

# npic

NATIONAL  
PESTICIDE ● INFORMATION  
CENTER

-2013-

Environmental & Molecular Toxicology

Oregon State  
UNIVERSITY

**OSU**

*The National Pesticide Information Center (NPIC) is a service providing a variety of pesticide and related information to the general public and professionals across the United States, Puerto Rico, and the Virgin Islands. NPIC is a cooperative project between Oregon State University and the U.S. Environmental Protection Agency. The 2013 Annual Report covers the period June 1, 2013 - February 14, 2014.*

**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. Based on the information provided, NPIC qualifies the information by assigning a certainty index (CI) and a severity index (SI). NPIC makes no claims or guarantees as to the accuracy of the CI, SI, 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:

U.S. Environmental Protection Agency  
Office of Pesticide Programs

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# NPIC 2013 Annual Report

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# DELIVERING OBJECTIVES

NPIC's cooperative agreement with the U.S. EPA specifies seven strategic project objectives. An overview of the objectives and a brief description of the measures taken to meet or exceed the goals therein are presented below.

## 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.

- NPIC operated a toll-free telephone service, including voicemail for off-hour inquiries. The toll-free service was operated Monday through Friday, 7:30-3:30 PT through December 31, 2013. Due to loss of NPIC staff, hours were reduced to four hours daily (8:00 – 12:00) on January 1, 2014. This change represents a modification in the scope of work, which was negotiated with Emily Selia, the NPIC Project Officer.
- NPIC responded immediately to over 99% of calls received during open operating hours throughout the year. Occasionally, a caller in the queue chose to leave a message. NPIC responded to 100% of voice mail messages within two business days.
- NPIC made appropriate referrals 100% of the time when people needed emergency medical assistance.
- NPIC submitted all required quarterly reports within 30 days of the end of each quarter.

## 2. To maintain and develop English and Spanish websites accessible to broad audiences, and respond to inquiries in multiple formats including email, fax, written requests and emerging technologies.

- NPIC collaborated with the State FIFRA Issues Research and Evaluation Group (SFIREG) Pesticide Oversight and Management (POM) committee to develop and refine language about incident reporting rationale and procedures.
- NPIC added nine new pages of content to its website including six pages in Spanish. See page 10.
- Quarterly, NPIC identified 100% of broken links on its website, and removed or replaced each one. NPIC added 46 new links to its website when high-quality science and regulatory items were identified. Five existing web pages were significantly updated with new content.
- NPIC maintains current contact lists for many organizations in order to provide the best local referrals. NPIC staff performed quality assurance to verify/update over 330 contacts during this period.
- NPIC responded to 100% of pesticide-related email inquiries within two business days.
- NPIC posted its first animated presentation on YouTube about the insect growth regulator, [Methoprene](#).
- NPIC developed three new "Common Pesticide Questions" and two new Pestibyte podcasts about topics of interest. See page 10.
- NPIC developed one new general fact sheet this year about [boric acid](#). See page 11.
- NPIC posted timely and accurate information on social media venues like Facebook and Twitter, promoting safe use practices, integrated pest management, and pesticide label comprehension 1-5 times per week. Specifically, NPIC authored 84 Twitter items, 50 Facebook items, and 9 posts for Google+.

## 3. To serve as a source of factual, reliable information on pesticide chemistry, toxicology, environmental fate, regulations, and health effects.

- NPIC collaborated with the Oregon Department of Agriculture to serve as a resource for questions about new restrictions on dinotefuran after high profile bee deaths.
- NPIC collaborated with the Vermont Department of Agriculture to serve as a resource for questions about chlorpyrifos after a high-profile enforcement action involving multiple properties.
- NPIC collaborated on outreach activities with several organizations. For example, EPA Region 10 worked with NPIC to identify priorities and opportunities for their outreach budget, which they used in part to purchase NPIC magnets for distribution. NPIC also worked with the west coast master gardener coordinators to encourage good stewardship practices when using slug baits where pets may have access.
- NPIC performed chemical-specific literature searches in order to update 16 active ingredient files, and created one new active ingredient file. In addition, NPIC monitored scientific and regulatory literature and added 126 new documents to various files in the collection.

# DELIVERING OBJECTIVES

- NPIC staff members participated in 19 events for continuing education this year, including seminars, presentations, conferences, and webinars.
  - NPIC used cost-effective methods of social media outreach to build connections, an email list to announce new resources, and provided flyers and other printed materials upon request. NPIC participated in events like National Pollinator Week and Farm Safety Week.
- 4. To provide expert consultation to the medical community for pesticide incidents involving humans or animals.**
- NPIC faculty members were available for consultation with medical (Dr. Sudakin) and veterinary (Dr. Berman) professionals, NPIC staff, EPA headquarters, and regional offices. They reviewed human/animal incident reports, providing subject matter expertise in the coding process.
  - NPIC fielded questions from veterinary professionals (64), medical professionals (81), and health agencies (33). NPIC also responded to referrals from poison centers (133), health departments (20), and medical (20) and veterinary professionals (28).
- 5. To collect complete information on human and animal exposure incidents, including the determination of certainty and severity indexes.**
- NPIC specialists documented demographic information for 99.8% of people that may have been exposed to pesticides, product information for 96.7% of reported incidents, and the location for 97.0% of incidents.
  - Among 1,523 reported incidents involving humans or animals, NPIC specialists were able to capture the exposure route in 85.6% of cases, and symptom/scenario information in 98.9% of cases.
  - For all 749 entities with known signs/symptoms that were exposed to a known product/active ingredient, NPIC compared the reported signs to science-based resources in order to assign a 'certainty index.'
  - For all 1,811 entities with known signs/symptoms, NPIC assigned a severity index.
- 6. To computerize all inquiries to facilitate reporting and analyze trends for pesticide misuse, labeling issues, and risks to humans, animals and environment.**
- Every pesticide incident was reviewed by a QA/QC specialist to ensure coding consistency and compliance with applicable protocols. Other inquiries were specifically reviewed when flagged by custom software.
  - In addition to routine QA/QC activities, each specialist received feedback about their strengths and weaknesses in documenting inquiries. Their performance was scored in 21 distinct measures such as narrative quality, judgment in assigning certainty and severity indexes, and accuracy in coding.
  - NPIC provided data about incidents and inquiries in response to 17 requests this year, within 1-9 business days. See page 14 for details about the data requests.
  - NPIC staff discussed trends and noteworthy inquiries with OPP routinely using email, quarterly meetings, conference calls, and reports.
- 7. To support and create innovative informational technology (IT) tools to report pesticide incidents and develop and maintain access to specialized databases on pesticides.**
- NPIC maintained its collection of mobile web apps and solicited feedback from target audiences to inform improvements.
  - NPIC collaborated with OPP, the American Association of Poison Control Centers (AAPCC) and other stakeholders to advance discussions about a new product search tool for Specialists in Poison Information (SPIs) that might be useful within the nationwide network of poison control centers.
  - NPIC made significant changes to the Ecological Incident Reporting Portal (Eco-portal) in collaboration with OPP. For example, a pop-up was added to clarify procedures and the ability for users to enter their contact information was removed.
  - NPIC developed new programming to enable automatic EPA notifications when an Eco-Portal report is filed. NPIC continues to engage with OPP and other stakeholders to improved and optimize the Ecological Incident Reporting Portal.

# INTRODUCTION

The primary mission of the National Pesticide Information Center is to provide objective information, collect and report incident data, use cutting edge technologies, and conduct extensive outreach to diverse audiences to promote a better understanding of pesticide use, with an overall goal of reducing risks to people, animals and the environment.

In this, the last part of the project period under cooperative agreement #X8-83458501, the National Pesticide Information Center (NPIC) continued to provide information about pesticides by phone, email and web content to millions. NPIC supports the US Environmental Protection Agency (EPA)'s Strategic Goal 4: Ensuring the Safety of Chemicals and Preventing Pollution. NPIC also supports the Mission of the Oregon State University (OSU) Extension System, conveying research-based knowledge in a way that is useful for people to improve their lives, their homes, and their communities.

After the third operational year ended on May 31, 2013, NPIC received an extended agreement to December 31, 2013 to continue operations, followed by a no-cost extension to February 14, 2013. A Funding Opportunity Announcement for the National Pesticide Information Center was published on August 15, 2013 (EPA-OPP-13-003). OSU submitted a proposal before the due date, September 30, 2013. In preparing the proposal, the team at OSU built the foundation for new collaborations with the American Association of Poison Control Centers (AAPCC), the Association of Structural Pest Control Regulatory Officials (ASPCRO) and the AgriSafe Network.

This period after the third operational year includes 8.5 months, from June 1, 2013 – February 14, 2013. That period will be referenced as “2013” in this report.

The complete record of NPIC accomplishments for the operational year includes this annual report and two quarterly reports, which were submitted within 30 days of each quarter's closure.

NPIC is open to questions from the public and professionals. It is staffed by highly qualified and trained specialists who have the 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 understand toxicology and environmental chemistry concepts. The services provided by NPIC are strictly informational and have no regulatory or enforcement capability or authority.

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- During this period, NPIC received 11,124 inquiries.
  - Around 87% of the total inquiries were addressed over the telephone.
  - About 15.9% of NPIC inquiries in 2013 were incidents. A pesticide incident is defined as 1) any unintended pesticide exposure, 2) a pesticide exposure with an adverse effect, 3) a spill, and/or 4) a misapplication.
  - One human death and 57 animal deaths were reported.
  - The top active ingredients involved with incidents were naphthalene (847), paradichlorobenzene (508), boric acid (251), permethrin (231), and silicon dioxide (134).
  - There were 2,567 entities involved in incidents reported to NPIC: 50% were human, 24% were animals and 26% were structural or environmental. See Chart 16.1 on page 33.
  - Among the 1,280 single humans involved in pesticide incidents, 12.2% were children (ages 4 and under) and 16.6% were seniors (ages 65 and over). About one-third of the people reported no symptoms (34.2%).
  - Questions related to health (2,805) and pesticide usage (2,438) were most common.
  - The NPIC website received 2,797,820 page views during this period. There were more than 1.4 million unique visitors, and 59,882 visitors stayed for more than 15 minutes.
-

# HIGHLIGHTS

**Diversity** – NPIC aims to deliver services in a way that works for people with diverse challenges. Pesticide Specialists receive training in tailored messaging. The NPIC website is available in English and Spanish, and it meets W3C web content accessibility guidelines. Fact sheets are available at the technical/scholarly level, and in question-answer formats at the 8th grade reading level.

**Strengthening Connections with States** - NPIC aims to increase 1) collaboration with states in responding to high-profile pesticide issues, and 2) utilization of NPIC inquiry data by states as a method of monitoring trends in pesticide exposure(s). NPIC engaged with members of the State FIFRA Issues Research & Evaluation Group (SFIREG) to address challenges in pesticide reporting language and protocols, presenting to the full SFIREG on June 10, 2013 and participating in conference calls in July. NPIC incorporated their feedback by revising the web page “**Reporting Pesticide Incidents**” (now titled “Where to Start with Pesticide Incidents”) substantially, among other outcomes.

**Social Media** – NPIC maintains an active presence on [Facebook](#), [Twitter](#), [Pinterest](#), and [Google +](#) targeting residential pesticide users. Updates include tips and resources about IPM and minimizing exposure to pesticides. NPIC released its first animated presentation during this partial year about the insect growth regulator, Methoprene. It’s available on the NPIC [YouTube](#) channel, in addition to the NPIC website.

**Foreign Language Capabilities** – NPIC employs two Spanish-speaking Pesticide Specialists capable of responding to inquiries and translating publications. The NPIC website is available in Spanish, and invitations to call NPIC are available in Cantonese, French, Mandarin, Russian, Japanese, Vietnamese, and Farsi. Under a contract with Language Line Solutions, NPIC is capable of responding to inquiries in over 170 languages.

During this partial year, NPIC responded to inquiries in Spanish (158), Vietnamese (5), American Sign Language (1), Mandarin (1), Russian (1), Greek (1), French (1), and Polish (1).

**IPM and Risk Reduction** – NPIC continued to emphasize Integrated Pest Management (IPM) and other risk reduction practices in its continuing education efforts this year. See the table on page 13 for examples. Specialists put their knowledge to work by discussing risk reduction actions with inquirers. During this partial year, they discussed following label directions over 2,000 times, minimizing exposure over 1,700 times, and IPM concepts over 500 times.

**Mothball Products** – NPIC received 649 inquiries about mothballs, flakes, and bars. Of these, 380 (59%) were incidents. Many reports involved off-label use of mothballs to repel animals in and around the home.

**Bed Bugs** – NPIC received 610 inquiries related to bed bugs this year. About 10% of these (58) were pesticide incidents. Many of these inquiries were related to the difficulty of pest control and the potential health effects of pesticides.

## History

The pesticide information service began in 1978 with the Texas Tech University Health Sciences Center associated Pesticide Hazard Assessment Project (PHAP) in San Benito, Texas. This telephone service was used to report pesticide incidents in EPA Region VI. 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 the mid 1980s the NPIC changed its name to the National Pesticide Telecommunications Network and moved to Texas Tech University. Following a competitive renewal process for the cooperative agreement, NPTN moved to Oregon State University (OSU) on April 1, 1995.

At OSU, NPTN built a comprehensive website, and started responding to inquiries by email. NPTN was re-named the National Pesticide Information Center (NPIC) in 2001.

- In 2007, NPIC added multi-lingual capabilities through a contract with Language Line Solutions, Inc. This enables NPIC to provide service in over 170 languages.
- In 2008, NPIC released a Spanish-language version of its website.
- In 2009, NPIC launched Pestibyte podcasts and an online portal for [veterinarians to report](#) pesticide incidents.
- In 2010, NPIC started using social media, and developed software to facilitate retrieval of information from the Pesticide Product Information System (PPIS) and the Pesticide Product Label System (PPLS).
- In 2011, NPIC revamped its websites in English and Spanish to infuse Integrated Pest Management (IPM) concepts throughout. Over 100 web pages were added, including a zip code driven locator for local resources.
- In 2012, NPIC released its first app for mobile devices, [My Repellent Finder](#).
- In 2013, NPIC released three additional [apps](#) for mobile devices and created video tutorials.
- In 2014, NPIC reduced available hours for phone service and increased emphasis on strengthening instant access to pesticide information online.



