

npic

NATIONAL
PESTICIDE ● INFORMATION
CENTER

-2023-

Environmental & Molecular Toxicology



Oregon State
University

The National Pesticide Information Center (NPIC) is a service that provides a variety of pesticide and related information to the general public and professionals across the United States and its territories. NPIC is a cooperative agreement between Oregon State University and the US Environmental Protection Agency. The 2023 Annual Report covers the period of February 15, 2023 - February 14, 2024.

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 consistency 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:

US Environmental Protection Agency
Office of Pesticide Programs

Submitted By:



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NPIC 2023 Annual Report

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INTRODUCTION / DELIVERING OBJECTIVES

NPIC provides objective, science-based information about pesticides and related topics to enable people to make informed decisions about pesticides and their use. In this, the fifth year of the project period under cooperative agreement #X8-83947901, Oregon State University (OSU) provided information to millions of people by phone, email, social media, data-sharing, mobile web apps, and/or web content.

NPIC supports the U.S. Environmental Protection Agency's (U.S. EPA) 2022-2026 Strategic Plan Objective 7.1, to "Ensure Chemical and Pesticide Safety" by protecting "the health of families, communities, and ecosystems from the risks posed by pesticides." NPIC also supports the mission of the OSU Extension System, conveying research-based knowledge in a way that is useful for people to improve their lives, their homes, and their communities.

The complete record of NPIC accomplishments for the operational year includes this annual report, four quarterly reports, and a quality assurance report. Quarterly and supplemental reports were submitted to the Project Officer within 30 days of the reporting period's closure.

The 12-month reporting period began on February 15, 2023, and ended February 14, 2024.
This period will be referenced as "2023" in this report.

The cooperative agreement between OSU and the U.S. EPA includes six strategic project objectives. Those objectives are listed below with a summary of measures taken to meet or exceed the goals in our work-plan.

1. Serve as a source of factual, unbiased information for diverse audiences including the agricultural and pest control community, healthcare providers, educators, consumers, and the public.

- NPIC maintained open hours with multilingual capabilities from 8:00am to 12:00pm Pacific Time, Monday-Friday, excluding holidays, with no closures due to technical or staffing issues.
- NPIC responded immediately to 99% of calls received during open hours and when inquiries were received via voicemail, email, and/or social media. Occasionally when call volume is high, people may choose to leave a message.
- NPIC retained six highly qualified pesticide specialists this grant period.
- NPIC collaborated with organizations 21 times this grant year to provide outreach and expert risk communication instruction to the public, medical professionals, agricultural growers, and educators:
 - NPIC gave a virtual presentation to EPA Region 7 about Risk Communication and Risk Perception.
 - NPIC trained the Pesticide Regulatory Education Program (PREP) to facilitate a "Know Your Resources" exercise on behalf of NPIC at the New Pesticide Managers Course.
 - NPIC gave a presentation about its services in Spanish to the Migrant Clinicians Network Farmworkers Stakeholder Group.
 - NPIC and Pesticide Educational Resources Collaborative-med (PERC-med) delivered a continuing medical education seminar through the Oregon Area Health Education Centers titled, "Disinfectants: What clinicians need to know to reduce risk."
 - NPIC attended the Oregon Pesticide Symposium and worked with the Oregon Department of Agriculture to introduce NPIC services to new attendees.
 - NPIC coordinated with EPA Region 10 to promote disinfectant safety ads/web materials on social media. Ads were run in Oregon, Washington, Idaho, and Alaska.
 - NPIC worked with the American Association of Pesticide Safety Educators (AAPSE) to develop a science communication workshop, which was presented by AAPSE to pesticide regulators at their annual meeting.
 - NPIC met with the Association of American Pesticide Control Officials (AAPCO) representatives and presented to the State FIFRA Issues Research and Evaluation Group (SFIREG) Joint Working Committee to discuss and promote the availability of NPIC data and services.
 - NPIC and America's Poison Centers (APC) published a collaborative infographic on summer pesticide safety in English and Spanish.
 - NPIC provided feedback on materials created by the Oregon Department of Agriculture for outreach related to a local herbicide application.
 - NPIC met with Multnomah County, Oregon Environmental Health to discuss bed bug and vector control issues.

DELIVERING OBJECTIVES

1. Serve as a source of factual, unbiased information for diverse audiences including the agricultural and pest control community, healthcare providers, educators, consumers, and the public (continued).

- NPIC presented on pesticide safety to a homeowner's association in Corvallis, Oregon.
- NPIC presented to the Oregon Vector Control Association meeting in Newport, Oregon about NPIC services and risk communication.
- NPIC hosted an outreach table and display at the Spanish language Oregon OSHA Worker Safety Conference in Ashland, Oregon.
- NPIC met with the Oregon Health Authority to discuss their Pesticide Exposure, Safety and Tracking Program.
- NPIC presented on organizational updates at an EPA Region 10 Pre-SFIREG meeting in Seattle, WA.
- NPIC continued to provide expert consultation on risk communication and wildlife incidents to the Rodenticide Task Force.
- NPIC trained Master Gardeners in Mason County, WA on pesticide safety.
- NPIC trained certified applicators in risk communication through Washington State University Extension; continuing education credits were offered for attendees.
- NPIC spoke about pesticide safety to Master Gardeners and the public in Benton County, OR.

2. Provide information on a wide variety of pesticide-related subjects including, but not limited to, pesticide products, toxicology, environmental chemistry, safety practices, pesticide regulation, enforcement, risk assessment, risk management, environmental effects, clean-up and disposal, understanding the label, recognition and management of pesticide poisonings, and integrated pest management (IPM).

- In order to stay current, NPIC staff members monitored 30 relevant publications and publication indexing services, including federal register notices, affiliated dockets, newsletters, listervs, and selected journals of relevance.
- NPIC exceeded this year's goal of evaluating 1,000 articles, documents, and websites in order to maintain and expand up-to-date, reputable, immediately accessible and optimized information about pesticide science and regulation. This year NPIC evaluated 2,977 relevant articles, documents, and websites.
- NPIC updated 13 active ingredient (AI) files and created seven new AI files. NPIC also added 1,094 new documents to AI files.

New/Updated AI files

- (E,E)-8,10-Dodecadien-1-ol (new)
- Bacillus velezensis (new)
- Bacteriophage of clavibacter michiganensis (new)
- Bacteriophage of erwinia amylovora (new)
- Bacteriophage of xanthomonas citri (new)
- Bacteriophage of xylella fastidiosa (new)
- Broflanilide
- Bromethalin
- Cerevisane (new)
- Cydia pomonella granulosis virus

New/Updated AI files

- Fir needle oil (new)
- Fluindapyr (new)
- Iron Phosphate
- Methiozolin (new)
- Methylisothiazolinone
- Paraquat
- Peroxyoctanoic acid (new)
- Pyraclonil (new)
- Tetrachlorvinphos
- Trichoderma atroviride (new)

- NPIC staff members attended 46 events for continuing education (CE) this year, including 33 webinars, seven events hosted by Oregon State University, four in-house guest speakers, and two conferences or workshops hosted by other organizations.
- NPIC tracked certain elements to quantify risk-reduction activities. In conversation with callers, pesticide specialists discussed following the label 1,780 times, ways to minimize exposure 1,347 times, IPM concepts 459 times, and environmental protection (including pollinator protection) 65 times.
- NPIC maintained storage capacity in order to ensure continuous access to NPIC resources by stakeholders, documenting and reporting milestones to inform future efforts for secure, long term data storage and hosting capacity.

DELIVERING OBJECTIVES

3. Address current and emerging pesticide-related issues and provide federal, state, and local resources on the topics in Objective 2.

- NPIC specialists were polled about trends and discussed 100% of cases flagged as “important and interesting” as a team. Specialists discussed 126 cases during the year.
- NPIC discussed potential trends and data with EPA’s Office of Pesticide Programs (OPP) at three Quarterly Coordination Meetings. A coordination meeting was not held in Quarter 3 because of the timing of the annual site visit, per a discussion with the Project Officer. Topics of focus during the meeting included:
 - Public interest in the efficacy of ultrasonic devices that claim to remove pesticide residue from produce.
 - Calls that NPIC suspects to be related to cases of delusory parasitosis have become common in recent years.
 - Trends in sulfuryl fluoride incidents reported to NPIC over the past decade.
 - Lack of availability of financial resources and other assistance for elderly callers, particularly related to bed bug infestations in the home.
 - Top active ingredients
 - Ongoing call trends
 - Summary of incidents involving sulfuryl fluoride reported to NPIC from 2013-2023
 - The illegal use of dichlorvos products (Sniper) in Region 2.
- NPIC shared 93 noteworthy cases with the Project Officer during the 2022 grant year period.
- NPIC compiles summary statistics about inquiries received on a quarterly and annual basis. All quarterly reports were submitted within 30 days of the quarter’s closure, along with this annual report, and a quality assurance report.
- Veterinary professionals submitted seven incident reports using NPIC’s Veterinary Incident Reporting Portal (VIRP). Thirty-two (32) incident reports were submitted using NPIC’s Ecological Incident Reporting Portal (Eco-Portal).
- NPIC provided 10 special reports about incidents and inquiries upon request. Reports were provided within 10 business days, unless otherwise negotiated. These include:
 - Channel 7 News WHDH Boston regarding VIRP reports in Massachusetts and Vermont within 3 years of the request.
 - Montana Department of Agriculture: Rodenticide Incidents in Montana.
 - Rodenticide Task Force: Incidents of non-target wildlife for several Prairie dog baits.
 - OPP Health Effects Division: Human Fipronil Incidents 2019-present.
 - OPP Health Effects Division: Incidents involving Acephate, 2013-2022.
 - Alabama Department of Agriculture: Select Inquiries from Alabama, 2018-2023.
 - OPP Pesticide Re Evaluation Division: Incidents involving Lannate.
 - OPP Pesticide Re Evaluation Division: Incidents involving methomyl bait products.
 - OPP: Incidents involving Sniper in EPA Region 2, 2019-2023.
 - OPP Certification and Worker Protection Branch: Incidents involving motor vehicles, 2015-2024, for WPS/AEZ revision.
- In collaboration with OPP, NPIC promoted the availability of inquiry data to state pesticide regulatory agencies, tribes, and other organizations during a webinar about “Understanding and Requesting NPIC Data.” There were 148 attendees, representing 26 state lead agencies, eight tribes, eight universities, five other organizations, and EPA. The webinar was recorded and posted on the [NPIC website](#) and [YouTube channel](#).
- NPIC continued to monitor and improve its working relationship(s) with America’s Poison Centers (APC) and Oregon Health & Science University (OHSU), ensuring that baseline expectations were met and/or exceeded, including developing a proposal for ongoing partnerships through 2029. APC and NPIC also produced an infographic about summer pesticide safety in [English](#) and [Spanish](#).
- Annually, specialists made timely and appropriate referrals with less than a 3% margin of error. This standard was evaluated as part of annual staff evaluations.

DELIVERING OBJECTIVES

4. Provide reputable, science-based information in a manner understandable to a lay audience to help people make informed decisions.

- NPIC coordinated and communicated with OPP frequently throughout the grant period, including:
 - The Antimicrobials Division provided several rounds of courtesy review for NPIC's webpage titled "What are Quaternary Ammonium Compounds?"
 - NPIC's Prodiamine Fact Sheet was sent to OPP for courtesy review.
 - Updating NPIC's protocol for collecting caller contact information during noteworthy cases.
 - Concerns about sulfuryl fluoride clearance devices.
 - Coordinating a data webinar which was delivered by NPIC and promoted by OPP.
 - OPP Antimicrobials Division provided a courtesy review of NPIC's Pool and Spa Chemicals fact sheet.
 - NPIC provided a list of narrative tags and "special circumstances" used in NPIC data to OPP.
 - OPP consulted on preferred Spanish terminology for antimicrobials.
 - NPIC and OPP discussed NPIC's workplan and budget for 2024, and QAPP/QMP for the new 2024-2029 project period.

