

npic

NATIONAL
PESTICIDE ● INFORMATION
CENTER

-2012-

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 2012 Annual Report covers the period June 1, 2012 - May 31, 2013.

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

Submitted By:

Dave Stone, Ph.D.
Project Director

Cooperative Agreement # X8-83458501
Environmental and Molecular Toxicology
Oregon State University
310 Weniger Hall
Corvallis, OR 97331-6502
800-858-7378
npic.orst.edu

NPIC 2012 Annual Report

Table of Contents

DELIVERING OBJECTIVES	4
INTRODUCTION, HIGHLIGHTS, AND HISTORY	6
NPIC WEBSITE	10
PALS MOBILE APP	11
PEST MOBILE APP	12
MAPL MOBILE APP	13
PESTIBYTE PODCASTS / CPQs	14
FACT SHEETS / AI FILES	15
CONTINUING EDUCATION	16
SOCIAL MEDIA	18
OUTREACH	20
COLLABORATION HIGHLIGHTS	21
CONTACTS	22
PESTICIDE INQUIRY DATABASE QA/QC	23
STAFF BACKGROUND	24
Introduction to Inquiry Data	25
1. Monthly Inquiries	27
2. Type of Inquiry	28
3. Origin of Inquiry	28
4. Website Access	29
5. Type of Inquirer	31
6. Type of Question	32
7. Actions Taken	33
8. Inquiries by State	34
9. Top 25 Active Ingredients for All Inquiries	35
10. Incident Type	36
11. Top 25 Active Ingredients for Incidents	37
12. Locations of Exposure or Accident	38
13. Environmental Impact	38
14. Certainty Index	39
15. Severity Index	40
16. Description of Entities	41
17. Reported Deaths	42
18. Entity Age	43
19. Notable Exposures	44
20. Veterinary Incident Reporting Portal (VIRP)	45
21. Ecological Incident Reporting Portal (Eco-Portal)	47

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. Further details about the objectives are detailed in the following pages of this report.

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.
- 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, and NPIC responded within one business day.
- NPIC made timely, appropriate referrals 100% of the time when people needed emergency medical assistance.
- NPIC submitted all quarterly reports within 30 days of the end of each quarter, and this Annual Report was submitted within 90 days of the end of the grant year.

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 added 29 new pages of content to its website this year, including six pages in Spanish. See page 10 for details.
- Quarterly, NPIC identified 100% of broken links on its website, and removed or replaced each one. NPIC added 65 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 in a timely way. In addition to routine error corrections, NPIC staff performed quality assurance to verify/update over 1,900 contacts this year.
- NPIC responded to 100% of pesticide-related email inquiries within one business day.
- NPIC developed four new Pestibyte podcasts about topics of interest to NPIC clientele, including one podcast in Spanish. NPIC developed one new "Common Pesticide Question." See page 14.
- NPIC developed seven new general fact sheets this year. See page 15.
- NPIC posted timely and accurate information in social media venues like Facebook and Twitter, promoting safe use practices, integrated pest management, and pesticide label comprehension 1-5 times per week.
- NPIC participated in quarterly coordination meetings with OPP to discuss proposed projects and priorities for educational materials, discussed noteworthy inquiries, and fostered connections in several divisions.

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

- NPIC performed chemical-specific literature searches in order to update 66 active ingredient files, and created 26 new active ingredient files. In addition, NPIC monitored the scientific and regulatory literature and added 1,161 new documents to various files in the collection.
- NPIC staff members participated in 46 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.

DELIVERING OBJECTIVES

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 produced a medical case profile titled, "Changing trends in the epidemiology of insecticide exposures" written by Dr. Sudakin.
- NPIC produced a veterinary podcast titled, "Slug Baits with Iron Phosphate" featuring Dr. Berman.
- NPIC fielded questions from veterinary professionals (114), medical professionals (99), and health agencies (60). NPIC also responded to referrals from poison centers (204), health departments (63), and medical (38) and veterinary professionals (36).

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 96.4% of reported incidents, and the location for 96.4% of incidents.
- Among 2,183 reported incidents involving humans or animals, NPIC specialists were able to capture the exposure route in 84.5% of cases, and symptom/scenario information in 98.4% of cases.
- For all 1,045 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 2,509 entities with known signs/symptoms, NPIC assigned a severity index ranging from 'asymptomatic' to 'death.'

6. To computerize all inquiries to facilitate reporting and analyze trends for pesticide misuse, labeling issues, and risks to humans, animals and environment;

- NPIC completed data entry within five business days for 95% of inquiry logs.
- Every pesticide incident is reviewed by a QA/QC specialist to ensure coding consistency and compliance with applicable protocols. Other inquiries are 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 the types of questions and actions.
- NPIC provided data about incidents and inquiries in response to 22 requests this year, most within five business days. See page 23.
- 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 participated in a series of conference calls/presentations with OPP to ensure that new information technology (IT) tools would meet existing needs and would not overlap with projects planned within OPP.
- Based on common priorities, NPIC released three new web apps titled, "PALS," "MAPL," and "PEST." See pages 11-13. PALS is a web app for mobile devices based on the "My Local Resources" tool on the NPIC website. MAPL is a web app for mobile devices based on the PAIRS product search tool, used internally by NPIC specialists.
- NPIC received 106 pesticide incident reports from veterinary (101) and wildlife (5) professionals this year through its web-based reporting portals. Each entire report was submitted to OPP quarterly, if not immediately. See pages 45-47.

INTRODUCTION

The primary mission of the National Pesticide Information Center (NPIC) 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 its third year of the current project period, NPIC continued to provide information about pesticides by phone, email, and web content to millions. NPIC supports the U.S. 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 Extension System, conveying research-based knowledge in a way that is useful for people to improve their lives, their homes, and their communities.

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 inquirers with 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. The services provided by NPIC are strictly informational and have no regulatory or enforcement capability or authority.

The operational year took place June 1, 2012 – May 31, 2013, which will be referenced as “2012” in this report. The complete record of NPIC accomplishments for the operational year includes this annual report and four quarterly reports, which were submitted throughout the year.

NPIC was visited in August 2012 by Emily Selia, Deborah McCray, and Bob McNally, from the Field and External Affairs Division (FEAD) of the Office of Pesticide Programs (OPP). They listened to specialists answer questions from the public, and met with project staff to review and coordinate on IT projects, social media, publication priorities, and training content. They also met with Drs. Sudakin and Berman to discuss quality assurance for NPIC incident data, and with Dr. Craig Marcus, Head of the Environmental & Molecular Toxicology (EMT) Department.

-
- During this period, NPIC received 17,376 inquiries.
 - About 90% of the total inquiries were addressed over the telephone.
 - About 14.5% of NPIC inquiries in 2012 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.
 - Two human deaths and 52 animal deaths were reported. Details about these cases were submitted quarterly; see Table 17.1.
 - The active ingredients involved in the highest number of incidents were naphthalene (1,306), paradichlorobenzene (776), boric acid (291), permethrin (286), malathion (154), and piperonyl butoxide (154).
 - There were 3,704 entities involved in incidents reported to NPIC: 52% were human, 27% were structural or environmental, and 21% were animals. See Chart 16.
 - Among the 1,899 single humans involved in pesticide incidents, 15.0% were seniors (ages 65 and over) and 13.8% were children (ages 4 and under). Almost half of the people reported no symptoms (42.4%).
 - Questions related to pesticide usage (7,634) and health (5,251) were most common.
 - The NPIC website received 2,703,686 page views this year, representing a 26% increase from 2011. There were more than 1.2 million unique visitors, and 68,808 visitors viewed NPIC's website for more than 15 minutes.
-

HIGHLIGHTS

Diversity – NPIC aims to deliver services that are accessible to people with diverse needs. Pesticide Specialists receive training in communication for different educational levels. The NPIC website is available in English and Spanish, and it meets W3C web content accessibility guidelines. Fact sheets are available at the technical 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 for a variety of purposes. See page 21. NPIC translated many of its training materials and exercises for utilization by state lead agencies, and delivered that training in April at a PREP Course titled “Risk Communication and Pesticide Incidents.” Dr. Stone delivered a webinar for SENSOR state programs on April 30th about requesting and utilizing NPIC incident data. NPIC engaged with members of the State FIFRA Issues Research & Evaluation Group (SFIREG) to address challenges in pesticide reporting language and protocols.

Social Media –NPIC maintains an active presence on [Facebook](#) and [Twitter](#), targeting residential pesticide users. Updates include tips and resources about IPM and minimizing exposure to pesticides. NPIC launched a [YouTube](#) channel this year as a home for new video content, in addition to the NPIC website. This year, NPIC added icons to every English page of its website (>300) that enable content-sharing on the most popular social media platforms, including Facebook, Twitter, Pinterest, Google+, Reddit, Stumble-Upon, and Delicious.



NPIC also launched a new presence on [Pinterest](#) this year, based on research showing that it is one of the fastest-growing social media platforms. See page 18.

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, Inc., NPIC is capable of responding to inquiries in over 170 languages. This year, NPIC used Language Line Solutions to provide risk communication in Spanish (31), Mandarin (2), French (2), American Sign Language (1), Arabic, (1), Farsi (1), French Canadian (1), and Portuguese (1).

IPM and Risk Reduction – NPIC has been emphasizing Integrated Pest Management (IPM) and other risk reduction practices in its continuing education efforts this year. See the table on page 33 for examples. Specialists put their knowledge to work by discussing risk reduction actions with inquirers. This year, they discussed following label directions over 3000 times, minimizing exposure over 2500 times, and IPM concepts over 800 times.

Collaborating to Develop IT Tools – NPIC released three mobile apps this year, and participated in conversations about one more. NPIC worked closely with its Project Officer and others to ensure that new tools meet existing needs and do not overlap with tools in development by OPP. These efforts include a conference call with OPP Director Steven Bradbury on September 26th, and a collaborative web-conference on January 30th to exchange information on specific plans.

Mothball Products – NPIC received 1,077 inquiries about mothballs, flakes, and bars. Of these, 614 (57%) were incidents. Many reports involved off-label use of mothballs to repel animals in and around the home.

Bed Bugs – NPIC received 865 inquiries related to bed bugs this year, which represents a 15% increase over the prior year. Consistent with last year, about 8% of these (72) 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 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.



Open minds. Open Doors.™

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 1,000 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. One new laptop was purchased this year to replace broken hardware.

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 (U.S. EPA) regarding Title VI of the Civil Rights Act of 1964 and Section 13 of the FWPCA Amendments of 1972. NPIC has complied with U.S. 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

One pesticide specialist (1.0 FTE) left the organization this year, and that position has not been filled.

As of May 31, 2013, NPIC's staff includes seven full-time pesticide specialists, a full-time information resource supervisor, a full-time project coordinator, and a full-time administrative professional. 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. See page 24 for more details about the staff members at NPIC.

Standard Operating Procedures

NPIC staff use a variety of standing operating procedures (SOPs) to guide their work and some decision-making. This year, 14 SOPs were updated. NPIC created a new SOP this year, "Referrals to EPA Regarding Bee Inquiries." This procedure was developed at EPA's request.

NPIC WEBSITE

The NPIC website received 2,703,686 page views this year, representing a 26% increase from 2011. There were more than 1.2 million unique visitors, and 68,808 visitors viewed NPIC's website for more than 15 minutes. See pages 29-30 for more information about the popularity of specific resources on the NPIC website.

NPIC added 29 web pages to its collection this year, which now includes over 800 pages. Based on daily conversations with the public, NPIC prioritized the development of new content. Each new page represents a thorough literature search and multiple reviews for accuracy, reading level, and clarity.

During this grant year, NPIC published the following new web pages:

- **Contacts for Pesticide Workers**
- **Ecological Incident Reporting Portal – Overview**
- **“Is it Safe?” A tip sheet for Applicators**
- **Pesticide Applicator Resources**
- **Pesticide General Permit**
- **Regulation of Pesticides Applied to U.S. Waters**
- **Structural Fumigation**
- **Tribal Pesticide Regulation**
- **Web apps by NPIC**
- **Boric acid**
- **Copper sulfate**
- **Diatomaceous earth**
- **Iron phosphate**
- **Methoprene**
- **Neem oil**
- **Oil of citronella**
- **Sulfuryl fluoride**
- **Zinc sulfate**
- **Aphids**
- **Boxelder bugs**
- **Carpenter ants**
- **Carpet beetles**
- **Fire ants**
- **Silverfish**
- **Spider mites**

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 this year, and 65 new links were added to various pages after a vetting process. Over 200 broken links were identified using custom monitoring software. Each broken link was removed or replaced with an appropriate new link.



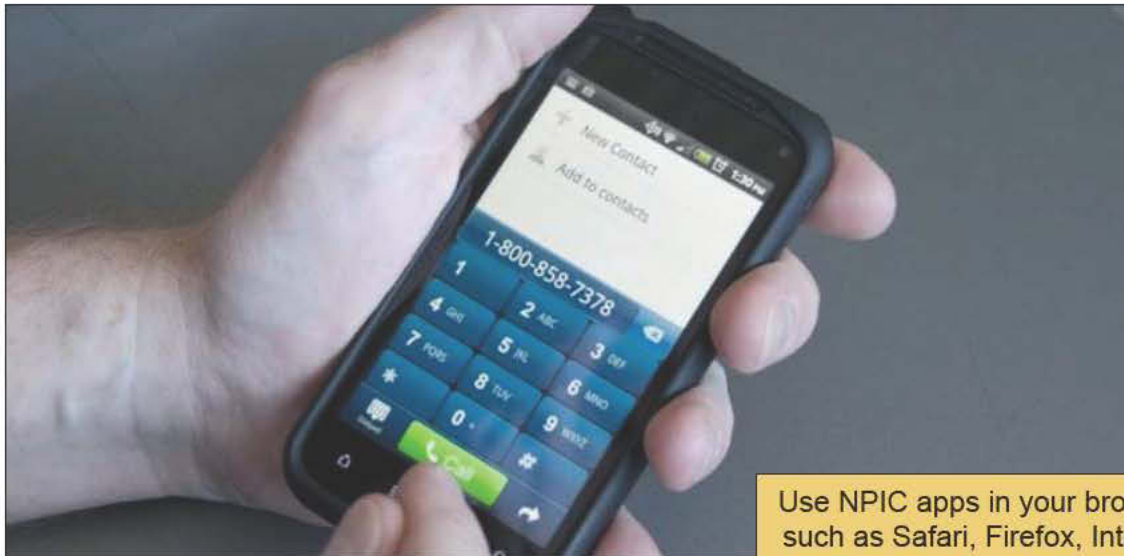
Website Facilitator

NPIC also developed six new web pages in Spanish this year:

- **Pesticidas y el embarazo** (Pesticides and Pregnancy)
- **Pesticidas y salud humana** (Pesticides and Human Health)
- **Pesticidas y los niños** (Pesticides and Children)
- **Minimizando riesgos de los pesticidas** (Minimizing Exposure to Pesticides)
- **Población adulta mayor** (Aging Populations)
- **Pesticidas en tu comunidad** (Pesticides in Your Community)

PALS MOBILE APP

NPIC is committed to making science-based information available to the public and professionals using appropriate and timely technologies. This year, NPIC launched three new **web applications**, increasing its collection to four. They were optimized for use with mobile devices. Developed in HTML5, they are compatible with iPhone, Android, and other phones and tablets.