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## Resources & Facilities

NPIC maintains an extensive collection of hard copy and electronic information. 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's library includes a comprehensive Active Ingredient (AI) file collection with detailed scientific and regulatory information for over 1000 active ingredients. This collection has been scanned and indexed for desktop access, using software developed by NPIC.

NPIC is housed on the third floor of Weniger Hall in the Department of Environmental & Molecular Toxicology. Allocated spaces include five rooms, two individual offices and a storage unit.

## Funding & Compliance

Funding for NPIC is provided by the U.S. Environmental Protection Agency and Oregon State University.

Throughout the reporting period, NPIC has complied with the requirements of the U.S. Environmental Protection Agency (US EPA) regarding Title VI of the Civil Rights Act of 1964 and Section 13 of the FWPCA Amendments of 1972. NPIC has complied with US EPA Guidelines regarding procurement requirements stipulated in 40 CFR Part 33. NPIC has complied with all requirements specified by US EPA as part of the funding authorization of this project.

## Personnel Update

Five pesticide specialists (5.0 FTE) left the organization during this period, and those positions were not immediately filled pending results of the competitive funding opportunity (EPA-OPP-13-003).

As of February 14, 2014, NPIC's staff includes two full-time pesticide specialists, and three supporting staff (0.7 – 1.0 FTE). In addition, the NPIC Executive Committee includes the Director and three co-investigators, all of whom hold faculty appointments. All pesticide specialists hold a Master's degree in an applicable field. Specialists have a variety of scientific backgrounds including public health, microbiology, food safety, biology and hydrology.

## Standard Operating Procedures

NPIC staff use a variety of standing operating procedures (SOPs) to guide their work and some decision-making. This year, 11 of 29 SOPs were updated.

# NPIC WEBSITE

The NPIC website received 2,797,820 page views during this period. There were more than 1.4 million unique visitors, and 59,882 visitors viewed NPIC's website for more than 15 minutes. See pages 21-22 for more information about the popularity of specific resources on the NPIC website.

NPIC added nine web pages to its collection during this partial year, which now includes over 700 individual web pages.

New web pages:

- [Pestibyte Episode 23: Natural or green. What does it mean?](#)
- [Pestibyte Episode 24: Pesticides in groundwater](#)
- [Flood Recovery - Mold and Drinking Water Resources](#) (also available in [Spanish](#))
- [Recursos para aplicadores de pesticidas](#) (Pesticide Applicator Resources)
- [Minimizando la exposición en el trabajo](#) (Minimizing Exposure at Work)
- [Uso de pesticidas alrededor de mascotas](#) (Pesticide Use Around Pets)
- [Uso de pesticidas en mascotas](#) (Pesticide Use on Pets)
- [Información sobre pesticidas para veterinarios](#) (Pesticide Information for Veterinarians)

In response to inquiries, NPIC developed a common pesticide question (CPQ) titled, "[How to keep pesticides out of my well water?](#)" It was adapted into a PestiByte podcast, as well.

NPIC staff monitor a variety of publications, email lists, and regulatory announcements, aiming to keep NPIC resources accurate, timely, and complete. Five web pages were significantly updated and 46 new links were added to various pages after a vetting process. Over 200 broken links were identified using custom monitoring software, run quarterly. Each one was removed or replaced with an appropriate new link.

NPIC developed "Flood Recovery" in English and Spanish in response to disastrous flooding in Colorado in late 2013.



[Pesticides in Groundwater](#) (download and listen) [Episode 24](#) (view transcript) - A specialist discusses ways to keep pesticides out of well water. 2:20 min., 1.6MB



["Natural" or "Green?" What does it mean?](#) (download and listen) [Episode 23](#) (view transcript) - A specialist discusses some do's and don'ts about getting rid of bed bugs. 2:26 min., 1.4MB

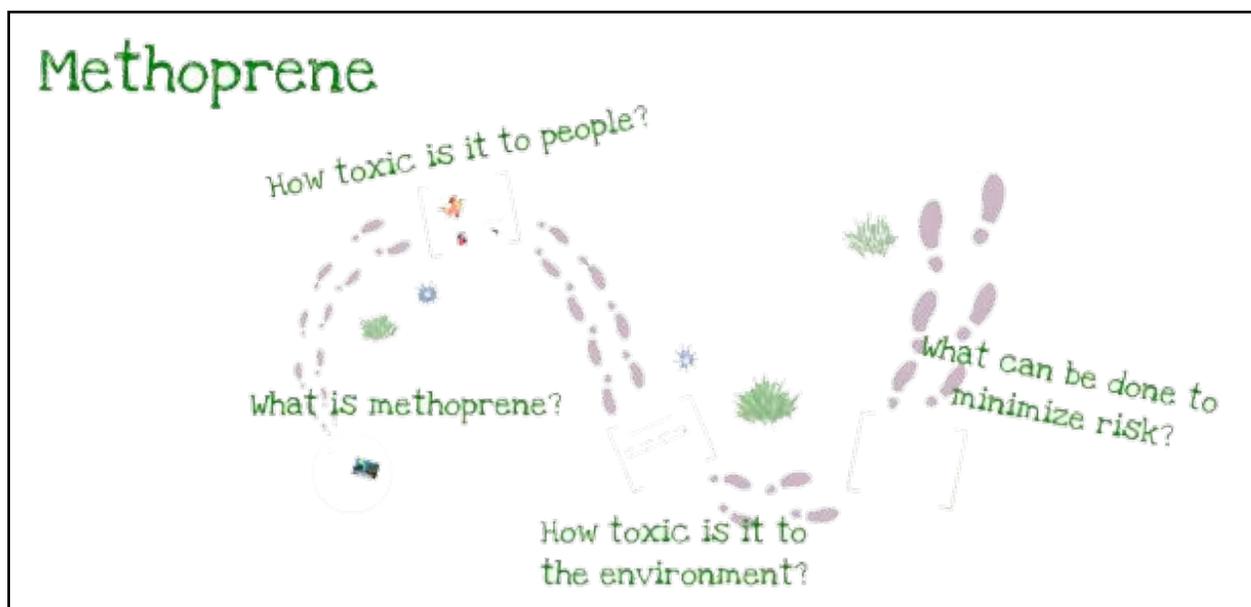
## Fact Sheets

NPIC aims to deliver services in a way that assists people with diverse challenges in making informed decisions. **Fact sheets** are available at the technical/scholarly level, and in targeted, question-answer formats at the 8th grade reading level. During this partial year, NPIC developed a new general fact sheet about **boric acid**, and it was posted on the NPIC website.



## Animated Presentation

NPIC released its first “**animated presentation**” in September. It’s a narrated presentation describing the insect growth regulator, methoprene. NPIC started developing video content in response to trends in the way people are seeking technical information online.



## Active Ingredient (AI) Files

In order to respond to inquiries efficiently, NPIC maintains a collection of AI files that contain reputable, science-based information about each pesticide active ingredient. The collection includes 1,066 files. NPIC updated 16 AI files by adding documents obtained from literature searches, and added one new AI file to its collection (sulfoxaflor).

NPIC monitored the Federal Register and evaluated relevant dockets for new science and regulatory information. NPIC acquired 126 new documents for inclusion in the collection this year, including all relevant EPA Fact Sheets, Risk Assessments and Registration Decisions.

NPIC also takes advantage of the library at Oregon State University, monitoring a wide variety of peer-reviewed sources for the latest research on toxicology, ecological impacts, and pest management science.

# CONTINUING EDUCATION

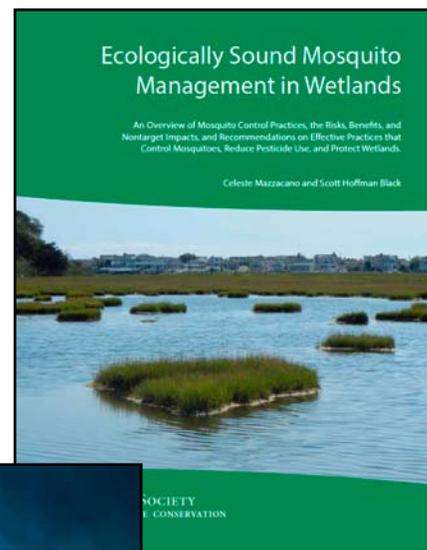
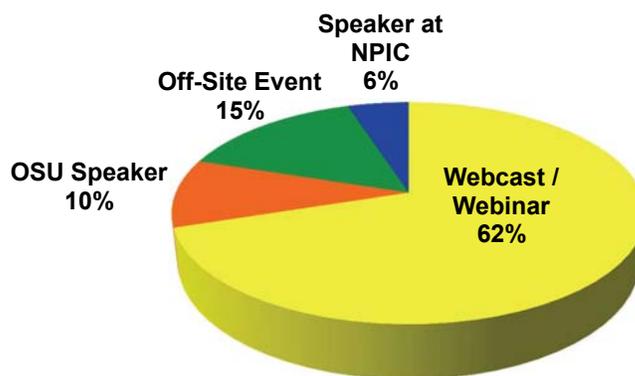
NPIC places emphasis on continuing education for pesticide specialists in order to maintain the highest level of service, relying on the most up-to-date science and regulatory information. Building and maintaining a strong knowledge base is a significant part of each specialist's position description (25%). See the next page for a table on events attended by NPIC staff during this partial year.

Oregon State University provided diverse opportunities for continued learning, including graduate seminars, visiting lecturers, faculty presentations, and regional conferences. Weekly staff meetings allow NPIC staff to discuss coding consistency, trends in inquiries and new research findings.

Specialists stay current with the scientific, regulatory and industry aspects of pesticides by monitoring relevant journals, pest control industry magazines, social media, and email lists. Each day, a designated specialist monitors the headlines to identify pesticide-related news items and distributes the most relevant items to the team.

NPIC approaches training for new specialists in a way that values diversity, new perspectives and the best science available. The training program includes a comprehensive training manual, facilitated exercises, and mentored practice in risk communication. 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.

**NPIC staff attended 19 events for continuing education this year.**



**Don't Bug Me Webinar Series 2013**

# CONTINUING EDUCATION

## Continuing Education Events

Speaker/Source	Speaker's Affiliation	Event Title
Dr. Dini Miller	Virginia Tech University	Don't Bug Me Webinar: Get Rid of Those Bed Bugs
Dave Gray	eXtension	The Connected Organization - Cooperative Extension
Several	eXtension	Google Hangout Discussion on Science Communication
Several	Compassonline.org and Academics	Science Communication Moderated Panel Discussion
Chlorine Institute and American Chemistry Council	Centers for Disease Control and Prevention	Pool Chemical Safety
Steven Caulfield	Turner Building Science and Design, Maine Indoor Air Quality Council, EPA	Mold and Moisture Control in Schools: Potential Health Effects and Safe Clean-Up Practices
Several	Sackler Colloquium	Communicating Uncertainty
Chris Buttacavoli, Jon Dorbolo	Oregon State University, Technology Across the Curriculum (TAC)	Prezi Basics
Robert Peckyno	Oregon State University	Higher Education in Mexico: the Challenges with Enrique Fuentes Flores
Dr. Dan Suiter	University of Georgia, eXtension	Don't Bug Me Webinar: Fall Invaders
Dr. Kaushik Patel	American Chemical Society	What's New with SciFinder?
Several	Oregon Department of Ag, Oregon State University, Xerces Society	Pollinator Protection - Legislative Committee Meeting
Aaron Huertas	Union of Concerned Scientists	Getting Science Right in the Media
Steve Bradbury, others	Various	Pesticide Program Dialogue Committee (PPDC) Meeting
Several	AgriSafe Network	Women in Agricultural Work: Are They Different?
Several	Various	Chemical Applicators Short Course
Kaci Buhl, Rose Kachadoorian	NPIC, Oregon Department of Agriculture	Rodenticide Regulation and Toxicity
Several	Oregon State University	EMT Research Day - Various topics in toxicology and risk communication
Celeste Mazzacano	Xerces Society for Invertebrate Conservation	Ecologically Sound Mosquito Management in Wetlands

Pesticide specialists perform data entry on a daily basis, documenting inquiries and incidents. A Quality Assurance/Quality Control (QA/QC) Specialist reviews the data, making corrections as needed to maintain a consistent approach. She collaborates with Dr. Daniel Sudakin (MD) on human incidents, and with Dr. Fred Berman (DVM) on animal incidents. Over 1,700 pesticide-related incidents were documented and reviewed during this partial year. See pages 23-36 for detailed information about the wide range of inquiries and incidents.

NPIC performed an annual data assessment focused on personnel, and provided detailed feedback to each Pesticide Specialist about his or her performance in data collection, entry, and incident classification. The QA/QC Specialist assigned quantitative scores based on 21 distinct measures of data quality, such as active ingredient spelling and the completeness of narratives.

NPIC also led staff activities to bolster and maintain data quality in the Pesticide Inquiry Database (PID). In response to QA/QC findings, discussions and posted coding examples were presented at staff meetings. More detailed information about quality assurance procedures are provided to the NPIC Project Officer in "Quality Assurance Reports."

**Special Reports from the PID** - NPIC provided 17 special reports to EPA personnel and their partners, typically within one week.

Selected examples (data recipient – data requested):

- Vermont Department of Agriculture – All incidents from VT (2013)
- EPA - OPP - FEAD: All inquiries related to RID Home Lice Control Spray
- EPA - OPP - BPPD – All incidents related to cytokinins
- EPA - OPP - HED – All human incidents related to malathion, dichlorvos, glyphosate, certain rodenticides, paraquat with severity of symptoms greater than "minor"
- New York Department of Health – All New York incidents with known products
- Oregon Department of Agriculture – All Oregon inquiries related to bed bugs
- EPA - OPP - HED – All incidents related to herbicide residue in compost
- North Dakota Department of Agriculture – All incidents from ND
- New Jersey Department of Agriculture – All dichlorvos incidents 2000-present
- EPA - OPP - AD – All incidents related to a product called Clean Clippers
- EPA - OPP - EFED – All incidents related to hexaflumuron

AD = Antimicrobials Division

BPPD = Biopesticides and Pollution Prevention Division

EFED = Environmental Fate & Effects Division

FEAD = Field & External Affairs Division

HED = Health Effects Division

OPP = Office of Pesticide Programs

# SOCIAL MEDIA

NPIC recognizes the importance of social media as a mechanism to provide objective, science-based information about pesticides in a timely way. NPIC follows standard operating procedures for answering inquiries received via social media, for building connections with others, and for developing engaging content. During this partial year, NPIC published 84 tweets and 50 Facebook posts. In addition to Facebook and Twitter, NPIC has an active presence on Google+, Pinterest, and YouTube.