- NPIC created nine new web pages and updated 13 web pages this year:

New/updated web pages

- Cockroaches ([English](#) | [Spanish](#))
- Disinfectant Safety for Workers ([English](#) | [Spanish](#))
- **Palabras de advertencia** (Signal Words) (new)
- **Pesticidas en las escuelas** (Pesticides in Schools) (new)
- **Pesticides and the Environment**
- **Plant Incorporated Protectants**
- **Pool and Spa Chemicals** Fact Sheet (new)
- Prodiamine [Overview](#) | [Fact Sheet](#) (new)
- **Quaternary Ammonium Compounds** Fact Sheet

New/updated web pages

- **Ratas** (Rats) (new)
- **Ratones** (Mice) (new)
- **Treated Wood and Wood Preservatives**
 - **Specific Wood Preservatives and Components**
 - **Consumer and Handler Safety**
 - **Home and Garden Use**
 - **Regulation and Disposal**
 - **Treated Wood in the Environment**
- **What are Quaternary Ammonium Compounds?** (new)
- **What are the risks of CCA-treated wood?** (new)

- NPIC developed four new infographics, titled:
 - In collaboration with America's Poison Centers (APC), NPIC produced an infographic about summer pesticide safety in English ([PDF](#) | [JPG](#)) and Spanish ([PDF](#) | [JPG](#))
 - Toxicidad de pesticidas/plaguicidas: ¿Cuál es la palabra de señal? ([PDF](#) | [PNG](#)) (Pesticide Toxicity - What's the Signal Word?)
 - Usar lejía en los sitios de cuidado infantil ([PDF](#) | [JPG](#)) (Using Bleach at Childcare Centers)
- NPIC developed/updated four fact sheets titled:
 - **Palabras de advertencia** (Signal Words)
 - **Pool and Spa Chemicals**
 - **Prodiamine**
 - **Quaternary Ammonium Compounds** (update)
- NPIC posts new items on social media platforms (Facebook and X) promoting safe use practices, IPM, and pesticide label comprehension. In 2023, NPIC uploaded 234 posts, averaging 4.5 per week.
- NPIC presented a new webinar about "[Understanding and requesting data from the National Pesticide Information Center \(NPIC\)](#)" on February 12, 2024. The webinar was recorded and posted on NPIC's website and YouTube channel.
- NPIC reviewed 100% of its web content this grant year. NPIC removed/replaced 380 broken links and added 39 new links.
- To provide the best referrals when appropriate, NPIC actively verifies/updates contact lists (i.e., county extension, vector control districts, manufacturers) on a routine basis. In 2023, NPIC updated 3,260 contacts for County Extension and the Occupational Safety and Health Association (OSHA).
- NPIC ensured continuous access to NPIC apps by stakeholders, maintaining software applications, tools, and mobile apps.

5. Collect and disseminate quality pesticide incident data via a rigorous and well-defined data collection system.

- NPIC specialists were able to document demographic information for 99% of human incidents, including age and/or gender. Callers occasionally decline to provide personal information such as age.
- “Incident information” includes information such as symptoms, time to onset of symptoms, and circumstances surrounding reported exposures. Among 1,120 reported incidents involving humans or animals, NPIC specialists were able to capture the symptom/scenario information in 91% of cases.
- NPIC specialists were able to collect product information for 88% of reported incidents.
- NPIC specialists were able to document the location for 88% of reported pesticide incidents.
- Among the 1,120 reported incidents involving humans or animals, NPIC specialists were able to capture the exposure route in 78% of cases.
- NPIC used standard operating procedures and rigorous quality control to classify reported signs/symptoms in terms of severity (severity index) and in terms of their relationship to the reported exposures (consistency index). NPIC assigned a severity index 100% of the time when signs/symptoms were known (485 times). Signs or symptoms were categorized as minor, moderate, major, or death 122 times. NPIC assigned a consistency index 100% of the time when signs/symptoms were described, and they could be compared to published reports about the active ingredient(s) involved (1,023 times).
- NPIC produced internally routed human and animal incident reports in coordination with OHSU, highlighting any changes in coding that were made in the QA process. Additionally, 100% of records were evaluated using automated QA protocols and all incident cases, including all cases with symptoms, were manually verified..
- The QA/QC facilitator led 14 training exercise(s) during staff meetings to facilitate consistency in data quality.
- Log Assessment Reviews (LARs) were conducted as part of regularly scheduled annual staff evaluations (see Objective 6), including quantifiable measures of data completeness and coding consistency. Deliverable upon hiring new staff, formally graded LARs were completed for three new specialists, in order to establish consistent habits in coding and data entry, including timely and appropriate referrals with less than 5% margin of error.

6. Provide exceptional customer service by integrating professionalism, teamwork, integrity, accountability, and a strong commitment to the public, as well as to the professional and medical communities.

- NPIC retained six highly qualified pesticide specialists with various scientific backgrounds.
- Annually, NPIC completes one evaluation event through 3rd-party assessment of NPIC services or by conducting website usability testing. This grant period NPIC conducted Web Usability Testing. A final report analyzed the results. User feedback will be incorporated in the 2024-2029 grant period.
- NPIC comprehensively evaluated each staff member, including quantified measures of data collection skills (see Objective 5), referral appropriateness, customer service skills, and continuing education measures.
- Key personnel from NPIC held a virtual site visit on November 16, 2023, with the EPA Project Officer and various OPP divisions for Grant Year 5.

Trends in NPIC Data

- During this period, NPIC received 6,922 inquiries.
- About 71% of the total inquiries were addressed over the telephone.
- About 19% of NPIC inquiries in 2023 were incidents. A pesticide incident is defined as: 1) any unintended exposure to humans or animals, 2) an exposure with an adverse effect, 3) a spill, and/or 4) a misapplication. See page 21.
- One non-family group and 29 animal deaths were reported to NPIC. See pages 35 and 37.
- The following active ingredients were involved in the most incident reports: naphthalene, paradichlorobenzene, and boric acid. See page 30.
- There were 1,811 entities involved in incidents reported to NPIC during this period, 51% were human, 24% were animals, and 24% were environmental non-target entities See page 34.
- Among the 591 humans with known age, 14% were children (ages 4 and under), and 31% were seniors (ages 65 and over). See page 36.
- Questions related to health/risk (2,075) and pest control (1,098) were most common. See page 25.
- The NPIC website received 4,517,129 page views during this period. There were more than 3.5 million “new” visitors with an average visit duration of approximately 49 seconds. See pages 22 and 23.

Foreign Language Capabilities

Under an agreement with LanguageLine Solutions, NPIC is capable of responding to inquiries in more than 240 languages. Translation services are provided immediately during calls, at no cost to NPIC customers, and language identification is available through this service. NPIC retained two bilingual Specialists with Spanish fluency during 2023. Most Spanish language inquiries were handled with in-house translation.

NPIC responded to 207 inquiries in Spanish, one in American Sign Language, one in Hindi, and one in Indonesian.

Noteworthy Inquiries

Bed Bugs – NPIC received 281 inquiries related to bed bugs this year. About 10% of these (28) were pesticide incidents. Many of these were about the difficulty of pest control, the potential health effects of pesticides, and if financial resources or free services are available to help with bed bug control.

Bees – NPIC received 100 questions about bees or reports of bee deaths. The majority of bee calls were informational only (85%). NPIC Specialists have experience discussing pollinator protection, including ways to prevent pesticide exposure for beneficial insects and how to compare pesticide products for bee toxicity. NPIC notifies the EPA Project Officer when bee deaths are reported. A recent trend is callers voicing concern about bees that are killed intentionally, presumably in accordance with product labels.

Mothball Products – NPIC received 359 inquiries about mothballs, flakes, and bars. Of these, 195 (54%) were incidents. Many reports involved off-label use of mothballs to repel animals or insects in and around the home.

Resources & Facilities

NPIC maintains an extensive collection of hard copy and electronic information. NPIC specialists have access to the full resources of OSU's Valley Library, which includes electronic access to thousands 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 more than 1,155 active ingredients. This collection has been scanned/saved and indexed for desktop access, using software developed by NPIC.

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

Personnel Update

The NPIC Executive Committee includes the director and two co-investigators. Six Pesticide Specialists were retained this year. As of February 14, 2024, NPIC staff included six Pesticide Specialists, three supporting staff members, and the Executive Committee.

Standard Operating Procedures

NPIC staff use a variety of SOPs and policies to guide their work and some decision making. This year, nine SOPs were updated.

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ABOUT US

Who is NPIC?

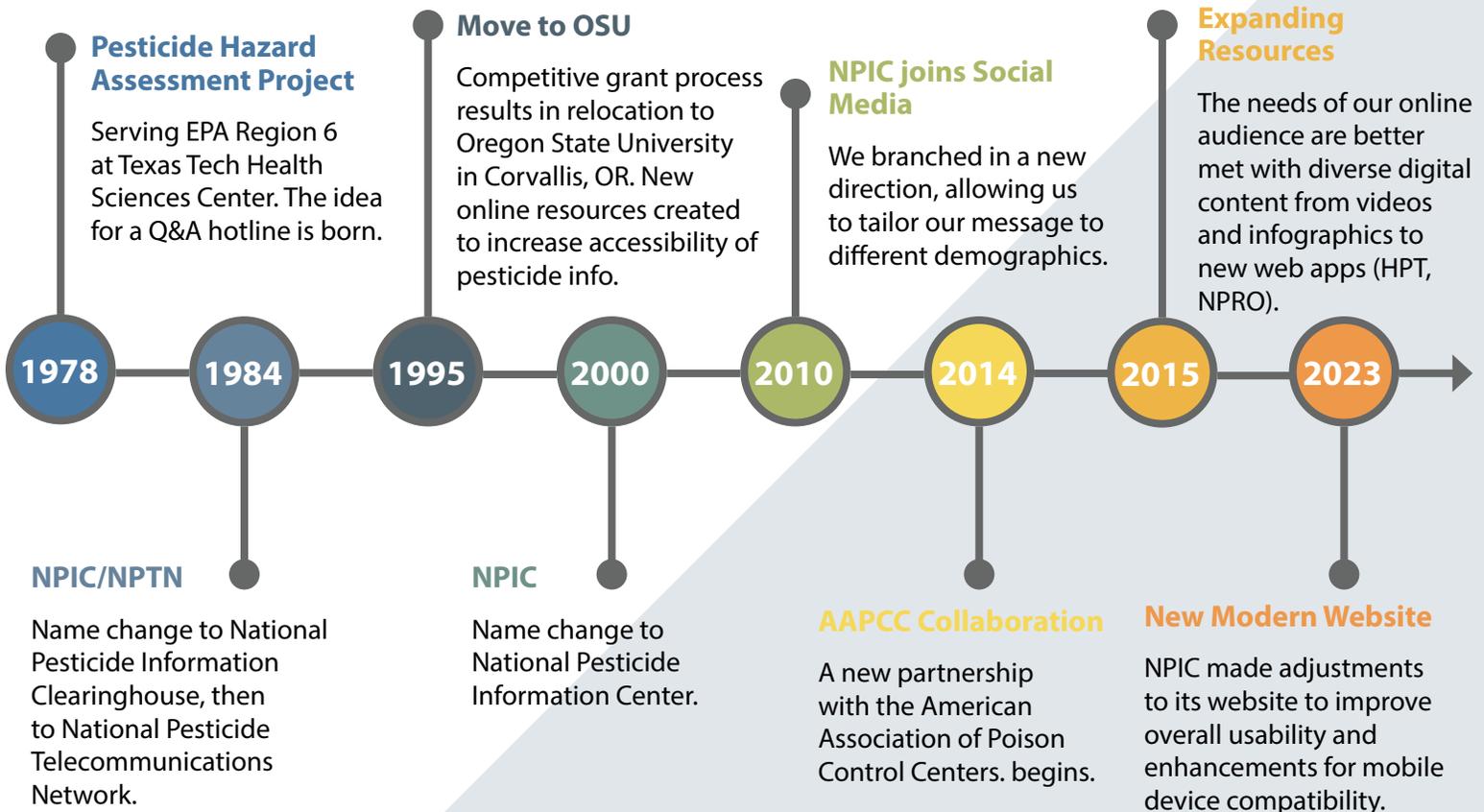
NPIC is a team of well-trained, approachable scientists and talented support staff. We have the knowledge and skill needed to effectively communicate scientific information to anyone who contacts us. If we can't directly answer the question, we'll try to figure out who most likely can.

Our number one goal is to provide objective, science-based information about pesticides and related topics to enable people to make informed decisions about pesticides and their use.

We reliably create accessible, up-to-date, factual materials to communicate complex pesticide information to both the public and professionals.



NPIC: A History



WEBSITE : APPS



Website

The NPIC website, available in both English and Spanish, is the culmination of years of work from every member on our team. We conducted website usability testing to help us better understand how people find information on our site and will guide future updates.

Working from user suggestions gathered from web usability testing, NPIC made adjustments to its website to improve overall usability and enhancements for mobile device compatibility.

Web Apps

We've developed web apps for the public and professionals. Available on any browser, apps are mobile- and desktop-compatible for easy access wherever you might be. Because they are web-based, you always get the most up-to-date information. Apps range from NPIC's Product Research Online (NPRO) to find product information, to our Herbicide Properties Tool. This tool helps professionals select low-impact herbicides for targeted plant irradiation in the field.



In 2023, NPIC created or significantly updated 22 web pages in English and Spanish. Selected examples are listed below.

Web Topics

- Human/animal health and safety
- Environmental protection
- Food safety
- Integrated Pest Management
- How to report pesticide incidents
- Safe use practices
- Local pesticide-related contacts

Web Apps

- NPIC's Product Research Online (NPRO)
- Herbicide Properties Tool (HPT)
- Pesticide and Local Services (PALS)

Web Pages

- Treated Wood Preservatives
- Spanish pest pages: Mice, rats, and roaches
- Plant Incorporated Protectants
- Spanish Signal Words Fact Sheet
- What are Quaternary Ammonium Compounds?
- What are the risks of CCA-treated wood?
- Pesticides in Schools in Spanish

COLLABORATIONS: OUTREACH

NPIC teams up with national, state, and local groups to increase awareness about pesticide health and safety across the nation. In 2023, NPIC worked with the American Association of Pesticide Safety Educators (AAPSE) to develop a science communication workshop, which was presented by AAPSE to pesticide regulators at their annual meeting.



Our reach has continued to grow through a collaboration with the America's Poison Centers (APC). Together, we work to raise awareness about pesticide poison prevention and best use practices, through social media and annual publications.

