control in Oregon
9/25/08	Discovery Channel	DVD	Dirty Jobs - Mosquito Control Officer; Disaster Clean up
10/2/08	Mike Babbitt	Oregon Department of Agriculture	State Pesticide Regulatory Agency
11/6/08	Dr. Fred Berman	CROET, OHSU	CROET and TIC Resources
11/13/08	Michael Peterson, DVM	Veterinarian	Pesticides and Pets
11/20/08	Rachelle Travers	NPIC	Carbaryl RED summary
12/4/08	Andrew Black	Oregon Tilth	Organic Agriculture
12/11/08	Rachelle Travers	NPIC	Integrated Pest Management
12/12/08	Kerri Stanley	OSU	Tadpole Exposure to Semi-Volatile Organic Compounds in the Mountains of California and Investigations into the Developmental Effects of Endosulfan
1/6-1/7/09	Several	Academic, regulatory, etc.	Chemical Applicator Short Course
1/8/08	Sandy Giffin and Brian Arzen	Oregon Poison Control	Poison Centers
1/20/09	Dr. Felicia Wu	University of Pittsburgh	Global Impacts of Aflatoxin Policies: How to Assess Public Health Interventions
1/21/09	Staci Simonich	EMT, OSU	Atmospheric Transport of Persistent Pollutants from China
1/27/09	Several	Academic, regulatory, etc.	Non Crop Vegetation Management Course
2/3/09	Several	Academic, regulatory, etc.	IPM Short Course
2/12/09	David Blake	Northwest Clean Air Agency	Mold in Your Home: Causes, Prevention and Cleanup
2/19/09	Jaga Giebultowicz, Louisa Hooven, Natraj Krishnan	OSU	Role of biological blocks in the regulation of insect susceptibility to pesticides and oxidative stress
2/20/09	Dr. Prabhu Pingali	Bill and Melinda Gates Foundation	Tackling chronic hunger and poverty through Ag development: Bill and Melinda Gates Foundation
2/26/09	Specialists	NPIC	Busy Season Preparation
3/5/09	Chris Marshal	OSU	Arthropod Collection
3/12 and 3/19/09	Melody Johnson	NPIC	Severity Index training
3/17/09	Dr. Susan Carroza	School of Rural Public Health, Texas A&M	Agricultural Pesticides and the Risk of Childhood Cancers
3/19/09	Dr. Jeff Morrell	OSU	Wood Preservatives
3/24-3/26/09	Several	Academic, regulatory, etc.	Sixth International IPM Symposium

ACHIEVEMENTS

Outreach

Overview - NPIC used new approaches to reach targeted groups this year including veterinary professionals, Spanish-speakers and underserved audiences. NPIC attended three conferences in order to raise awareness about NPIC service capabilities among public health, academic and regulatory professionals.



Jessica - Pesticide Specialist

As a result of both proactive outreach activities and requests from NPIC clientele, NPIC distributed 120,319 brochures this year. The majority (89,690) were requested by callers and recipients of NPIC mailings. See Figures 5 and 6 on page 20. NPIC reached out to specific audiences to provide information about NPIC services and pesticide safety. NPIC proactively provided 30,629 brochures this year using several methods; they are summarized in Figure 7 on pages 24 and 25.

Twenty percent (20%) of proactive outreach activities were aimed at reaching under-served audiences such as low-income families and Spanish-speakers. Fifteen percent (15%) of activities were intended to reach farmers, workers and pesticide applicators. Of those individuals requesting NPIC brochures by mail or phone, 50% were public health professionals, often representing local health departments.

Outreach to Veterinary Professionals -

NPIC released a new Veterinary Incident Reporting Portal (VIRP) in October 2008. In consultation with Dr. Kit Farwell (OPP) and the NPIC Project Officer, Frank Davido, NPIC developed a promotional postcard describing the purpose and procedures of the site (see Figure 4). In the following grant year, this card was mailed to over 4,600 veterinarians and professional or-

ganizations. NPIC worked with the American Society for the Prevention of Cruelty to Animals (ASPCA) and the Veterinary Information Network (VIN) to spread the word in their newsletters and online networks.

The Office of Pesticide Programs published an announcement in its "EPA Pesticide Program Update" on December 10, 2008. The American Veterinary Medical Association (AVMA) published an announcement about the portal in the November issue of the journal, JAVMA.

Outreach to Spanish-Speakers - Since expanding its Spanish capabilities in 2007, NPIC continued to proactively reach out to Spanish-speakers this year. After attending the Western Migrant Stream Forum and presenting a booth, NPIC mailed additional information to 155 attendees in May. NPIC staff collaborated with the Migrant Clinicians Network to develop an article for *Streamline*, a publication for practicing clinicians. Rachelle Travers participated in a regional work-group to develop training for Spanish-speaking landscapers in Integrated Pest Management (IPM).

Figure 4 - VIRP promotional card (front & back)

Make a Difference
Report Adverse Reactions to Pesticides!

There is a **new** reporting mechanism online, and it was designed to be **quick** and **easy** for busy veterinarians.

About 30,000 reports of adverse effects in pets are received by the US EPA each year. Reports vary in quality, and this portal is expected to generate more reliable data on pesticide incidents, from veterinarians like you.

<http://npic.orst.edu/vet>

The reporting site was developed by the National Pesticide Information Center with input from the EPA Office of Pesticide Programs, the AVMA Clinical Practitioners Advisory Committee and the AVMA Council on Biologic and Therapeutic Agents.

HOW TO REPORT...
adverse reactions to pesticides

- 1) Go to <http://npic.orst.edu/vet>
- 2) Answer required questions
- 3) Click "Save"

If you have questions, call 1-800-858-7378, seven days a week

Thank you for your time!

npic NATIONAL PESTICIDE INFORMATION CENTER
The National Pesticide Information Center (NPIC) is a cooperative effort between Oregon State University and the United States Environmental Protection Agency.

OSU OREGON STATE UNIVERSITY

ACHIEVEMENTS

Figure 5 - Materials Provided by NPIC Upon Request

Audience Name	Number of Requests	Number of English Brochures	Number of Spanish Brochures	Number of Other Materials
Animal Caretakers	5	1400	0	15
Emergency Management Services	9	2172	985	149
Environmental and Municipal Agencies	5	286	235	316
Environmental Protection Agency	6	540	510	1708
Farmers, Workers and Applicators	29	3565	3095	226
Gardeners	19	3525	405	558
General Public	53	743	25	125
Industry	3	800	600	35
Other	8	529	351	718
Parents & Children	27	3402	570	389
Physicians	7	2795	1070	146
Public Health Information Services	235	29356	14305	2408
State Pesticide Agencies	33	6765	1910	511
Tribes	8	1575	1085	82
Underserved	25	2453	4638	1038



Kristina - E-mail Team Member

Figure 6 - Materials Provided by NPIC through Proactive Outreach Activities

Audience Name	Number of Activities	Number of English Brochures	Number of Spanish Brochures	Number of Other Materials
Animal Caretakers	2	125	60	110
Emergency Management Services	2	129	0	258
Environmental and Municipal Agencies	3	680	50	535
Environmental Protection Agency	2	265	200	112
Farmers, Workers, and Applicators	12	1971	150	1307
Gardeners	6	3541	130	6364
General Public	1	25	25	70
Industry	3	545	75	70
Other	9	906	170	556
Parents & Children	1	54	0	108
Physicians	5	6522	525	11598
Public Health Information Services	9	6016	3174	11162
State Pesticide Agencies	3	517	0	259
Tribes	5	791	0	1657
Underserved	17	3287	696	6268

ACHIEVEMENTS

Upon launching a new Spanish-language version of its website in September 2008, NPIC sought low-cost mechanisms for marketing the site. NPIC distributed announcements to several electronic mailing lists including the Association of American Pesticide Safety Educators (AAPSE), The Association of American Pesticide Control Officials (AAPCO), AgHealth (distributed by UC Davis), Promator/a Program News, the Migrant Clinicians Network, NIOSH pesticide injury surveillance list, and SchoolBugs (distributed by the University of Florida). NPIC featured the new site in the "New & Notable" section of its website, and the Office of Pesticide Programs announced the launch in the EPA Pesticide Program Updates.

NPIC sent targeted mailings to over 600 migrant health clinics, 68 minority health consultants, 53 Offices of Multicultural Health and over 1,500 Habitat for Humanity offices. Many of them responded by requesting additional brochures or information.



Matt - Outreach Team Member

Collaborations - Kaci Agle participated in a nationwide workgroup to review new training materials on Integrated Pest Management (IPM). They were developed for public housing authorities. Kathy Seikel, of the Office of Pesticide Programs, led the team in an August webinar where feedback was provided to curriculum developers. Ms. Agle attended the training when it was delivered to personnel from the King County Public Housing Authority in December.

Rachelle Travers worked with a team of pesticide educators to create a two-day training curriculum for Spanish-speaking landscapers. The team was led by Becky Hines of Washington State University, and it was funded through the Western IPM Center (USDA). Ms. Travers developed the module related to insect

IPM and attended the pilot delivery in October. NPIC will be highlighted each time the training program is delivered.

NPIC collaborated with the Environmental Health Sciences Center at OSU, which is funded by the National Institute of Environmental Health Sciences (NIEHS), to produce PODcasts related to pesticides.

NPIC collaborated with the National Association of Local Boards of Health (NALBOH) to develop an article for the *NALBOH Newsbrief*, a quarterly magazine distributed to thousands of board members. The article, called *Pesticide DOs & DON'Ts*, will be published in May 2009.

NPIC entered into a collaborative working relationship with the National Environmental Health Association (NEHA). NPIC sent brochures and other resources to two NEHA training events on insect biology. Future opportunities may include collaborations to provide training to environmental health technicians as a part of NEHA's credential program.

NPIC provided illustrations from its collection to the National Education Association for use in developing on-line training tools for its members on "Indoor Air Quality in Schools."

Other Outreach News - NPIC monitors the open literature to track the number and type of references to NPIC in the media. This year, NPIC was mentioned in over 220 newspapers, magazines and online news sites. Approximately 75 articles were related to the stop-sale, use or removal order issued by EPA to the Scotts Miracle-Gro Company in April 2008.

NPIC conducted its annual bulk mail-out in March sending over 15,000 customized letters to targeted audiences. NPIC aims to raise awareness about the information and services available from NPIC at the beginning of the pest/pesticide season each year. In 2009, emphasis was given to underserved audiences and organizations that serve them, for example, Habitat for Humanity, WIC programs and Migrant Clinics.

For the first time this year, NPIC purchased the mailing list for over 5,000 members of the Association of Occupational Health Nurses (AAOHN). NPIC also created a new list for almost 3000 county offices affiliated with University Extension Services. Focus was also placed on tribal groups, in addition to state agencies, poison control centers, and local health departments. Over

ACHIEVEMENTS

600 business reply mailers were returned to NPIC soon after the bulk mail-out resulting in requests for over 80,000 NPIC brochures.

For the first time, NPIC exhibited a booth at the annual meeting of the American Public Health Association (APHA) in October. NPIC reached out to “gatekeeper” organizations in an effort to increase the number of referrals to NPIC from groups like the Center for Minority Health, the Nurse-Family Partnership and the National Organization of State Offices of Rural Health. The NPIC delegation also attended scientific sessions on risk communication, Integrated Pest Management, water quality, cultural competence and other topics.

Dr. Stone and Kari Christensen presented a poster about NPIC at the annual meeting of the Oregon Public Health Association (OPHA), which was held on the campus of Oregon State University.

Kaci Agle, Bryan Harper and Melody Johnson attended the International IPM Symposium in Portland, Oregon in March. NPIC exhibited a booth, disseminated outreach materials and described IPM resources available by calling NPIC. Melody Johnson, Kaci Agle and Dr. Stone presented a poster titled, “The National Pesticide Information Center: Integrating Risk Communication with IPM Resources for the General Public.” See Figure 2 on page 10.

Resources

NPIC acquired many books, reports, and other documents in 2008. Acquired books include: *Crop Protection Products for Organic Agriculture: Environmental, Health and Efficacy Assessment*, Felsot, A., 2007; *Concepts in Integrated Pest Management*, Norris, R., 2003; *Tomorrow's Table: Organic Farming, Genetics, and the Future of Food*, Ronald, P., 2008; *War on Bugs*, Allen, W., 2008; *Toxicology Testing in the 21st Century: A Vision and a Strategy*, National Research Council, 2007; *Applications of Toxicogenomic Technologies to Predictive Toxicology and Risk Assessment*, National Research Council, 2007; *Water Quality and Quantity Issues for Turfgrasses in Urban Landscapes*, Council for Agricultural Science and Technology, 2006; *Risk Assessment for Chemicals in Drinking Water*, Howd, R., 2008; *Fundamentals of Ecotoxicology*, Newman, M., 2003; *Pesticides: An International Guide to Pest Control Chemicals*, Milne, G., 2004.; *Integrated Pest Management Concepts, Tactics, Strategies and Case Studies*, Cambridge University Press, 2009; *Bed Bug*

Handbook: A Complete Guide to Bedbugs and Their Control, Pinto, L.J., December 2007; *Crop Protection Handbook 2008: The Global Industry Standard*, Meister Pro, January 2008; *Casarett & Doull's Toxicology: The Basic Science of Poisons*, Curtis D. Klaassen, January 2008; *2008 TLVs and BEIs*, ACGIH, January 2008; *Veterinary Toxicology: Basic and Clinical Principles*, G C. Gupta, January 2007; *Science and Decisions: Advancing Risk Assessment*, National Research Council, 2009.