The image shows a screenshot of a Facebook page for the National Pesticide Information Center (NPIC). It features four posts from November 2013. The first post, dated November 13, 2013, is a link post about a new bug repellent label symbol. The symbol is a circular graphic divided into four quadrants: top-left (yellow) with a mosquito and 'MOSQUITO', top-right (yellow) with a tick and 'TICK', bottom-left (black) with 'REPELS' and '4 HRS.', and bottom-right (black) with 'REPELS' and '6 HRS.'. The second post, also dated November 13, 2013, is a text post about storing pesticides, accompanied by an illustration of a cabinet labeled 'KEEP OUT' and 'FLA PEST' with a skull and crossbones. The third post, dated November 7, 2013, is a link post about antimicrobials, accompanied by an illustration of a scientist and a fact sheet titled 'Antimicrobials Fact Sheet'. The fourth post, dated November 13, 2013, is a text post about getting serious about ants, accompanied by an illustration of a broom sweeping up a mess and a sign that says '2 E Eliminate'. Each post includes engagement metrics like 'Like', 'Comment', 'Share', and 'Boost Post'.

**npic National Pesticide Information Center** shared a link.  
November 13, 2013

EPA is creating a label symbol that does for bug repellents what SPF labeling did for sunscreens. They're asking for feedback now!

**Is that the Right Bug Repellent for You? This New Graphic Should Help | EPA Connect**  
blog.epa.gov

Remember the days before SPF when you weren't so sure how long your sun screen would protect you from the sun's harmful rays? Maybe I'm daling myself. I burn easily and had no idea how to...

Like · Comment · Share 1 3  
89 people saw this post Boost Post

**npic National Pesticide Information Center** shared a link.  
November 13, 2013

We all know what to do with Thanksgiving leftovers (mmm...leftovers); but what can be done with those leftover #pesticides from the summer? If you choose to store them away, consider keeping them somewhere that won't get too cold or hot. Temp... See More

**Storage of Pesticides**  
npic.orst.edu

Objective, science-based pesticide information.

Like · Comment · Share 1 1 1  
45 people saw this post Boost Post

**npic National Pesticide Information Center** shared a link.  
November 7, 2013

Sometimes #antimicrobials are used in the home to sanitize or disinfect surfaces. You can check the label to verify which microbes the product works against and how long it must sit on surfaces to be effective. <http://ow.ly/qwdTS> If you need assistance in selecting the right product consider talking with the staff at your local health department. <http://ow.ly/qwe0r>

**Antimicrobials Fact Sheet**  
npic.orst.edu

Objective, science-based pesticide information.

Like · Comment · Share 4 2  
210 people saw this post Boost Post

**npic National Pesticide Information Center** shared a link.  
November 13, 2013

Can you take the pledge to get SERIOUS about ants in your home?  
Consider these 7 steps to help finally win the war.  
<http://ow.ly/qHUsO>

**Eliminate**  
Eliminate crumbs, messes, and spills.

**Got Ants? Get S.E.R.I.O.U.S.**  
www.gotantsgetserious.org

Got Ants? Get S. E. R. I. O. U. S. Don't play around with spray when there are better ways to keep ants away. Our mission is to show you how to manage ant problems at home—whether you tackle pest problems yourself or hire a professional to do it for you. Switching...

Fans and followers of “NPICatOSU” receive updates and tips about reducing the risk of pesticide exposure when controlling pests in the home and garden.

# COLLABORATION HIGHLIGHTS

## Collaborations – selected examples:

- NPIC collaborated with EPA Region 10 to distribute NPIC magnets and targeted information for veterinarians.
- NPIC collaborated with all three west coast coordinators for the master gardener community to encourage vigilance when using slug & snail baits.
- NPIC participated in Farm Safety Week and National Pollinator week using social media.
- Dave Stone and Kaci Buhl participated in a SFIREG work group tasked with harmonizing language about reporting pesticide incidents. NPIC website language was substantially revised.
- NPIC collaborated with the Oregon Department of Agriculture in preparation for their press release about dinotefuran use limitations.
- NPIC collaborated with the Vermont Department of Agriculture in preparation for their press release related to chlorpyrifos being misapplied in several homes.
- NPIC collaborated with EPA in order to optimize immediate notifications regarding dead or missing bees reported to NPIC.
- NPIC collaborated with the California Department of Pesticide Regulation in support of their workshop series for school IPM practitioners.
- NPIC collaborated with UC Davis in support of their Pesticide Safety Training winter events.

## Presentations – selected examples:

- Kaci Buhl delivered a presentation about NPIC at the National Pesticide Applicator Certification & Training (PACT) workshop.
- Several NPIC faculty delivered presentations for pesticide applicators seeking recertification credits.
- Kaci Buhl delivered a series of presentations about pesticide risk communication at the request of the Montana Department of Agriculture.

## Connecting People with Local Resources:

NPIC maintains a database of contacts, including information for local, state, and federal agencies, health departments, and occupational and wildlife agencies. This vast collection is available to the public on the NPIC home page (see [My Local Resources](#)), on a custom page for professional applicators (see [Contacts for Pesticide Workers](#)), and in a mobile web app called [PALS](#).



NPIC verified and/or updated over 300 contacts, including its list of Household Hazardous Waste contacts and state health agencies.

NPIC aims to thoroughly verify each contact list every two years. When errors are identified in between updates, they are corrected within 5 business days.

## *Introduction to Inquiry Data*

Pesticide specialists create a record for every inquiry, which is entered into the NPIC Pesticide Inquiry Database (PID). The PID is a relational database, designed and built by NPIC. Custom reports may be available based on many of the following items listed below.

There are three types of inquiries received by NPIC:

- Requests for information about pesticides and related issues
- Inquiries or reports about pesticide incidents
- Issues that are not related to pesticides

The type and amount of information entered into the PID depends on the type of inquiry.

NPIC aims to collect the following information for all pesticide-related inquiries:

- The inquirer's zip code or state
- The type of person (general public, government, or medical personnel, etc.)
- The type of question (health risk, regulatory compliance, label clarity, etc.)
- The EPA Registration number, product name and/or active ingredient name(s)
- The actions performed (verbal information, referrals, transfers, etc.)
- The way the person found NPIC (internet, phone book, etc.)

For pesticide incidents, NPIC makes every effort to collect these additional data:

- The type of incident (exposure route, misapplication, spill, etc.)
- The type of exposed entity (person, animal, building, etc.)
- The location of the incident (home inside, home outside, retail store, school, etc.)

If a person or animal was exposed to a pesticide, NPIC specialists attempt to collect additional information. However, they may not ask for all of these items during emergent medical events.

- A time line describing the exposure duration, symptom onset and resolution
- The person or animal's age, symptoms and gender
- The species, breed, and weight of animals

When symptoms are reported and the active ingredient(s) are known, specialists evaluate the relationship between them to assign a **certainty** index. The certainty index is an estimate by NPIC as to whether the reported symptoms were definitely, probably, possibly, or unlikely to have been caused by the reported exposure to a pesticide, or whether the signs and symptoms were unrelated. Specialists use the following tools when assigning the certainty index:

- A standard set of criteria, defined in NPIC training and procedures
- Published exposure reports and case studies
- Input from Dr. Dan Sudakin for human exposure incidents
- Input from Dr. Fred Berman for animal exposure incidents
- Input from the PID QA/QC specialist

Symptoms are also characterized in terms of their **severity** in the PID. The criteria for defining major, moderate, and minor symptoms were adapted from similar mechanisms used by poison control centers in the National Poison Data System, and by the U.S. EPA in the Incident Data System.

The following pages include details about the incidents and inquiries documented by NPIC from June 1, 2013 to February 14, 2014.

## ***Disclaimers and explanatory information:***

- Material presented in this report is based on information provided to NPIC by individuals who contacted NPIC, primarily by phone or email.
- None of the information has been verified or substantiated by independent investigation by NPIC staff, laboratory analyses, or by any other means. This is similar to other self-reported public health monitoring programs, including the incident data recorded by poison control centers.
- If a person alleges/reports a pesticide incident, it will likely be recorded as an incident by NPIC. To meet the criteria, the person must have sufficient knowledge about the scenario, and it must be reported within two years of its occurrence.
- NPIC defines an incident in terms of public health. The NPIC definition includes any unintended exposure (i.e., child ate a mothball), intended exposures with adverse effects (i.e., illness in pets treated with flea/tick products), spills and potential misapplications (i.e., product intended for ornamental plants was applied to vegetables in the home garden.)
- Less than 2% of the time, callers indicate their main purpose for contacting NPIC was to report a pesticide incident. More often, they indicate their main purpose for contacting NPIC is to obtain technical information. See Table 6 on page 24. Regardless, NPIC specialists make every effort to collect complete information about scenarios that meet the NPIC incident definition. Approximately 15% of inquiries to NPIC are coded as incidents.
- NPIC specialists are trained to recognize scenarios that could potentially lead to enforcement actions. In these cases, the standard operating procedure requires a referral to the appropriate State Lead Agency. See Table 7.3 on page 25.
- NPIC qualifies the information received by assigning a certainty index. The certainty index is an estimate by NPIC as to whether any reported signs/symptoms were definitely, probably, possibly, or unlikely to have been caused by the reported exposure to a pesticide, or whether the signs/symptoms were unrelated to pesticides.
- 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 the information provided to NPIC.
- It is occasionally necessary to collect personally identifiable information (PII) in order to respond to inquiries, for example, by voice-mail, email, or mail. Users of web-based incident reporting portals may have the option to submit PII as part of their reports. In all other cases, it is NPIC policy to refrain from collecting/documenting PII from people who contact NPIC through public channels.
- It is NPIC policy to not collect personally identifiable information, similar to other public health monitoring programs.
- Through its cooperative agreement with EPA, NPIC provides special reports upon request. Special reports may also be provided to other cooperative agreement holders with EPA, such as state-level Departments of Agriculture/Environmental Protection. Other entities with interest in special reports should contact NPIC to inquire about the procedure and possible costs.

# MONTHLY INQUIRIES

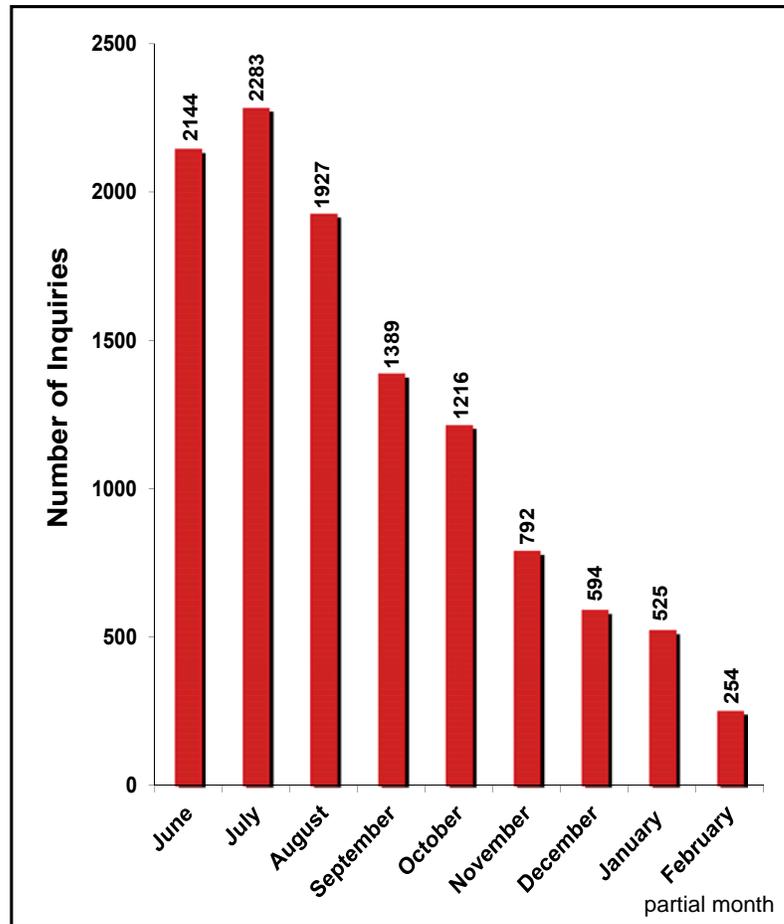
## 1. Monthly Inquiries

NPIC received 11,124 inquiries during this partial year. Graph 1 shows the number of inquiries received for each month. Eighty-one percent (81%) of the inquiries were received between June and October, concurrent with the part of the year when pest pressures are highest.

**Table 1. Monthly inquiries**

Month	Total
June	2144
July	2283
August	1927
September	1389
October	1216
November	792
December	594
January	525
February 1st - 14th	254
<b>Total =</b>	<b>11124</b>

**Graph 1. Monthly inquiries**



# TYPE OF INQUIRY / ORIGIN OF INQUIRY

## 2. Type of Inquiry

NPIC classifies inquiries as information, incident, or other (non-pesticide) inquiries. A pesticide spill, misapplication, contamination of a non-target entity, or any purported exposure to a pesticide, regardless of injury, is classified as an incident.

The types of inquiries are summarized in Table 2 and Chart 2.

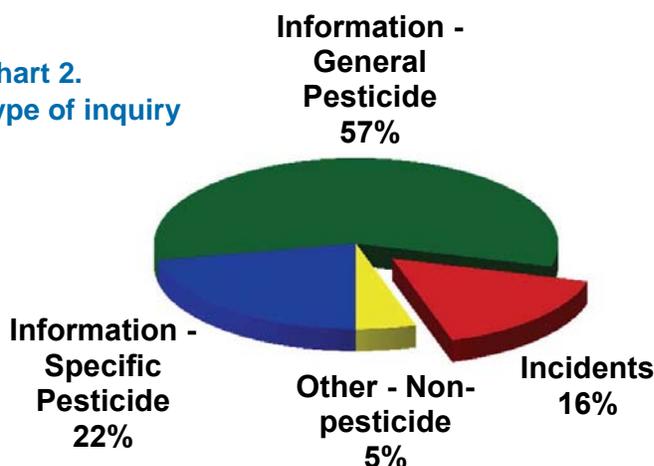
The majority of inquiries (8,823 or 79%) to NPIC were informational inquiries about pesticides or related issues (Chart 2). NPIC responded to 2,434 (22%) information inquiries about specific pesticides. NPIC responded to 6,389 (57%) inquiries relating to pesticides in general.