America's Poison Centers (APC)

Starting in 2014, NPIC partnered with APC to raise awareness about pesticide poisoning. Our annual outreach materials focus on topics for parents, schools, and the public.

2023 Summer Safety! Chemical Hazards Around the Home

2022 ToxTalks: Wiping Away Poisoning from Pesticides

2021 Partner Chat: a deep dive into disinfectant safety

2020 Disinfectant Safety Live Q&A



NPIC Presentations

NPIC has **more than 25 years** of experience engaging the public in science-based conversations. We're excited to share our pesticide and science communication expertise at public and professional events.

12 Speaking events in 2023, some examples include:



Professional Webinar

Oregon Area Health Education Centers

Training Course

WSU Pesticide Resources and Education Program

Invited Speaker

Mason County, WA, Master Gardeners Association

INFOGRAPHICS

Infographics

We concentrated more of our efforts on visual projects in 2023, including our infographics. Easy to follow, these colorful graphics are perfect for printing or sharing for outreach opportunities.

Mezclar Cloro/Lejía

Paso 1 **Paso 2**

Primero agregue agua y luego cloro/lejía. Previene derrames al llenar los contenedores. Diluya cloro/lejía todos los días antes de usarlo.

El cloro/lejía se vende en diferentes concentraciones. Esto cambiará la forma de diluirlo.

Al Mezclar y Aplicar:

Mezclarlo cerca de las estaciones de lavado de ojos

Use guantes

Use gafas de seguridad

Use ropa que cubra y zapatos con calcetines

Usar cloro/lejía en los sitios de cuidado infantil

Tiempo de contacto: El cloro/lejía permanece en las superficies menos tiempo al desinfectar y mas tiempo al esterilizar. Primero revisa la etiqueta.

- ⊘ No lave los alimentos con cloro/lejía.
- ⊘ No beba, respire, ni roce sobre la piel.
- ⊘ No mezcle el cloro/lejía con el amoníaco.
- ⊘ Evite el uso del cloro/lejía perfumado.
- ⊕ El cloro/lejía no es para limpieza diaria. Es un pesticida para controlar bacterias y virus. Todos los pesticidas incluso el cloro/lejía, pueden tener riesgos para la salud.

Area de lavado de ojos

El cloro mas debil desinfecta:

- superficies con contacto de alimentos
- artículos que tocan la boca
- piso y áreas para dormir

El cloro mas fuerte esteriliza:

- superficies con fluidos corporales
- cuando alguien esta enfermo

Seguridad Infantil

Mantenga alejados a los niños mientras mezcla y usa cloro/lejía.

Nunca permita que niños menores de 18 años usen cloro/lejía.

Almacenar fuera del alcance de los niños.

Usando Cloro/Lejía

Use en superficies duras.

Lave las superficies con agua y jabón antes de usar cloro/lejía.

Abra las ventanas o use ventiladores para ventilar.

Limpia las superficies con agua después de su uso.

El cloro/lejía no es la única opción. Otros productos podría funcionar en su situación. Lea la etiqueta para un uso adecuado. Pregunte a su Departamento de Salud: <http://npic.orst.edu/shemir.html>.

Para consultas sobre riesgos y el uso de cloro/lejía o desinfectantes llame:

npic
NATIONAL PESTICIDE INFORMATION CENTER
800-858-7378
8am-12pm PST

Office of Environmental Health and Safety
Washington State Department of Health
360-236-3330

SUMMER SAFETY!

Chemical Hazards Around the Home

Many products used during the summer months such as insect repellents, pesticides, and pool chemicals can lead to poisoning or injury. However, you and your family can enjoy the summer safely using these important prevention and safety tips.

INSECT REPELLENTS

How to use and apply insect repellents safely:

- Apply just enough of a repellent to cover exposed skin.
- Follow label directions to find out how long to wait before reapplying.
- Do not spray repellents directly on the face, in ears, or near the eyes or mouth.
- Children should not handle or apply repellents.
- Avoid applying to children's hands, as they often put their hands in their mouths.
- Wash skin and treated clothing when returning indoors.

GARDEN AND LAWN PESTICIDES

Tips for safe storage and reducing risks from pesticides and chemicals used in the yard and garden:

- Always wear protective clothing when handling gardening chemicals such as herbicides, pesticides, and fertilizer including "weed and feeds."
- Remove sensitive items from the application area, such as toys, pet dishes, etc.
- Cover items such as outdoor furniture, play structures, pet living or sleeping areas, vegetable gardens, and edible herbs.
- Stay away from the treated area during application until the amount of time specified on the label, or until it is completely dry.

POOL CHEMICALS

Best practices for handling pool chemicals and keeping your pool safe:

- Store pool chemicals in their original container, in a temperature-controlled environment, out of direct sunlight, and away from children.
- Use test kits on a regular basis to test pool pH and chlorine levels.
- If a child touches a pool chemical, rinse the affected area with clean water.
- Never allow pool chemicals to mix. Mixing may lead to dangerous chemical reactions that can start fires or release toxic gases.

FROM AMERICAS POISON CENTERS

If you have questions about a pest or pesticide, how to use or dispose of pesticides, or what the potential risks to people or the environment may be, contact the National Pesticide Information Center at 1-800-858-7378 (Mon-Fri 8am-12pm Pacific Time).

America's Poison Centers represent the nation's 55 Poison Centers, which provide expert, 24/7, free services for all Americans through the Poison Help line at 1-800-222-1222 and PoisonHelp.org.

In 2023, we introduced four new infographics

- Summer Safety! Chemical Hazards Around the Home (English | Spanish)
- Toxicidad de pesticidas/plaguicidas: ¿Cuál es la palabra de señal? (Pesticide Toxicity - What's the Signal Word?)
- Usar lejía en los sitios de cuidado infantil (Using Bleach at Childcare Centers)

TOXICIDAD DE PESTICIDAS/PLAGUICIDAS: ¿CUÁL ES LA PALABRA DE SEÑAL?

La palabra de señal es una advertencia sobre la toxicidad a corto plazo, antes de que el producto sea diluido. Estas palabras de señal explican como el pesticida puede dañar su salud. Las etiquetas de pesticidas usan tres palabras de señal: CAUTION/PRECAUCIÓN, WARNING/AVISO y DANGER/PELIGRO. Si está buscando pesticidas con menos nivel de toxicidad, busque un producto con la palabra de señal CAUTION/PRECAUCIÓN en la etiqueta.

HAY 3 PALABRAS DE SEÑAL:



Los productos que son altamente tóxicos por ser ingeridos o absorbidos a través de la piel, también deben incluir la palabra "**POISON**" (veneno) junto al **DANGER/PELIGRO**, con el símbolo de la calavera y huesos cruzados.



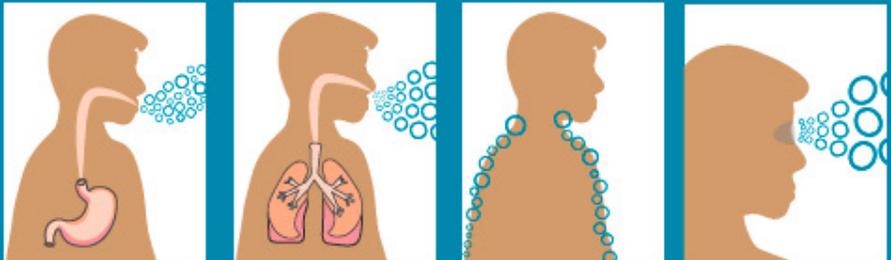
Siempre lea y siga todas las instrucciones de la etiqueta.

El EPA requiere que las palabras de señal se impriman en las etiquetas frontales en mayúscula.

Las palabras de señal se refieren a todo el producto, no solo a los ingredientes activos que controlan las plagas.

¿No puede encontrar la palabra de señal o tener otras preguntas sobre salud y seguridad? Llame a NPIC @ 800-858-7378 de 8 a.m. a 12 p.m. PT M-F.

npic
NATIONAL
PESTICIDE • INFORMATION
CENTER



Usted puede envenenarse con los pesticidas si los come, los respira o tiene contacto con su piel y ojos. Incluso los productos que son menos tóxicos, naturales u orgánicos pueden ser peligrosos. Va a depender de cuánto y qué parte de su cuerpo esté expuesto a alguien.

FACT SHEETS | SOCIAL MEDIA

Fact Sheets

As part of our mission to encourage informed decision making, NPIC publishes scientific information in the form of fact sheets. These summarize information about pesticides and related topics.

Our pesticide chemical (active ingredient) fact sheets answer common questions asked by the public about specific pesticides. They allow people to “dig deeper” for answers.

In 2023, NPIC created/updated four fact sheets:

- Palabras de advertencia (signal words)
- Pool and Spa Chemicals
- Prodiamine
- Quaternary Ammonium Compounds (update)



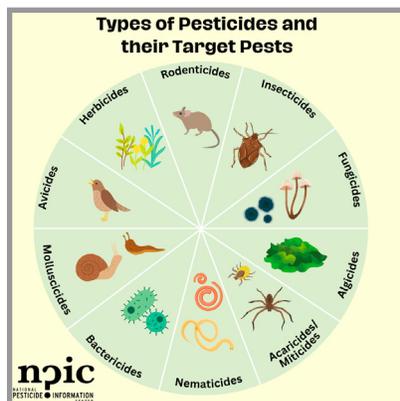
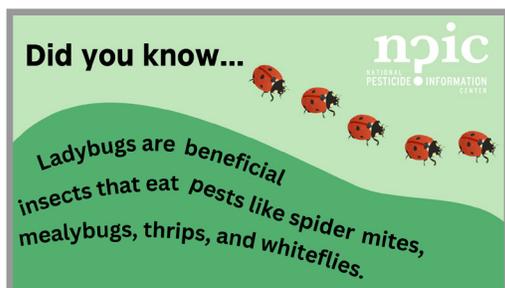
Social Media

At NPIC, we understand that we have to meet people on familiar ground. By staying active on various social media platforms, NPIC is able to further expand our reach to make science-based pesticide information available.

We try to keep our followers in the loop about seasonal pest and pesticide issues, health and safety topics, and the latest resources from NPIC and other reputable organizations.



234 posts this year



CONTINUING ED : AI FILES

Continuing Education

Our Pesticide Specialists and staff make it a priority to keep up with current events, regulatory decisions, and relevant findings in science research. Each year, we devote significant time to NPIC's Continuing Education program.

We attend a diverse array of educational events, including webinars, regional professional conferences, expert speaker seminars, and guest lectures. Specialists also regularly monitor scientific journals, daily news articles, social media, and other relevant publications.

In 2023

33 web-based events

webinars | recorded events

in-person events **13**

seminars | invited speakers

Active Ingredient Files

We answer questions as we get them, with limited time for research. To do this, our team needs to have the best resources at our fingertips. We continually monitor and evaluate a wide variety of peer-reviewed sources for the latest research on toxicology, regulatory information, ecological impacts, and pest management science.

1,094 new documents
added in 2023



Documents are uploaded in our searchable collection of Active Ingredient (AI) files for quick reference. The collection now includes more than 21,000 documents in 1,157 AI files. All of these documents are available for Specialists during conversations with the public and professionals.

We invested more than four hours per week monitoring Federal Register Notices, affiliated dockets, newsletters, and selected journals of relevance.

NPIC DATA : STAFF

NPIC's Pesticide Inquiry Database (PID)

When our Specialists get questions over the phone, through email, social media, or other methods, we collect certain pieces of information about the inquiry. We don't collect personally identifiable information, but we do ask questions to paint a better picture of each unique situation. This helps us tailor our resources to each person, making the conversation valuable to individuals, and our data valuable to other organizations, including:

- Pesticide Regulators and Policy Makers
 - EPA
 - Federal
 - State
 - Tribal
- Researchers
- Universities



6,922 inquiries

2023 Inquiry Types

5,402 informational

1,324 pesticide incidents

31% with unknown active ingredient

196 other (not pesticide related)



Staff Training & Experience

Our team of highly qualified Pesticide Specialists have nearly 30 years of combined experience answering questions at NPIC.

Thanks to our rigorous training program, people can be confident they are speaking with an experienced Specialist. The training process exposes new team members to a variety of topics, scenarios, and challenges.

During training, we take an "all hands on deck" approach, where every team member is invested in training new Specialists.

Our Pesticide Specialists have unique scientific backgrounds, from pollinator health to toxicology, soil, and environmental science. This scientific diversity strengthens our ability to answer diverse questions about pesticides and related topics.

ecology and evolutionary biology
chemistry biology public health
environmental and occupational health
toxicology environmental science
entomology

PESTICIDE INQUIRY DATA

The following pages include details about the incidents and inquiries documented by NPIC from February 15, 2023 to February 14, 2024.