NPIC acquired the following US EPA, Office of Pesticide Programs, Reregistration Eligibility Decision (RED) documents: *RED Ethylene Oxide*, March 2008; *RED Prometon*, March 2008; *RED Nicotine*, March 2008; *RED Copper 8-quinolinolate*, September 2007; *RED Copper and Zinc Naphthenate Salts*, September 2007; *RED 2-Octyl-3 (2H)-isothiazolone (OIT)*, September 2007; *RED Alkyl trimethylenediamines*, September 2007; *RED Trimethoxysilyl Quaternary Ammonium Chloride Compounds*, September 2007; *RED Tetramethrin*, June 2008; *RED Chloropicrin*, July 2008; *RED Methyl Bromide (soil and non-food structural uses)*, July 2008; *RED Dazomet*, July 2008; *RED Methylthiocarbamate Salts (Metam-sodium, Metam-potassium) and Methyl Isothiocyanate (MITC)*, July 2008; *RED Siduron*, May 2008; *RED Capric (Decanoic) Acid*, June 2008; *RED Soduim Hydroxide*, June 2008; *RED Nosema (Paranosema) Locustae*, July 2008; *RRD Linalool*, September 2008; *RRD Trichoderma Species*, September 2008; *RED Naphthalene*, September 2008; *RED d-Phenothrin*, September 2008; *RED Acrolein*, September 2008; *RED Sulfometuron Methyl*, September 2008.

NPIC added the following publications from DHHS/ATSDR to its library this year: *Toxicological Profile for Cadmium (Update)*, September 2008; *Toxicological Profile for Chromium (Update)*, September 2008; *Toxicological Profile for Manganese (Update)*, September 2008; *Toxicological Profile for Radon (Update)*, September 2008.

NPIC obtained the following book from the World Health Organization: *Public Health Significance of Urban Pests*, WHO, 2008. Other publications received by NPIC include: *Public Health Reports*, Association of Schools of Public Health (regular issues); *Continuing Pesticide Data Program Annual Summary*, Calendar Year 2006, U. S. Department of Agriculture, December 2001; *Code of Federal Regulations 40, Parts 150-189, Protection of Environment*, U.S EPA, July 2008.

ACHIEVEMENTS

Facilities

To replace aging desktop computers, three Apple Macintosh workstations were purchased. To improve the ability to provide service during power outages, NPIC acquired an American Power Conversion Smart-UPS XL battery-backup system and five additional extended-run battery packs. NPIC plans to upgrade server systems during the upcoming grant year.

Personnel Update

NPIC hired four full-time pesticide specialists throughout the year. Four pesticide specialists resigned during this period. In addition, one pesticide specialist, Dr. Jennifer Gervais, reduced her appointment to 0.625 FTE (25 hours per week) in order to pursue ecological research projects. Another pesticide specialist, Dixie Jackson, increased her part-time appointment from 0.49 to 0.70. Two student workers were hired to assist with office support. NPIC continued recruitment efforts for other full-time specialists.

NPIC's current staff includes a full-time project coordinator, eleven full-time, and two part-time pesticide specialists, a full-time information resource supervisor, a full-time administrative professional, a part-time fiscal/personnel manager, and three part-time undergraduate student assistants. In addition, the NPIC Executive Committee includes the Director, and two co-investigators, all of which hold faculty appointments within the Department of Environmental & Molecular Toxicology at OSU. All specialists have at least a bachelor's degree in a scientific field. Several staff have a Masters of Science or Masters of Public Health degree and one specialist has a Ph.D. Specialists have a variety of scientific backgrounds including toxicology, biology, biochemistry, environmental science, public health, microbiology and hydrogeology.



Andrea - CPQ / PODcast Facilitator



Foreign Language Team Member

ACHIEVEMENTS

**Figure 7 -
Proactive Outreach Events with Brochure Distribution (April 1, 2008 - March 31, 2009)**

Date	Project Name	Project Activity	English Brochures	Spanish Brochures	Other Materials
4/6/08	2008 National Air Quality (NAQ) Conference	Provided literature unattended.	375	25	0
4/8/08	Priester National Extension Health Conference	Provided literature unattended.	200	200	0
4/13/08	5th Annual Nutrition & Health Conference	Provided literature unattended.	500	25	2
4/17/08	National Hispanic Medical Association Annual Conference	Provided literature unattended.	500	500	202
4/17/08	Migrant Stream Forum	Mailed NPIC information to over 150 meeting participants.	155	155	155
4/22/08	OSU Community Fair Earth Day	Attended fair and exhibited a booth.	50	25	100
4/23/08	2nd Annual OSU Agriculture Career Showcase	Attended fair and exhibited a booth.	65	10	0
5/1/08	Migrant Clinicians Network Newsletter "Streamline"	Contributed an article about NPIC services highlighting Dr. Sudakin's role.	0	0	0
5/3/08	Oregon State University Pet Day	Provided literature unattended.	75	10	10
5/5/08	Aquatic Weed Control Short Course	Provided literature unattended.	400	100	0
5/13/08	Western Region Pesticide Meeting	Attended, presented and disseminated materials.	100	50	0
5/14/08	Workshop for Nursery & Greenhouse Growers	Provided literature unattended.	60	30	0
5/27/08	2008 Weeds Across Borders	Provided literature unattended.	170	0	0
6/18/08	Southern Region Master Gardener Conference	Provided literature unattended.	400	0	400
6/22/08	National Environmental Health Association	Attended conference, presented, exhibited a booth and disseminated materials.	350	150	460
6/22/08	National Institute for Farm Safety	Provided literature unattended.	125	25	0
6/23/08	Critical Access Hospital and Rural Health Conference	Provided literature unattended.	5	5	1
6/26/08	OSU Extension Pesticide Safety and Education	Provided literature unattended.	100	100	1
7/13/08	9th International Vaccinium Conference	Provided literature unattended.	1	0	2
8/8/08	Association of American Feed Officials	Provided literature unattended.	375	0	375
8/14/08	Polk County Migrant Head Start Meeting	Attended, presented and disseminated materials.	10	50	40
8/15/08	Colegio de Medicos Vetrinarios de Puerto Rico	Provided literature unattended.	50	50	50
8/18/08	North Central Region Pesticide Education and Certification Workshop	Provided literature unattended.	70	0	70

ACHIEVEMENTS

Figure 7 (cont'd) -
Proactive Outreach Events with Brochure Distribution (April 1, 2008 - March 31, 2009)

Date	Project Name	Project Activity	English Brochures	Spanish Brochures	Other Materials
10/6/08	Oregon Public Health Association	Presented a poster and disseminated materials	20	20	60
10/7/08	Western Horticultural Inspection Society	Attended, presented and disseminated materials.	100	25	25
10/13/08	Washington State University Integrated Pest Management	Contributed insect training module, attended and delivered portions of a 2-day training course for Spanish-speaking landscapers.	300	300	120
10/25/08	American Public Health Association	Attended, exhibited at booth and disseminated materials.	3,000	3,000	3,000
10/26/08	Minnesota Invasive Species Conference 2008	Provided literature unattended.	300	0	0
12/10/08	IPM in Multi-Family Housing - King County	Attended and mailed information to attendees of IPM training day.	20	0	20
1/6/09	Chemical Applicators' Short Course	Attended and delivered a presentation.	0	0	0
1/12/09	California Weed Science Society	Provided literature unattended.	150	0	10
1/13/09	Montana Weed Control Association	Provided literature unattended.	250	0	0
1/25/09	Mosquito & Vector Control Association of California 77th Annual Conference	Provided literature unattended.	400	0	25
2/3/09	IPM Training for Pesticide Applicators	Attended and delivered a presentation.	0	0	0
2/4/09	Virginia Mosquito Control Association	Provided literature unattended.	125	0	25
2/4/09	International Conference on Contaminated Soil	Provided literature unattended.	200	0	25
2/5/09	Helena Chemical Spring Forestry Meeting	Attended, presented and disseminated materials.	50	0	30
2/19/09	Nebraska Urban Pest Management Conference	Provided literature unattended.	200	0	200
2/22/09	International Master Gardener Conference	Provided a 2' x 3' poster describing NPIC services for display at the conference.	0	0	0
2/26/09	Midwest Organic and Sustainable Education Service Conference	Provided literature unattended.	200	25	25
2/28/09	California State Association of Occupational Health	Provided literature unattended.	150	0	450
3/10/09	National Environmental Health Association - Insect Biology Workshop	Provided literature unattended.	0	0	75
3/24/09	2009 International IPM Symposium	Exhibited a booth, presented a poster and disseminated materials.	100	25	375

Data Summary

Specialists record pertinent information for every inquiry received at NPIC via telephone or e-mail. This information is entered into the NPIC Pesticide Inquiry Database (PID), an electronic database used to record information for all inquiries to NPIC. Generally, there are two types of inquiries received by NPIC: 1) those for general or specific information about pesticides and pesticide-related issues and 2) inquiries about pesticide incidents. For example, an inquirer might ask a question about pesticides in foods (a general information inquiry) or about the toxicity of a particular pesticide (a pesticide-specific information inquiry). An inquiry to report an exposure to a pesticide is an example of an incident inquiry. The type and amount of information entered into the PID depends on whether the inquiry was for information or to report a pesticide incident. Information collected and entered into the PID for information inquiries includes:

- origin of inquiry (e.g., telephone or e-mail)
- state from which the inquiry originated
- type of person (e.g., general public, government agency, or medical personnel)
- type of inquiry (e.g., request for pesticide information)
- reason for inquiry (e.g., concern/knowledge in the case of information inquiries)
- action required (e.g., verbal information, referral, or mailed information)

If a specific pesticide product or active ingredient is discussed, the product and/or active ingredient is entered into the database. Details of an inquiry, including what the inquirer told or asked the specialist and how the specialist responded to the inquirer, are recorded as a narrative statement in the PID.

When incidents are reported, more detailed and specific information is recorded, including:

- type of incident (e.g., exposure, spill, drift)
- location of the incident
- circumstances surrounding the incident
- information about the person or animal, including age and gender
- route of exposure
- reported symptoms and time to onset
- product information
- EPA registration number
- type of application
- contact information

For incidents involving reported human or animal health effects, and for environmental incidents, a certainty index is assigned. The certainty index is an estimate by NPIC (based on information provided by the inquirer) as to the likelihood that the reported effects were caused by exposure to a pesticide. Additionally, if an incident involves an environmental impact, the nature of the impact is recorded in the database (e.g., impact to air, water, or soil).

Starting in the fifteenth grant year (2009-2010), a severity index will be implemented for human incidents.

Summary of Tables, Charts and Graphs

See pages 30 through 50 for additional details.

There are three main means of inquiry to NPIC: telephone, e-mail, and the internet. For purposes of this report, use of the terms “inquiry” and “inquirer” generally refer to use of the telephone or e-mail to contact NPIC. Unless otherwise specified, inquiries to NPIC via the web are referred to as “hits”.

NPIC received 26,440 inquiries during its fourteenth year of operation (April 2008 - March 2009) at Oregon State University. Most of the inquiries received by NPIC are complex, requiring expertise on the part of the specialists to be able to provide answers which are objective, science-based and, at the same time, discussed in an understandable manner.

A summary of the number of telephone inquiries received each month is provided in Table 1.1 and Graph 1.1. Also included in Table 1.1 is a listing of the total number of inquiries by calendar year. Most inquiries occurred during the period from March to October.

The types of inquiries received by NPIC are shown in Table 2.1 and Charts 2.1 and 2.2. Inquiries ranged from questions regarding general or specific information about pesticides, to reporting of incidents.

The means by which people contact NPIC are shown in Table 3.1. The telephone was the most important contact route. However, many people accessed NPIC through its website (Table 4.1 and Graphs 4.1 - 4.5).

The diversity of people contacting NPIC is shown in Table 5.1 and Chart 5.1. Most were from the general public.

The types of questions posed to NPIC specialists are presented in Table 6.1 and Chart 6.1. Most of the inquirers requested information about health-related issues and pesticide products.

Most of these information inquiries, and others listed in Table 6.1, were prompted by concern/knowledge of the inquirer (Table 7.1 and Charts 7.1 and 7.2). Only a small percentage of the inquiries were to report a pesticide incident.

Most inquirers received information verbally from a specialist (Table 8.1). Some inquirers also requested and received written information. In addition, appropriate inquiries were referred to either EPA, the National Pesticide Medical Monitoring Program (NPMMP, a cooperative project between Oregon State University and the U.S. EPA to provide medical consultation and follow-up to potential pesticide exposures), an extension specialist or a state lead agency (such as a State Department of Agriculture) (Chart 8.1).

The inquirers to NPIC represented all 50 states, as well as Canada and other foreign nations. Table 9.1 shows the number of inquiries from each of the states, Puerto Rico, the Virgin Islands, and other locations. Also shown in Table 9.1 and presented in Graph 9.2 are the number of inquiries from each of the EPA regions.

The total number of inquiries, as well as the number of information and incident inquiries, for the top 25 active ingredients are presented in Table 10.1. For incident inquiries, the value shown in parentheses indicates the number of incidents with a certainty index of 1 (definite) or 2 (probable). The 10 active ingredients mentioned most often in all inquiries are presented in Graph 10.1.

The 25 active ingredients most frequently reported in incident inquiries are listed in Table 11.1. Incident inquiries are further classified by entity type. The 10 active ingredients most often mentioned in incident inquiries are presented in Graph 11.1.