NPIC documented 1,770 incidents involving pesticides (16%). NPIC Specialists routinely provide requested information, evaluate the need for any referrals, and ask several scoping questions to document the circumstances surrounding the reported incidents.

**Table 2. Type of inquiry**

Type of Inquiry	Total
Information - General Pesticide	6389
Information - Specific Pesticide	2434
Incidents	1770
Other - Non-Pesticide	531
<b>Total =</b>	<b>11124</b>

**Chart 2. Type of inquiry**



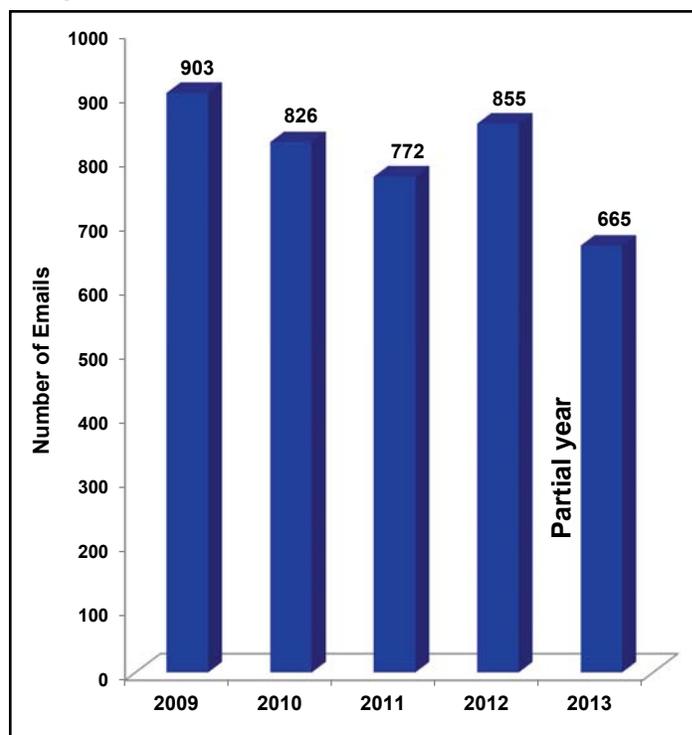
## 3. Origin of Inquiry

Table 3 summarizes the origin of inquiries received by NPIC. Over 90% of inquiries were received by telephone.

**Table 3. Origin of inquiry**

Origin of Inquiry	Total
Telephone	9693
Voice Mail	749
Email	665
Mail	16
Walk-In	1
<b>Total =</b>	<b>11124</b>

**Graph 3. Emails received**



# WEBSITE ACCESS

## 4. Website Access

The NPIC website attracted more than 1.4 million unique visitors viewing 2,797,820 pages during this period.

About half of page views (49%) originated from queries on popular search sites, or were connected with NPIC from a bookmark (45%) or other direct link (i.e., shared via email). The most popular search terms used to reach NPIC were “neem oil,” “diatomaceous earth,” and “malathion.”

Visits to the website varied greatly in duration, with 59,882 visits lasting longer than 15 minutes, and 1,722,300 of less than 15 minutes. The average visit duration was approximately 2 minutes.

The most popular pages viewed on the site were the “My Local Resources” page (153,565 views), the Diatomaceous Earth general fact sheet (121,928), and the NPIC home page (112,635 views).

Graph 4.1. Page views

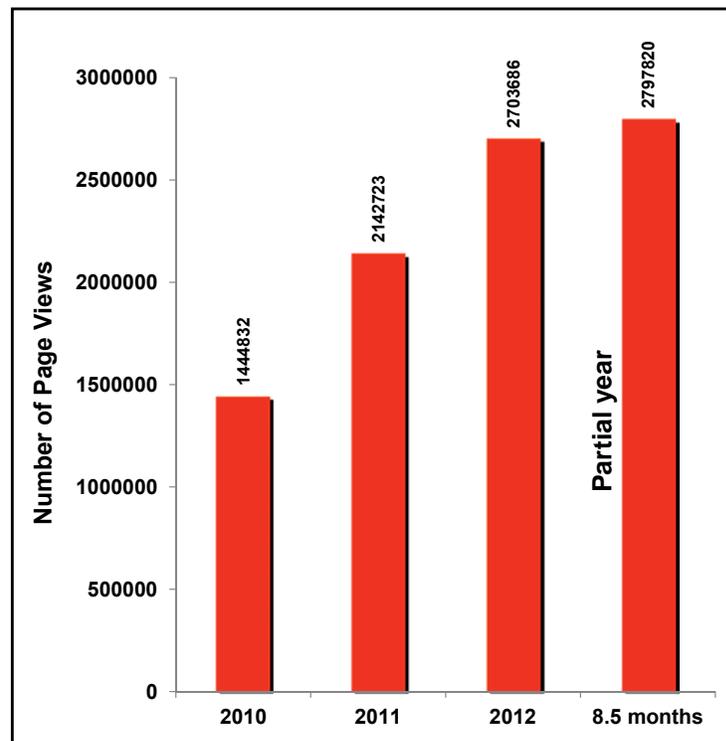
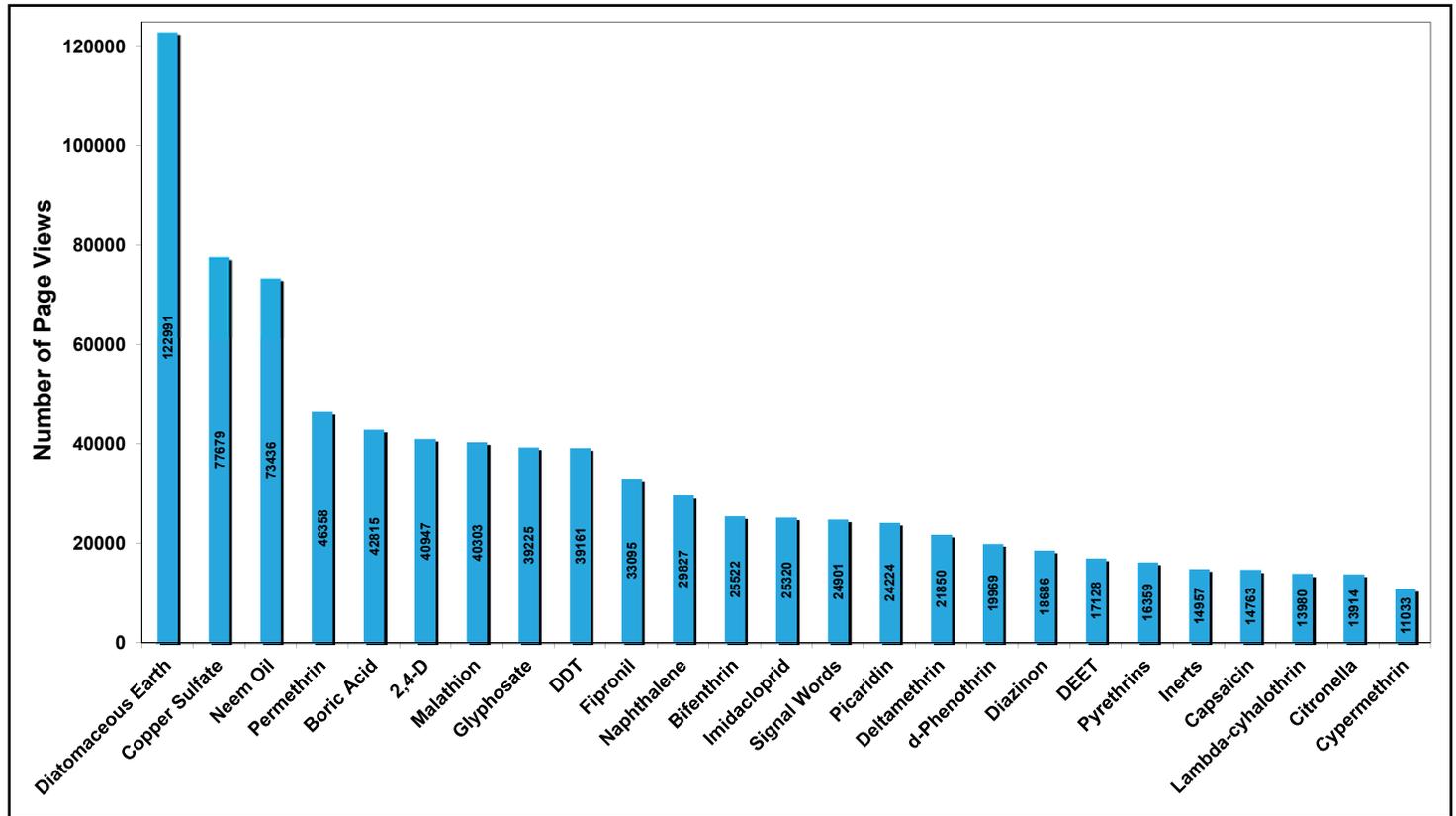


Table 4. Selected page views

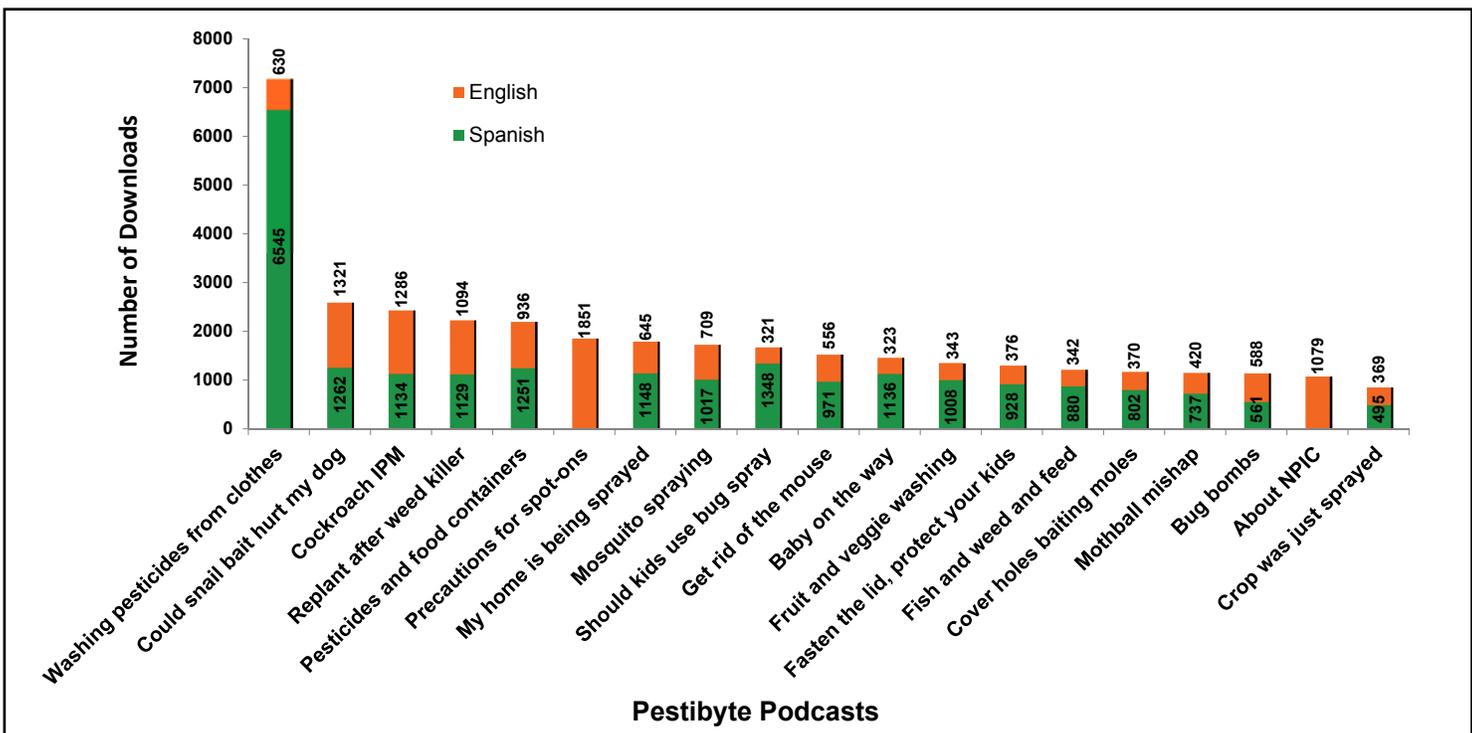
Page Accessed	English page views	Number of pages available	Spanish page views	Number of pages available
Fact Sheets	1,059,930	175	6,435	7
Pest Control	456,886	49	93,646	29
Pesticide Ingredients	338,733	85	22,283	16
My Local Resources	153,565	3	3,654	1
Home Page	112,635	1	3,762	1
Health and Safety	76,853	28	8,832	19
Common Pesticide Questions	47,338	93	46,342	65
Environment	42,642	18	9,921	7
Regulations	41,758	23	3,443	6
A to Z Index	29,189	1	1,778	1
Pestibyte Podcasts	15,627	45	22,974	39
Pesticide Incidents	6,780	1	873	1

# WEBSITE ACCESS

Graph 4.2. Top 25 active ingredient fact sheet page views



Graph 4.3. Top 15 Pestibyte podcast downloads



On an average day, 61 podcasts are downloaded in English, and 38 podcasts are downloaded in Spanish.

# TYPE OF INQUIRER

## 5. Type of Inquirer

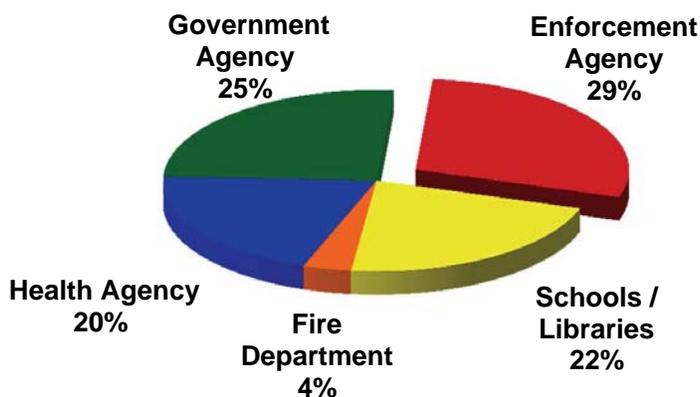
Table 5 summarizes the profession/ occupation of individuals contacting NPIC. The majority of inquiries to NPIC are from the general public. Of the 11,124 inquiries received, there were 10,381 (93.3%) from the general public, 164 (1.5%) from federal, state or local government agencies, 145 (1.3%) from human and animal medical personnel, and 75 (1.0%) from information groups including the media, unions, and environmental organizations.