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 through independent investigation by NPIC staff, laboratory analyses, or by any other means. This is similar to other self-reported public-health-monitoring programs, including the incident data recorded by poison control centers.
- If a person alleges/reports a pesticide incident, it will likely be recorded as an incident by NPIC. To meet the criteria, the person must have sufficient knowledge about the scenario, and it must be reported within two years of its occurrence.
- NPIC defines an incident in terms of public health. The NPIC definition includes any unintended exposure (e.g., child ate a mothball), intended exposures with adverse effects (e.g., illness in pets treated with flea/tick products), spills, and potential misapplications (e.g., a product intended for ornamental plants was applied to vegetables in the home garden.)
- About 3% of the time, callers' main purpose for contacting NPIC was to report a pesticide incident. More often, they contacted NPIC to obtain technical information. See page 16. Regardless, NPIC specialists make every effort to collect complete information about scenarios that meet the NPIC incident definition. Approximately 19% 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, provided to the inquirer. See page 26.
- NPIC qualifies the information received by assigning a consistency index (CI). The CI is an estimate by NPIC as to the likelihood that the reported signs and symptoms were consistent or inconsistent with published reports/materials for the identified active ingredients, in the context of the reported pesticide exposure. See page 32.
- NPIC makes no claims or guarantees as to the accuracy of the CI or other information presented in its reports, other than that NPIC has done its best to accurately document the information provided to NPIC.
- It is occasionally necessary to collect personally identifiable information (PII) in order to respond to inquiries, for example, by voicemail, email, or mail. Users of web-based incident reporting portals may have the option to submit PII as part of their reports. In all other cases, it is NPIC policy to refrain from collecting/documenting PII from people who contact NPIC through public channels.
- 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 agriculture and environmental protection agencies. Other entities with interest in special reports should contact NPIC to inquire about the procedure and possible costs.

MONTHLY INQUIRIES

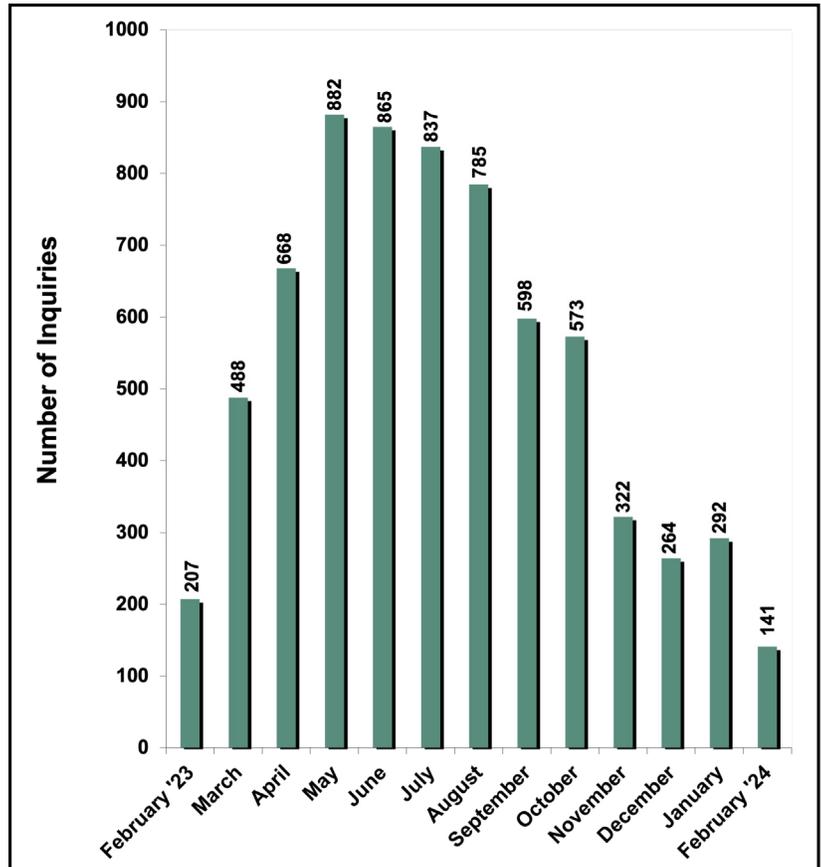
1. Monthly Inquiries

NPIC received 6,922 inquiries during this grant year. Graph 1 shows the number of inquiries received for each month. Seventy-five percent (75%) of the inquiries were received between April and October, concurrent with the part of the year when pest pressures are highest.

Table 1. Monthly inquiries

Month	Total
February 2023	207
March	488
April	668
May	882
June	865
July	837
August	785
September	598
October	573
November	322
December	264
January	292
February 2024	141

Graph 1. Monthly inquiries



TYPE OF INQUIRY / ORIGIN OF INQUIRY

2. Type of Inquiry

NPIC classifies inquiries as information, incident, or other (not pesticide related) 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.

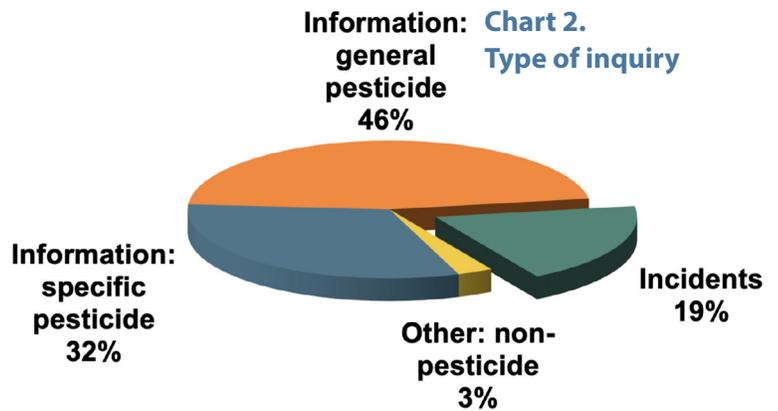
The types of inquiries are summarized in Table 2 and Chart 2.

The majority of inquiries (5,402 or 78%) were informational inquiries about pesticides or related topics. NPIC responded to 3,205 (46%) information inquiries about pesticides in general. NPIC responded to 2,197 (32%) information inquiries relating to specific pesticides or active ingredients.

NPIC documented 1,324 incidents involving pesticides (19%). Pesticide specialists routinely provided requested information, evaluated the need for any referrals, and asked several scoping questions to document the circumstances surrounding the reported incidents.

Table 2. Type of inquiry

Type of Inquiry	Total
Information - General Pesticide	3205
Information - Specific Pesticide	2197
Incidents	1324
Other (nonpesticide)	196
Total =	6922



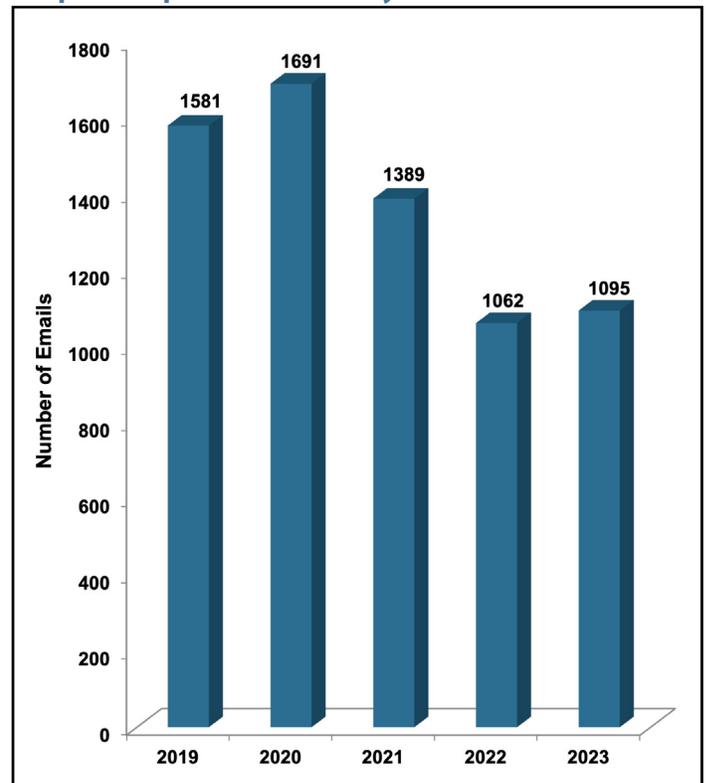
3. Origin of Inquiry

Table 3 summarizes the origin of inquiries received by NPIC. About 85% of inquiries were received by telephone.

Table 3. Origin of inquiry

Origin of Inquiry	Total
Phone	4920
Email/Web	1095
Voicemail	906
Walk-in	1
Total =	6922

Graph 3. Inquiries received by email



4. Website Access

The NPIC website attracted more than 3.5 million “new” visitors viewing 4,517,129 pages during this period. The average visit duration was approximately 49 seconds.

Most page views originated from queries on popular search sites (62%). Others were connected with NPIC from a bookmark (40%) or direct link (i.e., shared via email).

The most popular pages viewed were:

- Diatomaceous earth general fact sheet (241,858)
- Neem oil general fact sheet (189,966)
- ¿Por qué tengo cucarachas en mi casa? (Why do I have cockroaches in my home?) (134,441)
- Glyphosate general fact sheet (109,317)
- Permethrin general fact sheet (81,866)

Graph 4.1. Page views

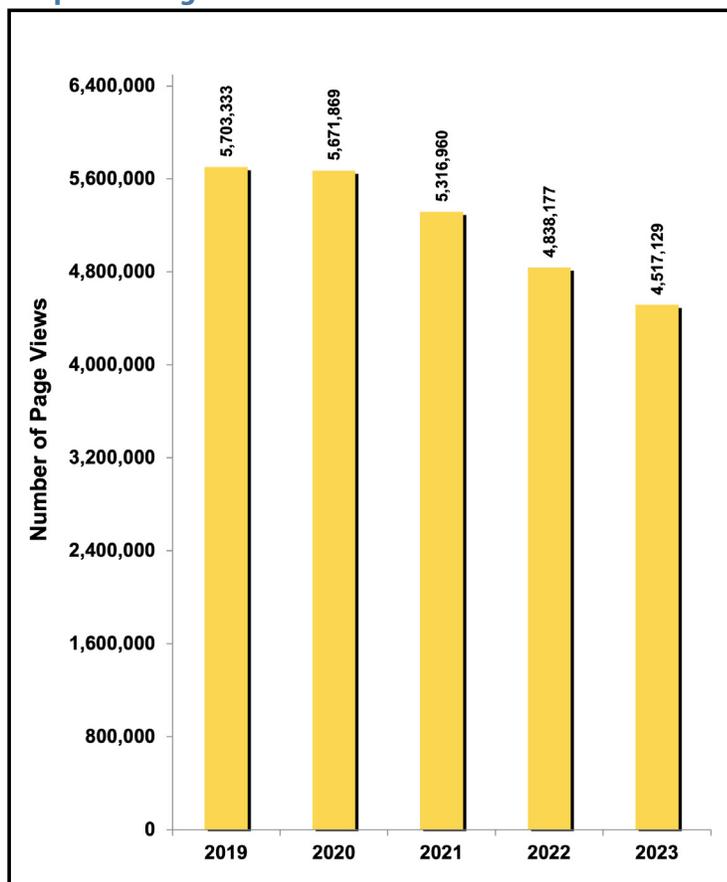
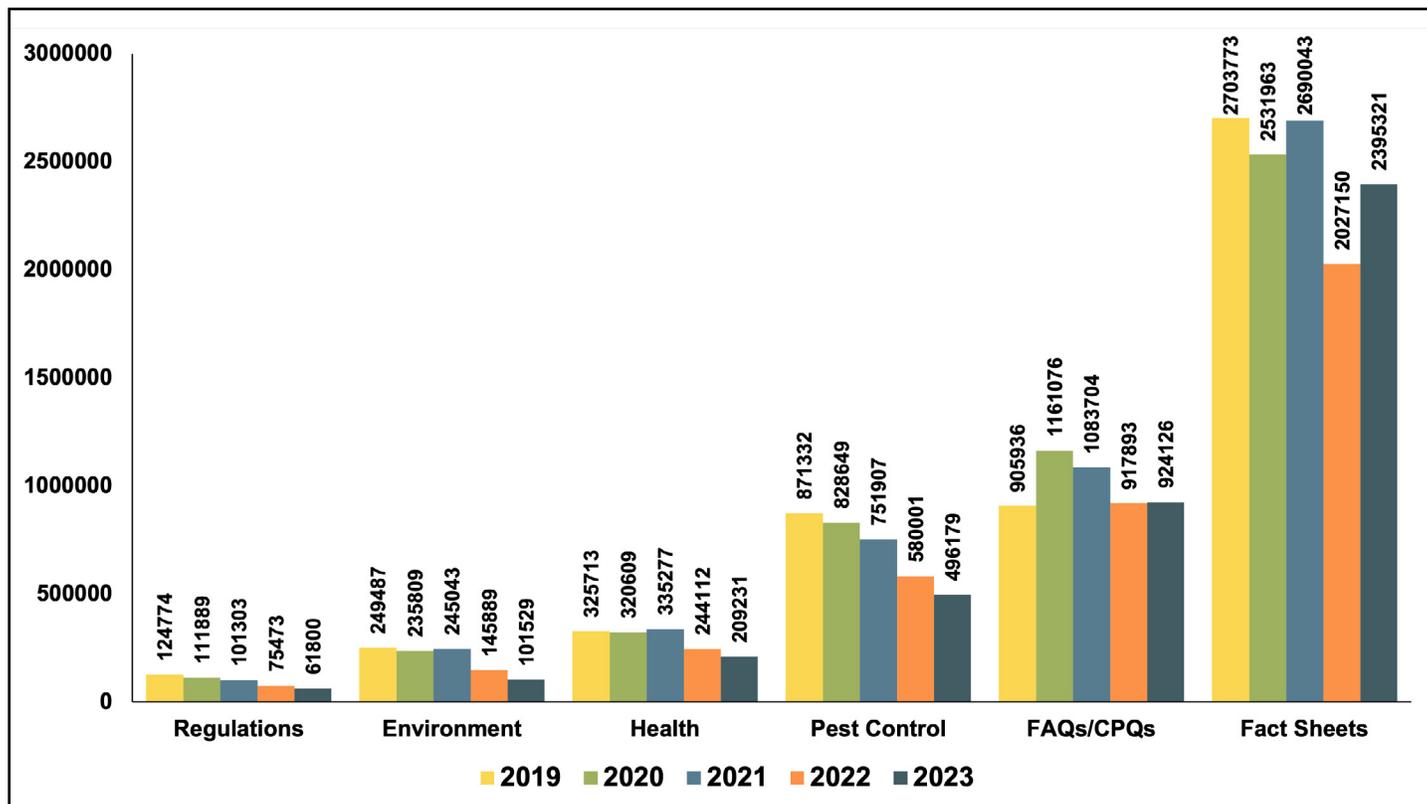