The locations where pesticide incidents were purported to have occurred are shown in Table 12.1. Of those inquiries where the location was reported, most incidents occurred in or around the home.

The environmental impact of the pesticides involved in incidents is shown in Table 13.1.

The incident inquiries are further categorized by whether the incident involved a human, animal, or building/other (Table 14.1 and Graph 14.1). The incident inquiries for each entity type are qualified by the certainty index. A pesticide spill, a misapplication, a contamination of a non-target entity, or any purported exposure to a pesticide (regardless of injury) is classified as an incident. On the basis of information provided by the inquirer, and with reference to established criteria, all incident inquiries are assigned a **certainty index (CI)**. This is NPIC's assessment as to whether the effects were definitely (1), probably (2), possibly (3), unlikely (4) or not related (5) to the reported pesticide exposure. A certainty index of zero (0) indicates one or more of the following criteria applied:

- An exposure occurred but no symptoms developed
- No active ingredient could be identified
- The incident involved an object, such as a building
- The presence or absence of symptoms was unknown

For humans presented in Table 14.1, the certainty index is further categorized by gender and group.

Table 15.1 and Graphs 15.1.1 - 15.1.3 list the descriptions for the entities involved in incidents such as female, male, groups, animals, and other. Chart 15.1 provides a description of entities involved in incidents grouped as humans, animals and other entities.

Reported symptoms are shown in Table 16.1 and Charts 16.1 and 16.2. Symptoms provided by inquirers were either symptomatic, asymptomatic, or atypical.

The number of deaths or interesting/strange cases, due to a potential pesticide exposure, is shown in Table 17.1 and Table 17.2.

Ages were available for most of the human entities and are presented in Table 18.1 and Graphs 18.1 and 18.1.1.

MONTHLY INQUIRIES

1. Monthly Inquiries

NPIC received 26,440 inquiries during the 2008 grant year. Graph 1.1 shows the number of inquiries received for each month. Eighty-five percent (85%) of the inquiries were received between March and October, coinciding with that part of the year when pest pressures are highest. Total inquiries received during previous grant and calendar years are provided for comparison in Table 1.1. The highest number of inquiries was received in May. The lowest number of inquiries was received in December.

May 2008 was a record-breaking month with 4,775 inquiries. NPIC responded to 1,825 inquiries related to the Scotts Stop-Sale. See page 9.

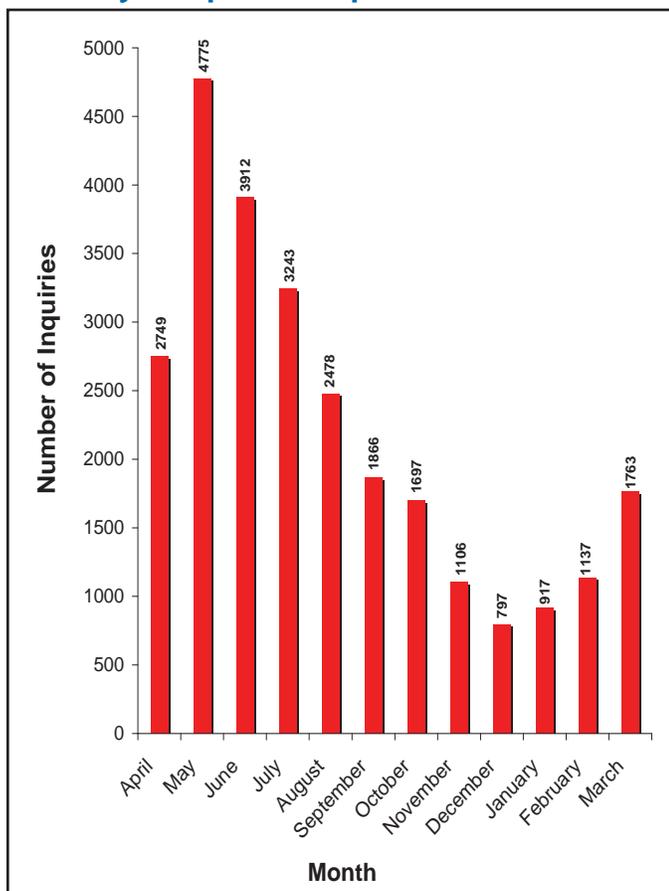
Table 1.1 - Monthly Telephone Inquiries

Month	Number of Inquiries				
	2004	2005	2006	2007	2008
April	2519	2556	2494	2391	2749
May	2826	2620	3140	2950	4775
June	3386	3602	3400	3229	3912
July	3136	3071	3241	2906	3243
August	2792	2951	2716	2713	2478
September	2142	1952	1807	1859	1866
October	1821	1638	1640	1764	1697
November	1193	1211	1149	1239	1106
December	886	818	838	819	797
January	1065	1145	1074	1008	917
February	1172	1106	1045	1250	1137
March	1827	1752	1928	1659	1763
Calendar ¹ Year Total =	24483	24484	24428	23918	26547
Grant ² Year Total =	24765	24422	24472	23787	26440

¹ January 1 through December 31.

² April 1 through March 31.

Graph 1.1 - Monthly Telephone Inquiries



TYPE OF INQUIRY

2. Type of Inquiry

NPIC classifies inquiries as information, incident, or other (non-pesticide) inquiries. The types of inquiries are summarized in Table 2.1 and Charts 2.1 and 2.2.

The majority of inquiries (21,269 or 80.4%) to NPIC were information inquiries in which the inquirer requested information about pesticides or pesticide-related issues (Chart 2.1). Information inquiries may involve a discussion of a specific pesticide, or of pesticides in general. NPIC responded to 10,344 (39.1%) information inquiries about specific pesticides. NPIC responded to 10,925 (41.4%) inquiries relating to pesticides in general.

NPIC responded to 3,444 (13.0%) incidents involving pesticides. A pesticide incident is a spill, a mis-application, a contamination of a non-target entity or any purported exposure to a pesticide, regardless of injury. The majority of incident inquiries involved human and animal entities (Chart 2.2). Of the 3,444 incident inquiries, 1,823 (52.9%) involved a human entity, 1,185 (34.4%) involved an animal entity, and 436 (12.7%) involved a structure or other location such as a garden or automobile.

NPIC also addressed 1,727 (6.5%) inquiries that were not related to pesticides.

Table 2.1 - Type of Inquiry

Type of Inquiry	Number of Inquiries				
	2004	2005	2006	2007	2008
Information - Specific Pesticide	9900	8690	8303	7635	10344
Information - General Pesticide	10547	9733	10707	10954	10925
Incidents	2455	3190	3393	3326	3444
Human Incidents	1089	1477	1714	1749	1823
Animal Incidents	984	1250	1235	1127	1185
Building/Other	382	462	443	450	436
Other - Non-Pesticide	1863	2809	2069	1872	1727
Grant Year Total =	24765	24422	24472	23787	26440

Chart 2.1 - Type of Inquiry

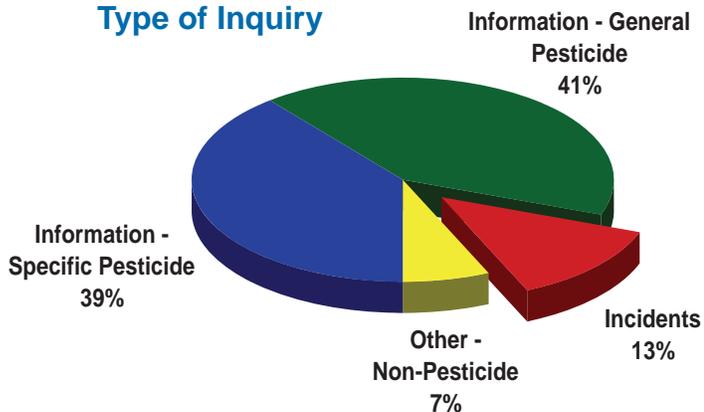
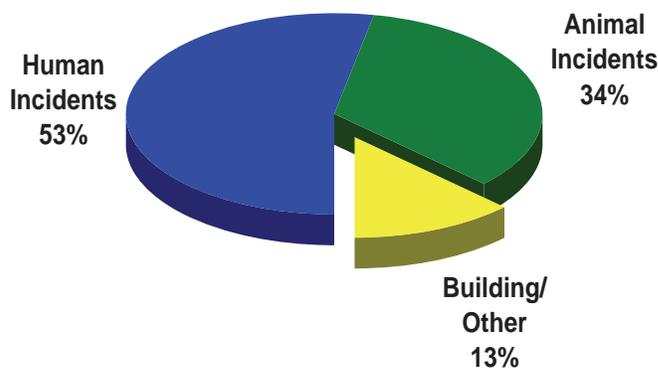


Chart 2.2 - Incidents



ORIGIN OF INQUIRY

3. Origin of Inquiry

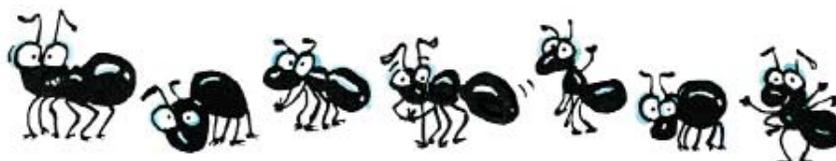
Table 3.1 summarizes the origin of inquiries received by NPIC. Most inquiries are received by telephone. Of the 26,440 inquiries, 24,674 (93.3%) were received by telephone, 582 (2.2%) were recorded by a voice mail system, 310 (1.2%) were received by postal mail, 3 were walk-in inquiries, and 871 (3.3%) were by e-mail.

The number of inquiries received by postal mail has been increasing since 2005 when NPIC initiated its annual bulk mail-out. Recipients can return a pre-paid postcard to request NPIC brochures.



Table 3.1 - Origin of Inquiry

Origin of Inquiry	Number of Inquiries				
	2004	2005	2006	2007	2008
Telephone	23242	22871	22907	22171	24674
Voice Mail	598	521	483	464	582
Mail	19	121	266	274	310
Walk-In	8	2	3	5	3
E-Mail	897	906	813	873	871
Other	1	1	0	0	0
Grant Year Total =	24765	24422	24472	23787	26440



WEBSITE ACCESS

4. Website Access

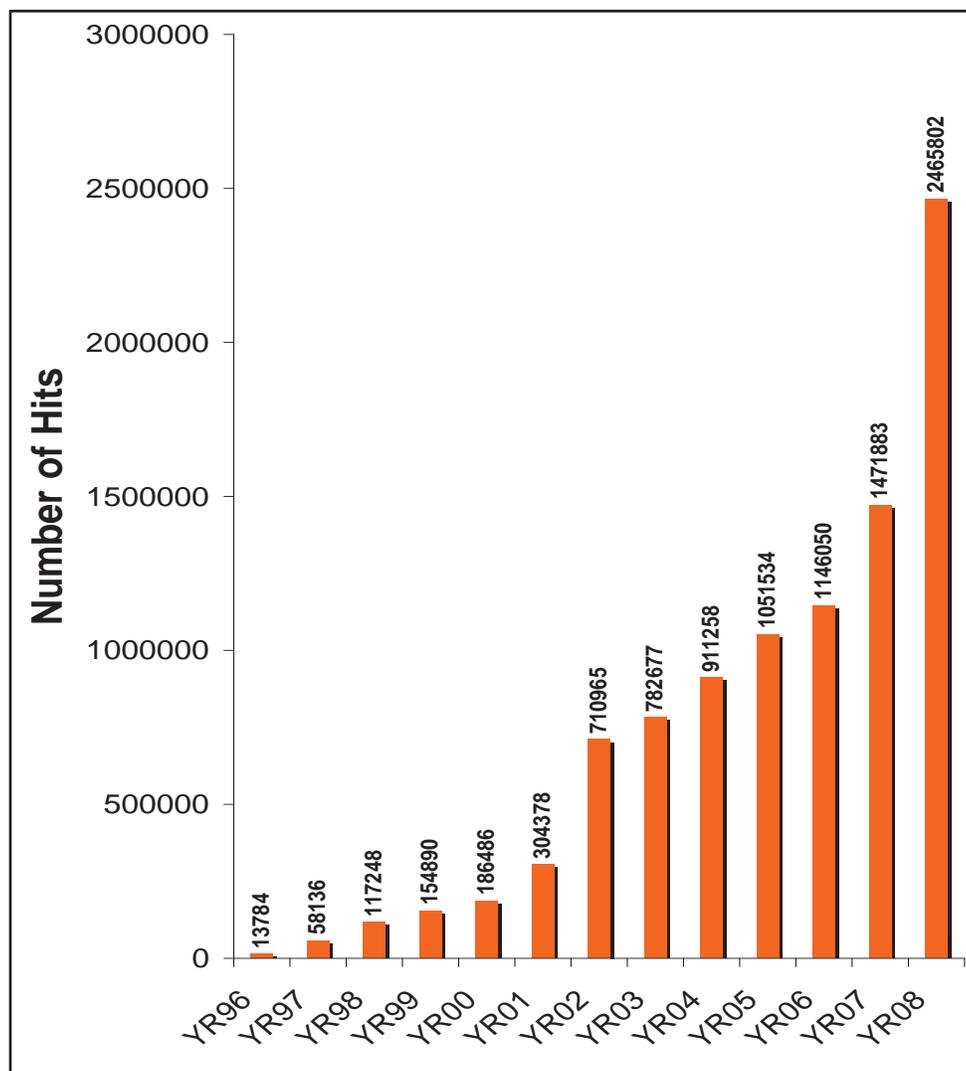
The NPIC website is an increasingly popular source of information for the public and professionals. The NPIC website received 2,465,802 hits in 2008, representing a 68% increase compared to 2007.