Chart 5 summarizes the 164 governmental entities that contacted NPIC during this partial year. Health agencies include health departments and WIC personnel. Government agencies include city, county, and other government entities without enforcement roles. Enforcement agencies include the U.S. EPA, state lead pesticide agencies and police, among others.

Table 5. Type of inquirer

Type of Inquirer	Total
General Public	10381
<b>Federal/State/Local Agencies</b>	
Enforcement Agencies	47
Government Agency	42
Schools/Libraries	36
Health Agency	33
Fire Departments	6
<b>Medical Personnel</b>	
Human Medical	81
Animal Vet./Clinic	64
<b>Information Groups</b>	
Media	34
Unions/Info. Service	23
Environmental Org.	18
Pesticide Mfg./Mktg. Co.	77
<b>Consumer Users</b>	
Retail Store	62
Pest Control	61
Lab./Consulting	28
Lawyer/Insurance	11
Farm	11
Master Gardener	7
Non-migrant Ag. Worker	1
Other	101
<b>Grant Year Total =</b>	<b>11124</b>

Chart 5. Inquiries from federal / state / local agencies (Total: 164)



# TYPE OF QUESTION

## 6. Type of Question

The questions received at NPIC are most often related to health (e.g., effects, risk, etc.) and application (e.g., methods, label clarity, etc.). “Other” questions (1,943) include all wrong numbers and people seeking their pest control companies.

Questions about regulations (662) range from “How do I get a new product registered?” to “Can the authorities make my neighbor stop spraying?” Questions about how to follow pesticide label directions were coded as ‘Application’ questions (2,438).

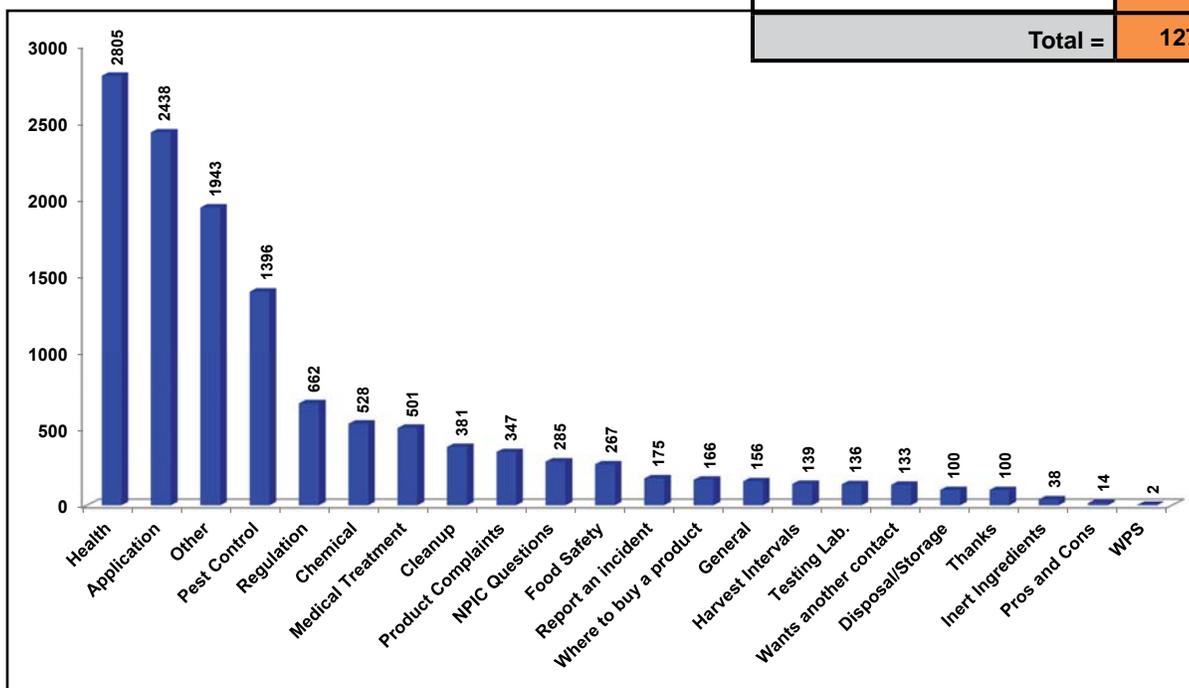
People contacted NPIC in order to report a pesticide incident 175 times with no specific question. In these cases, NPIC provides appropriate local referrals for enforcement, as needed.

Inquiries may often involve more than one type of question. Inquirers asked 12,712 questions this partial year in the course of 11,124 inquiries.

Table 6. Type of question

Type of Question	Total
Health	2805
Application	2438
Other	1943
Pest Control	1396
Regulation	662
Chemical	528
Medical Treatment	501
Cleanup	381
Product Complaints	347
NPIC Questions	285
Food Safety	267
Report an incident	175
Where to buy a product	166
General	156
Harvest Intervals	139
Testing Lab.	136
Wants another contact	133
Disposal/Storage	100
Thanks	100
Inert Ingredients	38
Pros and Cons	14
WPS	2
<b>Total =</b>	<b>12712</b>

Graph 6. Type of question



# ACTIONS TAKEN

## 7. Actions Taken

### Primary actions:

NPIC Specialists respond to inquiries in a variety of ways. The primary actions are summarized in Table 7.1. Most inquiries (10,427) were answered by providing verbal communication. Information was also sent via email in 650 cases, and by postal mail in 50 cases. Upon request, NPIC brochures and other promotional materials were mailed to people 27 times in this period.

Table 7.1. Primary action taken

Primary Action Taken	Number of Inquiries
	2013
Verbal Info	10427
Emailed Info	650
Transferred to Specialist / Voicemail	106
Handled Inquiry in Spanish	88
Mailed Info	50
Transferred to EC / PC	40
Sent NPIC Outreach Material(s)	27
Interpreted via Language Line Solutions	18
Faxed Info	3
Referred to Dr. Sudakin	3
Referred to Dr. Berman	1

### Risk reduction actions:

NPIC keeps track of certain conversation topics aimed at reducing pesticide risk. Specialists documented 4,344 risk reduction actions, detailed in Table 7.2.

Table 7.2. Risk reduction actions

Risk Reduction Action Taken	Number of Inquiries
	2013
Discussed Following the Label	2007
Discussed Ways to Minimize Exposure	1757
Discussed IPM Concepts	506
Discussed Environmental Protection	74

### Referrals to other organizations:

The number of referrals to various organizations is presented in Table 7.3. Specialists use their training and SOPs to evaluate the need for referrals, providing them only when the requested information is outside NPIC boundaries and there is an appropriate resource available to provide the information (i.e. "Manufacturer/Distributor" for detailed application instructions and product complaints, "Cooperative Extension" for pest control advice, and "State Lead Agency" for enforcement). Local resources are provided whenever possible, and contact information is included. See page 16 for information about how NPIC maintains and delivers appropriate referral information.

Table 7.3. Referrals to other organizations

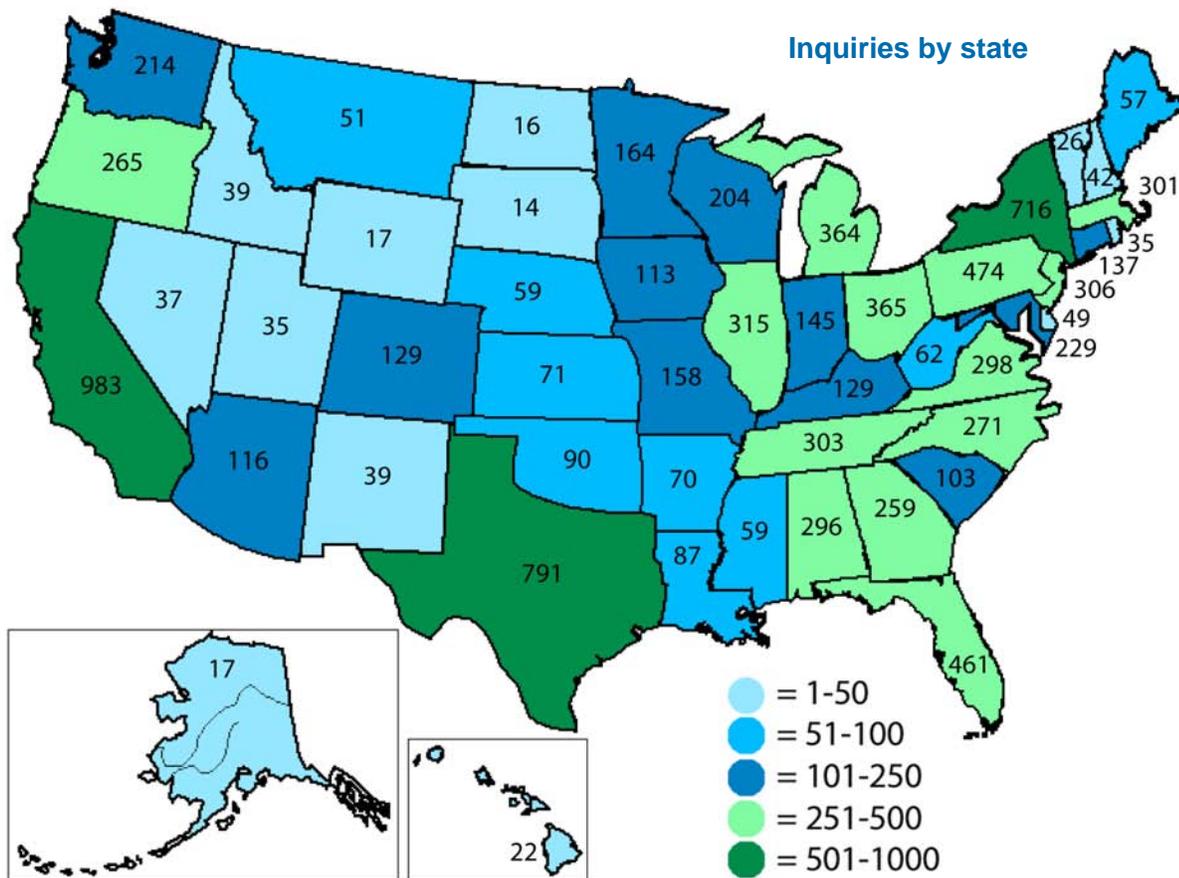
Organization Name	Number of Inquiries
	2013
Manuf. / Distributor Contact	3301
NPIC Website	882
County Extension Contact	860
State Lead Contact	627
Poison Control Contact	582
Other Org. Contact	327
Dept. of Health Contact	276
EPA Website	202
EPA HQ / OPP Contact	153
Animal Poison Contact	150
Hazardous Waste Contact	141
EPA Region Contact	93
Other State Agency Contact	71
Other Fed Agency Contact	53
OSHA Contact	12

# INQUIRIES BY STATE

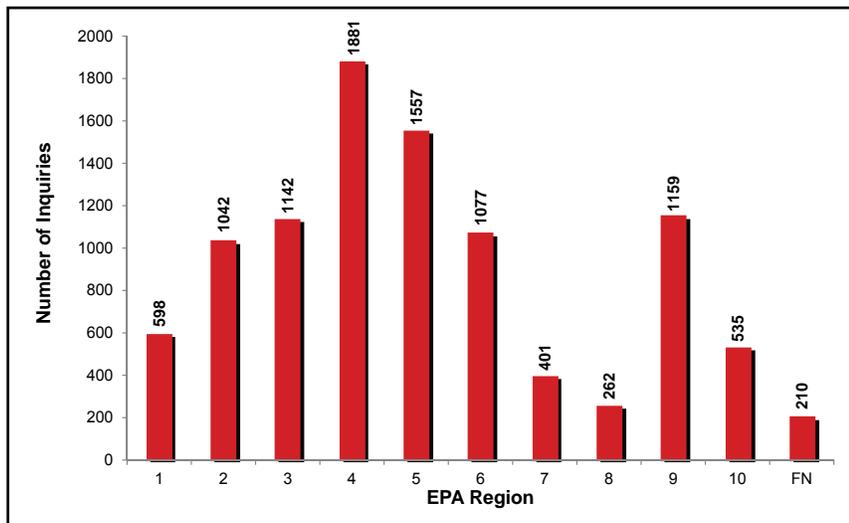
## 8. Inquiries by State

The map below shows the number of inquiries received by NPIC from each state. The largest number of inquiries came from California, followed by Texas, New York, and Pennsylvania. In addition to the states, NPIC received 21 inquiries from U.S. territories including Puerto Rico (16), the Virgin Islands (4), and American Samoa (1). NPIC also received calls from Canada (88) and other countries (122).

Graph 8 summarizes inquiries by EPA region. NPIC received 16.9% of inquiries from Region 4, 14.0% from Region 5, 10.4% from Region 9, 10.3% from Region 3, and 9.7% from Region 6.