Table 4. Selected page views

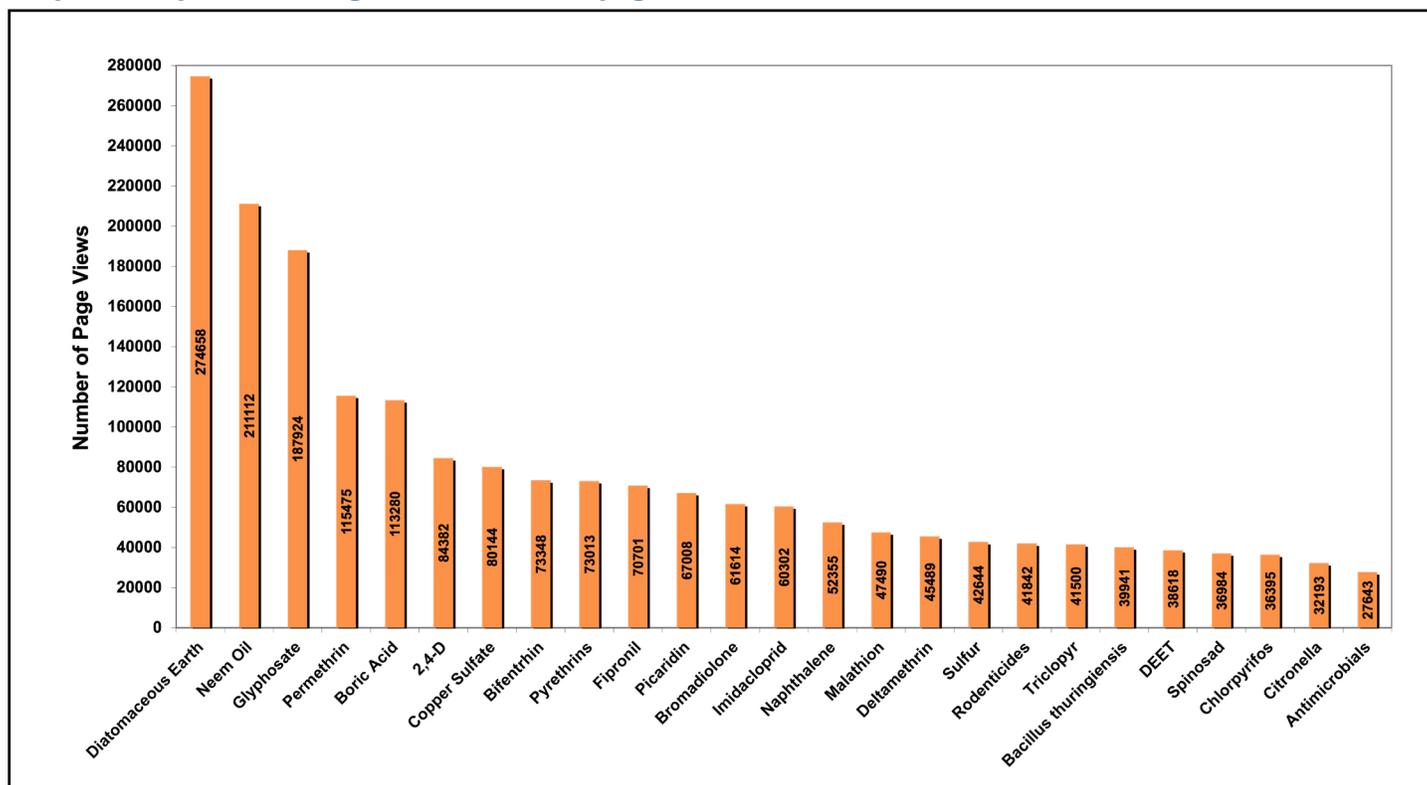
Page accessed	English page views	Spanish page views
Fact Sheets	2,370,659	24,662
FAQs/CPQs	337,250	586,876
Pest Control	241,194	254,985
Health and Safety	96,128	113,103
Environment	64,341	37,188
Regulations	56,649	5,151

NPIC WEBSITE

Graph 4.2. Category of web pages viewed by year



Graph 4.3. Top 25 active ingredient fact sheet pages viewed



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 public. Of the 6,922 inquiries received, there were 6,322 (91%) from the public, 83 from federal, state, local government agencies, or schools, 101 from pesticide manufacturers, and 66 from human and animal medical personnel.

Chart 5 summarizes the 83 governmental entities that contacted NPIC during the grant 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 pesticide regulatory agencies, and police, among others.

Chart 5. Inquiries from federal / state / local agencies

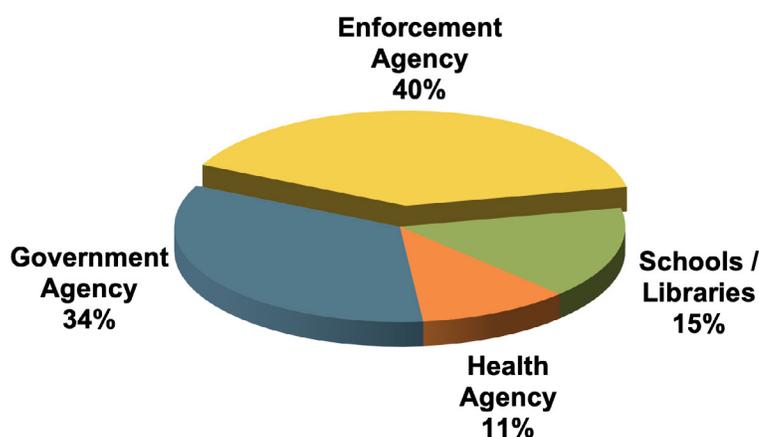


Table 5. Type of inquirer

Type of Inquirer	Total
General Public	6323
Federal/State/Local Agencies	
Enforcement Agency	33
Government Agency	28
Schools / Libraries	13
Health Agency	9
Medical Personnel	
Human Medical	44
Animal / Vet / Clinic	22
Agencies or Organizations	
Pesticide Mfg. or Mktg. Co.	101
Farm/Fertilizer	55
Pest Control	50
Media/Authors	28
Labs/Consulting	27
Retail Store/Nursery	20
Lawyers/Insurance	12
Beekeeper	9
Master Gardener	9
Environmental Organizations	8
Info Service - Unions	7
Vector Control	3
Non-migrant Ag Worker	1
Migrant Ag Worker	1
Other	119
Grant Year Total =	6922

TYPE OF QUESTION

6. Type of Question

The questions received at NPIC are most often related to health (e.g., effects to humans and animals, risk, etc.), pest control (e.g., how to control a pest, pest habits, etc.), and application (e.g., methods, label clarity, etc.). “Other” questions (873) include all wrong numbers and people seeking their pest control companies, among others.

Questions about how to follow pesticide label directions are coded as “application” (790). Questions about regulations (618) range from “How do I get a new product registered?” to “Can the authorities make my neighbor stop spraying?”

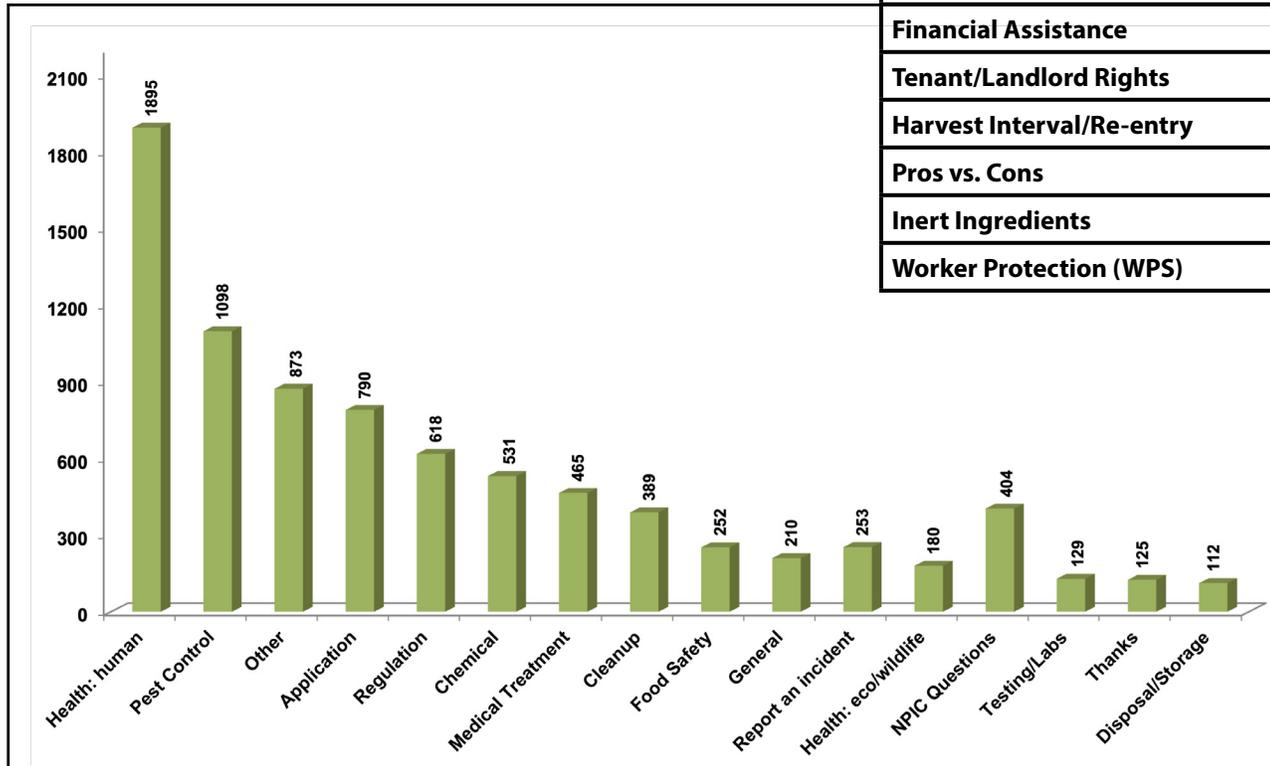
People contacted NPIC to report a pesticide incident 253 times. In these cases, NPIC provided people with appropriate local referrals for enforcement, as needed.

Inquiries may involve more than one type of question. Inquirers asked 8,701 questions during this grant year in the course of 6,922 inquiries.

Table 6. Type of question

Type of Question	Total
Health: human/domestic	1895
Pest Control	1098
Other	873
Application	790
Regulation	618
Chemical	531
Medical Treatment	465
NPIC Questions	404
Cleanup	389
Food Safety	252
General	210
Report an incident	253
Health: eco/wildlife	180
Testing/Labs	129
Thanks	125
Disposal/Storage	112
Where to Buy a Product	89
Just Wants Another Contact	73
Complaints	63
Financial Assistance	47
Tenant/Landlord Rights	30
Harvest Interval/Re-entry	29
Pros vs. Cons	24
Inert Ingredients	16
Worker Protection (WPS)	6

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 (5,760) were answered by providing information over the phone. Information was also sent via email in 1,132 cases. Upon request, NPIC brochures were mailed to people seven times during this grant year.

Table 7.1. Primary action taken

Primary Action Taken	Number of Inquiries
	2023
Verbal Info	5760
Emailed Info	1132
Handled Inquiry in Spanish	174
Transferred to EC / PC	114
Transferred to Specialist / Voicemail	65
Mailed Info	35
Interpreted via Language Line Svs	9
Sent NPIC Outreach Material(s)	7

Risk reduction actions:

NPIC keeps track of certain conversation topics aimed at reducing pesticide risk. Specialists documented 3,651 risk reduction actions, detailed in Table 7.2.

Table 7.2. Risk reduction actions

Risk Reduction Action Taken	Number of Inquiries
	2023
Discussed Following the Label	1780
Discussed Ways to Minimize Exp.	1347
Discussed IPM Concepts	459
Discussed Environmental Protection	65

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. Examples include “manufacturer/distributor” for detailed application instructions and product complaints, “county extension” for pest control advice, and “state pesticide regulatory agencies” for enforcement.