Graph 4.1 shows the number of total hits per grant year. Table 4.1 summarizes the number of website hits to NPIC main web pages. Hits to common pesticide questions are shown in Graph 4.2. Hits to medical case profiles are shown in Graph 4.3. Graphs 4.4 and 4.5 detail the number of hits for NPIC fact sheets (>315,000 hits). Web hits are a major form of inquiry to NPIC, in addition to telephone and e-mail. The NPIC InfoBase received 189,222 hits this year, a 56% increase from last year.

Table 4.1 - Selected Web Hits

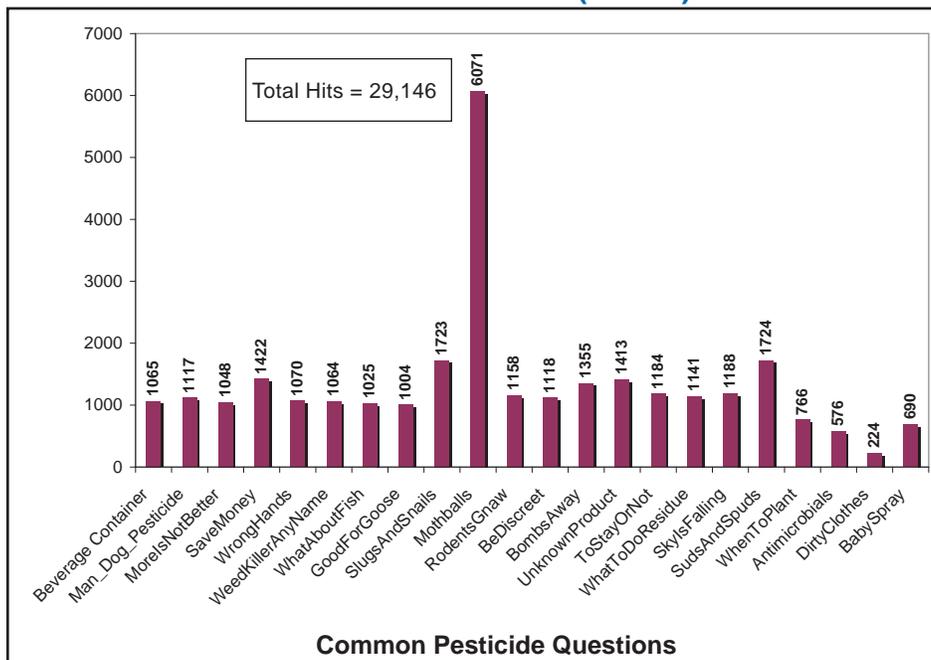
Page Accessed	Web Hits
General Information	64160
Technical Information	84584
Fact Sheets	316404
State Regulatory Agencies	75529
Recognition & Management of Pesticide Poisonings	80608
Manufacturer Information	47617
Pest Control	59081
Spanish Web	30548

Graph 4.1 - NPIC Total Hits per Year



“The “new” website looks terrific! It is much more user-friendly.” - Colorado State University Extension Agent

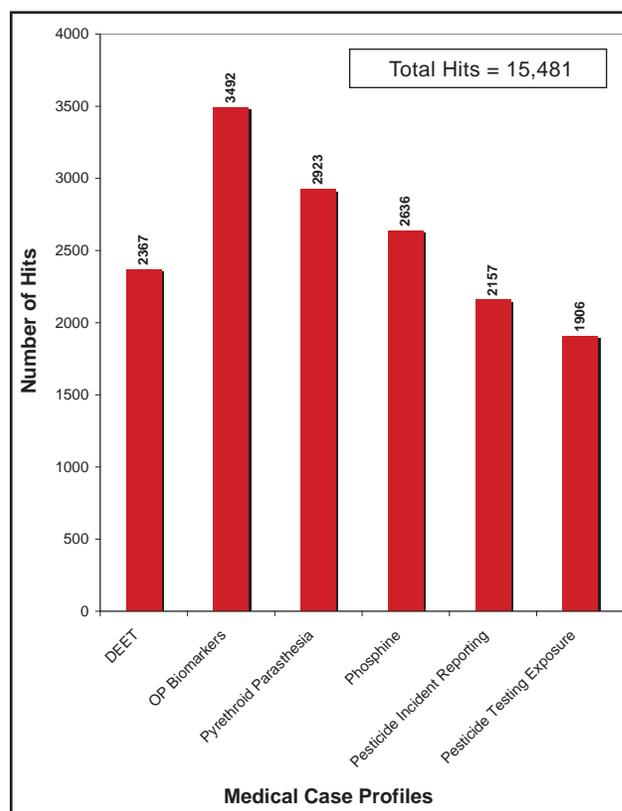
Graph 4.2 - Hits to Common Pesticide Questions (CPQ's)



What are Common Pesticide Questions (CPQ's)?

Formerly known as “Case Profiles”, these short documents were developed in 2003 to turn frequently asked questions into learning opportunities. CPQs describe a caller’s question, NPIC’s answer, and provide a series of links that allow the reader to learn more about specific topics of interest. Some describe mishaps and ways to prevent accidental exposures or incidents.

Graph 4.3 - Hits to Medical Case Profiles

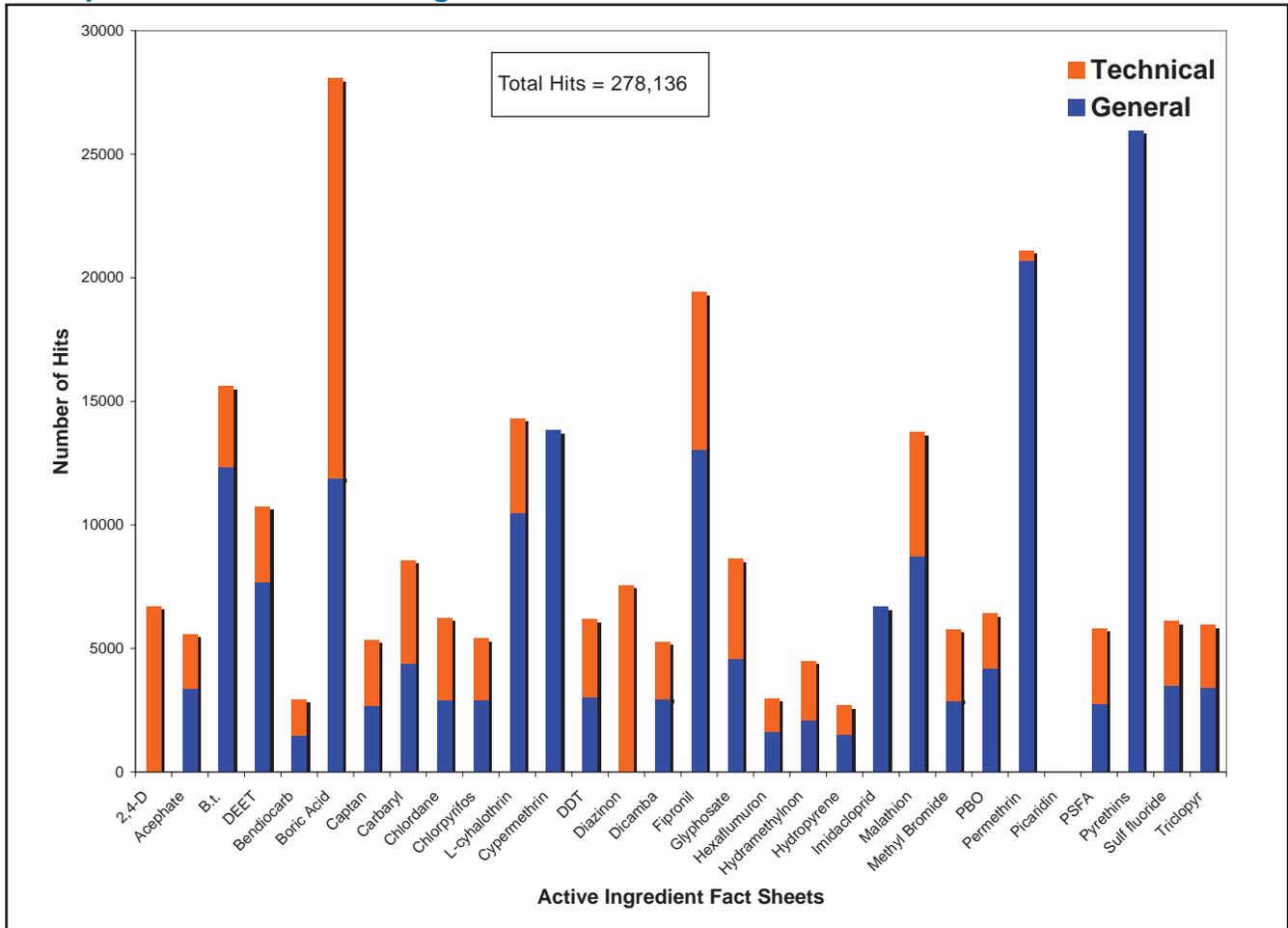


What are Medical Case Profiles?

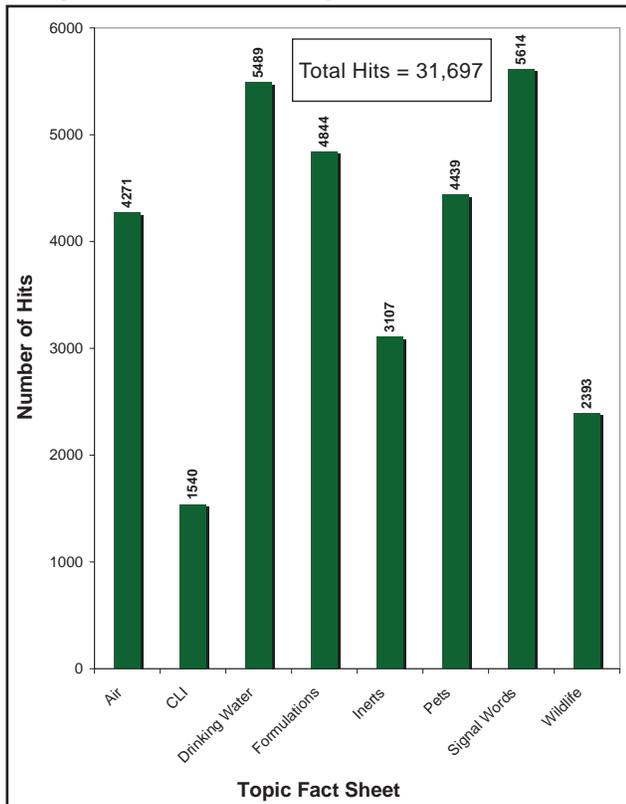
Medical Case Profiles are directed toward health care providers and convey clinical information useful to this audience. Dr. Daniel Sudakin produces these resources in order to raise awareness of pesticide-related issues in the medical community.

WEBSITE ACCESS

Graph 4.4 - Hits to Active Ingredient Fact Sheets



Graph 4.5 - Hits to Topic Fact Sheets



Overall, general fact sheets were twice as popular as technical fact sheets. The number of web hits for NPIC fact sheets increased by approximately 40% this year compared to 2007.

TYPE OF INQUIRER

5. Type of Inquirer

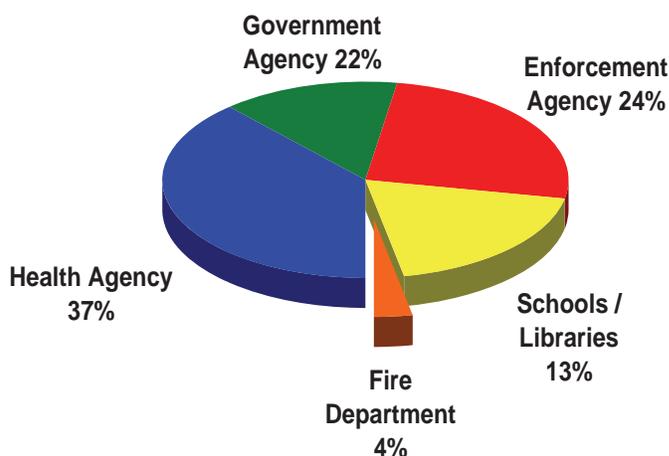
Table 5.1 summarizes the profession/occupation of individuals contacting NPIC. The majority of inquiries made to NPIC are from the general public. Of the 26,440 inquiries received, there were 23,374 (88.4%) from the general public, 880 (3.3%) from federal, state or local government agencies, 529 (2.0%) from human and animal medical personnel, 485 (1.8%) from information groups including the media, unions, environmental organizations and pesticide manufacturing or marketing companies, 791 (3.0%) from consumer users including legal or insurance representatives, laboratory or consulting personnel, pest control operators, retail store personnel or farm personnel, and 354 (1.3%) inquiries from other professions/occupations.

Chart 5.1 summarizes the 880 governmental entities that contacted NPIC during the 2008 grant year.