**Graph 8. Inquiries by EPA region**



FN = Foreign Nation

# TOP 25 AIs FOR ALL INQUIRIES

## 9. Top 25 Active Ingredients for All Inquiries

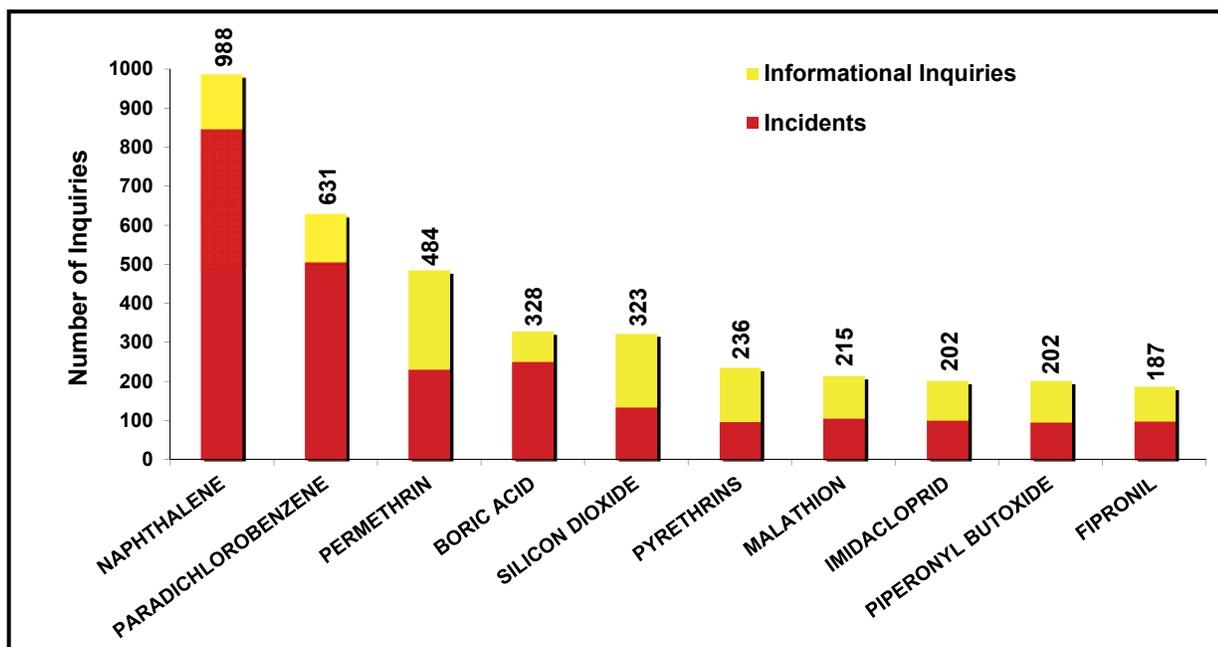
When inquiries to NPIC involve discussion of a specific product or active ingredient, Specialists record the product and the active ingredient in the PID. Naphthalene was discussed in more inquiries than any other single active ingredient this year (Table 9, Graph 9). Of the 988 inquiries involving naphthalene, 847 (85.7%) were incidents. Note that an inquiry may involve discussion of several active ingredients. Graph 9 illustrates the number of informational inquiries and incident inquiries for the top active ingredients that NPIC received during this partial year.

Table 9. Top 25 active ingredients for all inquiries

Active Ingredient	Total Inquiries	Incidents <sup>1</sup>	Information Inquiries
NAPHTHALENE	988	847(8)	141
PARADICHLOROBENZENE	631	508(0)	123
PERMETHRIN	484	231(14)	253
BORIC ACID	328	251(5)	77
SILICON DIOXIDE	323	134(8)	189
PYRETHRINS	236	97(5)	139
MALATHION	215	106(0)	109
IMIDACLOPRID	202	101(3)	101
PIPERONYL BUTOXIDE	202	96(3)	106
FIPRONIL	187	98(3)	89
BIFENTHRIN	175	82(3)	93
DELTAMETHRIN	164	71(1)	93
GLYPHOSATE	163	103(3)	60
CARBARYL	147	66(1)	81
2,4-D	142	67(1)	75
METHOPRENE	125	95(4)	30
CAPTAN	116	45(0)	71
COPPER SULFATE	95	29(0)	66
DICAMBA	93	43(1)	50
SULFUR	90	43(0)	47
NEEM OIL	90	33(2)	57
CYFLUTHRIN	87	36(1)	51
LAMBDA-CYHALOTHRIN	86	59(4)	27
PYRIPROXYFEN	85	65(2)	20
PUTRESCENT WHOLE EGG SOLIDS	84	20(0)	64
<b>Total =</b>	<b>5538</b>	<b>3326(72)</b>	<b>2212</b>

<sup>1</sup> First number represents the total number of reported incidents regardless of certainty index. The numbers in parentheses indicate the total number of incidents with certainty index of "definite" or "probable."

Graph 9. Top 10 pesticide active ingredients for all inquiries



# INCIDENT TYPE

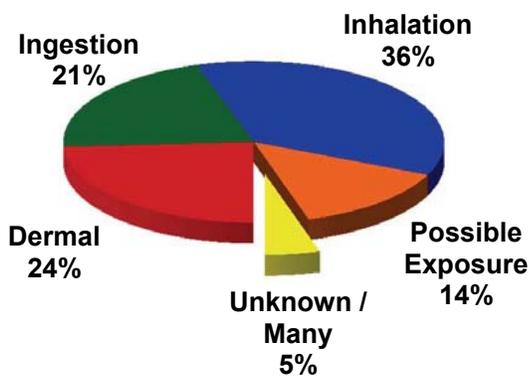
## 10. Incident Type

A pesticide incident may involve a spill, misapplication, exposure, or any combination of these events.

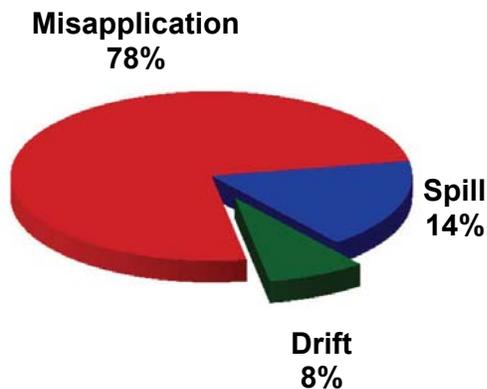
There were 2,217 pesticide exposures and 696 accidents. Charts 10.1 and 10.2 provide further details. Among reported exposures, inhalation was the most common route of exposure (36.2%), followed by dermal contact (23.8%) and ingestion (20.9%). When a specific exposure route could not be identified, specialists documented a “possible exposure” (13.5%).

Indoor spills (76) were reported about three times as much as outdoor spills (23). Among reported misapplications (539), over three quarters were misapplications by the homeowner or resident. Misapplications by the homeowner were relatively steady in 2013 (539) compared to 2012 (631), but the number of incidents involving drift decreased from 102 in 2012 to 57 in 2013.

**Chart 10.1. Pesticide exposures (Total: 2,217)**



**Chart 10.2. Pesticide accidents (Total: 696)**



**Table 10. Incident Type**

Type of Incident	Total
<b>Incident</b>	
<b>Exposures</b>	
Inhalation	802
Dermal	528
Ingestion	464
Exposure Possible	300
Unknown/Many	102
Occupational	21
<b>Accidents</b>	
Misapp. - Homeowner	398
Misapp. - Other	94
Spill - Indoor	76
Drift	57
Misapp. - PCO	47
Spill - Outdoor	23
Fire - Other	1
Fire - Home	0
Industrial Accident	0
Other	271
<b>Total =</b>	<b>3184</b>

# TOP 25 AIs FOR INCIDENTS

## 11. Top 25 Active Ingredients for Incidents

The most common active ingredients reported during incident inquiries are listed in Table 11 and Graph 11. The table identifies the number of incidents involving humans, animals, and other entities, such as environmental entities and property. Naphthalene and paradichlorobenzene were involved in more reported incidents than any other active ingredients. These are the active ingredients found in mothballs and similar products. Among these, humans were more commonly involved than animals, including children under five years old (156).

In Table 11, the top 3 active ingredients for human and animal incidents are highlighted below. For animal incidents, boric acid, permethrin, and fipronil were involved in the highest number of incidents.

Graph 11. Top 10 active ingredients for incidents

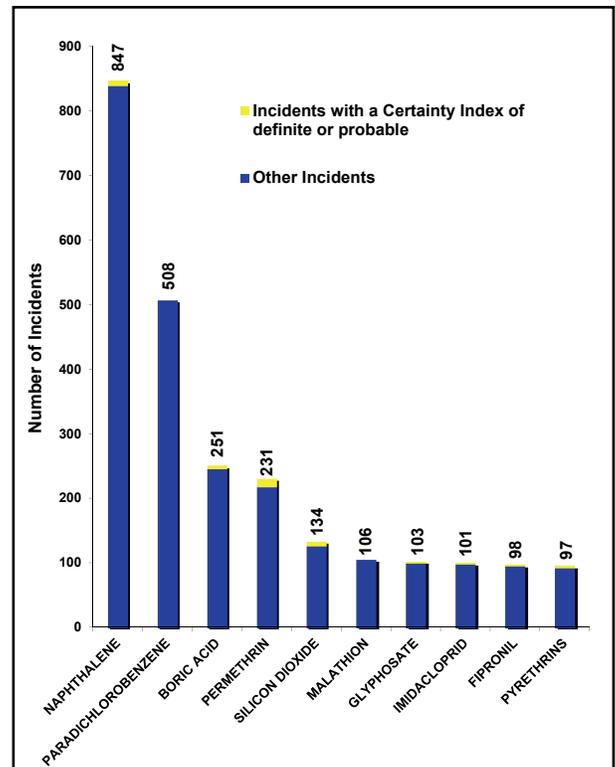


Table 11. Top 25 active ingredients for incidents to NPIC

Active Ingredient	Total Incidents <sup>1</sup>	Human Incidents <sup>1</sup>	Animal Incidents <sup>1</sup>	Other Incidents
NAPHTHALENE	847(8)	384(7)	39(1)	295
PARADICHLOROENZENE	508(0)	238(0)	16(0)	188
BORIC ACID	251(5)	65(2)	66(3)	9
PERMETHRIN	231(14)	71(8)	59(6)	29
SILICON DIOXIDE	134(8)	66(8)	21(0)	9
MALATHION	106(0)	45(0)	7(0)	30
GLYPHOSATE	103(3)	41(2)	20(1)	15
IMIDACLOPRID	101(3)	23(1)	27(2)	13
FIPRONIL	98(3)	19(0)	43(3)	4
PYRETHRINS	97(5)	47(1)	23(4)	5
PIPERONYL BUTOXIDE	96(3)	39(1)	25(2)	7
METHOPRENE	95(4)	12(0)	48(4)	1
BIFENTHRIN	82(3)	29(1)	16(2)	15
DELTAMETHRIN	71(1)	26(0)	12(1)	11
2,4-D	67(1)	19(1)	13(0)	14
CARBARYL	66(1)	22(1)	2(0)	21
PYRIPROXYFEN	65(2)	7(0)	32(2)	2
LAMBDA-CYHALOTHRIN	59(4)	23(4)	7(0)	12
BROMETHALIN	57(0)	2(0)	26(0)	2
ETHOFENPROX	56(2)	1(0)	32(2)	1
CAPSAICIN	51(17)	25(17)	5(0)	5
CAPTAN	45(0)	16(0)	2(0)	12
DICAMBA	43(1)	15(1)	7(0)	9
SULFUR	43(0)	15(0)	9(0)	5
CYPERMETHRIN	39(1)	19(1)	3(0)	10
<b>Total =</b>	<b>3411(89)</b>	<b>1269(56)</b>	<b>560(33)</b>	<b>724</b>

<sup>1</sup> First number represents the total number of reported 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 "definite" or "probable."

# LOCATION & ENVIRONMENTAL IMPACT

## 12. Locations of Exposure or Accident

For incidents, specialists record the location of exposure or accident. Of the 3,031 locations where exposures or accidents were documented, 89.0% occurred in the home or yard, and 2.3% occurred in an agricultural setting. Table 12 identifies the number of exposures or accidents reported to NPIC in a variety of other locations.

Table 12. Location of exposure/accident

Location	Total
Home or Yard	2698
Agriculturally Related	69
Unclear/Unknown	62
Office Building, School	48
Other	46
Food Service/Restaurants	23
Roadside/Right-of-Way	22
Park/Golf Course	20
Retail Store/Business	14
Pond, Lake, Stream Related	10
Industrially Related	7
Treated Water	7
Health Care Facility	4
Nursery, Greenhouse	1
<b>Total =</b>	<b>3031</b>

## 13. Environmental Impact

Table 13 presents the type of incidents reported for each kind of environmental entity. The most common environmental incident reported to NPIC involves pesticide misapplications to buildings by the residents (189). Many of these are related to mothballs and similar products.

Table 13 - Reported environmental impacts

	Misapplication by Resident	Misapplication by PCO	Misapplication by Other	Misapplication by Unknown	Spill - Indoor	Spill - Outdoor	Drift	Plant Exposure	Other
Agricultural Crop	1	0	0	0	0	0	3	4	0
Building-Home/Office	189	16	45	2	39	0	5	0	7
Home Garden	77	8	5	1	0	0	15	117	0
Home Lawn	29	5	4	0	0	1	2	26	0
Natural Water	1	0	0	0	0	1	1	0	1
Property	30	4	5	1	16	4	2	0	9
Soil/Plants/Trees	36	2	15	0	0	6	10	52	2
Treated Water	5	3	0	0	2	2	4	0	3
Vehicle	4	0	4	1	9	0	0	0	0

# CERTAINTY INDEX

## 14. Certainty Index

Table 14 and Graph 14 summarize the certainty index assignments for all incidents that were eligible to be classified. An incident is eligible to be classified if there was an exposed person or animal with reported signs/symptoms, and at least one active ingredient was known.

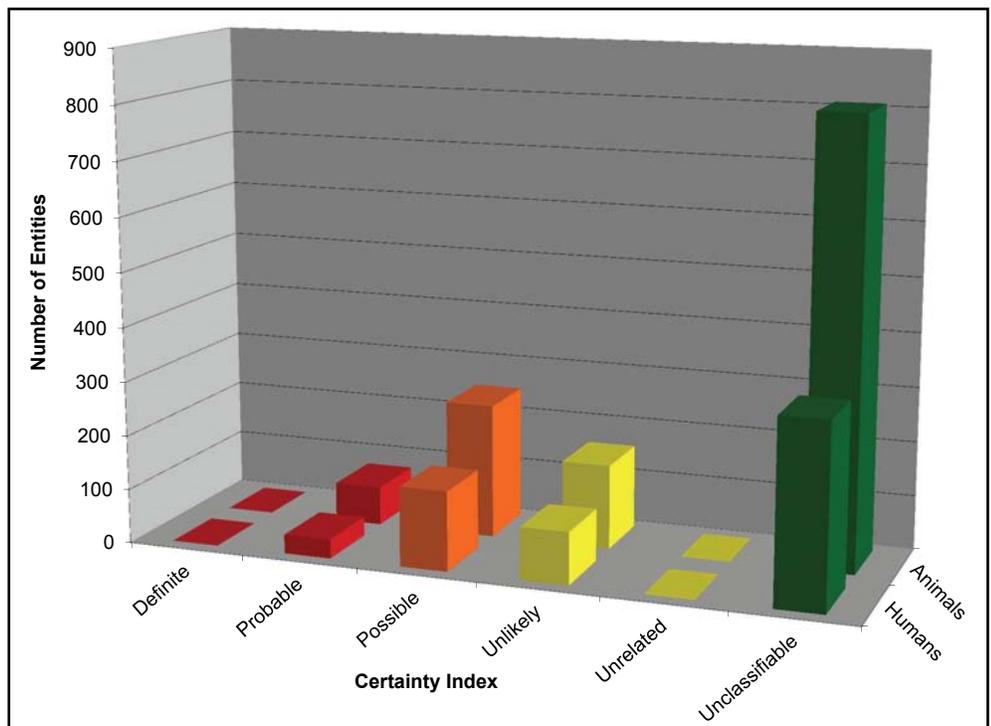
Of the total number of entities assigned a certainty index (1,957), 5.4% of the cases were assigned an index of definite or probable, 20.0% were assigned an index of possible, 12.8% were assigned an index of unlikely, and 61.8% were considered unclassifiable. Because none of the information reported to NPIC has been verified or substantiated by independent investigation, uncertainty is common. This is the case with many forms of self-reported data, which are often used for monitoring public health. As a result, the certainty index assignments for definite and unrelated are rarely assigned.