Use NPIC apps in your browser, such as Safari, Firefox, Internet Explorer, or Chrome.

Pesticide and Local Services (PALS)



One-click dialing! Find pals in your state to help you 1) report pesticide incidents, 2) get pest control advice, 3) learn about area-wide pest control in your neighborhood, 4) get licensed to apply pesticides or contact pesticide law enforcement professionals, 5) determine whether pesticide poisonings are “reportable” in your state, 6) comply with occupational standards and select appropriate PPE (personal protective equipment), and 7) dispose of unwanted pesticides.

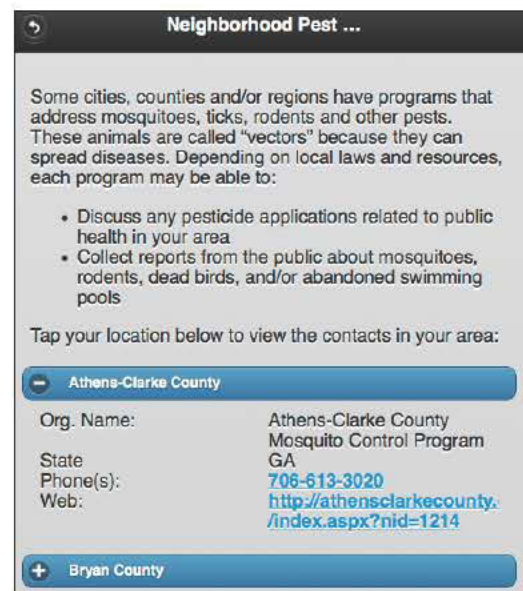
1

Select your state from a drop-down menu.



3

Click to dial.



2

Click on the type of PAL you need.

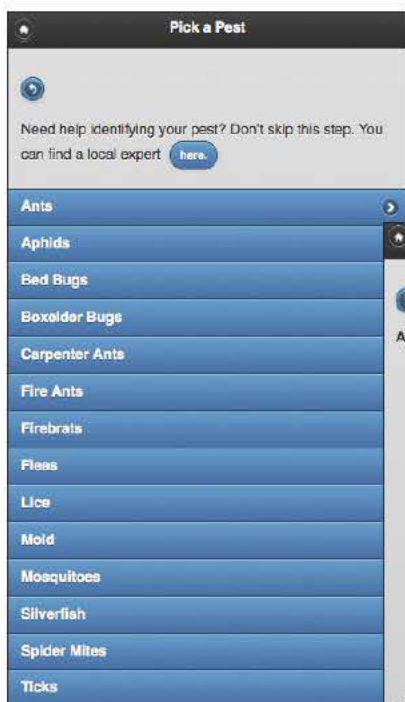
PEST MOBILE APP

Pesticide Education & Search Tool (PEST)

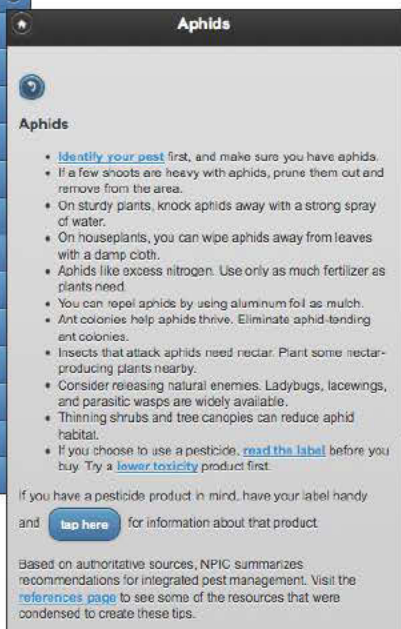


Designed for the general public as they search for pest control solutions, this app brings together elements from other NPIC web apps and incorporates new content, written by NPIC. Users are prompted to pick a pest or pick a product. When pest is selected, a bulleted list of action items grounded in integrated pest management (IPM) appears. When product is selected, a one-stop interface with options to view the formulation, ingredients, the signal word, and pests are presented. Interpretive statements make the technical information easy to understand.

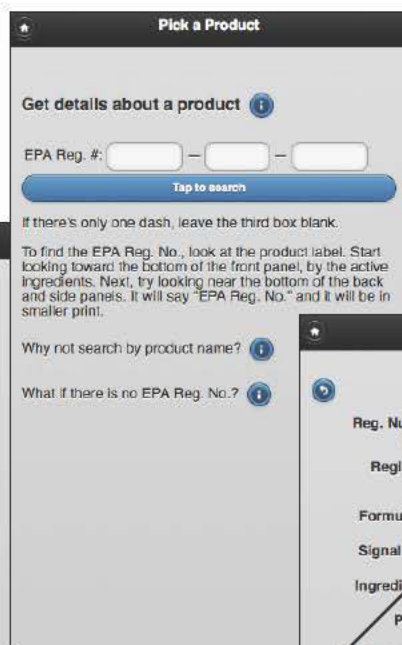
1 Select a pest.



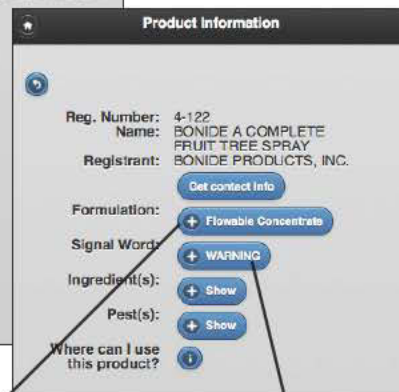
2 Review IPM methods recommended by University Extension experts.



3 Select a product and enter the EPA Reg. No.



4 Browse product and details.



Some flowable liquids have to be mixed often to keep the solids from settling out. Concentrates must be diluted before application.

NPIC developed IPM tips for 12 pests, interpretive language for each pesticide formulation and signal word, and tips for diluting pesticides at home.

This means that the product was found to be "moderate" in toxicity by at least one route of exposure. [Learn more.](#)

MAPL MOBILE APP

Mobile Access to Pesticides & Labels (MAPL)



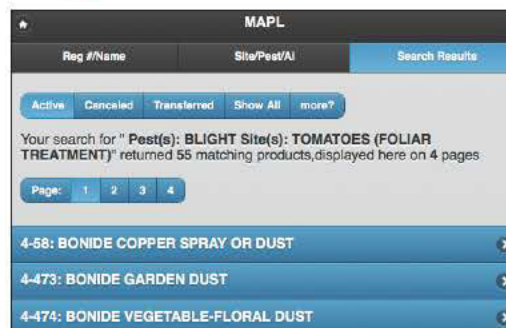
MAPL was designed for use by professionals such as pesticide applicators, crop consultants, University Extension agents, pesticide regulators, and researchers. Search for pesticide products by name, site, pest, EPA Registration Number, registrant, or search for a combination of these. For example, search for products registered for use in apple orchards against fire blight, or products with citronella that can be used on horses. When you find the right product, you can bookmark the results, bring up the federal label (pdf), and browse the product's ingredients, registered use sites, signal word, formulation, and more.

1

Search by product name, registration number, site, pest, or active ingredient.

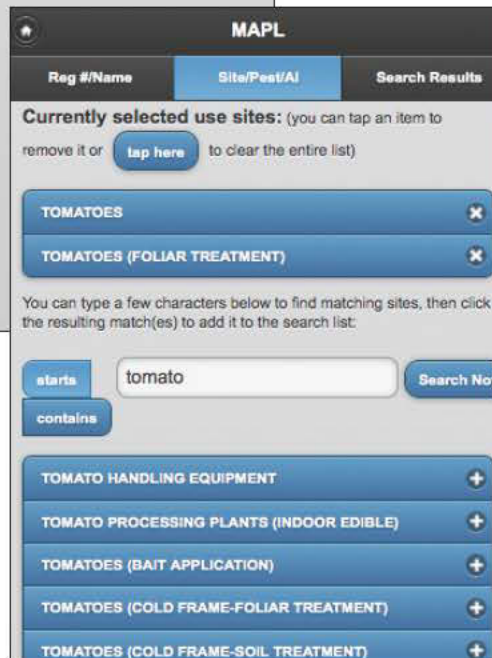
3

Review search results and choose a product to review more closely.



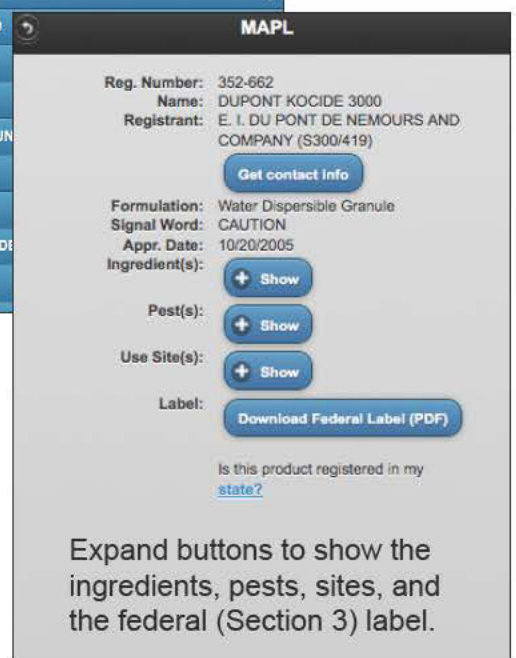
2

Select sites, pests, or active ingredients from a list after you begin typing.



4

Expand buttons to show the ingredients, pests, sites, and the federal (Section 3) label.





Pesticide Specialist

NPIC develops short publications called Common Pesticide Questions (CPQs) to be relevant and easily understood by diverse audiences. They include detailed questions and answers, including links to science-based, public-friendly resources. NPIC's collection of 63 CPQs are often provided in response to email inquiries, and the content is also adapted for Pestibyte podcasts.

NPIC published a new CPQ this year in response to strong interest from the public, called "**Natural or Green? What does it mean?**"



NPIC posted the following three PestiBytes this year. Episode 21 was also produced in Spanish.



Podcasts are some of the most popular NPIC resources that are available in Spanish. See page 30.



My yard is being sprayed; can my kids go out and play? (download and listen) **Episode 22** (view transcript) - A specialist discusses ways to minimize exposure to children after lawn treatments. 2:17 min., 1.4MB



Don't let pesticides make your bed bug problem worse! (download and listen) **Episode 21** (view transcript) - A specialist discusses some do's and don't's about getting rid of bed bugs. 2:26 min., 1.4MB



Slug Baits with Iron Phosphate. (download and listen) **Episode 20** (view transcript) - A veterinarian gives pet owners some important information about slug & snail products containing iron phosphate. 2:11 min., 0.96MB

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 level, and in targeted, question-answer formats at the 8th grade reading level.

During this grant year, NPIC published the following new fact sheets:

- **Copper sulfate**
- **Diatomaceous earth**
- **Iron phosphate**
- **“Is it Safe?”** A primer on risk communication for applicators.
- **Methoprene**
- **Citronella** (Oil of Citronella)
- **Zinc sulfate**



Fact Sheet Facilitator



Active Ingredient 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 1,092 files. NPIC updated 66 AI files by adding documents obtained from literature searches, and added 26 new AI files to its collection.



AI Facilitator

NPIC monitored the Federal Register daily and evaluated relevant dockets for new science and regulatory information. NPIC acquired 1,161 new documents for inclusion in the collection this year, including all relevant EPA Fact Sheets, Risk Assessments and Reregistration 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 (CE) 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 table on page 17 for selected examples of the events attended by NPIC staff this 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.



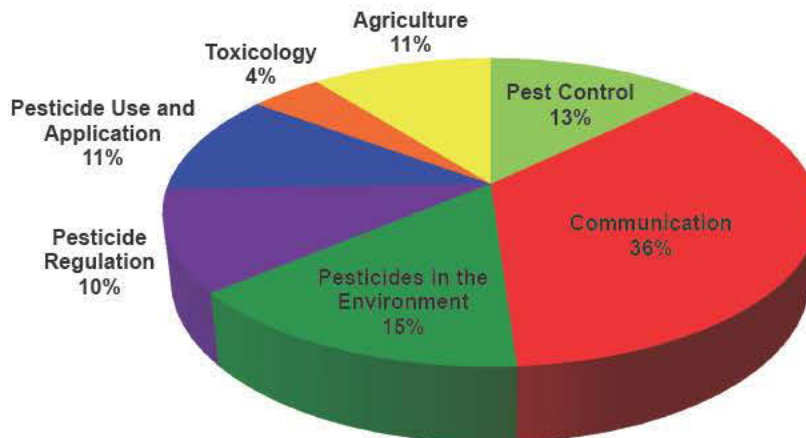
CE Facilitator

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.



Event types and topics for the 46 CE events in 2012



CONTINUING EDUCATION

Selected continuing education events

Speaker/Source	Speaker's Affiliation	Event Title
Dr. Stacey Harper	Oregon State University	Integrating Rapid Assessment Strategies with Informatics to Define Key Drivers of Nanomaterial Toxicity
Several	Healthy Schools Campaign	Green Cleaning and Infection Control
Rose Kachadoorian, David Priebe	Oregon Department of Agriculture	Pesticide Registration and Regulation
Rita Palacios	National Center for Farmworker Health	An Orientation to Migrant Health
Marcia Anderson	U.S. EPA	Outdoor & Field School IPM
Dr. Captain Young H. Lee	U.S. Public Health Service	How FDA Protects You from Pesticides
Dr. Thomas Green	IPM Institute of North America	Advanced IPM Techniques for Green Pest Management
Ben Duncan	Multnomah County Health Department	A Regional Strategy to Address Bed Bugs; A Partnership Model
Dr. David Olszyk	U.S. EPA	Assessing Off-Target Impacts of Herbicide Drift on Plants
Dr. Yoder	Pennsylvania State University	Using Social Marketing in Agricultural Safety and Health
Andrew Thostensen	American Association of Pesticide Safety Educators	Temperature Inversions and their Impact on Pesticide Applications
Paul Biwan	Oregon State University	Understanding Communication Styles
Paul Hoekstra, David Fischer, Maria Trainer	Society of Toxicology	Pollinators & Pesticides: Complementary Components of Sustainable Agriculture
Several	U.S. EPA	Integrated School Health Tools for Districts
Paul Jones	National AgrAbility Project	Launching and Using Your Own YouTube Channel
Gabriel Merrell	Office of Equity and Inclusion	Accessibility Basics for the Web
Lynn Braband, Paul Duerre, Roger Young	Facility Masters	Birds and Bats: Pest Management Tips for the Educational Environment
Several	Pesticide Safety Education Program	Chemical Applicators Short Course
Joy N. Goodwin	University of Florida	The Power of Effective Messaging
Jefe Hino	eXtension	Marketing Ask an Expert
Several	U.S. EPA	School Integrated Pest Management: "Bed Bugs Go to School"
Marie-Claire Shanahan, Emily Finke	SciOnline	Formal Science Education, Informal Science Education and Science Writing
Dr. Rubidium, Carmen Draul	SciOnline	Chemophobia & Chemistry in the Modern World
Tim Church	Washington State Department of Health	Strategies for Successful Public Health Messaging
Vanessa Turner	Health Canada	Do Label Statements Impact the Frequency of Incidents?
Jim O'Connor	U.S. Geological Survey	A Tale of Two Rivers (Plus Several Others): Geologic and Physiographic Controls on Gravel Bed Rivers of Western Oregon
Several	U.S. EPA and U.S. Department of Agriculture	EPA Pollinator Summit
Several	Oregon Environmental Council	5th Annual NW Environmental Health Conference
Michelle McCrackin	Washington State University	Current and Future Patterns in Nitrogen Loading to US Coastal Areas
Nancy Hinkle, Peter Lepping	Health Care Ethics	The Bugs That Won't Go Away: Your Role in Delusional Infestation
Chris Newman	U.S. EPA	Indoor Pesticide Misuse: the Problem, the Response, and Prevention
Humberto Nation	NPIC	Groundwater Topics
Several	University Extension, Health Departments, etc.	National Preister Health Conference
Brittany Hanson	NPIC	Busy Season Preparation: All Staff Event

SOCIAL MEDIA

In keeping with its mission, 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 organizations that have similar goals, and for developing content that is timely, engaging, and science-based.