Table 5.1 - Type of Inquirer

Type of Inquiry	Number of Inquiries				
	2004	2005	2006	2007	2008
General Public	21334	21733	21794	20941	23374
Federal/State/Local Agencies					
Health Agency	118	108	251	322	337
Government Agency	225	173	157	115	125
Enforcement Agency	292	184	169	152	225
Schools/Libraries	174	155	93	167	167
Fire Department	31	27	31	22	26
Medical Personnel					
Human Medical	290	250	279	218	248
Animal Vet./Clinic	292	238	281	261	265
Migrant Clinic	8	8	4	8	16
Information Groups					
Media	101	79	69	75	75
Unions/Info. Service	147	121	106	102	114
Environmental Org.	114	97	88	70	57
Pesticide Mfg./Mktg. Co.	198	179	194	186	239
Consumer Users					
Lawyer/Insurance	50	46	46	52	27
Lab./Consulting	106	62	37	49	88
Pest Control	183	163	155	198	228
Retail Store	384	302	316	349	386
Farm	71	54	39	53	62
Other	621	412	327	403	354
Grant Year Total =	24765	24422	24472	23787	26440

Chart 5.1 -
Inquiries from Federal / State / Local Agencies (Total: 880)



TYPE OF QUESTION

6. Type of Question

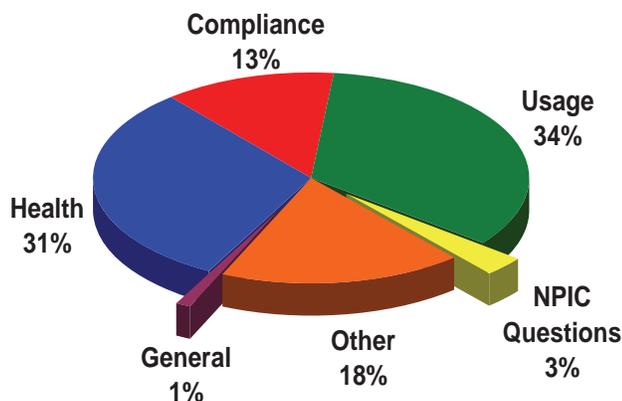
The types of questions received at NPIC are most often related to health effects and use practices (Chart 6.1 and Table 6.1). NPIC responded to 8,116 (30.7%) inquiries related to health effects of pesticides, including inquiries about general health, treatment and testing, and laboratory questions. In addition, there were 8,836 (33.4%) inquiries involving requests for pesticide use information, including questions about use on specific pests or crops, chemical information, pros and cons of application, safety and application questions, cleanup, preharvest intervals, and lawn care use.

NPIC also responded to 3,373 (12.7%) inquiries involving compliance questions, including regulations, disposal, and complaints. There were 98 (0.4%) inquiries about other food safety issues, 350 (1.3%) inquiries involving general pesticide questions, 961 (3.6%) inquiries involving questions about NPIC, and 4,706 (17.8%) inquiries not classified according to type of question.

Table 6.1 - Type of Question

Type of Question	Number of Inquiries				
	2004	2005	2006	2007	2008
Health Related					
Health	7891	6655	7192	6780	7255
Treatment	278	470	600	584	718
Testing Lab.	188	210	169	157	143
Usage Information					
Pest/Crop	2007	1764	1929	2069	2052
Chemical	697	799	828	1076	1093
Pros and Cons	69	43	73	101	98
Safety/Application	3760	4430	4831	4246	4458
Cleanup	296	362	388	470	422
Harvest Intervals	162	154	224	245	335
Lawn Care	28	22	26	16	378
Compliance					
Regulations	1484	1365	1322	1325	2344
Complaints	747	879	658	653	870
Disposal	164	201	162	168	159
Food Safety	184	166	69	100	98
General	325	250	274	301	350
NPIC Questions	847	749	898	823	961
Other	5638	5900	4829	4673	4706
Grant Year Total =	24765	24422	24472	23787	26440

Chart 6.1 - Type of Question



REASON FOR INQUIRY

7. Reason for Inquiry

Specialists identify the reason for all inquiries received by NPIC (Table 7.1 and Charts 7.1 and 7.2). The reason for all information inquiries is recorded as "Concern/Knowledge." The reason for incident inquiries varies according to the nature of the incident. Of the 3,444 inquiries for which a reason was avail-

able, there were 2,981 (86.6%) about pesticide exposure, and 423 (12.3%) about accidents. There were 19 (0.6%) inquiries about odor only, and 21 (0.6%) inquiries for other reasons. The reason for all other (non-pesticide) inquiries is "N/A-Unknown."

Chart 7.1 - Pesticide Exposures

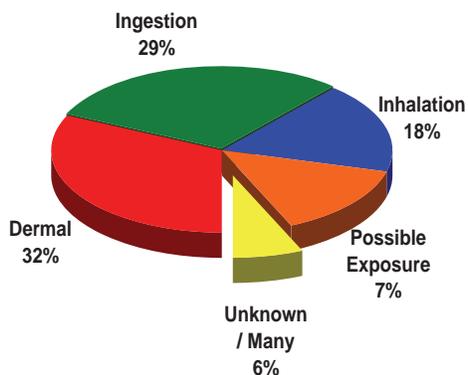


Chart 7.2 - Pesticide Accidents

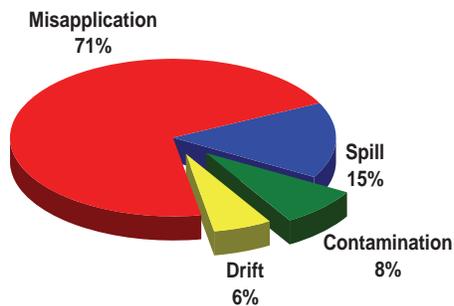


Table 7.1 - Reason for Inquiry

Type of Inquiry	Number of Inquiries				
	2004	2005	2006	2007	2008
Information Inquiries					
Concern/Knowledge	20988	19019	20567	19108	21756
Incident Inquiries					
Exposures					
Dermal - Acute	655	863	782	866	899
Dermal - Chronic	18	21	50	63	53
Ingestion - Acute	647	885	968	981	864
Ingestion - Chronic	3	12	15	11	13
Inhalation - Acute	227	296	289	340	393
Inhalation - Chronic	61	94	134	150	136
Exposure Possible	163	281	319	194	421
Unknown/Many	181	154	177	152	201
Occupational	14	9	4	3	1
Accidents					
Misapp. - Homeowner	229	337	384	308	259
Misapp. - PCO	42	39	30	19	19
Misapp. - Other	29	36	35	24	20
Spill - Indoor	44	54	44	80	47
Spill - Outdoor	16	14	27	19	18
Contamination - Home	5	5	8	12	10
Contamination - Other	7	7	13	16	24
Drift	37	30	41	30	25
Fire - Home	0	1	2	1	1
Fire - Other	0	1	0	0	0
Industrial Accident	0	0	1	0	0
Odor Only	42	67	60	34	19
Other	33	13	9	24	21
N/A - Unknown	1324	2184	513	1352	1240
Grant Year Total =	24765	24422	24472	23787	26440

8. Actions Taken

Primary Actions:

NPIC specialists respond to inquiries through verbal communication, transfer to poison control, referrals to other agencies or organizations, and via postal or e-mail. The primary actions taken by specialists are summarized in Table 8.1. Most inquiries (24,371; 92.2%) were answered by providing verbal communication, while 1,262 (4.8%) of inquirers were sent information by e-mail, mail, or fax.

Some inquiries (162; 0.6%) were transferred to Oregon Poison Control Center or the Animal Poison Control Center in emergent situations, or referred to the National Pesticide Medical Monitoring Program (NPMMP) as appropriate. Foreign language inquiries (201; 0.8%) were either transferred to a Spanish speaking specialist, or interpreted via Language Line Services, Inc.

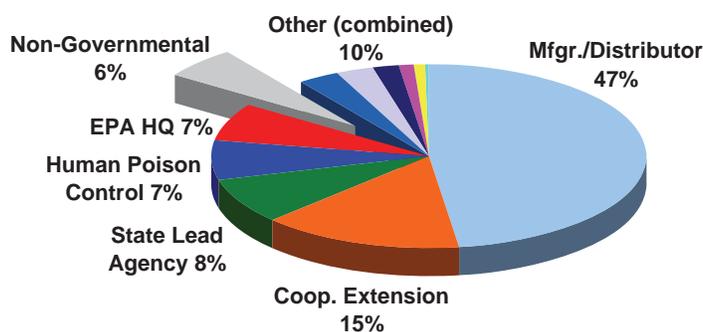
Table 8.1 - Primary Action Taken

Primary Action Taken	Number of Inquiries
	2008
Provided Verbal Information	24371
Referred to NPMMP	61
Provided Transfer to:	
Oregon Poison Center	65
Animal Poison Control Center	36
Executive Committee / PC	76
Another Specialist	208
Spanish Resource / Spanish Audix	98
E-mailed Information	800
Mailed / Faxed Information	41
Mailed NPIC Brochures	421
Interpreted via Language Line Services, Inc.	103
Unable to Contact Inquirer	159
Grant Year Total =	26440

Secondary Actions:

When the needs of the inquirer could best be met by another organization, NPIC made appropriate referrals by providing contact information to the inquirer in addition to other information. These referrals are summarized in Chart 8.1. Occasionally, specialists may provide multiple referrals to an inquirer. Of the total referrals made in 2008 (14,707), there were 1,120 (7.6%) to the EPA, 1,186 (8.1%) to state lead agencies, 2,209 (15.0%) to cooperative/county extension service, 1,048 (7.1%) to Poison Control, and 7,007 (47.6%) to the manufacturer/registrant.

Chart 8.1 - Contact Information Provided



INQUIRIES BY STATE

9. Inquiries by State

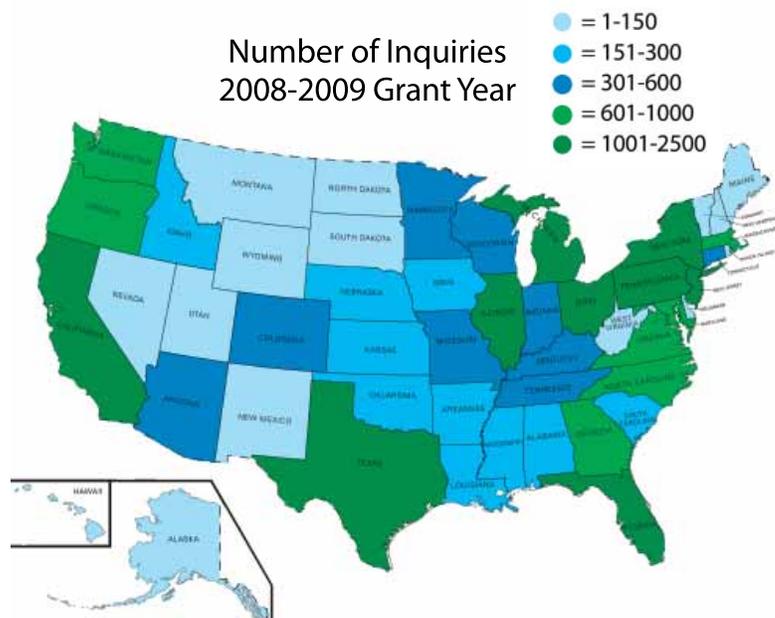
Table 9.1 lists the number of inquiries received by NPIC from each state. The largest number of inquiries came from California, followed by Texas, New York and Florida.

Graph 9.2 summarizes inquiries by EPA region. NPIC received 17.6% of inquiries from Region 5, 15.5% from Region 4, 12.4% from Region 2, 10.5% from Region 6, and 10.3% from Region 9.

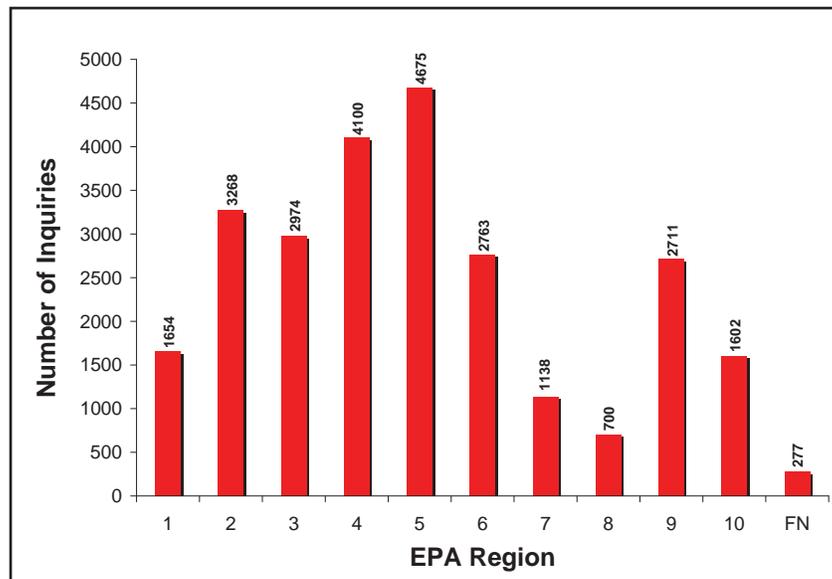
Table 9.1 - Listing of States and Foreign Nations Using NPIC