All certainty index assignments are reviewed by quality assurance specialists. Dr. Sudakin provides additional consultation for human incidents, and Dr. Berman for animal incidents.

**Table 14. Incident inquiries by certainty index (CI)**

CI for All Categories of Entities				Breakdown of Human-Entity Incident Inquiries			
Certainty Index (CI)	Humans	Animals	Total	Male	Female	Groups	Gender Not Stated
Definite	0	0	0	0	0	0	0
Probable	35	71	106	34	36	1	0
Possible	146	246	392	97	139	9	1
Unlikely	96	155	251	58	94	2	1
Unrelated	0	0	0	0	0	0	0
Unclassifiable	333	808	1208	305	400	100	3

**Graph 14. Certainty index for incidents**



### What is the Certainty Index?

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

The certainty index is unclassifiable when one or more of the following criteria apply:

- An exposure occurred, but no symptoms were reported
- No active ingredient could be identified
- The presence or absence of symptoms was unknown

# SEVERITY INDEX

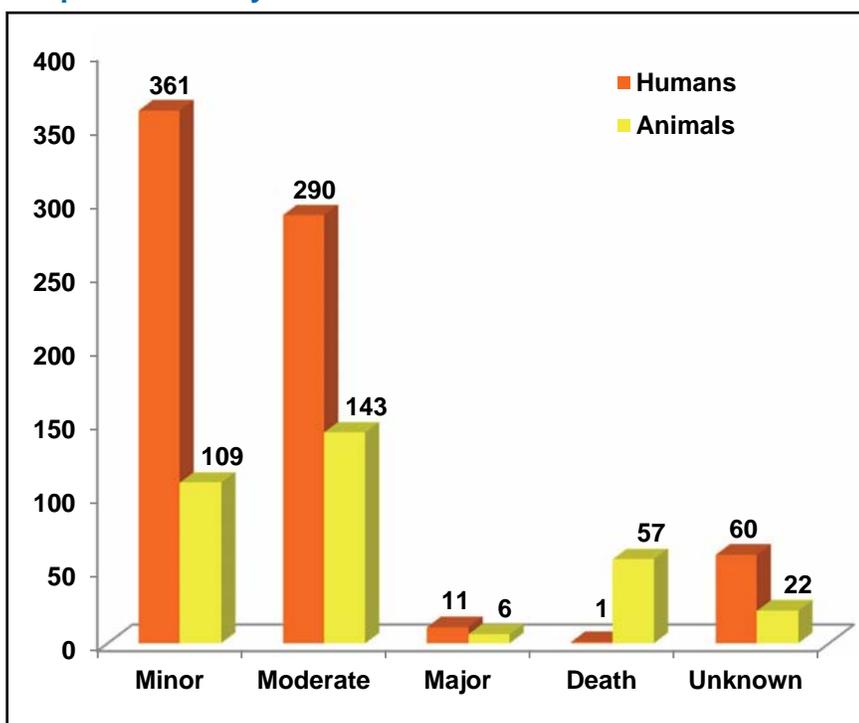
## 15. Severity Index

Table and Graph 15 summarize the severity of symptoms for all human and animal incidents reported to NPIC. For all signs/symptoms reported in human pesticide incidents, 28.2% were minor, 22.7% were moderate, 0.9% were major, and one death was reported. Symptoms were unknown in 4.7% of human incidents. In 43.5% of human exposure incidents, the person reported that they did not experience any symptoms.

**Table 15. Human and animal incidents by severity index (SI)**

SI for All Categories of Entities				Breakdown of Human-Entity Incident Inquiries			
Severity Index (SI)	Humans	Animals	Total	Male	Female	Groups	Gender Not Stated
Minor	361	109	470	134	206	20	1
Moderate	290	143	433	107	175	7	1
Major	11	6	17	5	6	0	0
Death	1	57	58	0	1	0	0
Unknown	60	22	82	18	23	18	1
Asymptomatic	557	273	830	230	258	67	2

**Graph 15. Severity index for human and animal incidents**



### What is the Severity Index?

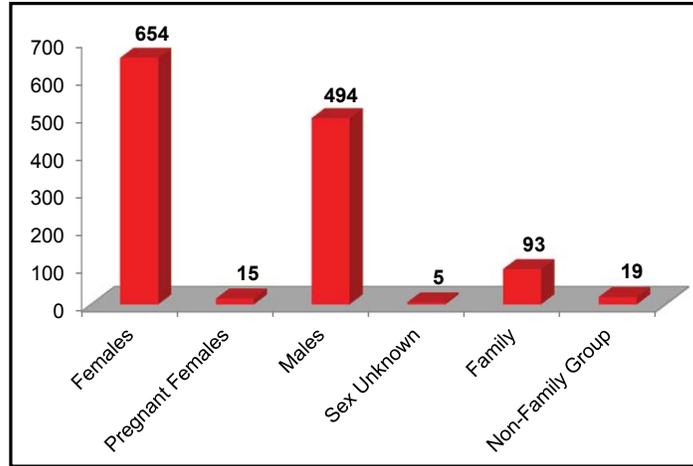
The severity index is an estimate by NPIC as to the severity of signs/symptoms reported for incidents. The severity of signs/symptoms can be categorized as minor, moderate, major, death, unknown, or asymptomatic. The NPIC severity index is based on criteria used by poison control centers in their National Poison Data System (NPDS).

# DESCRIPTION OF ENTITIES

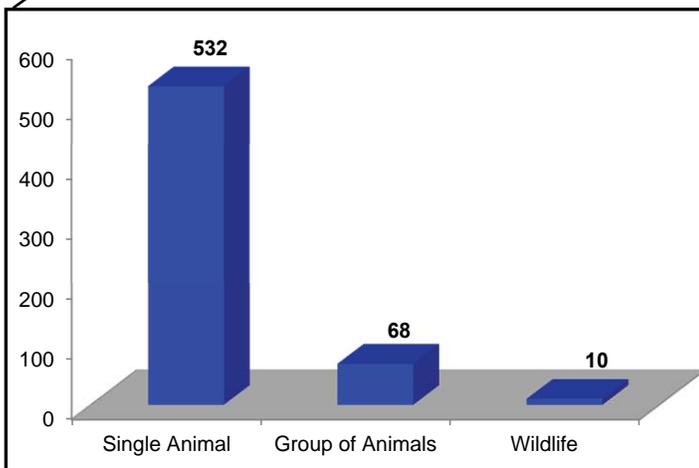
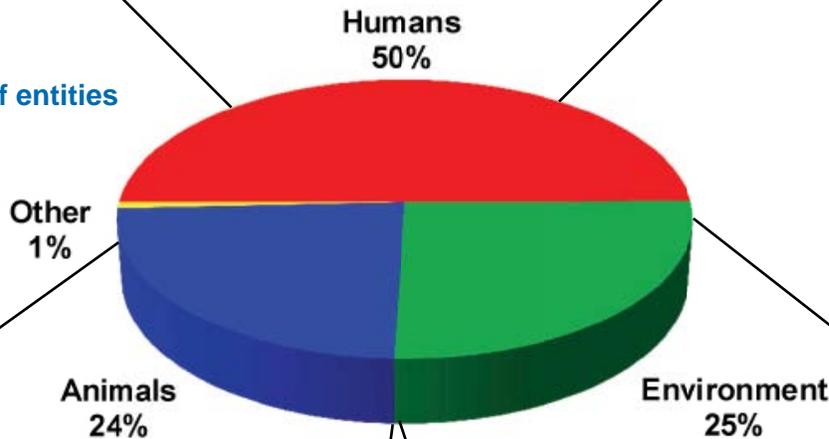
## 16. Description of Entities

The chart and graphs below provide a summary of entities involved in pesticide incidents. Of the 2,567 entities involved in incidents reported to NPIC during this period, 50.0% were human, 23.8% were animals, and 25.7% were environmental non-target entities. Other entities (18) are miscellaneous items (i.e., sidewalk, food). Pesticide incidents may involve multiple entities.

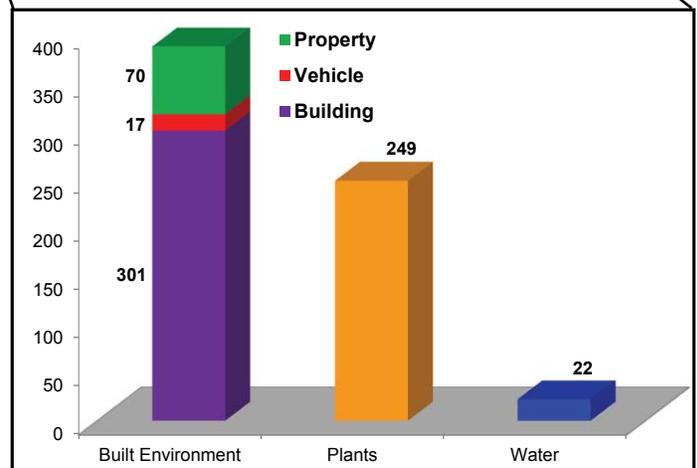
**Graph 16.1. Humans**



**Chart 16. Description of entities**



**Graph 16.2. Animals**



**Graph 16.3. Environmental entities**

# DEATHS WITH KNOWN ACTIVE INGREDIENT

## 17. Reported Deaths

During this period, no human deaths with a known active ingredient were reported (Table 17.1). Of the 610 animal entities involved in pesticide incidents, there were 46 reported deaths where the active ingredients were known. Fipronil, methoprene, permethrin, and piperonyl butoxide were the most commonly reported active ingredients in animal deaths (Table 17.2).

One human death was reported by email and the active ingredient(s) were not known. The individual had potentially been eating mothballs.

**Table 17.1. Reported deaths with known active ingredient**

Reported Deaths	Total <sup>1</sup>
<b>Human Deaths -</b>	
Male	0
Female	0
<b>Total Human Deaths =</b>	<b>0</b>
<b>Animal Deaths -</b>	
Single Animal	35(2)
Group of Animals	4(1)
Wildlife	7(1)
<b>Total Animal Deaths =</b>	<b>46(4)</b>
<b>Total =</b>	<b>46(4)</b>

<sup>1</sup> First number represents the total number of reported incidents regardless of certainty index. The numbers in parentheses indicate the total number of incidents with certainty index of "definite" or "probable."

**Table 17.2 - Active ingredients involved in three or more animal deaths**

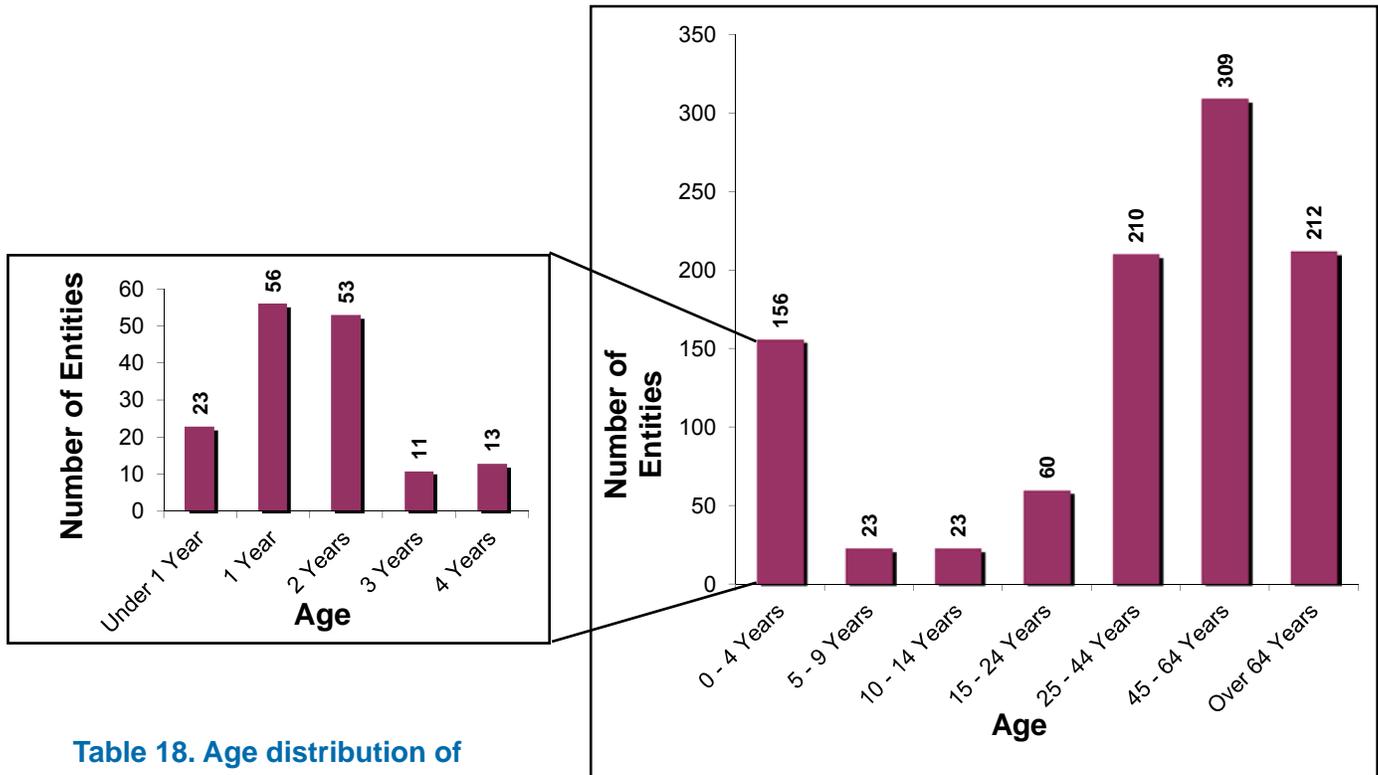
Active Ingredient <sup>1</sup>	Number of Deaths	Active Ingredient <sup>1</sup>	Number of Deaths
FIPRONIL	12	ETHOFENPROX	5
METHOPRENE	10	IMIDACLOPRID	5
PERMETHRIN	8	PYRIPROXYFEN	5
PIPERONYL BUTOXIDE	7	PYRETHRINS	4
BIFENTHRIN	6		

<sup>1</sup> Note that a pesticide product may contain more than one active ingredient.