In addition to Facebook and Twitter, NPIC created profiles this year on Pinterest and YouTube. Pinterest is one of the fastest growing social media platforms. After publishing an RSS feed (Real Simple Syndication) for several months with low readership, NPIC discontinued the feed. NPIC staff are monitoring other platforms (Reddit, Google+) to stay abreast of trends in audience engagement.

The image shows a screenshot of the NPIC @OSU Pinterest profile. At the top, there is a search bar and the Pinterest logo. The profile header includes the NPIC logo, the name "NPIC @OSU", a bio stating "We maintain a whole library of information about pesticides. Call us with your questions today. 1-800-858-7378", and the website "npic.orst.edu". To the right, a "Repins from" section lists "UGA Cooperative Extension", "BHL", and "PA Horticultural". Below the header, statistics show "13 Boards", "358 Pins", "13 Likes", "54 Followers", and "84 Following". The main content is a grid of 12 boards, each with a cover image, a title, a pin count, and an "Unfollow" button. The boards are: "Gardens" (42 pins), "Beneficial Bugs and Birds" (55 pins), "University Extension" (31 pins), "For Kids" (38 pins), "Pest Information By Pest Name" (42 pins), "Environment" (51 pins), "Health and Safety" (19 pins), "IPM" (14 pins), "Pesticide Ingredients" (15 pins), "Reduce Risk" (11 pins), "Types of Pesticides" (13 pins), and "Science & Nature" (11 pins).

SOCIAL MEDIA

NPIC developed content for posting by planning seasonally appropriate themes for each week or month. Additional content was added in response to inquiries (i.e. pre-harvest intervals) and events of national importance (i.e. pollinator protection). In 2012, NPIC posted new content about 150 times, representing a 50% increase compared to 2011. Often, a weekly theme was reflected on the NPIC home page in the “New & Notable” section of the English and Spanish websites.

Interesting factoid – Among people 25 to 64 years old, unintentional poisoning caused more deaths than motor vehicle crashes. <http://ow.ly/i8DSS> Well, people, “An ounce of prevention is worth a pound of cure.” Many poisonings could be preve... See More



Storage of Pesticides
ow.ly


Objective, science-based pesticide information.

Like · Comment · Share 2 2

228 people saw this post Boost Post

npic National Pesticide Information Center shared a link. February 27

It is time to do an inventory of the shed, garage, and basement; anywhere you keep your pesticides. Sometimes keeping a pesticide log with your pesticides can help you remember when you bought a particular product and if it worked on your p... See More



National Pesticide Information Center - Home Page
npic.orst.edu


Objective, science-based pesticide information.

Like · Comment · Share 4 1 2

258 people saw this post Boost Post

npic National Pesticide Information Center shared a link. February 22

Check with your local nursery or extension, some have online calendars <http://ow.ly/hvVz8> ,to see if it is time to plant fruit trees, deciduous shrubs and maybe even asparagus? <http://ow.ly/hvVR6>. Planting during late winter or early spring... See More



February Garden Calendar | Oregon State University Extension Service | Gardening
ow.ly

The monthly gardening calendars are produced by OSU Extension.

npic **Nat'l Pesticide Info** @NPICatOSU 29 May

Checking for bed bugs? Consider looking within box springs or behind headboards. ow.ly/kQABu pic.twitter.com/Tg32u6q2Fd

[View photo](#)

npic **Nat'l Pesticide Info** @NPICatOSU 27 May

Learn how to reduce the pesticide residue, dirt and bacteria on your food. ow.ly/lDfLO

Expand

npic **Nat'l Pesticide Info** @NPICatOSU 24 May

How long do I wait to #harvest vegetables after using a pesticide? Check the label for the pre-harvest interval #PHI. ow.ly/lde0J

Expand

npic **Nat'l Pesticide Info** @NPICatOSU 23 May

Did you know that different types of mosquitoes can have different habits? ow.ly/lDpjm

[View media](#)

npic **Nat'l Pesticide Info** @NPICatOSU 20 May

Does your community spray for mosquitoes? Consider these tips to reduce your contact. ow.ly/kQstf pic.twitter.com/YPaCFD2OQ3

[View photo](#)

npic **Nat'l Pesticide Info** @NPICatOSU 17 May

Not all #flea and #tick treatments are meant for #cats. Follow the label. ow.ly/kQrwi pic.twitter.com/Xf7oSM4P4c

[View photo](#)

npic **Nat'l Pesticide Info** @NPICatOSU 15 May

#Boxelder bugs don't usually bite, damage or breed in your home. Learn more here: ow.ly/kQsE1 pic.twitter.com/M5d0wPXymy

[View photo](#)

npic **Nat'l Pesticide Info** @NPICatOSU 13 May

#Compost helps enrich #urbangarden soil reducing plant disease yielding vigorous plants and that means less pesticide use...

Expand

NPIC staff collaborated with others to amplify messages during social media events. For example, NPIC participated in a Tweet-fest for National Farm Safety & Health Week. NPIC used all of its social media platforms to promote pollinator protection during National Pollinator Week.

To encourage social sharing of NPIC content, NPIC added icons to each one of its web pages (html only, over 300 pages) that make it easy for visitors to share the page on Facebook, Twitter, Pinterest, Google+, Reddit, StumbleUpon, and Delicious.

Share this page:



OUTREACH

In 2011, NPIC restructured outreach efforts to focus on social media and collaborations. The cost of printing and distributing NPIC brochures upon request is no longer supported. This year, NPIC created a more printer-friendly version of its brochure, in **English** and **Spanish**.

Collaborations – selected examples:

- NPIC participated in Tweet-fests for National Farm Safety & Health Week, Healthy Schools Week, and Healthy Air Week.
- NPIC collaborated with others in the Field and External Affairs Division (FEAD) to provide NPIC brochures at EPA booth at the American Public Health Association Conference.
- NPIC collaborated with EPA Region 5 to compile pesticide misuse information for a bed bug presentation for public housing staff, the Preservation Compact Workshop.
- NPIC collaborated with USDA NIFA to promote the availability of County Extension contacts with the PALS app.
- NPIC collaborated with EPA Region 10 to make NPIC brochures available at the EPA booth at the Northwest Environmental Health Conference.

Presentations delivered (selected):

- Kaci Buhl delivered a presentations about NPIC at the North Central Pesticide Applicator Certification & Training (PACT) workshop and the Oregon Governor's Occupational Safety & Health Conference.
- Ann Ketter and Kaci Buhl delivered presentations about factors in pesticide toxicity for the Oregon Ag Chem & Fertilizer Association.
- Dave Stone delivered presentations about NPIC at three events for pesticide applicators in Oregon.
- Humberto Nation delivered a presentation about NPIC in Spanish at an event sponsored by the Oregon Farmworker's Union.
- Kristina Wick presented a poster at the Priester National Extension Health Conference (see below).

A multimedia approach to communicating objective, science-based risk information about pesticides



Kristina Wick, MPH; Kaci Buhl, MS; Dave Stone, PhD

Department of Environmental and Molecular Toxicology, Oregon State University, Corvallis, Oregon

Background

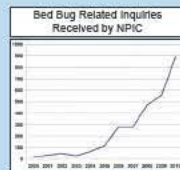
In 2006, a government survey reported that at least 80% of people reported using the Internet to find health information.¹ The amount of information available to the average consumer is expanding exponentially. For example, YouTube reports that over 72 hours of video are uploaded every minute.² With this increasing wealth of information, the public is looking for outlets where they can obtain information efficiently. A recent survey found that health information seekers spent 2-4 seconds, on average, deciding whether a web page was going to be useful.³ The challenge for health and environmental educators is to develop material that is actionable, engaging, and to the point for new medias of communication.

In 2012, the National Pesticide Information Center (NPIC) website received more than 2 million page views, representing a 78% increase compared to 2010. This poster will discuss the following 1) Techniques for developing effective written content, 2) A alternatives to traditional written forms of communication, and 3) Tools that can be used to effectively measure successful outreach through these media formats.

Inquiry-Driven Resources

Recently NPIC created a podcast on bed bugs and pesticides in response to an increasing number of bed bug inquiries.

NPIC branded its collection of podcasts as "Pestibytes." They are 1-2 minutes interviews with pesticide specialists on common pesticide questions received from the public. All podcasts are recorded using free recording software. NPIC uses web hits on our podcasts to monitor popularity. Podcasts have become one of the most frequently accessed tools on our Spanish website.



m(NPIC) Mobile Apps and Videos

Many marketing companies predict that by 2014, mobile internet usage will overtake desktop usage.⁴ At NPIC, mobile phones are the second most popular way that users access NPIC social media. To meet the need for greater accessibility on mobile devices, NPIC has developed several apps. The apps are designed for quick accessibility with a user friendly interface and de-emphasized text. NPIC created 1-2 minute video tutorials demonstrating how to use each app. These apps were created using free QuickTime screen recording software.

Available Web Apps

- **Insect Resistance Lookup (IRL)**
Find information about all of the products registered to treat mosquitoes, ticks, or bees. Before using for selecting the desired product, look for < 2 hours to > 10 hours. Click on the action required name to review its chemical class and environmental impact, or click "back" to see the product's full label. Don't see the perfect product for you, use the manufacturer's name to find their website information. **Something similar for bigger screens: Insect Resistance Lookup!**
- **Pesticide and Local Services (PLS)**
Checklist change that lets you be able to help you 1) report pesticide incidents, 2) get pest control advice, 3) learn about local pest control services, 4) get contact information for local pesticide law enforcement professionals, 5) determine whether pesticide products are "restricted" or "general", 6) determine whether pesticide products are "restricted" or "general", 7) compare with registered pesticide and sales appropriate PPE (Personal protection equipment), 8) 1) Register or Unregister Pesticide. **Something similar for bigger screens: My Local Resources**

Chemical Hub Pages

NPIC Hub pages are organized to allow quick access to specific topics related to a pesticide. Rather than presenting long fact sheets with headings, NPIC presents the headings as stand-alone hyperlinks. Visitors can easily click on their choice of questions, ranging from general to highly technical.

General content in the first column is intended for those with limited scientific backgrounds. Language was written at or below the 6th grade reading level using tools in MS Word. Related topics and Podcasts are also accessible from the page.



Social Media

Social Media is a part of the continuing evolution of our communicating with the public. Using internet based tools and platforms we are sharing timely information about pesticides, ways to minimize risk, and IPM. Social media has enhanced our ability to share information in various forms, including text, images, audio, and video with an expanding audience. The English and Spanish NPIC homepages feature a New and Notable space, which is highly reflective of social media themes for the week. Using these principles, NPIC has continued to see an upward trend in the number of likes shares and retweets.



Lessons Learned

1. Engagement with audiences on social media is greater with pictures than text or links. Timing is also key for social media posts. More posts were shared in the mornings than in the afternoons.
2. Audio files are some of the most popular Spanish resources NPIC makes available. Podcasts can be created using free software.
3. Web data can be a powerful tool for determining the information your audience needs, measuring outreach success. Many social media sites also have easily accessible tools to monitor your organization's expanding reach.

References
 1. U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion (2010). Health literacy online: A guide to writing and designing user-friendly health Web sites. http://www.health.gov/health/encyclopedia/Web_Guide_Health_L1_OH_06.pdf
 2. 5 of 10 at. YouTube. Accessed 11 Apr. 2013. www.youtube.com/watch?v=statastbaAdeI
 3. Whole Marketing Statistics 2013. Smart Insights. Accessed 11 Apr. 2013. <http://www.smartinsights.com/mobile-marketing-1q/mobile-marketing-1q-social-media-1q-2013/>

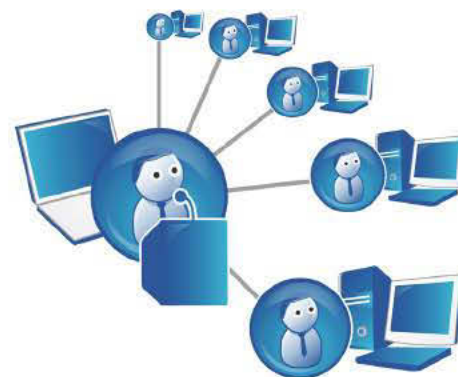
Acknowledgements: The National Pesticide Information Center is a cooperative agreement between the United States Environmental Protection Agency and Oregon State University. Cooperative agreement #02-03-55001. Portions of text and images were contributed by pestidc@oregonstate.edu Ann Ketter, Dana Jackson, and Colin Bond.

COLLABORATION HIGHLIGHTS

Promoting utilization of NPIC inquiry data

In October, NPIC staff delivered a remote presentation to over 40 participants representing EPA HQ and Regional offices to describe and promote NPIC inquiry data. In April, the NPIC Director delivered a webinar for SENSOR states about NPIC incident data, collection procedures, and available reports. SENSOR is the Sentinel Event Notification System for Occupational Risk, administered by the Centers for Disease Control & Prevention.

Data requests doubled in 2012, compared to the 2011 project year.



PREP Course - April 2-5, 2013

The NPIC training program was adapted this year into a concentrated four-day program for pesticide regulators at the state level. Invited by the US EPA, the NPIC Project Coordinator (Kaci Buhl) participated in the planning committee for the course entitled "Risk Communication and Pesticide Incidents." It was part of the Pesticide Regulatory Education Program, known as PREP.