EPA Region	State Code	State	# of Inquiries
0		Unknown	578
10	AK	Alaska	46
4	AL	Alabama	299
6	AR	Arkansas	185
9	AZ	Arizona	340
9	CA	California	2175
FN	CN	Canada	96
8	CO	Colorado	321
1	CT	Connecticut	435
3	DC	DC	154
3	DE	Delaware	69
4	FL	Florida	1252
FN	FN	Foreign	181
4	GA	Georgia	647
9	HI	Hawaii	51
7	IA	Iowa	247
10	ID	Idaho	165
5	IL	Illinois	1103
5	IN	Indiana	514
7	KS	Kansas	239
4	KY	Kentucky	338
6	LA	Louisiana	262
1	MA	Massachusetts	771
3	MD	Maryland	670
1	ME	Maine	137
5	MI	Michigan	1108
5	MN	Minnesota	358
7	MO	Missouri	487
4	MS	Mississippi	171
8	MT	Montana	96
4	NC	North Carolina	680
8	ND	North Dakota	38
7	NE	Nebraska	165
1	NH	New Hampshire	110
2	NJ	New Jersey	1276
6	NM	New Mexico	102
9	NV	Nevada	145
2	NY	New York	1944
5	OH	Ohio	1112
6	OK	Oklahoma	226
10	OR	Oregon	774
3	PA	Pennsylvania	1246
2	PR	Puerto Rico	43
1	RI	Rhode Island	130
4	SC	South Carolina	263
8	SD	South Dakota	37
4	TN	Tennessee	450
6	TX	Texas	1988
8	UT	Utah	142
3	VA	Virginia	687
2	VI	Virgin Islands	5
1	VT	Vermont	71
10	WA	Washington	617
5	WI	Wisconsin	480
3	WV	West Virginia	148
8	WY	Wyoming	66
Total =			26440

Graph 9.1 - Inquiries by State



Graph 9.2 - Inquiries by EPA Region



TOP 25 AIs FOR ALL INQUIRIES

10. Top 25 Active Ingredients for All Inquiries

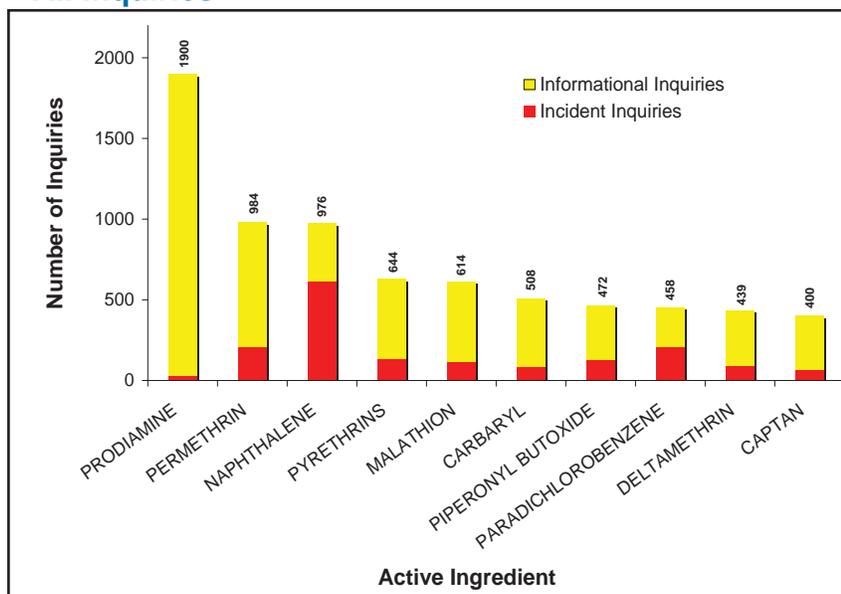
When inquiries to NPIC involve discussion of a specific product or active ingredient, specialists record the product and the active ingredient in the PID. Prodiamine was discussed in more inquiries than any other single active ingredient this year (Table 10.1, Graph 10.1). These inquiries were related to the Scotts Stop-Sale Order; see page 9 for more information. Of the 1,900 inquiries involving prodiamine, 27 (1.6%) were incident inquiries. Note that an inquiry may involve discussion of more than one active ingredient; thus totals reflect the number of times active ingredients are discussed during all inquiries. Graph 10.1 illustrates the number of informational inquiries and incident inquiries for the top active ingredients that NPIC received in the 2008 grant year.

Table 10.1 - Top 25 Pesticide Active Ingredients for All Inquiries to NPIC

Active Ingredient	Total Inquiries	Incident Inquiries ¹	Information Inquiries
PRODIAMINE	1900	27 (0)	1869
PERMETHRIN	984	205 (21)	776
NAPHTHALENE	976	613 (30)	363
PYRETHRINS	644	132 (8)	498
MALATHION	614	118 (5)	496
CARBARYL	508	86 (5)	422
PIPERONYL BUTOXIDE	472	131 (10)	334
PARADICHLOROBEZENE	458	211 (11)	243
DELTAMETHRIN	439	92 (5)	341
CAPTAN	400	64 (3)	335
2,4-D	389	58 (2)	319
BACILLUS THURINGIENSIS	353	34 (0)	316
POTASSIUM SALTS OF FATTY ACIDS	334	81 (6)	252
BORIC ACID	324	113 (3)	206
CAPSAICIN	306	110 (35)	194
FIPRONIL	291	50 (0)	240
PETROLEUM HYDROCARBONS	287	44 (0)	242
DICAMBA	280	37 (0)	242
ZINC PHOSPHIDE	279	147 (10)	132
SULFUR	276	44 (3)	231
IMIDACLOPRID	271	56 (4)	209
MECOPROP	251	32 (0)	215
GLYPHOSATE	249	56 (2)	189
BIFENTHRIN	226	35 (2)	188
PUTRESCENT WHOLE EGG SOLIDS	222	58 (2)	163
Total =	11733	2634 (167)	9015

¹ First number represents the total number of purported incidents regardless of certainty index. The numbers in parentheses indicate the total number of incidents with certainty index of 1 (definite) or 2 (probable).

Graph 10.1 - Top 10 Pesticide Active Ingredients for All Inquiries



TOP 25 AIs FOR INCIDENT INQUIRIES

11. Top 25 Active Ingredients for Incident Inquiries

The most common active ingredients reported during incident inquiries are listed in Table 11.1 and Graph 11.1. Also, Table 11.1 summarizes the number of reported incidents involving human and animal entities exposed to specific active ingredients. Naphthalene was reported to be involved in more incidents (613) than any other active ingredient (4.9% of these incidents had a certainty index of 1 or 2). Paradichlorobenzene was involved in the second largest number (211) of incidents (5.2% of the incidents had a certainty index of 1 or 2).

Cyphenothrin and denatonium benzoate had the highest percentage of incidents with a certainty index of 1 or 2, 65.8% and 63.9%, respectively.

Of the total active ingredients listed in Table 11.1, 11.3% of incident inquiries were assigned a certainty index of 1 (definite) or 2 (probable).

Graph 11.1 - Top 10 Active Ingredients for Incident Inquiries

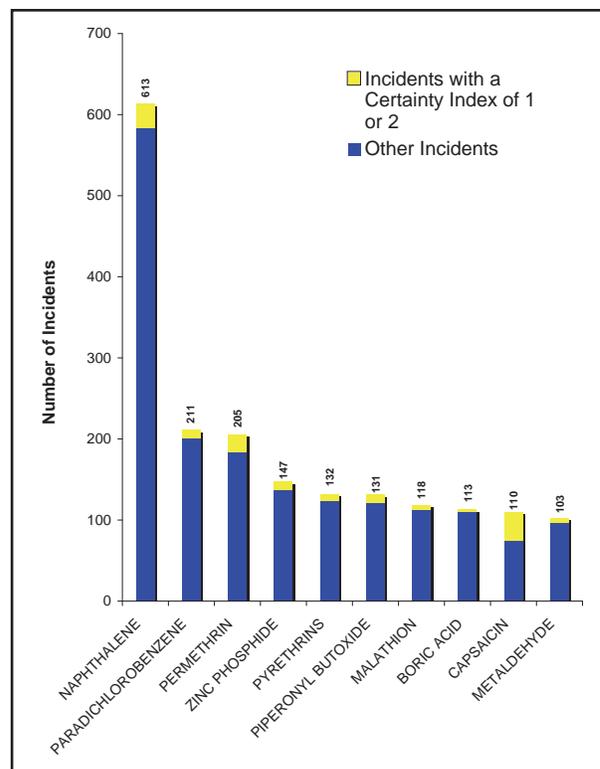


Table 11.1 - Top 25 Pesticide Active Ingredients for Incident Inquiries¹ to NPIC

Active Ingredient	Total Incidents	Human Incidents	Animal Incidents	Other Incidents
NAPHTHALENE	613 (30)	469 (27)	72 (3)	72
PARADICHLORO BENZENE	211 (11)	159 (9)	22 (2)	30
PERMETHRIN	205 (21)	96 (8)	79 (13)	30
ZINC PHOSPHIDE	147 (10)	14 (0)	125 (10)	8
PYRETHRINS	132 (8)	85 (8)	33 (0)	14
PIPERONYL BUTOXIDE	131 (10)	81 (8)	36 (2)	14
MALATHION	118 (5)	70 (4)	8 (1)	40
BORIC ACID	113 (3)	63 (2)	44 (1)	6
CAPSAICIN	110 (35)	88 (35)	14 (0)	8
METALDEHYDE	103 (6)	23 (2)	73 (4)	7
DELTAMETHRIN	92 (5)	62 (5)	20 (0)	10
METHOPRENE	85 (16)	13 (0)	71 (16)	1
CARBARYL	86 (5)	41 (3)	16 (2)	29
POTASSIUM SALTS OF FATTY ACIDS	81 (6)	55 (6)	22 (0)	4
PYRIPROXYFEN	77 (43)	6 (1)	70 (42)	1
CYPHENOTHRIN	76 (50)	0 (0)	76 (50)	0
DENATONIUM BENZOATE	72 (46)	65 (46)	7 (0)	0
CAPTAN	64 (3)	32 (2)	9 (1)	23
2,4-D	58 (2)	31 (2)	10 (0)	17
PUTRESCENT WHOLE EGG SOLIDS	58 (2)	22 (2)	17 (0)	19
IMIDACLOPRID	56 (4)	17 (0)	28 (4)	11
GLYPHOSATE	56 (2)	36 (2)	10 (0)	10
FIPRONIL	50 (0)	14 (0)	30 (0)	6
BROMADIOLONE	47 (2)	6 (1)	40 (1)	1
GARLIC OIL	46 (2)	16 (2)	13 (0)	17
Total =	2887 (327)	1564 (175)	945 (152)	378

¹ First number represents the total number of purported incidents regardless of certainty index (categorized by humans, animals, and other). The numbers in parentheses indicate the total number of incidents with certainty index of 1 (definite) or 2 (probable).

LOCATION OF INCIDENT

12. Location of Incident

For incident inquiries, NPIC specialists record the location of the reported exposure. Of the 3,390 known locations where incidents occurred, 95.0% occurred in the home or yard, 1.4% occurred in an agricultural setting, 0.7% occurred in an office building or school, and 0.8% occurred in a retail store or business (Table 12.1).

Table 12.1 - Location of Pesticide Incident

Location	Number of Incident ¹ Inquiries				
	2004	2005	2006	2007	2008
Unclear/Unknown	27 (6)	33 (2)	13 (0)	33 (5)	34 (8)
Home or Yard	2207 (248)	2929 (136)	3196 (114)	3076 (229)	3220 (281)
Agriculturally Related	50 (5)	42 (4)	35 (1)	52 (1)	49 (6)
Industrially Related	6 (0)	11 (0)	9 (0)	15 (2)	8 (0)
Office Building, School	29 (5)	46 (0)	31 (2)	35 (2)	23 (1)
Pond, Lake, Stream Related	5 (1)	4 (0)	12 (0)	4 (1)	10 (1)
Nursery, Greenhouse	8 (1)	8 (0)	4 (0)	2 (0)	6 (2)
Food Service/Restaurants	4 (0)	10 (0)	6 (0)	2 (0)	5 (0)
Retail Store/Business	21 (3)	29 (2)	20 (0)	31 (1)	27 (3)
Roadside/Right-of-Way	13 (1)	19 (0)	8 (0)	16 (3)	8 (0)
Park/Golf Course	18 (2)	5 (1)	6 (0)	12 (3)	8 (2)
Other	67 (9)	54 (3)	48 (2)	37 (5)	26 (7)
Total =	2455 (281)	3190 (148)	3388 (119)	3315 (252)	3424 (311)

¹ First number represents the total number of purported incidents regardless of certainty index. The numbers in parentheses indicate the total number of incidents with certainty index of 1 (definite) or 2 (probable).



13. Environmental Impact

NPIC specialists record reported environmental impacts discussed in incident inquiries. The most common reported environmental impacts are damage to property and plants, including food crops and other plants or trees.

Table 13.1 - Reported Environmental Impact

Environmental Impact	Number of Incident ¹ Inquiries				
	2004	2005	2006	2007	2008
Air	48	2	34	66	63
Water	8	10	12	9	17
Soil	24	12	13	25	22
Food Crops/Process	85	120	99	158	177
Property	261	284	219	465	349
Poultry/Livestock	5	6	1	3	4
Plants/Trees	88	51	25	59	40
Other	10	11	7	19	8
Total =	529	496	410	804	680



CERTAINTY INDEX

14. Certainty Index

Table 14.1 and Graph 14.1 summarize the assignment of the certainty index for all incident inquiries received by NPIC. Human incident reports are stratified by gender and group. Multiple entities may be discussed in one incident inquiry; thus totals reflect the number of entities (as opposed to number of incidents) discussed during the course of incident inquiries to NPIC. Of the total number of entities discussed in incident inquiries to NPIC (4,023), 8.8% of the cases were assigned a certainty index of definite (1) or probable (2), 15.4% of the

cases were assigned a certainty index of possible (3), 17.1% of the cases were assigned a certainty index of unlikely (4), and 0% of the cases were assigned a certainty index of unrelated (5). Fifty-eight percent of the cases did not involve health effects, the symptoms were unknown, the entity was an inanimate object, and/or the active ingredient was unknown. Therefore they were assigned a certainty index of zero (unclassifiable). Certainty index assignments for human incidents are reviewed by Melody Johnson and by Dr. Daniel Sudakin.