## 18. Entity Age

Table 18 and Graph 18 summarize information about the ages of people involved in incidents reported to NPIC. Among the 1,280 single humans involved in pesticide incidents, 12.2% were children (ages 4 and under) and 16.6% were seniors (ages 65 and over). NPIC aims to capture the age for all human entities. In 78% of cases the age was collected. Occasionally callers decline to provide their age.

**Graph 18. Age of people involved in reported incidents**



**Table 18. Age distribution of people involved in reported incidents**

Age Category	Total
Under 1 Year	23
1 Year	56
2 Years	53
3 Years	11
4 Years	13
<b>Total (0 - 4 Years) =</b>	<b>156</b>
5 - 9 Years	23
10 - 14 Years	23
15 - 24 Years	60
25 - 44 Years	210
45 - 64 Years	309
Over 64 years	212

# NOTABLE EXPOSURES

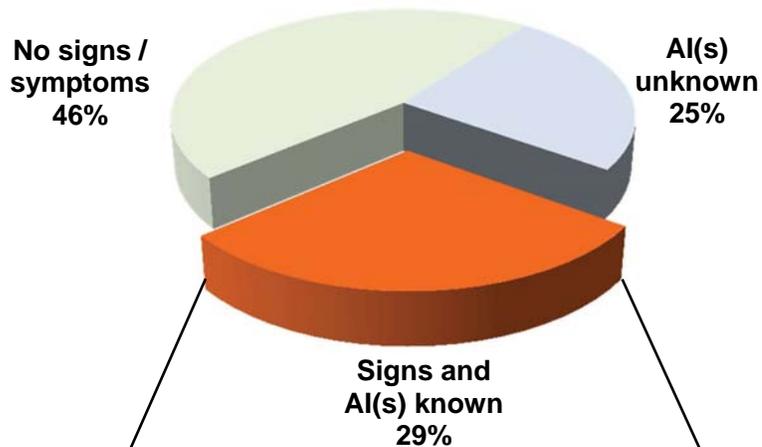
## 19. Notable Exposures

There were 2,567 entities potentially exposed to pesticides in 1,934 reported incidents.

**Figure 19.1**

Entities potentially exposed to pesticides in 1,934 incidents reported to NPIC.

**Total = 2,567 entities**



**Figure 19.2**

Entities potentially exposed to a known pesticide with reported signs/symptoms.

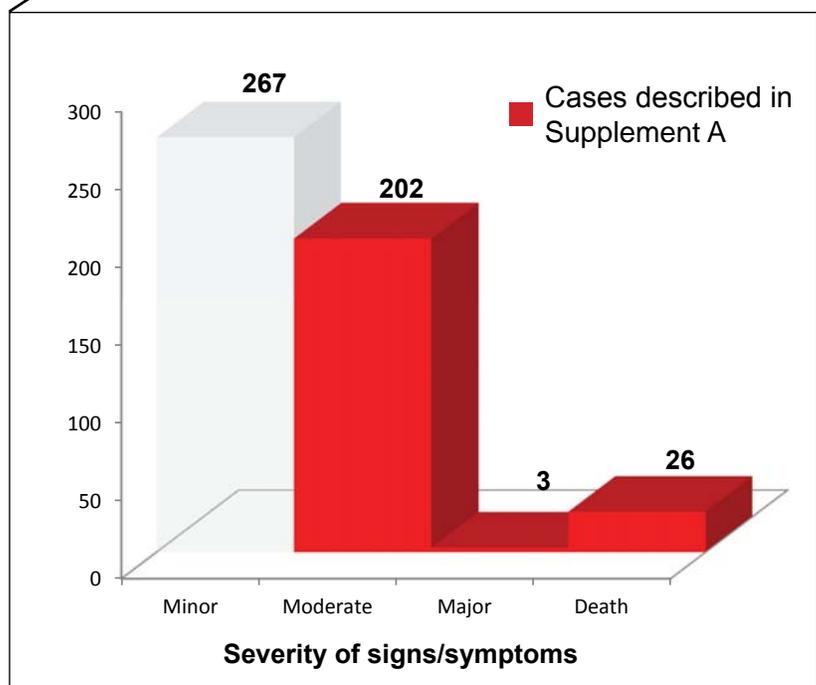
**Total = 748 entities**



**Figure 19.3**

Entities potentially exposed to a known pesticide with reported signs/symptoms that were consistent with reports in the literature for that pesticide.

**Total = 498 entities**



A supplemental report describes the 231 entities represented by the red bars in Figure 19.3.

# VETERINARY REPORTING

NPIC developed a web-based portal for veterinarians to report adverse reactions to pesticides among animals in 2009. NPIC does not verify or conduct quality assurance of the information submitted into the VIRP.

Veterinarians submitted 63 incident reports to the VIRP involving 75 animals (54 dogs, 19 cats, and two bovine). All VIRP reports are forwarded to EPA quarterly, in their entirety.

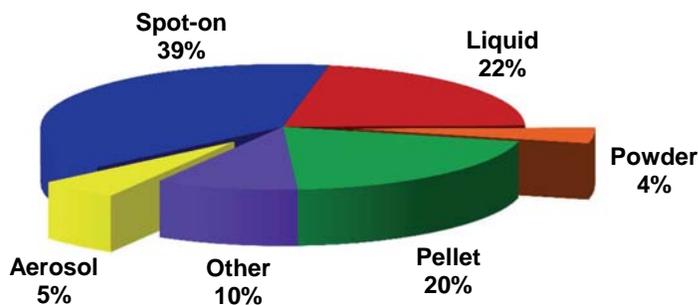
Table 20.1 and Chart 20.1 summarize the formulation of products that were involved in the incidents reported by veterinarians. Over one-third of the products were liquid spot-on treatments for pets (39.0%). About 20.3% of products were pelleted, and 21.6% were other liquids, not intended for spot-on application.

Table 20.2 and Chart 20.2 summarize the pesticide types that were involved in the incidents reported by veterinarians. Three-quarters (75.7%) of the products were insecticides and 13.5% were rodenticides.

**Table 20.1. Product formulations as reported in VIRP**

Formulation	Number of Products
	2013
Spot-on	29
Liquid	16
Pellet	15
Other	7
Aerosol	4
Powder	3
<b>Total =</b>	<b>74</b>

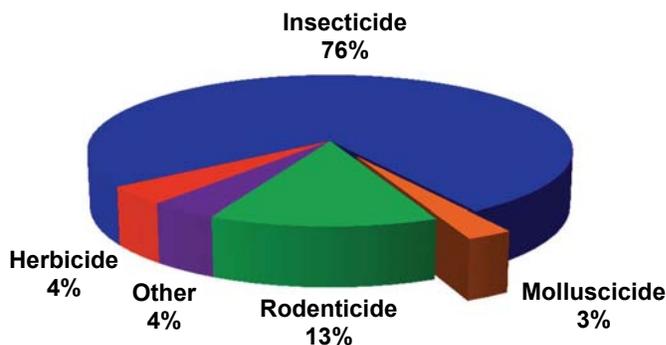
**Chart 20.1. Product formulations reported in VIRP**



**Table 20.2. Product types as reported in VIRP**

Type	Number of Products
	2013
Insecticide	56
Rodenticide	10
Other	3
Herbicide	3
Molluscicide	2
<b>Total =</b>	<b>74</b>

**Chart 20.2. Product types reported in VIRP**



# VETERINARY REPORTING

Table 20.3 and Chart 20.3 show the types of animal symptoms reported to VIRP. Symptoms are classified as dermatological (irritant, sloughing, ulcer), gastrointestinal (diarrhea, vomiting), neurological (depression, excited state, seizures, tremors), none or other. Multiple symptoms may be reported for each animal. Of the reported symptoms, 34.5% were classified as neurological. Twenty-two (21.8%) percent were classified as dermatological, 13.6% as gastrointestinal, 17.3% as other and 12.7% as none.

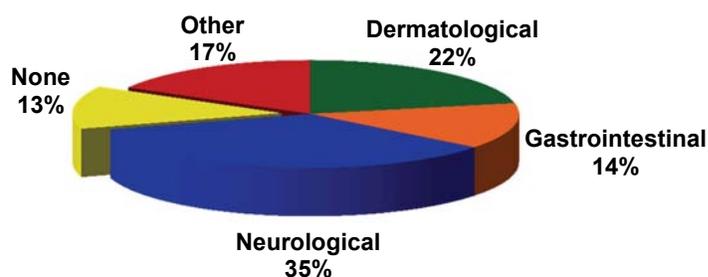
Table 20.4 and Chart 20.4 summarize the outcomes associated with each animal incident reported in the VIRP. Multiple animals may be involved in each VIRP report; thus totals reflect the number of animals, as opposed to the number of reports.

Of the total number of animals involved in VIRP incident reports, 65.3% of the cases were ongoing. The affected animals had recovered at the time of the report, in 22.7% of cases. Five percent (5.3%) of the animals experienced continuing illness and 2.7% resulted in the death of the animal.

**Table 20.3. Animal symptoms as reported in VIRP**

Symptom	Number of Animals
	2013
Dermatological: Irritant	19
Dermatological: Ulcer	5
Dermatological: Sloughing	0
<b>Dermatological Total</b>	<b>24</b>
Gastrointestinal: Vomiting	11
Gastrointestinal: Diarrhea	4
<b>Gastrointestinal total</b>	<b>15</b>
Neurological: Depression	14
Neurological: Tremor	12
Neurological: Excited	8
Neurological: Seizure	4
<b>Neurological Total</b>	<b>38</b>
Other	19
None	14
<b>Total =</b>	<b>110</b>

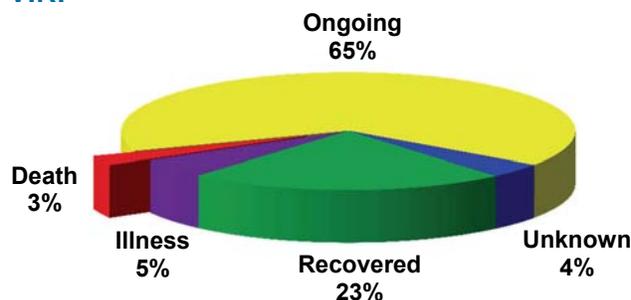
**Chart 20.3. Animal symptoms as reported in VIRP**



**Table 20.4. Incident outcomes as reported in VIRP**

Outcome	Number of Animals
	2013
Ongoing	49
Recovered	17
Illness	4
Unknown	3
Death	2
<b>Total:</b>	<b>75</b>

**Chart 20.4. Incident outcomes as reported in VIRP**



# ECOLOGICAL REPORTING

In 2009, NPIC developed a web-based portal to facilitate reporting of ecological incidents. It was designed by the U.S. EPA Office of Pesticide Programs (OPP), built and hosted by Oregon State University.

NPIC does not verify reports through independent investigation, nor does NPIC conduct quality assurance of the information submitted into the Eco-portal. NPIC provides each report, as submitted, to OPP quarterly, in their entirety. More recently, NPIC developed programming to make that delivery automatic and immediate.

## All Incidents Reported to Date (April 2009 – April 2014)

Sixty (60) incidents have been submitted through the Ecological Incident Reporting Portal (Eco-portal) involving 63 entities with reported exposures to pesticides. See Table 21.1.

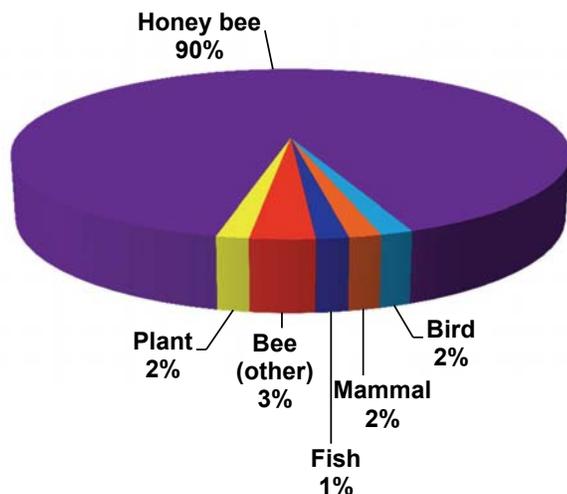
**Table 21.1 Entities involved in the 60 Eco-reports**

Entity	Number of Reports
Honey Bee	57
Bee (other)	2
Terrestrial plant	1
Fish	1
Bird	1
Mammal	1

**Table 21.2 Active ingredients involved in the Eco-reports**

Active Ingredient	Quantity
BOSCALID	3
PYRACLOSTROBIN	3
UNKNOWN	3
DIFLUBENZURON	2
TEBUCONAZOLE	2
CHLORPYRIFOS	2
CHLOROTHALONIL	2
CLOTHIANIDIN	2
UNKNOWN NUTRIENTS	2
CARBARYL	1
POTASAN	1
FENOXAPROP-ETHYL	1
2,4 DIMETHYLPHENYL FORMAMIDE (DMPF)	1
CYPRODINIL	1
W/41 GLYPHOSATE, ISOPROPYLAMINE 41,	1
2,4-D	1
MCPA	1
DICAMBA	1
DIQUAT BROMIDE	1
ACEPHATE	1
CHLOROPHACINONE	1
ABAMECTIN	1
BRODIFACOUM	1
CYPERMETHRIN	1
IMIDACLOPRID	1

**Chart 21.1 Entities involved in the 60 Eco-reports**



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