Ms. Buhl developed seven modules with lecture/exercise components for about 30 participants on topics such as incident intake, active listening, and the risk framework. Dr. Stone delivered presentations about NPIC incident data and common pesticide-related misconceptions



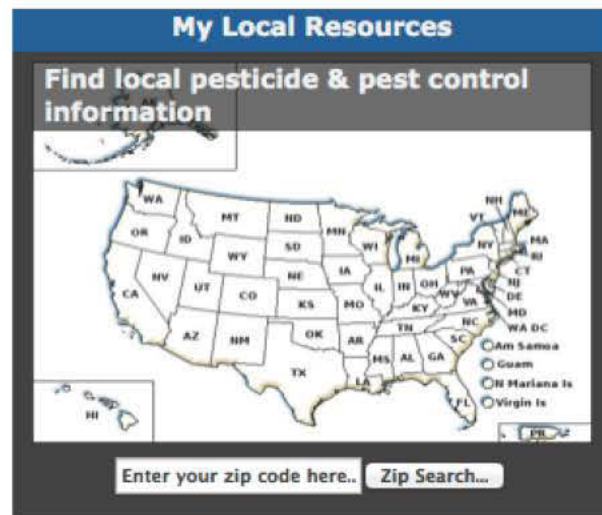
Outreach Co-facilitator

Reaching out to EPA Regions

Collaboratively, about 20 individuals were identified with outreach-related work assignments in the pesticide arena. NPIC sent emails to each one and followed up with phone calls. About 90% were familiar with NPIC. Most of the individuals were unaware of the breadth of NPIC services. An EPA Region 10 official suggested that NPIC should have a web page devoted to pesticide regulation on tribal lands, and worked with NPIC to develop and revise the new page, now [available](#).

CONTACTS

Contacts - NPIC maintains a database of contacts providing specialists with quick access to frequently requested information, including contact information for local, state, and federal resources, health departments, 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 app called PALS (see page 11 of this report).



NPIC verified contact information, websites and mailing addresses for thousands of resources including: County Extension offices (over 3000), household hazardous waste contacts (about 50), state pesticide regulatory agencies (about 50), and state health agencies (about 50).

Type of Contact	Number of contacts included
County Extension Offices	3093
Vector Control Agencies/Contacts	956
Sources for localized IPM fact sheets	956
Pesticide Manufacturers/distributors	584
OSHA	117
State environmental agency contacts	117
State Pesticide Lead Agency contacts	61
Household hazardous waste contacts	58
State Health Agencies	54
State WPS contacts	54
State Coordinators for Master Gardeners	53

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



Social Media / Contacts Facilitator



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. The QA/QC specialists collaborate with Dr. Sudakin (MD) on human incidents, and with Dr. Berman (DVM) on animal incidents. Over 2,500 pesticide-related incidents were documented and reviewed this year. See pages 27-44 for detailed information about the wide range of inquiries and incidents.



QA/QC Facilitator

Carmen Boone trained Brittany Hanson this year to perform many QA/QC functions during her maternity leave. This cross-training allowed the QA/QC process to be consistent and maintain its rigorous quality.

Ms. Boone performed an annual data assessment focused on personnel, and provided detailed feedback to each Pesticide Specialist about their performance in data collection, entry and incident classification. She assigned quantitative scores based on 21 distinct measures of data quality, such as active ingredient spelling and a comprehensive narrative.

Together, the QA/QC team led staff activities to bolster and maintain data quality in the Pesticide Inquiry Database (PID). In response to QC findings, they led discussions and posted coding examples in a series called “Code of the Week.” They also held coding competitions focused on data elements in need of specific attention or improvement. Winners were granted a few weeks’ possession of the coveted “Gold Phone.”

Over the winter, the Project Coordinator facilitated exercises responding to data inquiry trends, including a closed-book quiz about types of questions and actions, a facilitated exercise on referrals/resources, and an interactive presentation about required data collection elements for different types of inquiries. More detailed information about quality assurance procedures were provided to the Project Officer in “Quality Assurance Reports.”

Special Reports from the PID - NPIC provided 22 special reports to EPA personnel and their partners, typically within one week. Selected topics:

- Environmental pesticide incidents
- Occupational pesticide incidents
- Outdoor animal exposures with adverse effects
- Incidents related to *Beauveria bassiana*, a microbial pesticide
- Cases from the Ecological Incident Reporting Portal
- Pesticide misuse and indoor cleanup challenges
- All inquiries from Vermont, incidents and inquiries
- Incidents related to dichlorvos pest strips
- Pesticide incidents related to bed bug control
- Pesticide incidents involving humans in California
- Incidents involving insecticide misting systems

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 to optimize efficiency in data entry, quality assurance, and useful reporting. 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, 2012 to May 31, 2013.

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 surveillance systems, 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.
- 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 32. 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 33.
- NPIC makes no claims or guarantees as to the accuracy of the certainty index 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 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.
- PII is not included in quarterly, annual, or special reports. Data requestors must agree to keep confidential any PII that may be inadvertently included in reports.
- 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 17,376 inquiries during the 2012-13 operational year. Graph 1 shows the number of inquiries received for each month. Eighty-one percent (81%) of the inquiries were received between March and October, concurrent with the part of the year when pest pressures are highest.

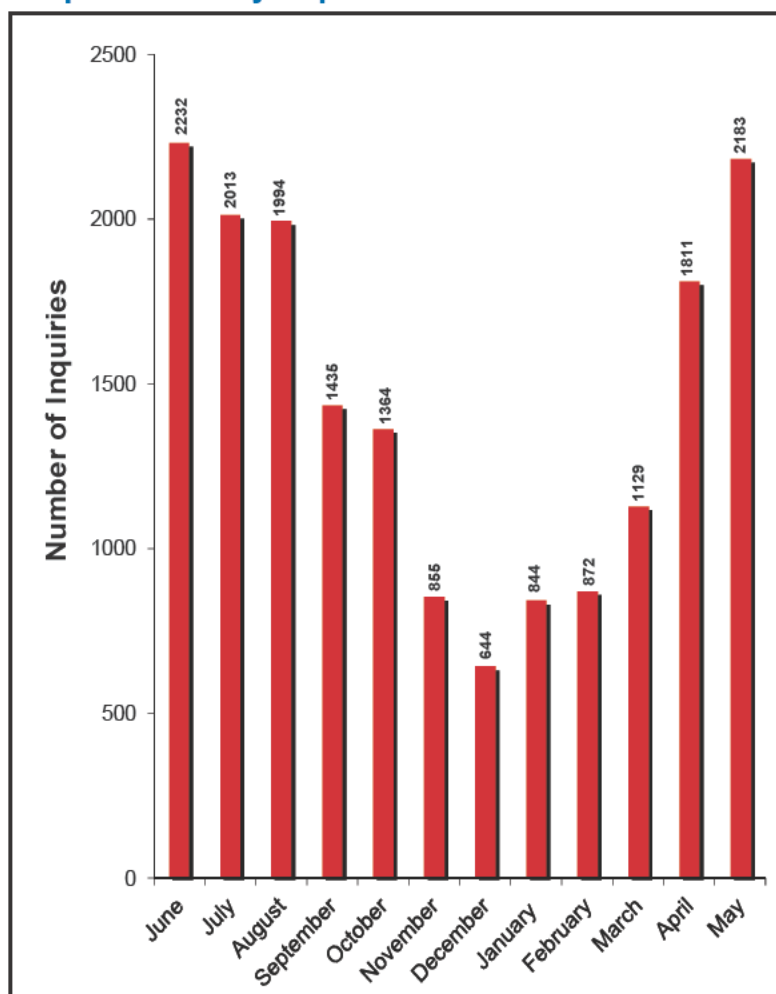
Table 1. Monthly inquiries

Month	Total
June	2232
July	2013
August	1994
September	1435
October	1364
November	855
December	644
January	844
February	872
March	1129
April	1811
May	2183
Calendar¹ Year Total =	17843
Grant² Year Total =	17376

¹ January 1 through December 31.

² June 1 through May 31.

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.

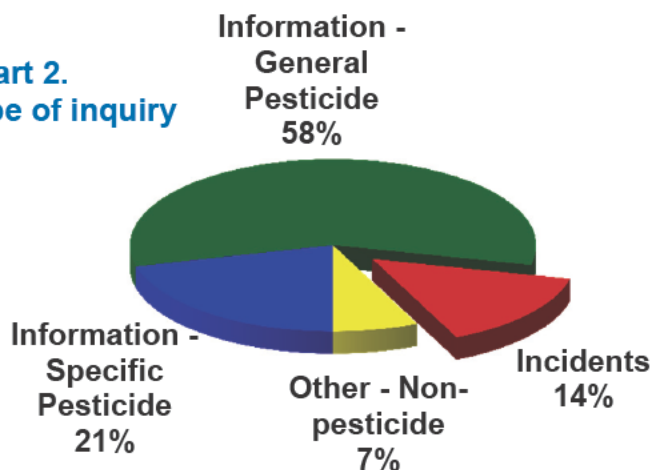
The majority of inquiries (13,674 or 79%) to NPIC were informational inquiries about pesticides or related issues (Chart 2). NPIC responded to 3,658 (21%) information inquiries about specific pesticides. NPIC responded to 10,016 (58%) inquiries relating to pesticides in general.

NPIC documented 2,522 incidents involving pesticides (14%). 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	10016
Information - Specific Pesticide	3658
Incidents	2522
Other - Non-Pesticide	1180
Total =	17376

Chart 2. Type of inquiry



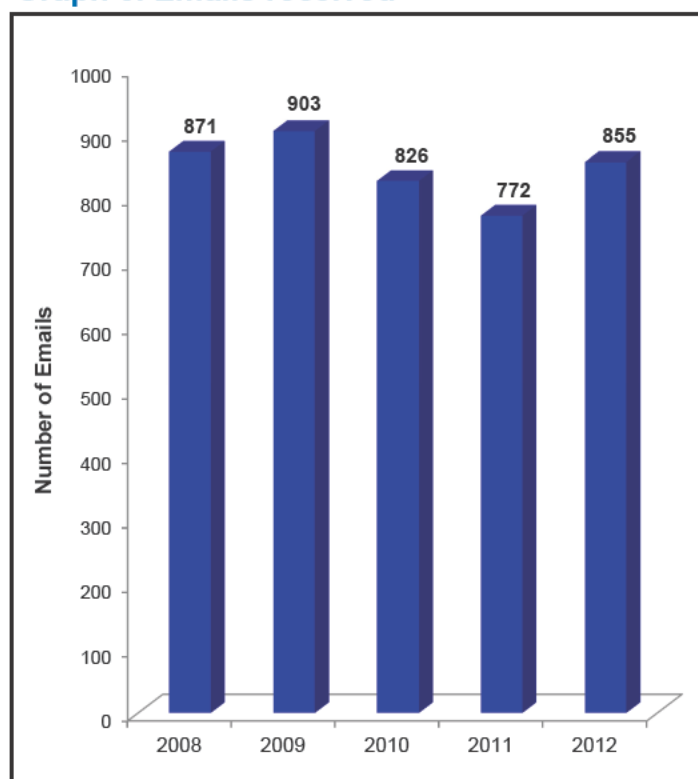
3. Origin of Inquiry

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	15572
Voice Mail	918
Email	855
Mail	30
Walk-In	1
Total =	17376

Graph 3. Emails received



4. Website Access

The NPIC website attracted more than 1.2 million unique visitors viewing 2,703,686 pages during 2012, an increase of 26% over 2011 views (2,142,723 pages).

Over half of page views (56%) originated from queries on popular search sites, while another third (33.5%) were connected with NPIC from a bookmark or other direct link (i.e. shared via email). The most popular search terms used to reach NPIC were “malathion,” “neem oil,” and “pesticides.”

Visits to the website varied greatly in duration, with 68,808 visits lasting longer than 15 minutes, and 1,496,791 of less than 15 minutes. The average visit duration was 2 minutes 25 seconds.

The most popular pages viewed on the site were the “My Local Resources” page (141,454 views), the NPIC home page (131,413 views), and the Bed Bug page (54,844).

Graph 4.1. Page views

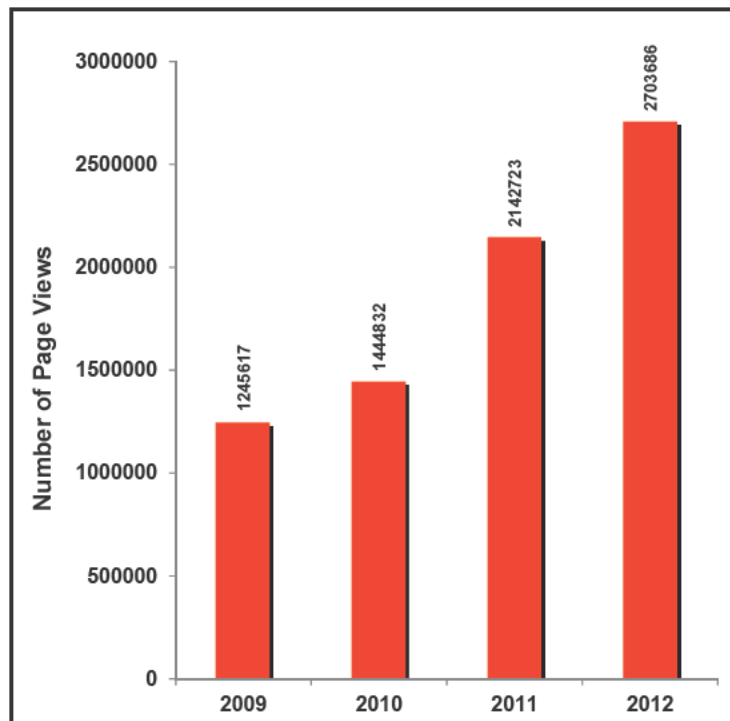
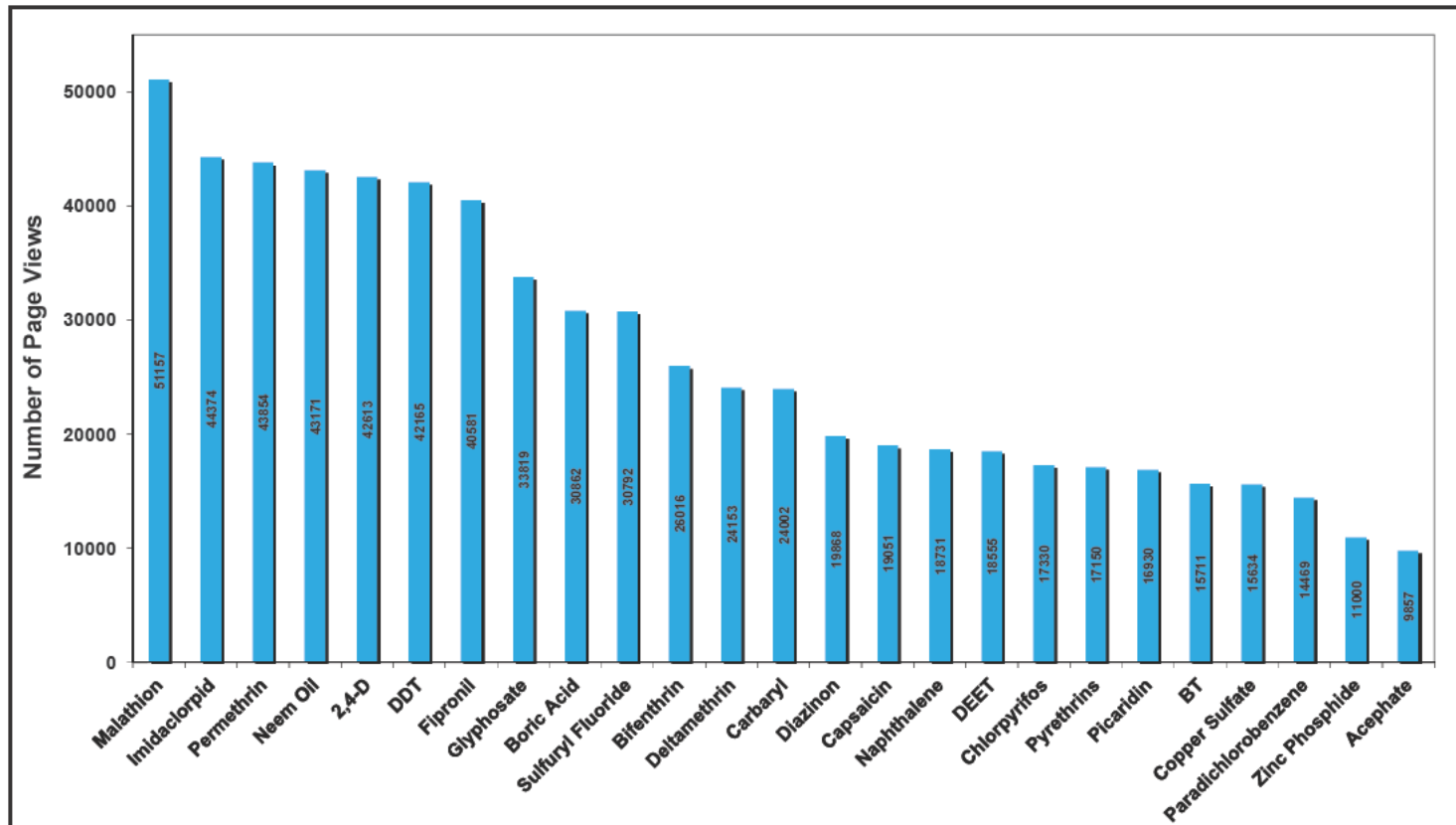