Table 7.3. Referrals to other organizations

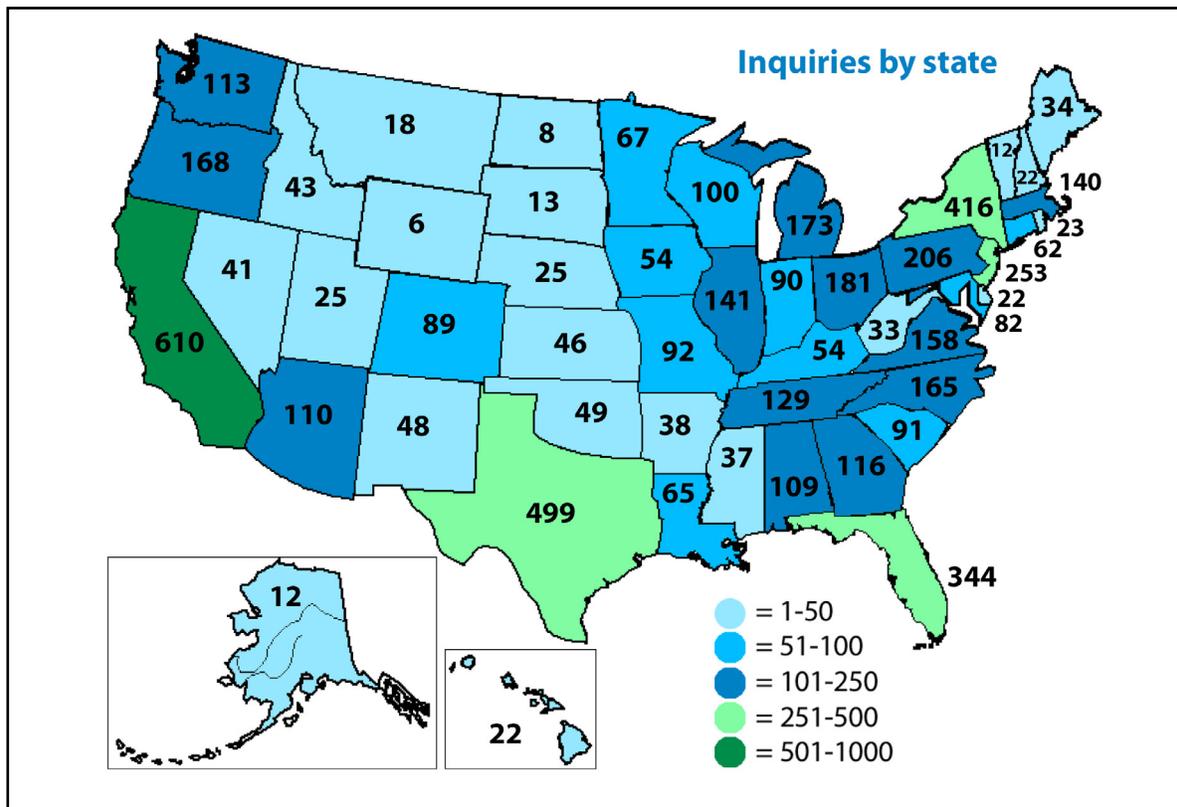
Organization Name	Number of Inquiries
	2023
Manufacturer / Distributor Contact	1234
NPIC Website	1148
County Extension Contact	1054
State Lead Contact	708
Other Org. Contact	535
Poison Control Contact	468
Animal Poison Contact	218
EPA Website	197
EPA HQ / OPP Contact	135
Dept of Health Contact	126
Other State Agency Contact	112
Hazardous Waste Contact	106
EPA Region Contact	76
Other Fed Agency Contact	27
OSHA Contact	16
Referred to OHSU	3

INQUIRIES BY STATE

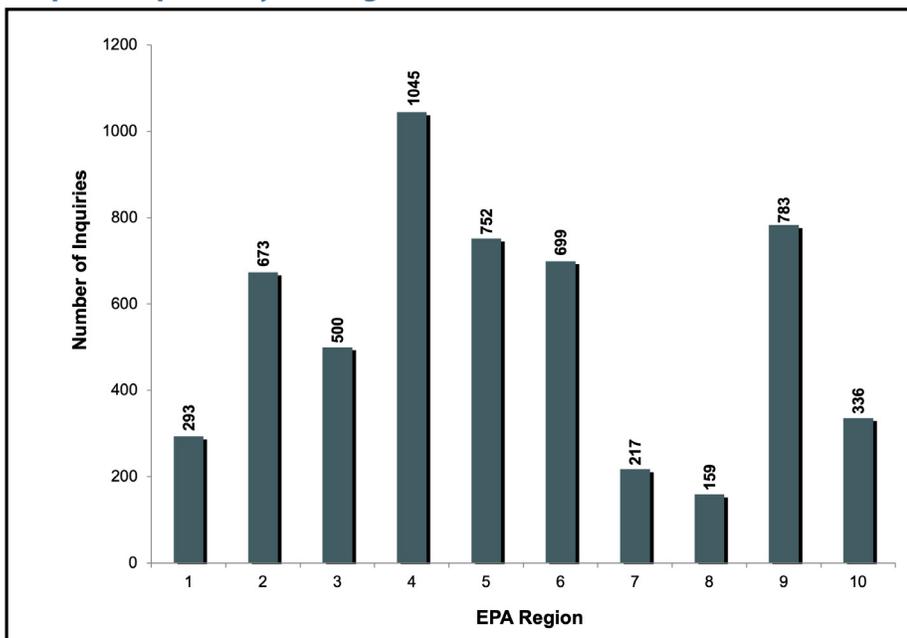
8. Inquiries by State

The map below shows the number of inquiries received by NPIC from each state. The largest number of inquiries came from California (610), Texas (499), New York (416), and Florida (344). In addition to the states, NPIC received inquiries from the District of Columbia (19), Canada (17), Puerto Rico (4), and other countries (169). Sometimes a state cannot be identified during the inquiry.

Graph 8 summarizes inquiries by EPA region.



Graph 8. Inquiries by EPA region



The top 5 regions with a known state were:

- Region 4 (19.2%)
- Region 9 (14.4%)
- Region 5 (13.8%)
- Region 6 (12.8%)
- Region 2 (12.3%)

TOP 25 AIs FOR ALL INQUIRIES

9. Top 25 Active Ingredients for All Inquiries

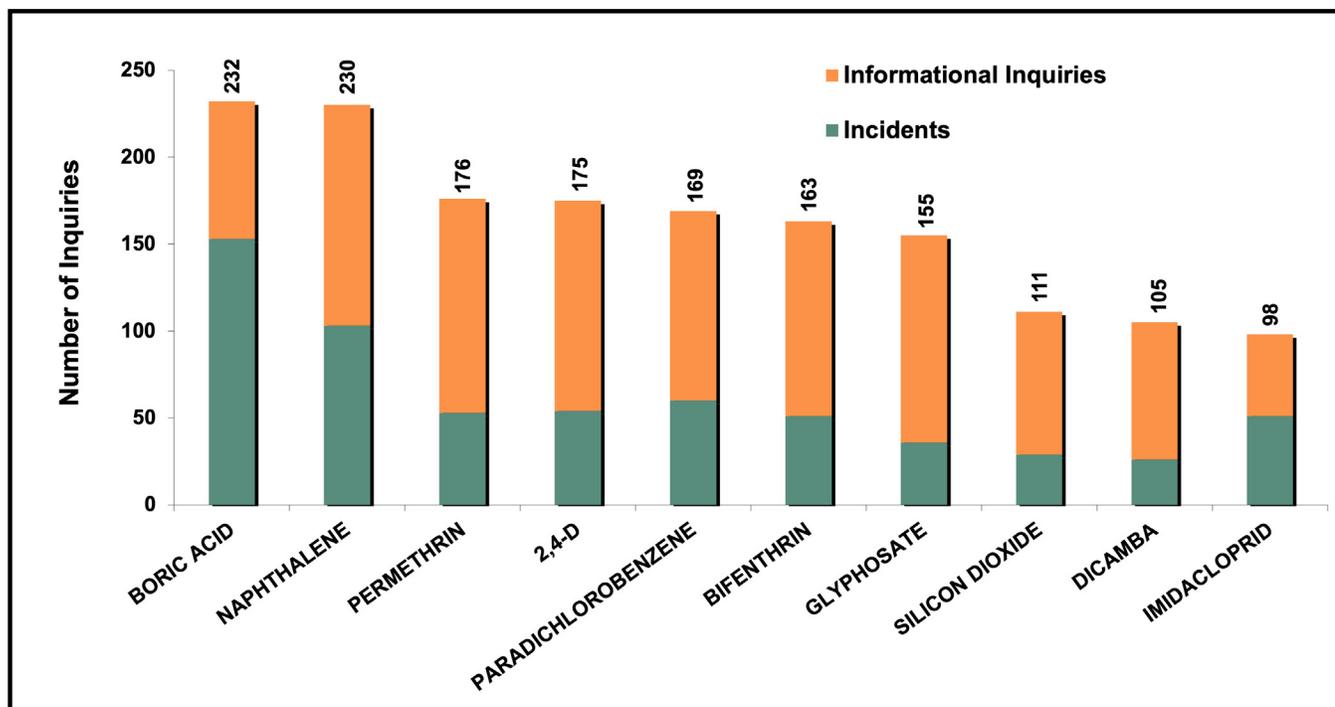
When inquiries to NPIC involve discussion of a specific product or active ingredient, specialists record the product and the active ingredient in the PID. Boric acid was discussed in more inquiries than any other single active ingredient this year (Table 9, Graph 9). Of the 232 inquiries involving boric acid, 153 (66%) were incidents. Note that an inquiry may involve discussion of several active ingredients.

Graph 9 illustrates the number of informational and incident inquiries for the top active ingredients discussed during the grant year.

Table 9. Top 25 active ingredients for all inquiries

Active Ingredient	Total Inquiries	Incident Inquiries	Information Inquiries
BORIC ACID	232	153	79
NAPHTHALENE	230	103	127
PERMETHRIN	176	53	123
2,4-D	175	54	121
PARADICHLORO BENZENE	169	60	109
BIFENTHRIN	163	51	112
GLYPHOSATE	155	36	119
SILICON DIOXIDE	111	29	82
DICAMBA	105	26	79
IMIDACLOPRID	98	51	47
PYRETHRINS	90	39	51
NEEM OIL	88	33	55
PIPERONYL BUTOXIDE	86	37	49
DELTAMETHRIN	75	19	56
LAMBDA-CYHALOTHRIN	73	31	42
MALATHION	68	36	32
ADBAC	66	21	45
FIPRONIL	64	23	41
CYPERMETHRIN	62	25	37
SULFUR	59	29	30
TRICLOPYR	57	14	43
CAPSAICIN	55	30	25
SULFURYL FLUORIDE	53	23	30
IMAZAPYR	52	6	46
MECOPROP	51	10	41

Graph 9. Top 10 pesticide active ingredients for all inquiries



INCIDENT TYPE

10. Incident Type

An incident may involve a spill, misapplication, exposure, adverse effects, or any combination of these events.

There were 1,589 pesticide exposures and 540 accidents. Charts 10.1 and 10.2 provide further details. Among reported exposures, inhalation was the most common route of exposure (33%), followed by dermal contact (23%) and ingestion (18%). When a specific exposure route could not be identified, specialists documented an “unknown” exposure route (11%). When an exposure occurred but could not be verified (e.g., a pet is found next to an open container), specialists documented “possible” exposure.

Indoor spills (62) were reported more often than outdoor spills (15). Among reported misapplications (313), 78% were misapplications by the homeowner or resident.

Chart 10.1. Pesticide exposures (Total: 1,589)

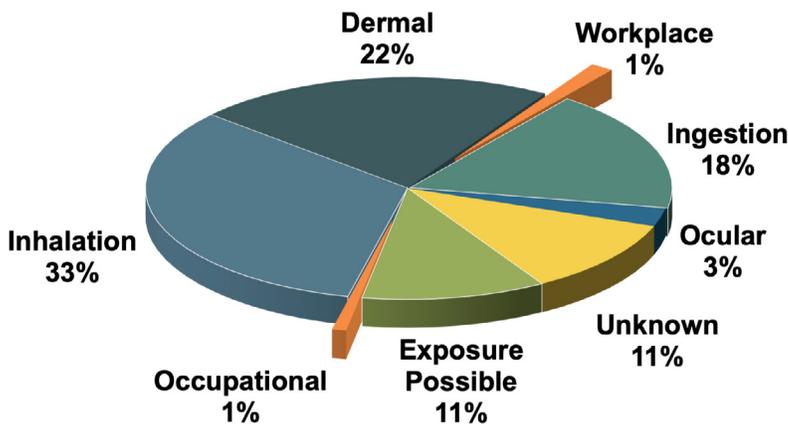


Chart 10.2. Pesticide accidents (Total: 540)

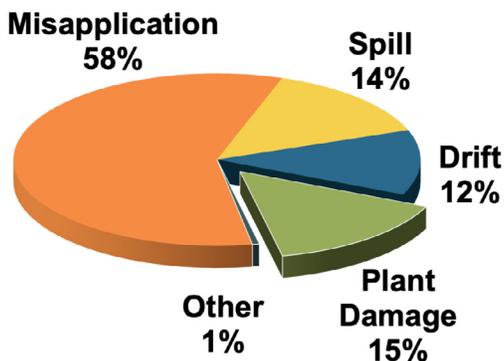


Table 10. Incident Type

Type of Incident	Total
Exposures	
Inhalation	522
Dermal	354
Ingestion	281
Exposure Possible	180
Unknown	173
Ocular	42
Workplace	23
Occupational	14
Accidents	
Misapp - Homeowner	243
Plant Damage	81
Drift	66
Spill - Indoor	62
Misapp - PCO	35
Misapp - Other	30
Spill - Outdoor	15
Misapp - Unknown	5
Other	3
Total =	2129

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. The table identifies the number of exposures or accidents involving humans, animals, and other entities, such as environmental entities and property. Naphthalene and paradichlorobenzene were involved in more reported exposures/accidents than any other active ingredients. Both are commonly found in mothballs and similar products.