Table 14.1 Incident Inquiries by Certainty Index (CI)

CI for All Categories of Entities					Breakdown of Human-Entity Incident Inquiries			
Certainty Index (CI)	Humans	Animals	Other	Total	Male	Female	Groups	Gender Not Stated
Total Inquiries in Operational Year = 26440								
Unclassifiable (0)	1011	617	732	2360	414	502	88	7
Definite (1)	0	0	0	0	0	0	0	0
Probable (2)	211	124	21	356	90	109	12	0
Possible (3)	342	220	59	621	122	195	24	1
Unlikely (4)	382	260	44	686	160	208	12	2
Unrelated (5)	0	0	0	0	0	0	0	0
TOTAL =	1946	1221	856	4023	786	1014	136	10

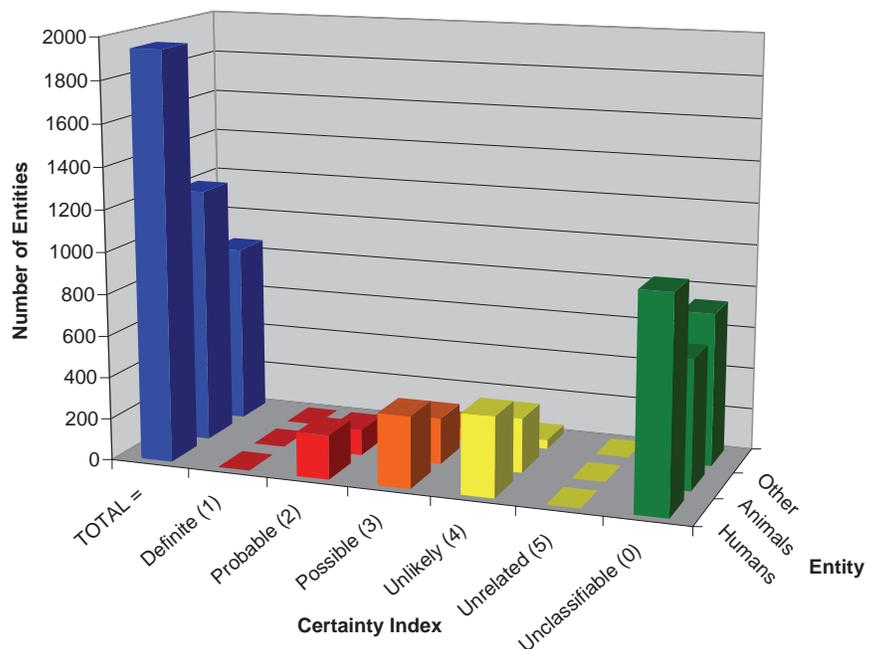
What is the Certainty Index?

The certainty index is an estimate by NPIC as to whether an incident (including reported symptoms) was either definitely (1), probably (2), possibly (3), or unlikely (4) to have been caused by the reported exposure to a pesticide, or whether the incident was unrelated (5) to pesticides.

A certainty index of zero (0) indicates one or more of the following criteria applied:

- An exposure occurred, but no symptoms developed
- No active ingredient could be identified
- The incident involved an object, such as a building
- The presence or absence of symptoms was unknown

Graph 14.1 - Certainty Index for Incidents



DESCRIPTION OF ENTITIES

15. Description of Entities

Table 15.1 presents the number of entities (by category) involved in reported incidents. Entity categories are arranged into like associations, such as females, males, gender not stated, groups, animals, and other entities. The totals at the bottom of each

column are for the total number of entity categories. For each incident, two entity categories can be recorded in the NPIC database, therefore the number of entity categories may not be the same as the number of incidents reported.

Table 15.1 - Description of Entities

Description of Entities	Number of Entities ¹				
	2004	2005	2006	2007	2008
ALL FEMALES -					
Female	599 (58)	805 (10)	935 (9)	958 (71)	985 (107)
Female-Pregnant	22 (1)	28 (0)	28 (0)	34 (0)	28 (1)
Female Suicide Attempt	2 (2)	1 (1)	3 (0)	0 (0)	1 (1)
TOTAL ALL FEMALES =	623 (61)	834 (11)	966 (9)	992 (71)	1014 (109)
ALL MALES -					
Male	452 (47)	643 (9)	734 (10)	775 (68)	783 (88)
Male Suicide Attempt	2 (0)	4 (1)	4 (0)	0 (0)	3 (2)
TOTAL ALL MALES =	454 (47)	647 (10)	738 (10)	775 (68)	786 (90)
ALL GROUPS -					
Family	75 (8)	75 (8)	128 (1)	92 (8)	125 (10)
Non-Family Group	12 (5)	12 (5)	30 (1)	20 (3)	11 (2)
TOTAL ALL GROUPS =	87 (13)	87 (13)	158 (2)	112 (11)	136 (12)
GENDER NOT STATED -					
Child - Sex Unknown	2 (0)	10 (0)	9 (0)	7 (0)	7 (0)
Adult - Sex Unknown	0 (0)	0 (0)	1 (0)	0 (0)	3 (0)
Other - Sex Unknown	1 (0)	0 (0)	0 (0)	0 (0)	0 (0)
TOTAL GENDER NOT STATED =	3 (0)	10 (0)	10 (0)	7 (0)	10 (0)
TOTAL ALL HUMANS =	1167 (121)	1596 (27)	1872 (21)	1886 (150)	1946 (211)
ALL ANIMALS -					
Single Animal	954 (169)	1199 (120)	1204 (98)	1098 (113)	1161 (115)
Group of Animals	54 (9)	81 (10)	67 (7)	66 (12)	63 (12)
Wildlife	6 (1)	4 (2)	6 (0)	3 (0)	7 (0)
TOTAL ALL ANIMALS =	1014 (179)	1284 (132)	1277 (105)	1167 (125)	1231 (127)
OTHER ENTITIES:					
Building-Home/Office	234 (7)	316 (0)	219 (1)	342 (7)	405 (15)
Other Places	298 (2)	333 (2)	394 (3)	452 (6)	451 (6)
TOTAL OTHER ENTITIES =	532 (9)	649 (2)	613 (4)	794 (13)	856 (21)
TOTAL ALL ENTITIES =	2713 (309)	3529 (161)	3762 (130)	3847 (288)	4033 (359)

¹ First number represents the total number of purported incidents regardless of certainty index. The numbers in parentheses indicate the total number of incidents with certainty index of 1 (definite) or 2 (probable).

DESCRIPTION OF ENTITIES

The chart and graphs (15.1.1 - 15.1.3) below provide a summary of entities involved in incident inquiries. Of the 4,033 entities involved in incidents reported to NPIC this quarter, 49.0% were hu-

man, 30.5% were animal, and 21.2% were other types of non-target entities (buildings or gardens, for example). Please note, an incident may involve one or more entities.

Graph 15.1.1 - Humans Involved in Incidents

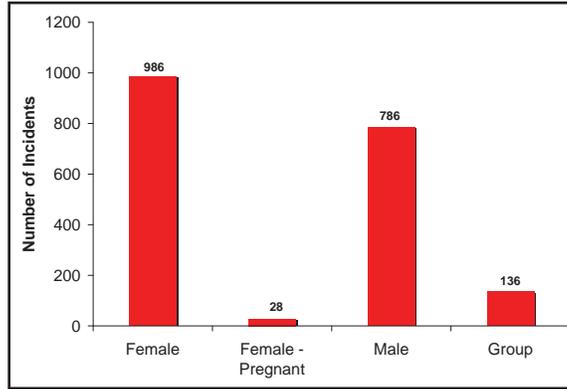
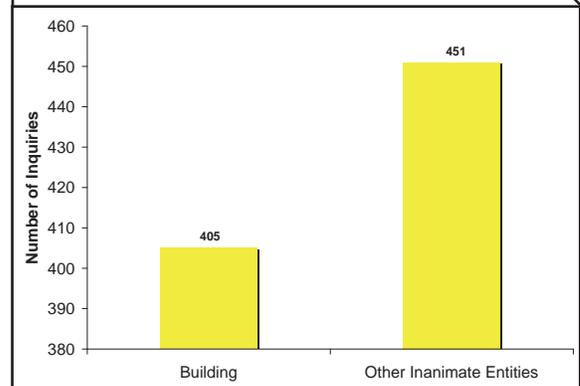
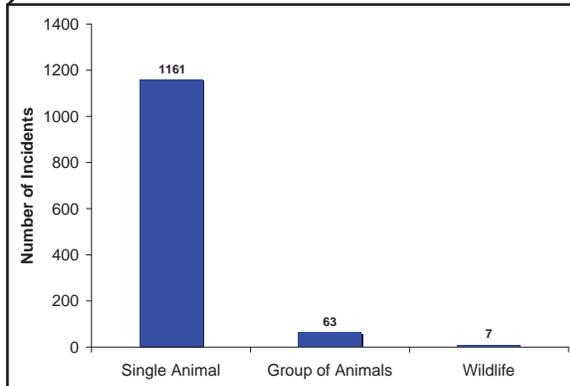
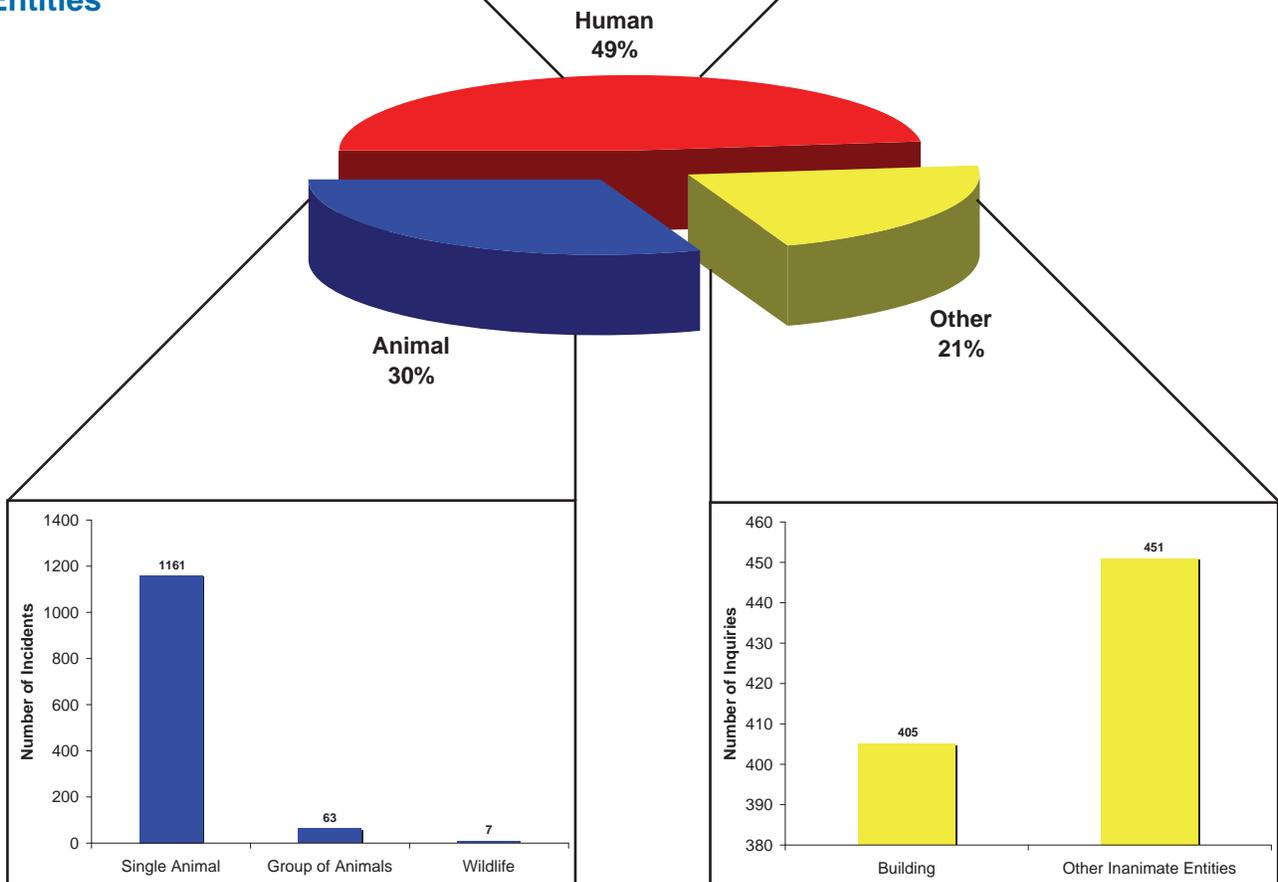


Chart 15.1 - Description of Entities



Graph 15.1.2 - Animals Involved in Incidents

Graph 15.1.3 - Other Entities Involved in Incidents

ENTITY SYMPTOMS

16. Entity Symptoms

Of the 1,946 human entities discussed in incident inquiries to NPIC, symptoms, absence of symptoms, or symptoms unknown were reported for 1,702 entities (Table 16.1). Of these entities, 29.4% reported symptomatic health effects (effects that are consistent with a significant exposure to the pesticide in question), 48.0% were asymptomatic or symptoms were unknown, and 22.6% reported atypical health effects (Chart 16.1). Table 16.1 and Chart 16.2 provide similar information for animal entities.