Table 4. Selected page views

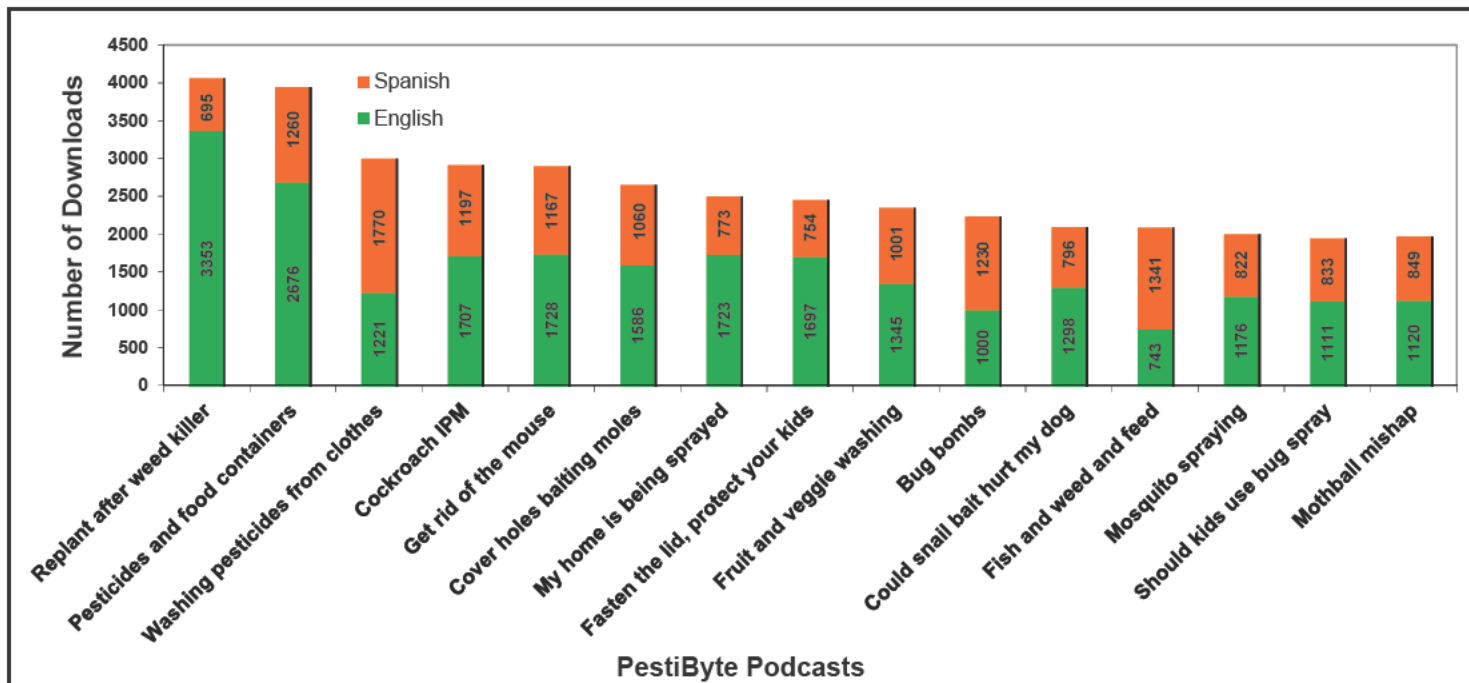
Page Accessed	English page views	Number of pages available	Spanish page views	Number of pages available
Fact Sheets	864,102	164	5,507	6
Pest Control	368,200	53	84,738	31
Pesticide Ingredients	334,774	84	30,127	15
My Local Resources	200,376	3	2,268	1
Home Page	131,507	1	4,964	1
Health and Safety	78,972	27	11,186	16
Regulations	66,092	23	4,720	6
Environment	45,007	18	13,378	7
Common Pesticide Questions	42,260	46	38,645	30
A to Z Index	33,322	1	2,691	1
Pestibyte Podcasts	32,903	42	17,774	32
Reporting Pesticide Incidents	8,144	1	1,120	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, 79 podcasts are downloaded in English, and 46 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 17,376 inquiries received, there were 16,097 (93.0%) from the general public, 294 (1.7%) from federal, state or local government agencies, 216 (1.2%) from human and animal medical personnel, and 120 (1.0%) from information groups including the media, unions, and environmental organizations.

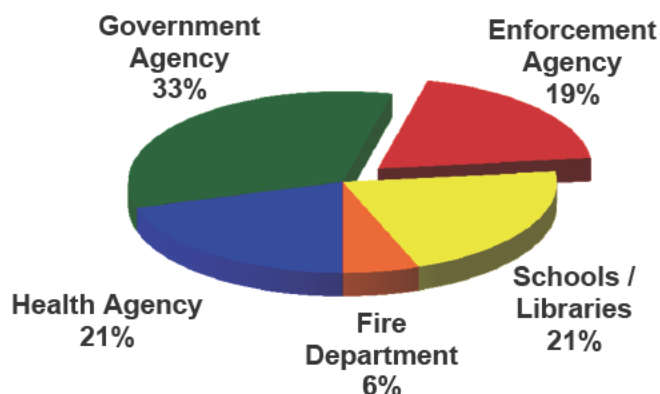
Chart 5 summarizes the 294 governmental entities that contacted NPIC during the year. Health agencies include health departments and WIC personnel. Government agencies include city, county, and other government entities without enforcement roles.

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	16097
Federal/State/Local Agencies	
Government Agency	98
Schools/Libraries	62
Health Agency	60
Enforcement Agencies	57
Fire Departments	17
Medical Personnel	
Animal Vet./Clinic	114
Human Medical	101
Migrant Clinic	1
Information Groups	
Unions/Info. Service	52
Environmental Org.	39
Media	29
Pesticide Mfg./Mktg. Co.	144
Consumer Users	
Retail Store	112
Pest Control	92
Farm	31
Lawyer/Insurance	28
Lab./Consulting	26
Master Gardener	24
Non-migrant Ag. Worker	7
Other	185
Grant Year Total =	17376

Chart 5. Inquiries from federal / state / local agencies (Total: 294)



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 (3,099) include all wrong numbers (1,180) and people seeking their pest control companies (950).

Questions about regulations (1,216) 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 (3,781) were coded as ‘Application’ questions.

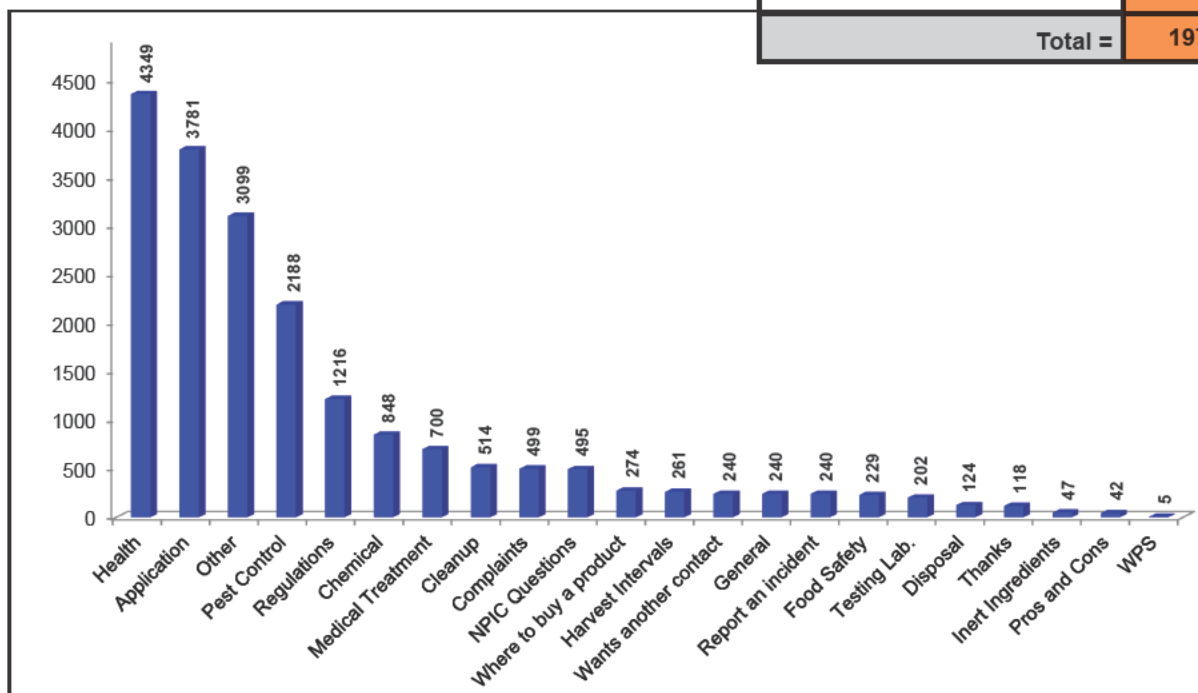
People contacted NPIC in order to report a pesticide incident 240 times with no specific question. In these cases, NPIC provides appropriate local referrals for enforcement, as needed.

Inquiries may often involve more than one type of question. Inquirers asked 19,711 questions this year in the course of 17,376 inquiries.

Table 6. Type of question

Type of Question	Total
Health	4349
Application	3781
Other	3099
Pest Control	2188
Regulations	1216
Chemical	848
Medical Treatment	700
Cleanup	514
Product Complaints	499
NPIC Questions	495
Where to buy a product	274
Harvest Intervals	261
Just wants another contact	240
General	240
Report an incident	240
Food Safety	229
Testing Lab.	202
Disposal	124
Thanks	118
Inert Ingredients	47
Pros and Cons	42
WPS	5
Total =	19711

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 (16,435) were answered by providing verbal communication. Information was also sent via email in 879 cases, and by postal mail in 81 cases. Upon request, NPIC brochures and other promotional materials were mailed to people 54 times in 2012.

Table 7.1. Primary action taken

Primary Action Taken	Number of Inquiries
	2012
Verbal Info	16435
Emailed Info	879
Transferred to Specialist / Voicemail	172
Handled Inquiry in Spanish	101
Mailed Info	81
Sent NPIC Outreach Material(s)	54
Transferred to EC / PC	53
Interpreted via Language Line Svs	32
Faxed Info	4
Referred to Dr. Sudakin	4
Referred to Dr. Berman	2

Risk reduction actions:

NPIC keeps track of certain conversation topics aimed at reducing pesticide risk. Specialists documented 6,588 risk reduction actions, detailed in Table 7.2.

Table 7.2. Risk reduction actions

Risk Reduction Action Taken	Number of Inquiries
	2012
Discussed Following the Label	3095
Discussed Ways to Minimize Exposure	2575
Discussed IPM Concepts	804
Discussed Environmental Protection	114

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 22 for information about how NPIC maintains and delivers appropriate referral information.