In Table 11, the top three active ingredients for human and animal exposures are highlighted below. Naphthalene, paradichlorobenzene, and boric acid were involved in the highest number of exposures for human incidents. The top three active ingredients with the highest number of exposures involving animals were boric acid, naphthalene, and paradichlorobenzene.

Table 11. Top 25 active ingredients for incidents reported to NPIC¹

Active Ingredient	Human Exposures	Animal Exposures	Other Accidents
NAPHTHALENE	169	39	146
PARADICHLOROENZENE	146	30	133
BORIC ACID	65	79	12
2,4-D	24	12	28
BIFENTHRIN	36	13	15
IMIDACLOPRID	16	28	8
PERMETHRIN	40	8	10
ABAMECTIN	2	28	3
GLYPHOSATE	24	10	13
DICAMBA	8	5	18
LAMBDA-CYHALOTHRIN	23	3	10
PIPERONYL BUTOXIDE	27	5	7
PYRETHRINS	29	4	7
SILICON DIOXIDE	23	7	6
CAPSAICIN	25	1	4
MALATHION	18	7	11
FIPRONIL	5	12	8
NEEM OIL	29	3	1
BROMETHALIN	2	15	4
IRON PHOSPHATE	1	20	0
CYPERMETHRIN	14	6	8
ADBAC	16	4	5
SULFUR	18	5	8
DDAC	14	4	2
DELTAMETHRIN	10	4	5

¹ Note that incidents may include multiple humans, animals, and other entities. See Table 9 for a count of incident inquiries by active ingredient.

LOCATION & ENVIRONMENTAL IMPACT

12. Locations of Exposure or Accident

For incidents, specialists record the location of an exposure or accident. Of the 1,942 locations where exposures or accidents were documented, 83% occurred in the home or yard, 6% occurred at the intersection of home and agricultural property, and 3% occurred in an agricultural setting. Table 12 identifies the number of exposures or accidents reported to NPIC in a variety of other locations.

Based on inquiries, NPIC saw a decrease in incidents occurring at natural (e.g., ponds, lakes, streams) and treated water locations in 2023 (11) compared to 2022 (33).

Table 12. Location of exposure/accident

Location	Total
Home - Inside	950
Home - Outside	669
Ag/urban interface	122
Vehicle	49
Agricultural	48
Park/Golf Course	18
Roadside/Right-of-Way	17
Office Building	16
Pond/Lake/ Stream	9
Retail Store	9
Nursery/Greenhouse	9
School/Day Care	8
Other	7
Industrially Related	5
Health Care Facility	2
Food Service/Restaurant	2
Treated Water	2
Total =	1942

13. Environmental Impact

Table 13 presents the type of incidents reported for each kind of environmental or built entity. The most common environmental incidents reported to NPIC involve pesticide misapplications to buildings by residents (111).

Table 13. Reported environmental impacts

	Drift	Misapplication: Resident	Misapplication: Other	Misapplication: PCO	Misapplication: Unknown	Plant Damage	Spill: Indoor	Spill: Outdoor
Agricultural Crop	10	3	3	1	0	7	0	0
Building - Home/Office	4	111	13	13	2	0	50	4
Home Garden	30	39	2	13	0	49	0	1
Home Lawn	3	9	4	1	0	2	0	0
Natural Water	0	0	0	1	0	0	0	1
Other ¹	0	8	0	2	0	0	0	2
Property	1	19	0	1	0	0	7	0
Soil/Plants/Trees	15	38	6	2	2	23	0	3
Treated Water	1	0	0	0	0	0	0	3
Vehicle	0	5	0	0	1	0	5	1

¹ "Other" refers to miscellaneous items not included in previous categories (e.g., sidewalk, food).

CONSISTENCY INDEX

14. Consistency Index

Table 14 and Graphs 14.1 and 14.2 summarize the consistency index (CI) 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 CI (1,812), 20% of the cases were assigned a consistency index of “consistent,” 6% were assigned an index of “inconsistent,” and 73% were considered “unclassifiable.” Because none of the information reported to NPIC has been verified or substantiated by independent investigation, uncertainty is common. This is the case with many forms of self-reported data, which are often used for monitoring public health. As a result, the consistency index assignment for “definite” is rarely assigned.

All consistency index assignments are reviewed by a quality assurance specialist. Dr. Berman, DVM, provides additional consultation for human and animal incidents.

What is the consistency index?

The consistency index is an estimate by NPIC as to the likelihood that the reported signs and symptoms were “**consistent**” or “**inconsistent**” with published reports/materials for the identified active ingredients, in the context of the reported pesticide exposure.

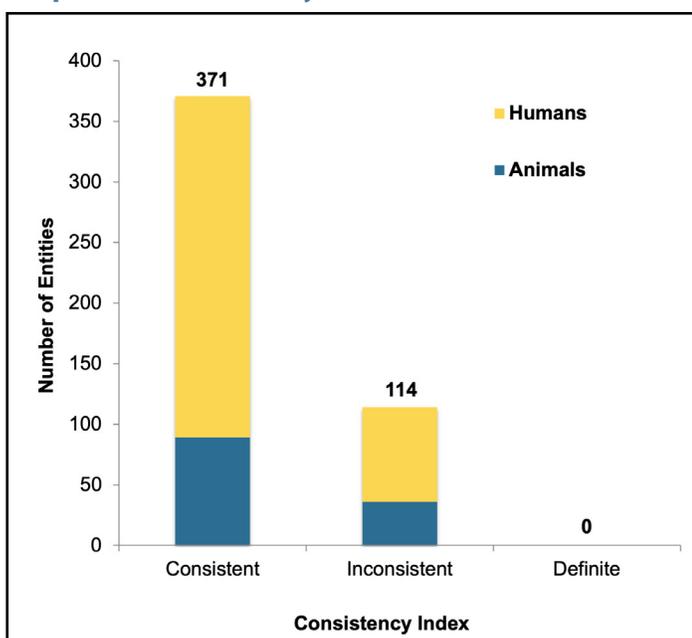
The consistency index is “**unclassifiable**” when one or more of the following criteria apply:

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

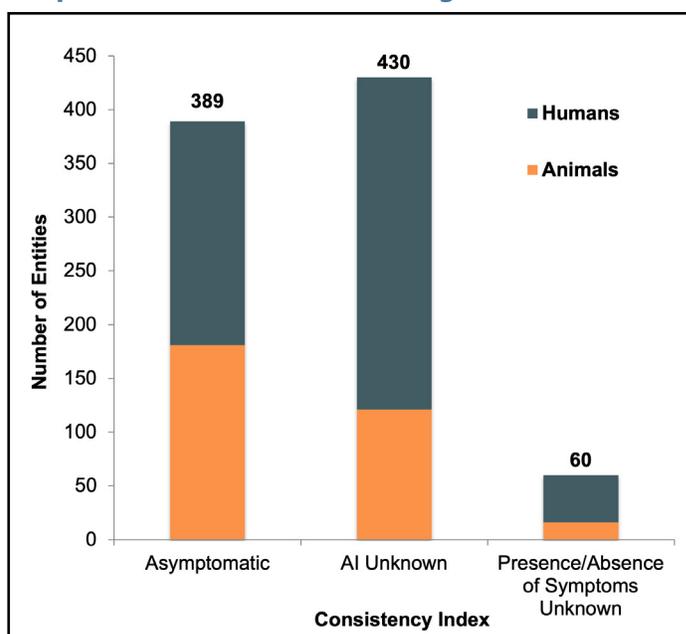
Table 14. Incident inquiries by consistency index (CI)

CI for All Categories of Entities					Breakdown of Human-Entity Incident Inquiries			
Consistency Index (CI)	Humans	Animals	Other	Total	Male	Female	Groups	Gender Not Stated
Unclassifiable	561	318	448	1327	195	272	75	19
Definite	0	0	0	0	0	0	0	0
Consistent	282	89	0	371	87	178	13	4
Inconsistent	78	36	0	114	29	48	1	0

Graph 14.1. Consistency index for incidents



Graph 14.2. Unclassifiable CI categories



SEVERITY INDEX

15. Severity Index

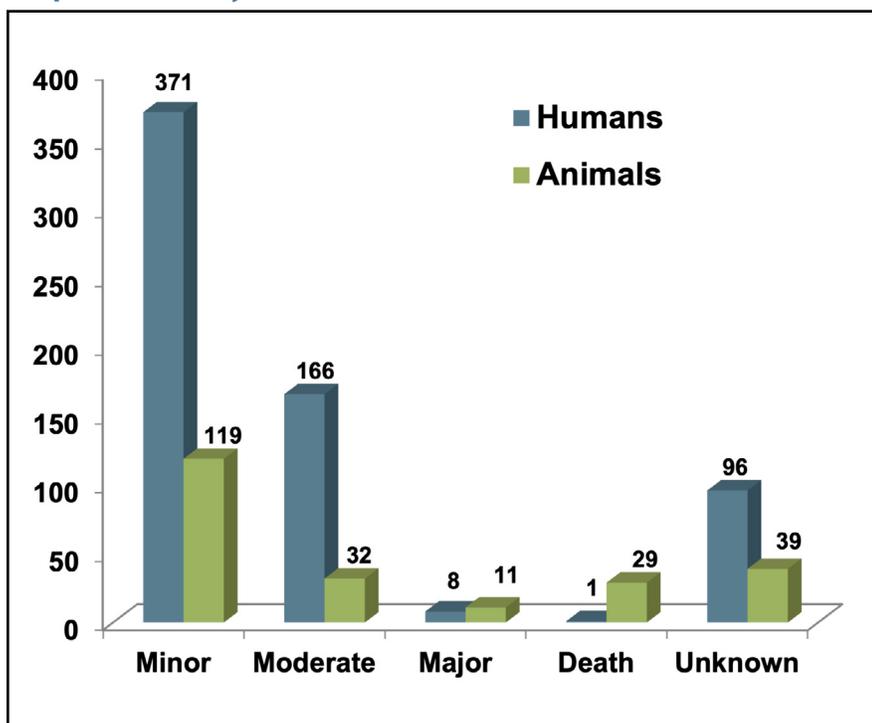
Table and Graph 15 summarize the severity of symptoms for all human and animal incidents reported to NPIC.

For all human pesticide incidents with reported exposures, 40% had minor symptoms, 18% had moderate symptoms, and 1% had major symptoms. Symptoms were unknown in 10% of human incidents. In 30% of human exposure incidents, the person reported that they did not experience any symptoms.

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

SI for All Categories of Entities				Breakdown of Human-Entity Incident Inquiries			
Severity Index (SI)	Humans	Animals	Total	Male	Female	Groups	Gender Not Stated
Minor	371	119	490	108	238	18	7
Moderate	166	32	198	57	102	5	2
Major	8	11	19	5	3	0	0
Death	1	29	30	0	0	1	0
Unknown	96	39	135	34	33	18	11
Asymptomatic	279	212	491	107	122	47	0

Graph 15. Severity index for human and animal incidents



What is the Severity Index?

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

DESCRIPTION OF ENTITIES

16. Description of Entities

The chart and graphs below provide a summary of entities involved in pesticide incidents. Of the 1,811 entities involved in incidents reported to NPIC during this period, 51% were human, 24% were animals, and 24% were environmental non-target entities. Other entities (12, 1%) are miscellaneous items (e.g., sidewalk, food). Pesticide incidents may involve multiple entities.