Table 16.1 - Reported Symptoms of Entities

Reported Symptoms	Number of Entities ¹				
	2004	2005	2006	2007	2008
Human Symptoms -					
Symptomatic	542 (172)	484 (81)	435 (64)	452 (160)	500 (219)
Asymptomatic/Unknown	344	600	802	819	817
Atypical	226	332	347	378	385
Total Humans =	1112	1416	1584	1649	1702
Animal Symptoms -					
Symptomatic	456 (207)	446 (155)	365 (114)	315 (131)	345 (149)
Asymptomatic/Unknown	446	559	633	586	541
Atypical	121	186	211	174	280
Total Animals =	1023	1191	1209	1075	1166
Total Symptoms =	2135 (379)	2607 (236)	2793 (178)	2724 (291)	2868 (368)

¹ First number represents the total number of purported incidents regardless of certainty index. The numbers in parentheses indicate the total number of incidents with certainty index of 1 (definite) or 2 (probable).

Chart 16.1 - Symptoms: Humans

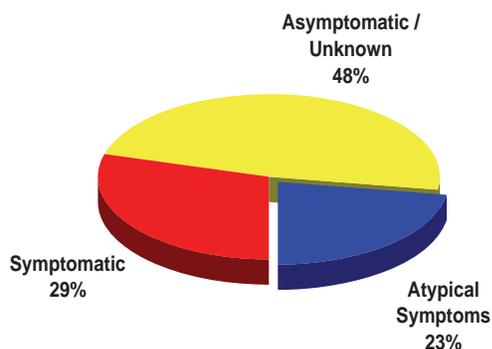
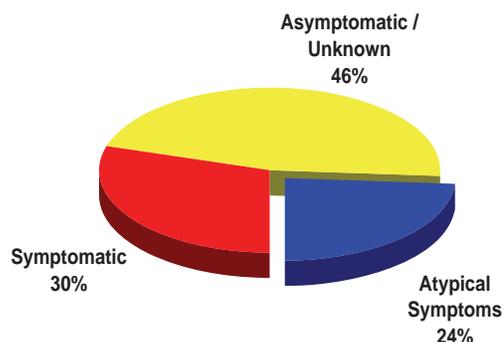


Chart 16.2 - Symptoms: Animals



DEATHS AND OTHER OUTCOMES

17. Deaths and Other Outcomes

Amongst the 1,946 human entities, there were no human deaths reported (Table 17.1).

The number of animal and human deaths, and other outcomes have been fairly constant over the last 6 years. For the current year, of the 1,231 animal victims, there were 46 deaths, with 4 of the cases assigned a certainty index of 1 or 2, indicating likely pesticide involvement. Table 17.1 summarizes this

information and also lists the number of entities associated with unusual circumstances.

Table 17.2 shows the active ingredients involved in the majority of the animal deaths. Methoprene, piperonyl butoxide, pyrethrins, metaldehyde, cyphenothrin, ethofenprox, permethrin, pyriproxyfen, and zinc phosphide were reported to be associated with the largest number of animal deaths.

Table 17.1 - Additional Outcomes

Additional Outcomes	Number of Entities ¹				
	2004	2005	2006	2007	2008
Human Deaths -					
Male	0 (0)	2 (1)	1 (0)	1 (0)	0 (0)
Female	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)
Total Human Deaths =	1 (1)	2 (1)	1 (0)	1 (0)	0 (0)
Animal Deaths -					
Single Animal	55 (24)	38 (9)	31 (9)	41 (10)	37 (3)
Group of Animals	10 (2)	15 (2)	7 (1)	5 (2)	6 (1)
Wildlife	2 (1)	2 (2)	0 (0)	0 (0)	3 (0)
Total Animal Deaths =	67 (27)	55 (13)	38 (10)	46 (12)	46 (4)
Other -					
Interesting/Strange	107 (26)	109 (9)	117 (7)	131 (14)	127 (25)
Total Additional Outcomes =	175 (54)	166 (23)	155 (17)	178 (26)	173 (29)

¹ First number represents the total number of purported incidents regardless of certainty index (categorized by humans, animals, and other). The numbers in parentheses indicate the total number of incidents with certainty index of 1 (definite) or 2 (probable).

Table 17.2 - Active Ingredients Involved in Three or More Animal Deaths

Active Ingredient ¹	Number of Deaths
METHOPRENE	7 (0)
PIPERONYL BUTOXIDE	5 (0)
PYRETHRINS	5 (0)
METALDEHYDE	4 (0)
CYPHENOTHHRIN	3 (1)
ETHOFENPROX	3 (0)
PERMETHRIN	3 (0)
PYRIPROXYFEN	3 (1)
ZINC PHOSPHIDE	3 (0)

¹ Note that a pesticide product may contain more than one active ingredient.

ENTITY AGE

18. Entity Age

Table 18.1 and Graph 18.1 summarize information about the ages of people involved in incidents reported to NPIC. Of these 1,411 people, 26.2% were less than 5 years of age (primarily consisting of ages

1 and 2), 4.7% were between the ages of 5 and 14, 4.0% were between the ages of 15 and 24, 51.6% were between the ages of 25 and 64, and 13.5% were over age 65.

Graph 18.1 & 18.1.1 - Age of People Involved in Reported Incidents

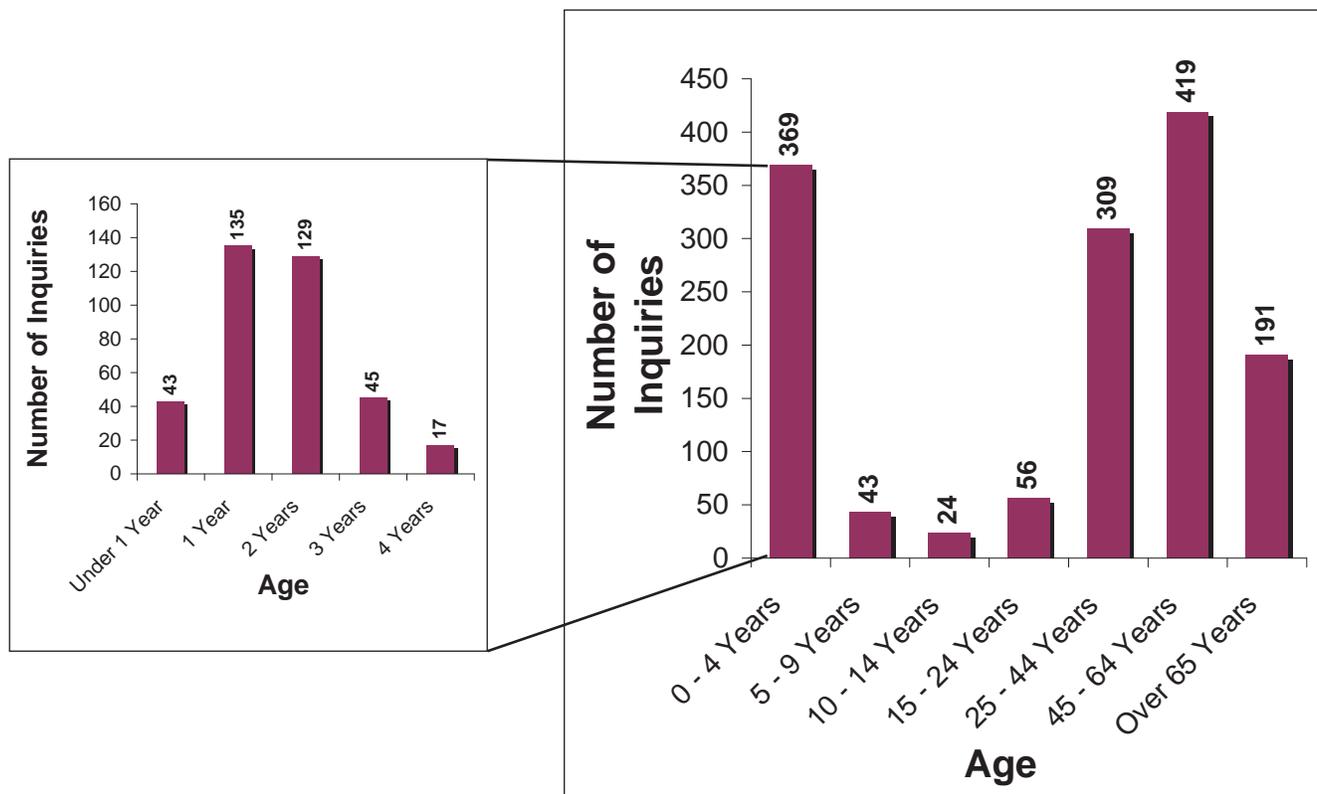


Table 18.1 - Age Distribution of People Involved in Reported Incidents

Age Category	Number of People				
	2004	2005	2006	2007	2008
Under 1 Year	12	27	35	45	43
1 Year	42	90	119	125	135
2 Years	50	90	112	105	129
3 Years	24	42	52	54	45
4 Years	11	22	22	14	17
Total (0 - 4 Years) =	139	271	340	343	369
5 - 9 Years	32	39	46	46	43
10 - 14 Years	15	20	14	20	24
15 - 24 Years	41	57	56	69	56
25 - 44 Years	228	243	266	271	309
45 - 64 Years	273	313	327	389	419
Over 64 years	125	139	197	189	191

REPORT ON SUBCONTRACTS

Oregon Poison Center

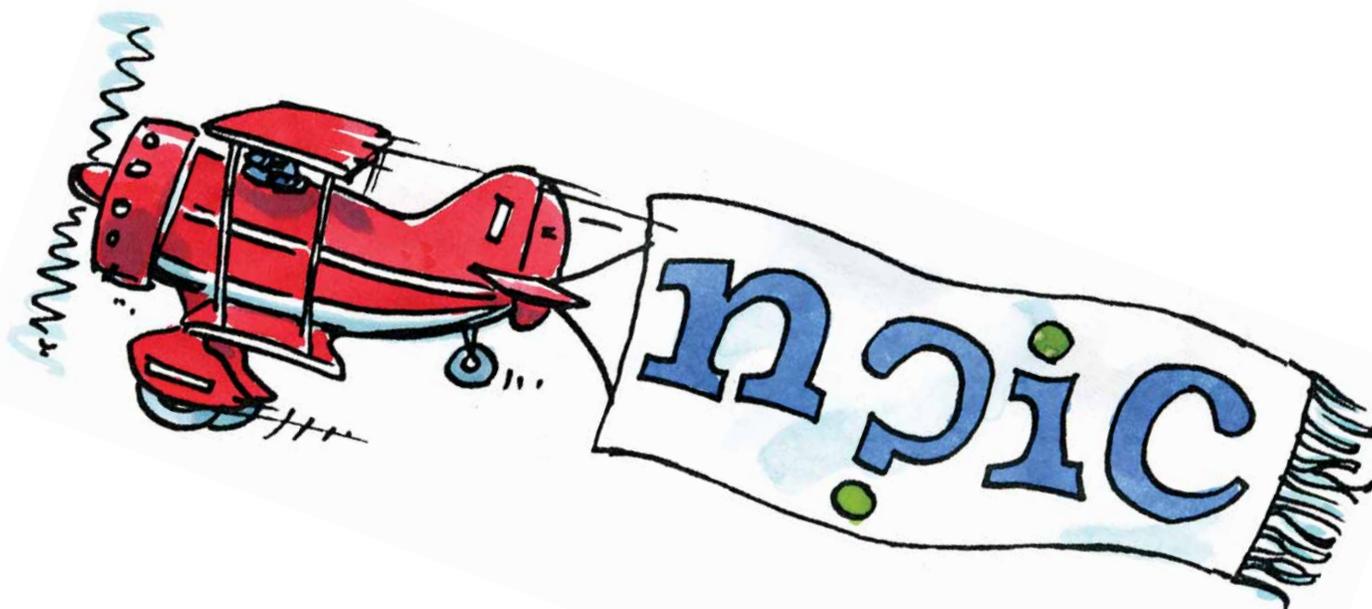
NPIC specialists transferred 65 inquiries to the Oregon Poison Center. These inquiries were transferred to the center because the specialists deemed that the inquirer's situation represented an acute poisoning emergency. The NPIC quarterly reports present detailed information for the inquiries transferred in each quarter.

Animal Poison Control Center

In the current year, 36 inquiries were transferred to the Animal Poison Control Center (APCC). The situation presented in each inquiry was considered to be an emergency; therefore, the inquiry was transferred to APCC. The nature of transferred inquiries is detailed in the NPIC quarterly reports.

Language Line Services, Inc.

Language Line Services, Inc. provides real-time access to over-the-phone interpretation services, seven days per week. Interpretation is possible in over 170 languages, including Spanish, Vietnamese, Chinese, Russian and Korean. NPIC made arrangements to work with medically-trained interpreters, capable of translating technical information about the potential health effects of pesticides. For the 2008 grant year, NPIC utilized the service to provide risk communication to 103 clients in Spanish, Russian, Cantonese or French.



NPIC is a cooperative agreement between Oregon State University and the United States Environmental Protection Agency.

Environmental & Molecular Toxicology
Extension Services
Oregon State University
333 Weniger Hall
Corvallis, OR 97331-6502
www.npic.orst.edu