Table 7.3. Referrals to other organizations

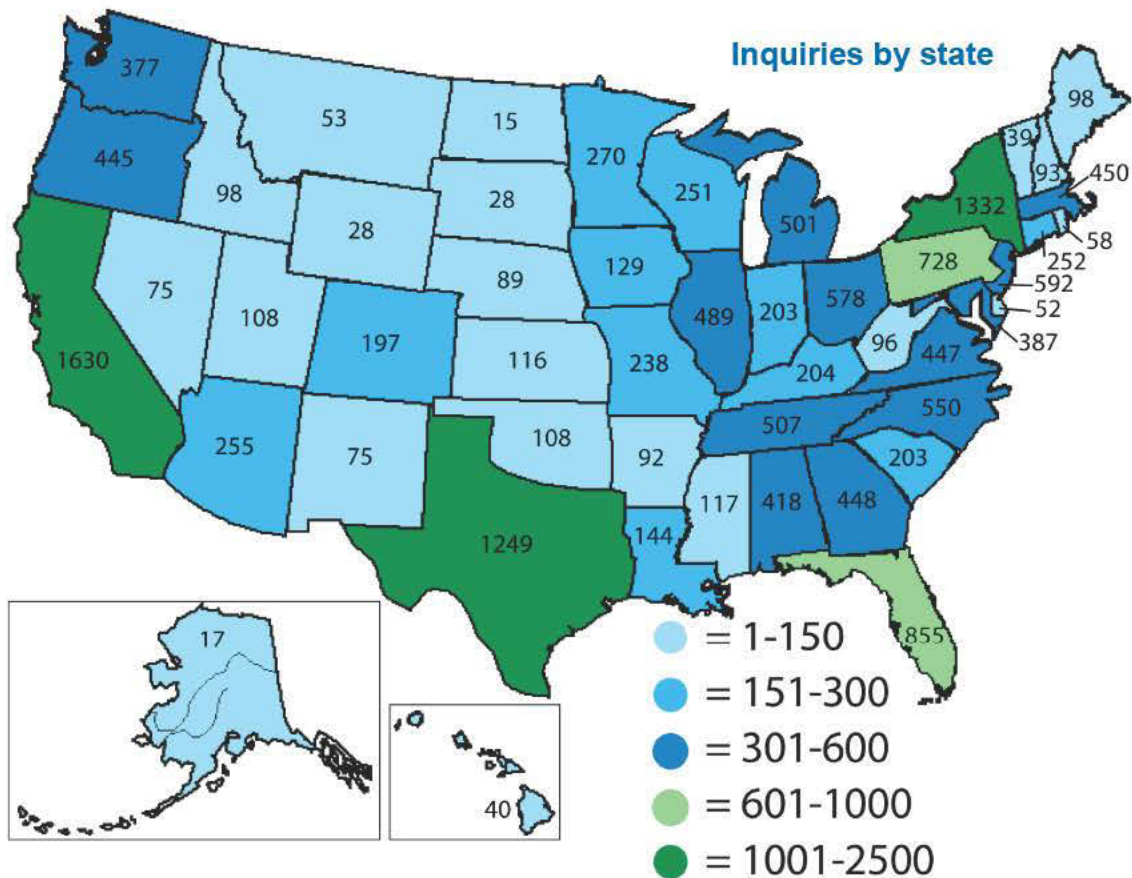
Organization Name	Number of Inquiries
	2012
Manuf. / Distributor Contact	5387
NPIC Website	1749
County Extension Contact	1414
Poison Control Contact	971
State Lead Contact	872
Other Org. Contact	478
EPA Website	379
Dept of Health Contact	345
EPA HQ / OPP Contact	265
Hazardous Waste Contact	228
Animal Poison Contact	206
EPA Region Contact	155
Other State Agency Contact	142
Other Fed Agency Contact	105
OSHA Contact	19

INQUIRIES BY STATE

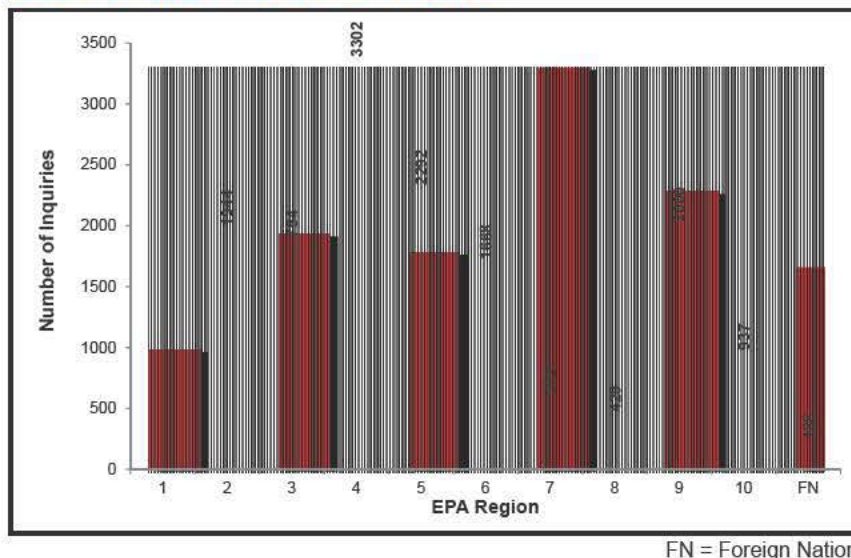
8. Inquiries by State

The map below shows the number of inquiries received by NPIC from each state. The largest number of inquiries came from California, followed by New York, Texas, and Florida. In addition to the states, NPIC received 20 inquiries from U.S. territories including Puerto Rico (16) and the Virgin Islands (4). NPIC also received calls from Canada (110) and other countries (188).

Graph 8 summarizes inquiries by EPA region. NPIC received 19.0% of inquiries from Region 4, 13.2% from Region 5, 11.5% from Region 9, 11.2% from Region 2, and 10.3% from Region 3.



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 1,527 inquiries involving naphthalene, 1,306 (85.5%) 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 in the 2012 grant year.

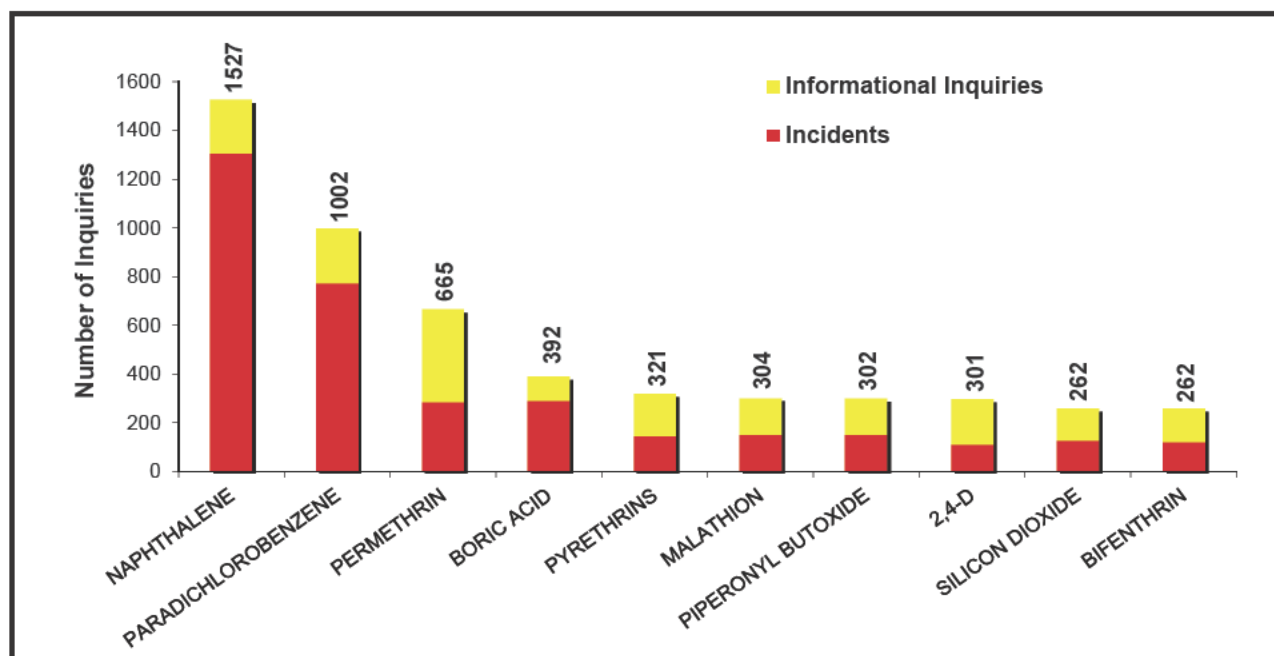
Compared to 2011, bifenthrin and silicon dioxide (diatomaceous earth) are new on the top ten list. Deltamethrin and imidacloprid were eliminated from the top ten list in 2012.

Table 9. Top 25 active ingredients for all inquiries

Active Ingredient	Total Inquiries	Incidents ¹	Information Inquiries
NAPHTHALENE	1527	1306(20)	221
PARADICHLOROBENZENE	1002	776(5)	226
PERMETHRIN	665	286(24)	379
BORIC ACID	392	291(0)	101
PYRETHRINS	321	148(6)	173
MALATHION	304	154(6)	150
PIPERONYL BUTOXIDE	302	154(12)	148
2,4-D	301	112(1)	189
SILICON DIOXIDE	262	131(1)	131
BIFENTHRIN	262	122(0)	140
DELTA METHRIN	248	110(6)	138
FIPRONIL	247	129(13)	118
IMIDACLOPRID	243	118(5)	125
DICAMBA	202	64(2)	138
CARBARYL	199	81(4)	118
PUTRESCENT WHOLE EGG SOLIDS	194	64(2)	130
GARLIC OIL	193	62(2)	131
GLYPHOSATE	188	85(0)	103
DRIED BLOOD	179	52(1)	127
MECOPROP	172	43(1)	129
METHOPRENE	169	123(17)	46
CAPSAICIN	154	98(31)	56
PYRIPROXYFEN	151	116(19)	35
CAPTAN	151	62(2)	89
D-PHENOTHRIN	116	62(9)	54
Total =	8144	4749(189)	3395

¹ 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.

In 2012, there were 3,069 pesticide exposures, and 1,502 accidents. Charts 10.1 and 10.2 provide further details. Among reported exposures, inhalation was the most common route of exposure (34.2%), followed by dermal contact (25.8%) and ingestions (20.8%). When a specific exposure route could not be identified, specialists documented a "possible exposure" (11.8%).

Indoor spills (89) were reported about twice as much as outdoor spills (44). Among reported misapplications (910), over three quarters were misapplications by the homeowner or resident. Misapplications by the homeowner were relatively steady in 2012 (631) compared to 2011 (658), but the number of reported misapplications attributed to pest control operators (PCO) increased from 42 in 2011 to 93 in 2012.

Chart 10.1. Pesticide exposures

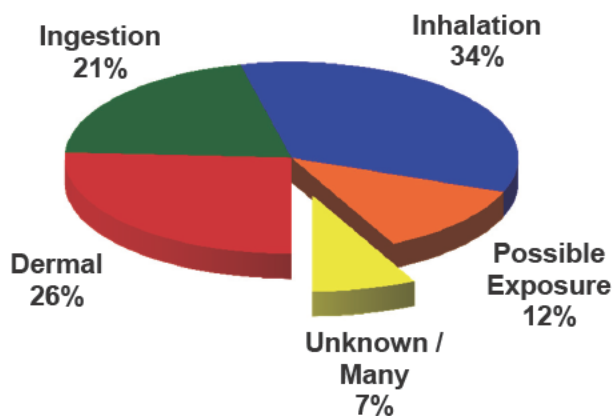


Chart 10.2. Pesticide accidents

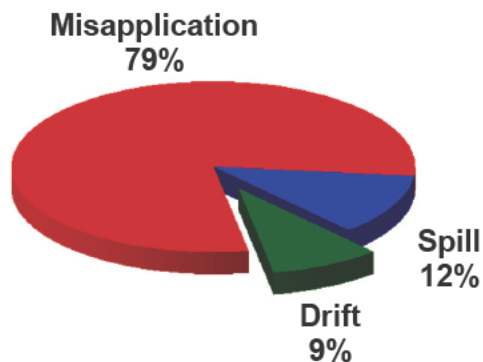


Table 10. Incident Type

Type of Incident	Total
Incident	
Exposures	
Inhalation	1051
Dermal	791
Ingestion	624
Exposure Possible	360
Unknown/Many	226
Occupational	17
Accidents	
Misapp. - Homeowner	631
Misapp. - Other	186
Drift	102
Misapp. - PCO	93
Spill - Indoor	89
Spill - Outdoor	44
Fire - Other	1
Industrial Accident	1
Fire - Home	0
Other	355

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 (25).

For animal incidents, naphthalene, methoprene, and permethrin were involved in the highest number of incidents. Note that methoprene and pyriproxifen are rarely used singly. They are almost exclusively used in conjunction with other active ingredients like fipronil, or one of many pyrethroids.

In Table 11, the top 3 active ingredients for human and animal incidents are highlighted below.

Graph 11. Top 10 active ingredients for incidents

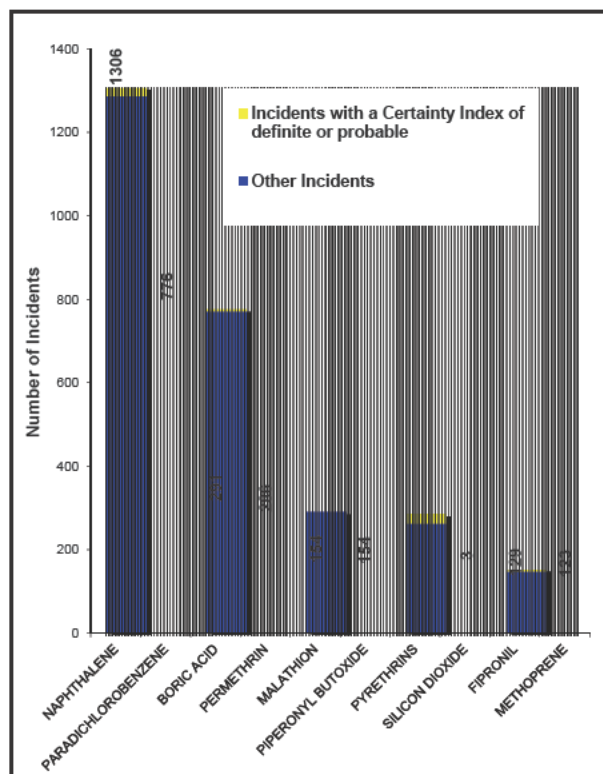


Table 11. Top 25 active ingredients for incidents to NPIC

Active Ingredient	Total Incidents ¹	Human Incidents ¹	Animal Incidents ¹	Other Incidents
NAPHTHALENE	1306(20)	623(20)	63(0)	427
PARADICHLOROBENZENE	776(5)	379(5)	37(0)	262
BORIC ACID	291(0)	112(0)	45(0)	12
PERMETHRIN	286(24)	96(12)	60(12)	39
MALATHION	154(6)	59(4)	10(2)	46
PIPERONYL BUTOXIDE	154(12)	83(9)	25(3)	16
PYRETHRINS	148(6)	85(5)	22(1)	14
SILICON DIOXIDE	131(1)	62(1)	22(0)	12
FIPRONIL	129(13)	21(0)	52(13)	10
METHOPRENE	123(17)	16(0)	63(17)	1
BIFENTHRIN	122(0)	44(0)	19(0)	26
IMIDACLOPRID	118(5)	14(0)	38(5)	17
PYRIPROXYFEN	116(19)	11(0)	58(19)	2
2,4-D	112(1)	31(1)	25(0)	26
DELTAMETHRIN	110(6)	56(6)	11(0)	14
CAPSAICIN	98(31)	51(31)	3(0)	12
GLYPHOSATE	85(0)	20(0)	15(0)	19
CARBARYL	81(4)	25(4)	7(0)	19
IRON PHOSPHATE	76(1)	7(0)	30(1)	3
ZINC PHOSPHIDE	69(0)	5(0)	21(0)	10
DICAMBA	64(2)	20(2)	10(0)	14
PUTRESCENT WHOLE EGG SOLIDS	64(2)	10(1)	10(1)	19
N-OCTYL BICYCLOHEPTENE DICARBOXIMIDE	63(2)	31(0)	16(2)	5
CAPTAN	62(2)	18(2)	3(0)	16
D-PHENOTHRIN	62(9)	17(0)	19(9)	7
Total =	4800(188)	1896(103)	684(85)	1048

¹ 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 4,425 locations where exposures or accidents occurred, 90.4% occurred in the home or yard, and 1.8% 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	4001
Unclear/Unknown	110
Agriculturally Related	80
Office Building, School	66
Other	54
Pond, Lake, Stream Related	27
Roadside/Right-of-Way	22
Retail Store/Business	15
Park/Golf Course	12
Health Care Facility	10
Treated Water	10
Industrially Related	9
Nursery, Greenhouse	6
Food Service/Restaurants	3
Total =	4425

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 (325). 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	2	2	2	0	0	1	6	8	0
Building-Home/Office	325	30	99	7	56	3	14	0	9
Home Garden	124	7	7	0	0	1	27	141	0
Home Lawn	20	12	13	3	0	3	7	28	0
Natural Water	1	0	0	0	0	1	0	0	2
Property	52	11	12	0	12	3	2	0	4
Soil/Plants/Trees	46	4	27	1	0	8	7	39	0
Treated Water	1	1	1	0	0	4	2	0	1
Vehicle	11	2	3	1	11	1	1	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.

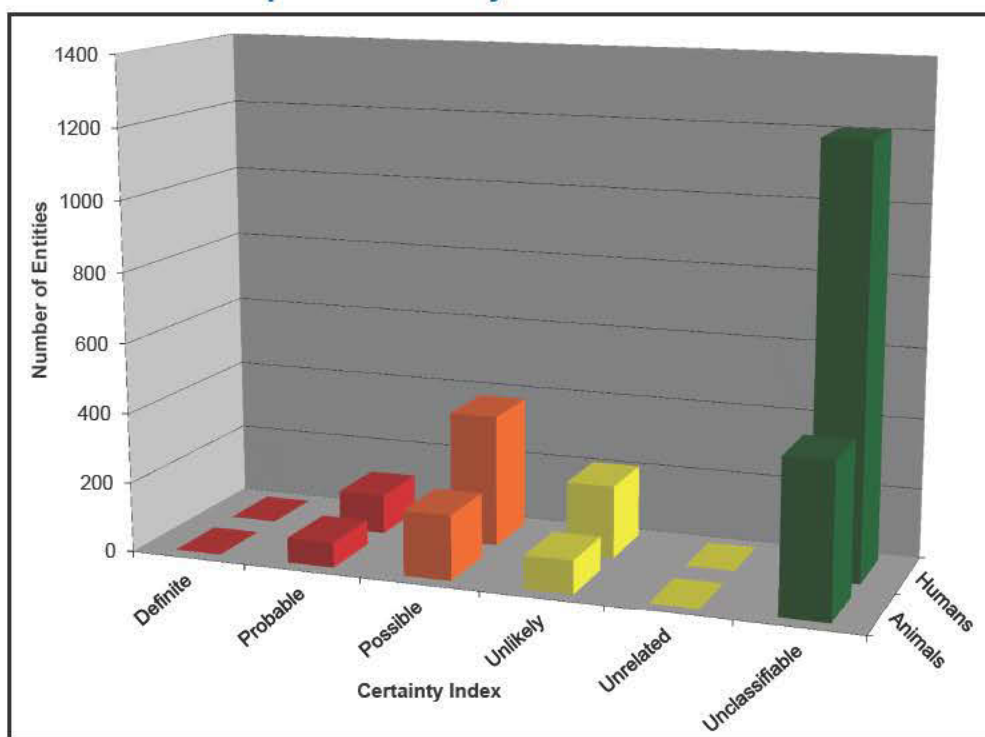
Of the total number of entities assigned a certainty index (2,776), 6.6% of the cases were assigned an index of definite or probable, 20.2% were assigned an index of possible, 10.8% were assigned an index of unlikely, and 62.4% were considered unclassifiable. Because none of the information reported 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 surveillance purposes. As a result, the certainty index assignments for definite and unrelated are rarely assigned.

All certainty index assignments are reviewed by quality assurance specialists, Carmen Boone and Brittany Hanson. 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	112	71	183	56	49	7	0
Possible	376	185	561	150	210	14	2
Unlikely	206	95	301	81	122	2	1
Unrelated	0	0	0	0	0	0	0
Unclassifiable	1205	433	1731	468	594	138	5

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

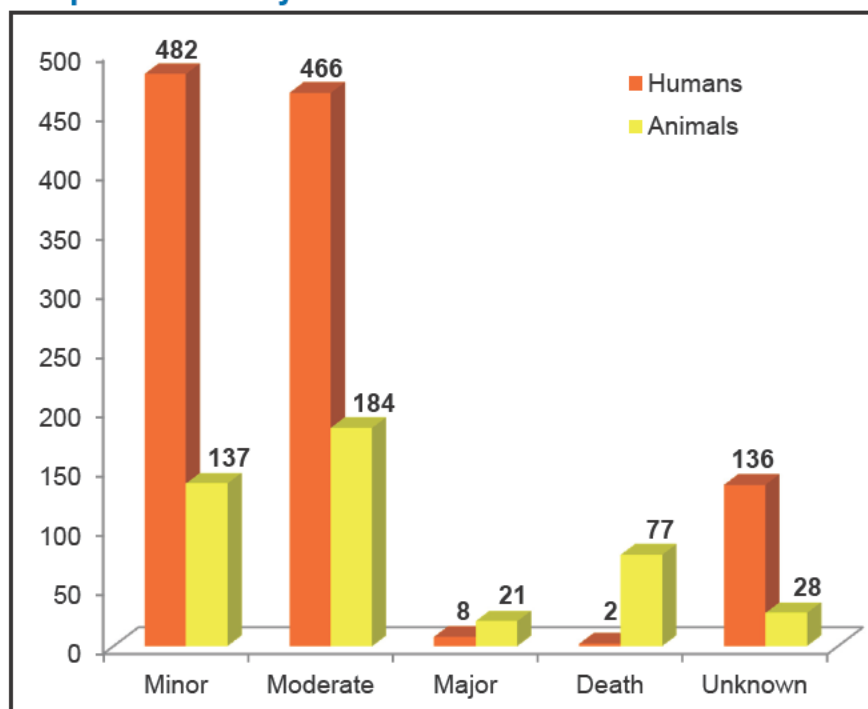
15. Severity Index

Table and Graph 15 summarize the severity of symptoms for all human and animal incidents reported to NPIC. For all symptoms reported in human pesticide incidents, 25.0% were minor, 24.3% were moderate, 0.4% were major, and two deaths were reported. Symptoms were unknown in 7.8% of human incidents. In 42.4% of human 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	482	137	619	210	246	17	2
Moderate	466	184	650	156	284	20	1
Major	8	21	29	5	3	0	0
Death	2	77	79	2	0	0	0
Unknown	136	28	164	40	68	36	4
Asymptomatic	805	337	1142	342	374	88	1

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 symptoms reported for human incidents. The severity of symptoms can be categorized as asymptomatic, minor, moderate, major, death, or unknown. 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 3,704 entities involved in incidents reported to NPIC this year, 51.3% were human, 21.2% were animals, and 27.1% were environmental nontarget entities. Other entities (18) are miscellaneous items (i.e. sidewalk, food). Pesticide incidents may involve multiple entities.

Graph 16.1. Humans

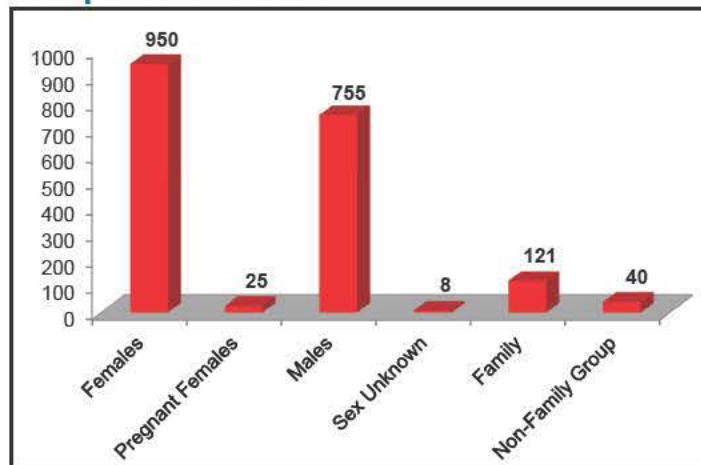
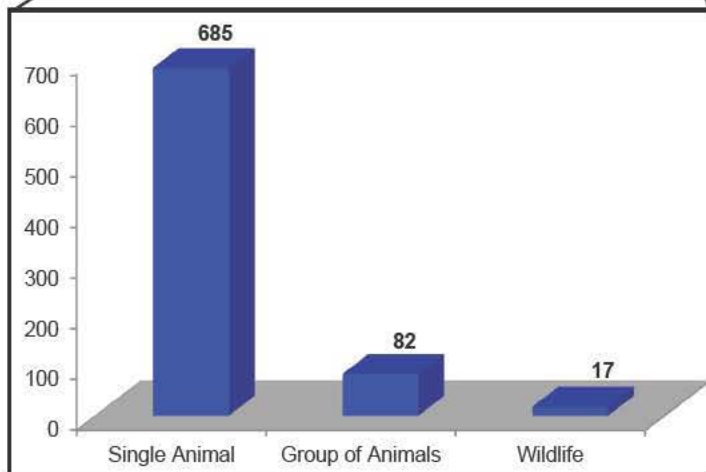
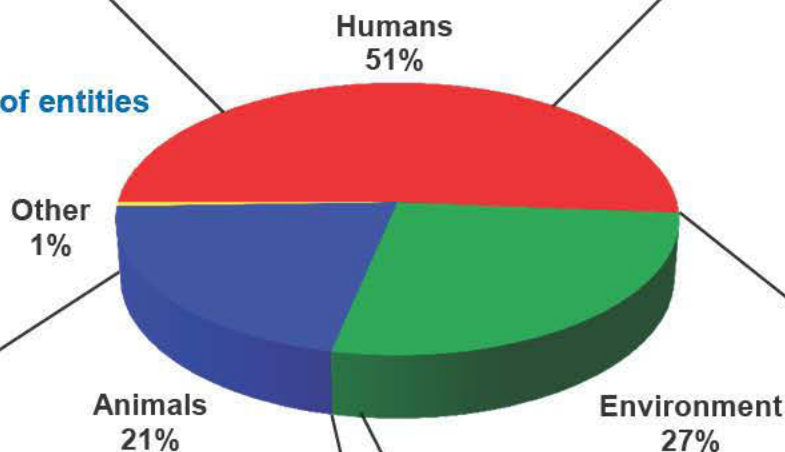
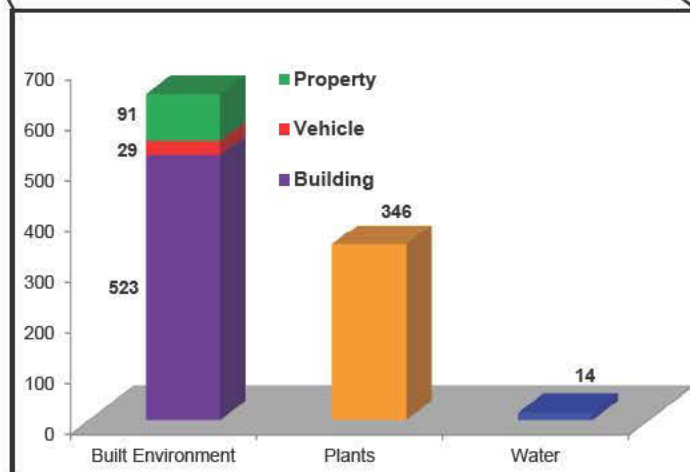


Chart 16. Description of entities



Graph 16.2. Animals



Graph 16.3. Environmental entities

REPORTED DEATHS

17. Reported Deaths

In 2012, two human deaths were reported (Table 17.1). Of the 784 animal entities involved in pesticide incidents, there were 52 reported deaths. Fipronil, methoprene, pyriproxyfen, and ethofenprox were most commonly reported in animal deaths (Table 17.2).

Both human deaths were apparent suicides reported by forensic investigators. They were seeking technical information about the pesticides involved.

Table 17.1. Reported deaths

Reported Deaths	Total ¹
Human Deaths -	
Male	2(1)
Female	0(0)
Total Human Deaths =	2(1)
Animal Deaths -	
Single Animal	38(9)
Group of Animals	12(4)
Wildlife	2(0)
Total Animal Deaths =	52(13)
Total =	54(14)

¹ 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 ¹	Number of Deaths	Active Ingredient ¹	Number of Deaths
FIPRONIL	11	PIPERONYL BUTOXIDE	4
METHOPRENE	11	NAPHTHALENE	4
PYRIPROXYFEN	10	2,4-D	3
ETHOFENPROX	8	PYRETHRINS	3
D-PHENOTHRIN	7	N-OCTYL BICYCLOHEPTENE DICARBOXIMIDE	3
PERMETHRIN	5	COPPER SULFATE	3
IMIDACLOPRID	4		

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

ENTITY AGE

18. Entity Age

Table 18 and Graph 18 summarize information about the ages of people involved in incidents reported to NPIC. Of the 1,464 people with ages available, 17.9% were less than 5 years of age (primarily consisting of ages 1-2), 5.3% were between the ages of 5 and 14, 4.3% were between the ages of 15 and 24, 53.1% were between the ages of 25 and 64, and 19.4% were over the age of 65.

Graph 18. Age of people involved in reported incidents

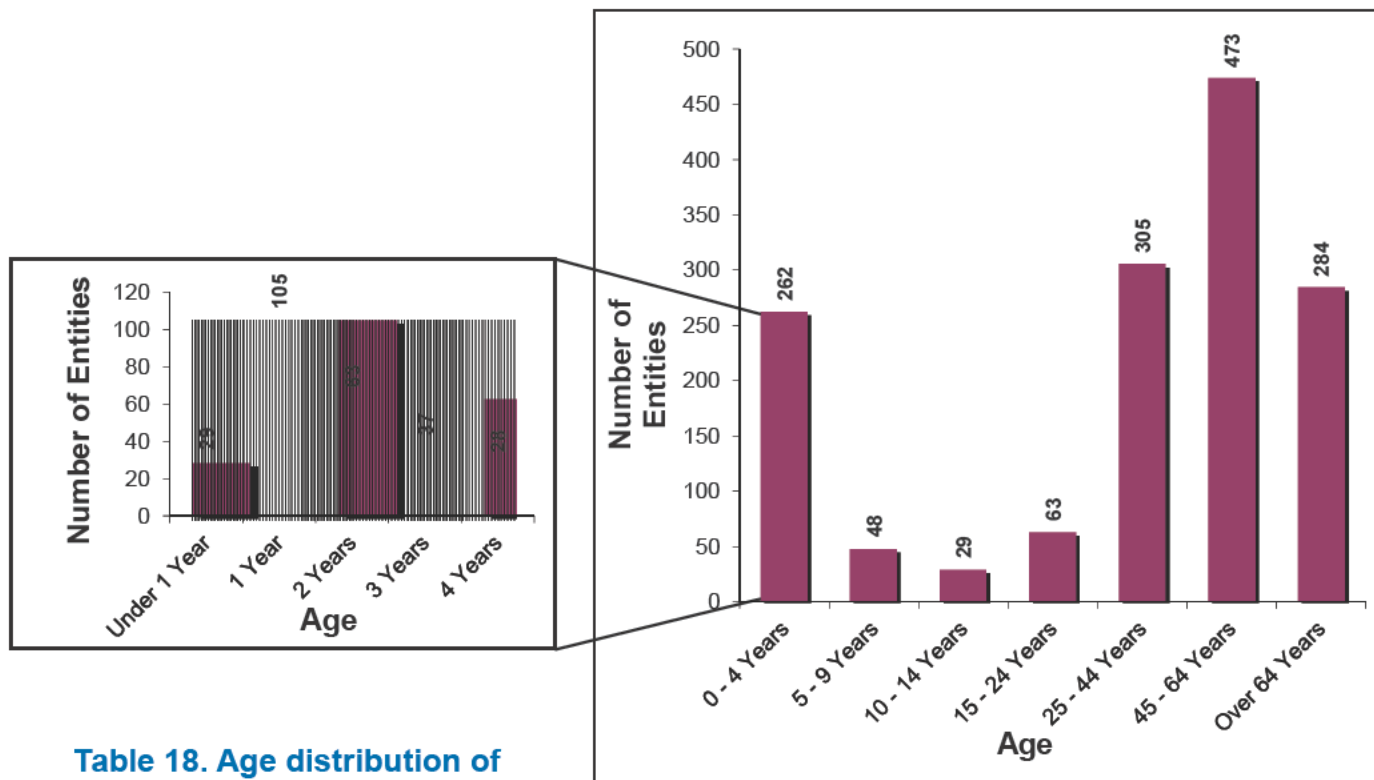


Table 18. Age distribution of people involved in reported incidents

Age Category	Total
Under 1 Year	29
1 Year	105
2 Years	63
3 Years	37
4 Years	28
Total (0 - 4 Years) =	262
5 - 9 Years	48
10 - 14 Years	29
15 - 24 Years	63
25 - 44 Years	305
45 - 64 Years	473
Over 64 years	284

NOTABLE EXPOSURES

19. Notable Exposures

There were 3,704 entities exposed in 2,522 incidents.

Figure 19.1

Exposed entities to pesticides in 2,522 incidents reported to NPIC.
Total = 3,704 entities

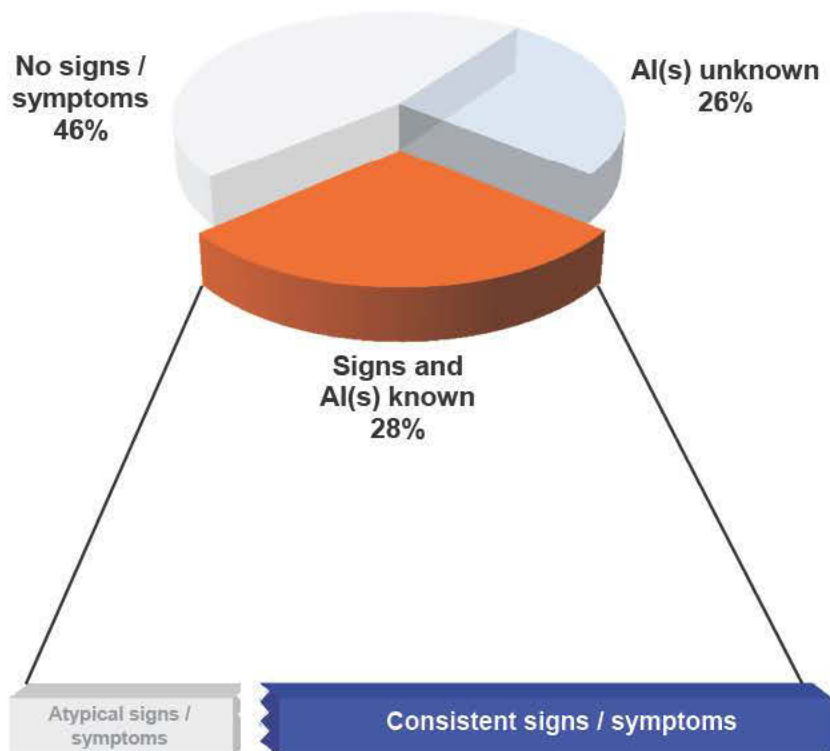
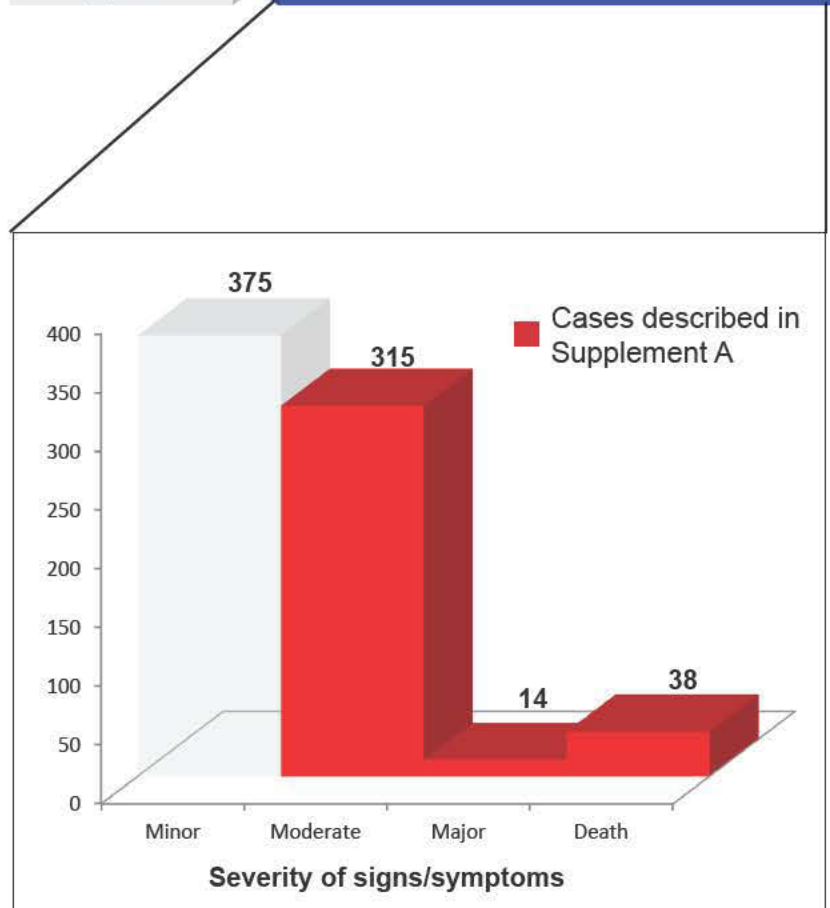


Figure 19.2

Entities exposed to a known pesticide with reported signs/symptoms.
Total = 1,042 entities

Figure 19.3

Entities exposed to a known pesticide with reported signs/symptoms that were consistent with reports in the literature for that pesticide.
Total = 742 entities



A 2011-2012 supplemental report describes the 367 entities represented by the red bars in Figure 19.3.

VETERINARY REPORTING

20. Veterinary Incident Reporting Portal (VIRP)

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.

In 2012, veterinarians submitted 101 incident reports to the Veterinary Incident Reporting Portal (VIRP) involving 109 animals (88 dogs, 20 cats, and one horse). 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. Almost half of the products were liquid spot-on treatments for pets (49.0%). About 26.5% of products were pelleted, and 14.3% 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. Two thirds (66%) of the products were insecticides, and 16.5% were rodenticides.

Table 20.1. Product formulations as reported in VIRP

Formulation	Number of Products
	2012
Spot-on	48
Pellet	26
Liquid	14
Other	5
Powder	3
Shampoo	2
Total =	109

Chart 20.1. Product formulations reported in VIRP

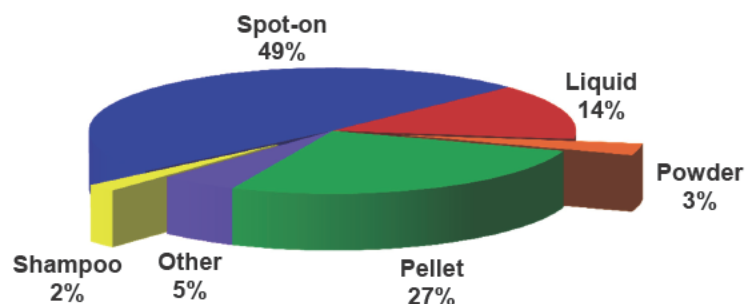
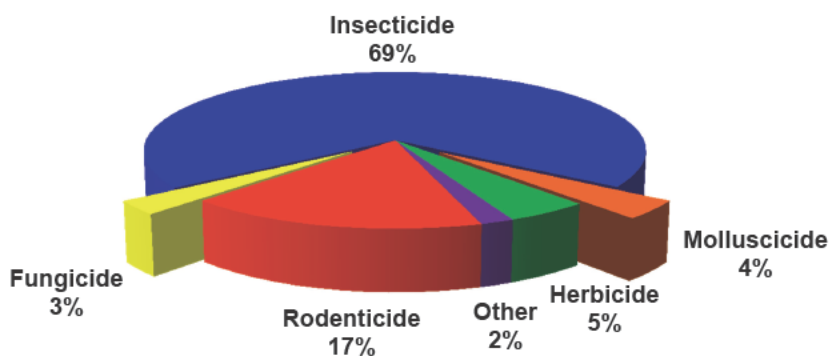


Table 20.2. Product types as reported in VIRP

Type	Number of Products
	2012
Insecticide	72
Rodenticide	18
Herbicide	5
Molluscicide	4
Fungicide	3
Other	2
Total =	109

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, 39.2% were classified as neurological. Nineteen (20.8%) percent were classified as dermatological, 13.5% as gastrointestinal, 15.2% as other and 12.3% 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, 56.0% of the cases were ongoing or the affected animals had recovered (23.9%) at the time of the report. Ten percent (10.1%) of the animals experienced continuing illness, and 6.4% resulted in the death of the animal.

Table 20.3. Animal symptoms as reported in VIRP

Symptom	Number of Animals
	2012
Dermatological: Irritant	26
Dermatological: Ulcer	7
Dermatological: Sloughing	1
Dermatological Total	34
Gastrointestinal: Vomiting	18
Gastrointestinal: Diarrhea	5
Gastrointestinal total	23
Neurological: Depression	20
Neurological: Excited	12
Neurological: Tremor	26
Neurological: Seizure	9
Neurological Total	67
Other	26
None	21
Total =	171

Chart 20.3. Animal symptoms as reported in VIRP

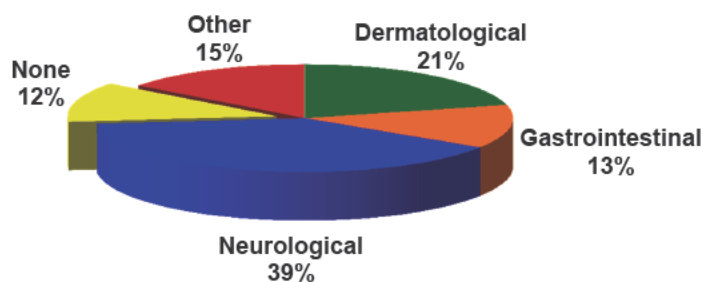
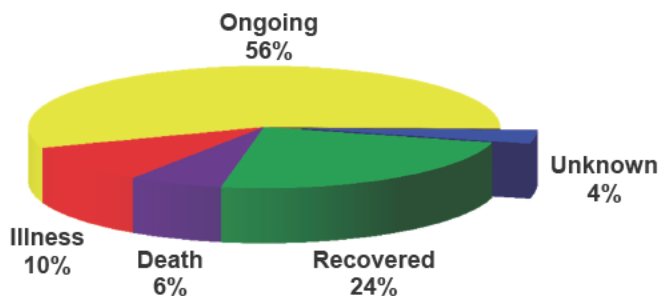


Table 20.4. Incident outcomes as reported in VIRP

Outcome	Number of Animals
	2012
Ongoing	61
Recovered	26
Illness	11
Death	7
Unknown	4
Sequelae	0
Total:	109

Chart 20.4. Incident outcomes as reported in VIRP



21. Ecological Incident Reporting Portal (Eco-Portal)

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 NPIC. Efforts were made to make data portable into OPP's Ecological Incident Information System (EIIS) by using similar field names and definitions. Users have been allowed to attach files, including detailed results of laboratory analysis.

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. More recently, NPIC automated delivery of reports as soon as they are received.

All Incidents Reported to Date (April 2009 – July 2013)

Twenty (20) incidents have been submitted through the Eco-Portal involving 24 entities with reported exposures to pesticides. See Tables 21.1 and 21.2.

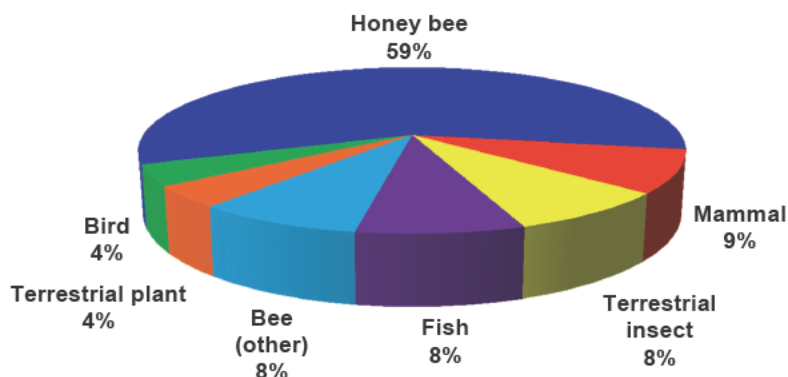
Table 21.1 Entities involved in the 20 Eco-reports to date

Entity	Number of Reports
Honey Bee	14
Mammal	2
Terrestrial insect	2
Fish	2
Bee (other)	2
Terrestrial plant	1
Bird	1

Table 21.2 Active ingredients involved in reported incidents

Active Ingredient	Quantity
pyraclostrobin	4
boscalid	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
glyphosate	1
2,4-d	1
mcpa	1
dicamba	1
unknown	1
diquat bromide	1
acephate	1
chlorophacinone	1
abamectin	1
brodifacoum	1
pyraclostrobin	1
acetamiprid	1
atrazine	1

Chart 21.1. Entities involved in the 20 Eco-reports to date



Environmental & Molecular Toxicology
Cooperative Agreement #X8-83458501
Oregon State University
310 Weniger Hall
Corvallis, OR 97331-6502
www.npic.orst.edu