Graph 16.1. Humans

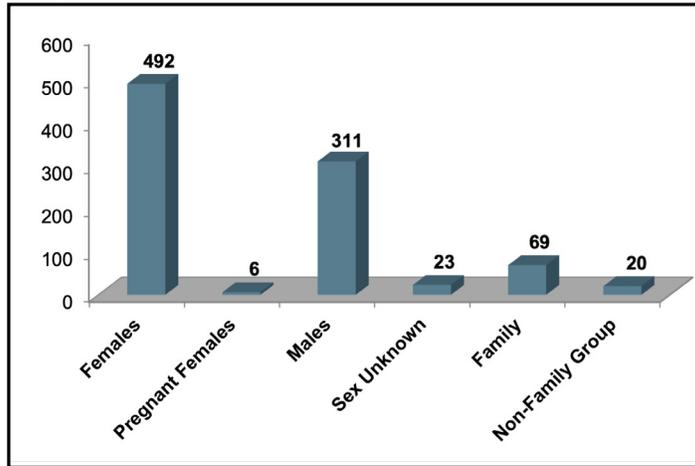
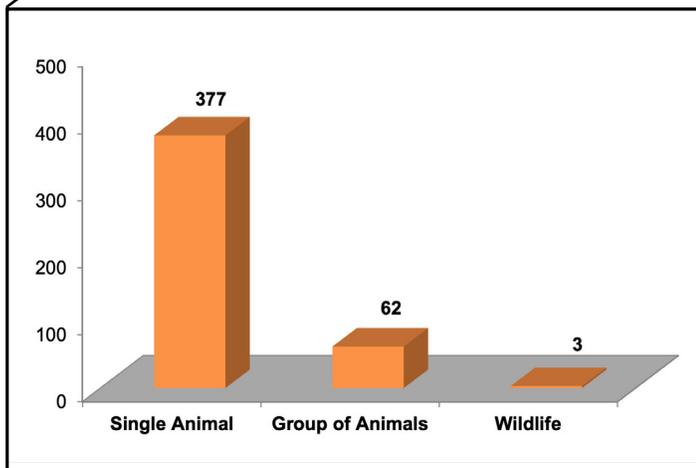
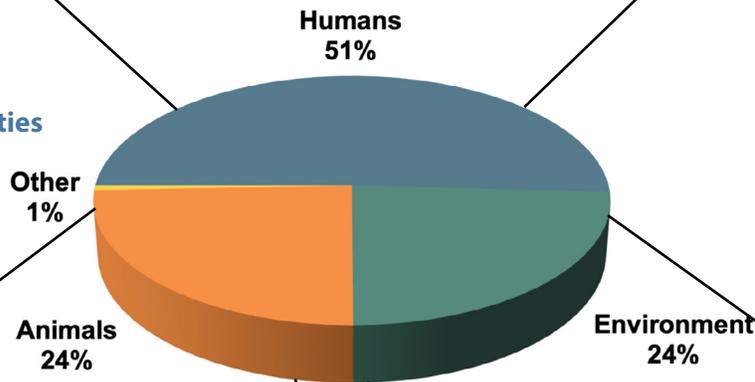
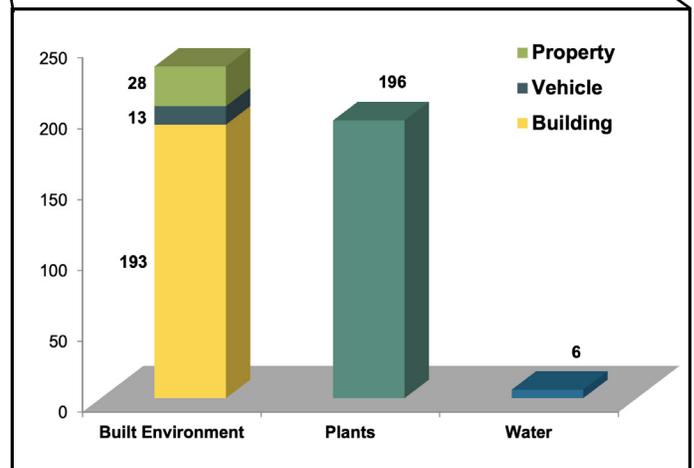


Chart 16. Description of entities



Graph 16.2. Animals



Graph 16.3. Environmental entities

DEATHS WITH KNOWN ACTIVE INGREDIENT

17. Reported Deaths

Of the 921 human entities and 442 animal entities involved in pesticide incidents, 30 deaths were reported. Of those, there were 16 animal deaths and one non-family group where the active ingredients were known (Table 17.1).

The non-family group death involved two employees of a pest control company who became exposed to sulfuryl fluoride while fumigating a furniture store in Florida.

Table 17.2 describes reported deaths with known active ingredient(s) where signs and/or symptoms were consistent with literature, in the context of the reported exposure scenario.

Table 17.1. Reported deaths with known active ingredient

Reported Deaths	Total
Human Deaths	
Non-family Group	1
Animal Deaths	
Single Animal	12
Group of Animals	4
Total =	17

Table 17.2. Reported animal deaths with compatible signs/symptoms

PESTICIDE PRODUCT	ACTIVE INGREDIENT	INCIDENT TYPE	ENTITY	STATE
VIKANE	SULFURYL FLUORIDE	Exposure: Possible	Single Animal	CA
PNR1427 INSECTICIDE	FLUMETHRIN IMIDACLOPRID	Exposure: Dermal	Single Animal	NY
SERESTO	FLUMETHRIN IMIDACLOPRID	Exposure: Dermal	Single Animal	FL
DIATOMACEOUS EARTH	SILICON DIOXIDE	Exposure: Possible	Single Animal	PA
ZELTYMA ZEPHYR GRIZZLY TWO	PROPICONAZOLE LAMBDA-CYHALOTHRIN MEFENTRIFLUCONAZOLE PYRACLOSTROBIN	Exposure: Possible	Group of Animals	OH
TERRO ANT KILLER BAIT	BORIC ACID	Exposure: Possible	Single Animal	MO
K9 ADVANTIX II LARGE DOG	PERMETHRIN PYRIPROXYFEN IMIDACLOPRID	Exposure: Dermal Misapplication: Homeowner	Single Animal	KY
N/A	DELTAMETHRIN	Exposure: Possible	Group of Animals	NJ
SERESTO	FLUMETHRIN IMIDACLOPRID	Exposure: Ingestion Exposure: Dermal	Single Animal	FN
N/A	FIPRONIL	Exposure: Possible	Group of Animals	WA

ENTITY AGE

18. Entity Age

Table 18 and Graph 18 summarize the ages of people involved in incidents reported to NPIC. Among 832 single human entities, NPIC was able to collect the person's age 71% of the time. NPIC aims to capture the age for all human entities; occasionally callers decline to provide that information.

Among the 591 humans with known age, 14% were children (ages 4 and under), and 31% were seniors (ages 65 and over).

Graph 18. Age of people involved in reported incidents

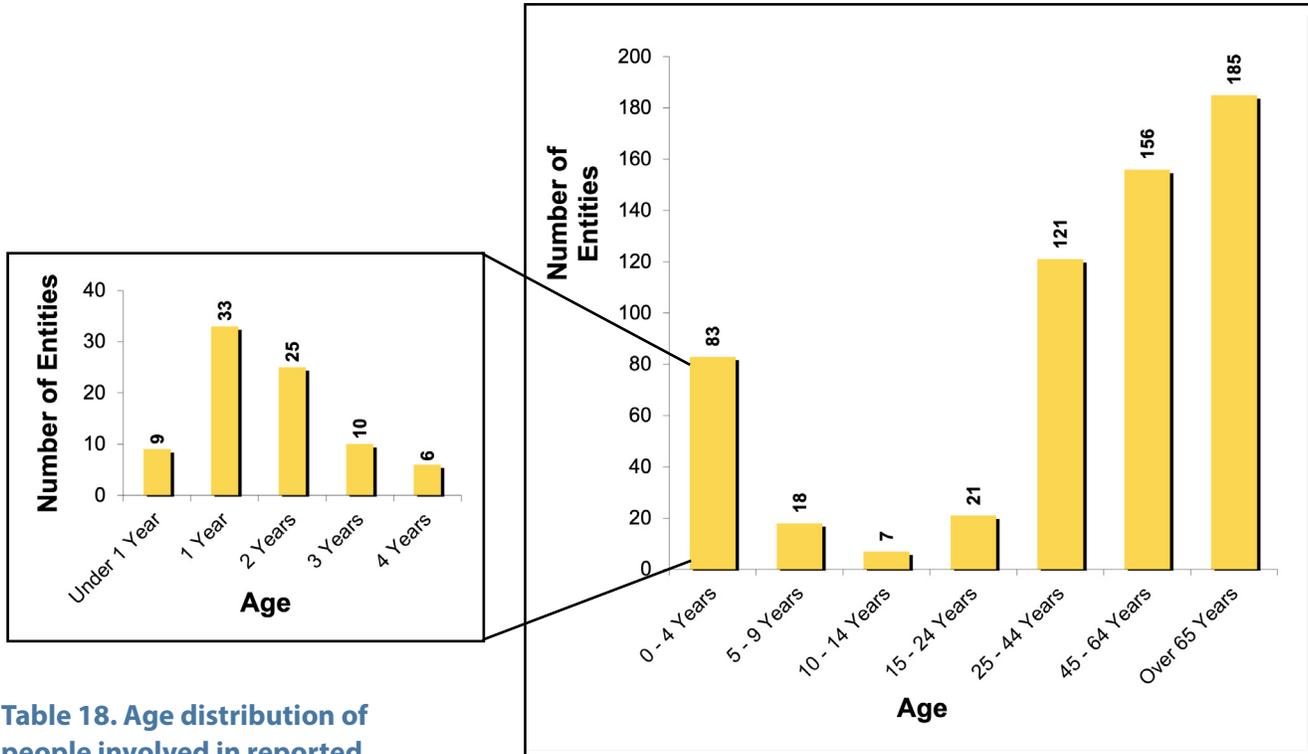


Table 18. Age distribution of people involved in reported incidents

Age Category	Total
Under 1 year	9
1 year	33
2 years	25
3 years	10
4 years	6
Total (0 - 4 years) =	83
5 - 9 years	18
10 - 14 years	7
15 - 24 years	21
25 - 44 years	121
45 - 64 years	156
Over 65 years	185

NOTABLE EXPOSURES

19. Notable Exposures

There were 1,811 entities potentially exposed to pesticides in 1,324 reported incidents.

Figure 19.1

There were 1,324 pesticide incidents reported, involving 1,811 exposed entities (people, animals, buildings, plants, soil, and water).

Total = 1,811 entities

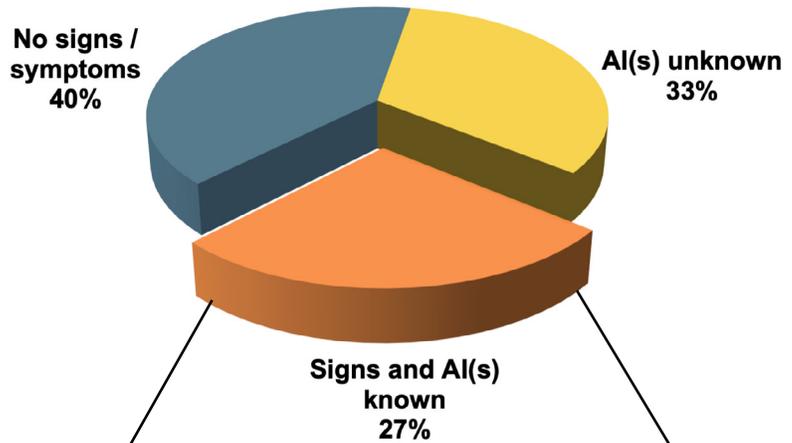


Figure 19.2

Human and animal entities potentially exposed to a known pesticide, with reported signs/symptoms (371 consistent and 114 atypical).

Total = 485 entities

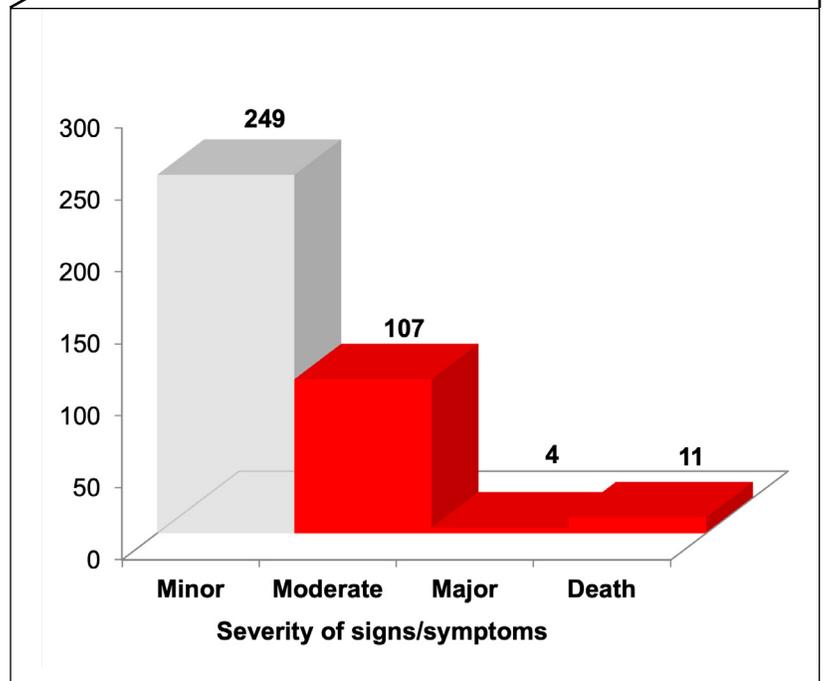


Figure 19.3

Human and animal entities potentially exposed to a known pesticide with reported signs/symptoms that were **consistent** with reports in the literature for that pesticide.

Total = 371 entities

Signs and symptoms are compared to the open literature, including fact sheets, case reports, textbooks, and articles. Furthermore, the timing of onset and duration are considered.



20. Veterinary Incident Report Portal

NPIC developed a web-based portal for veterinarians to report adverse reactions to pesticides among animals. NPIC does not verify or conduct quality assurance of the information submitted into the Veterinary Incident Reporting Portal (VIRP).

In 2023, Veterinarians submitted seven incident reports to the VIRP involving seven animals (4 canine and 3 feline). All VIRP reports are forwarded to EPA quarterly, in their entirety.

Of the three reports with a known product type, two were insecticide products (one spot-on and one liquid), and two were pellet formulated rodenticide products.

Symptoms reported to the VIRP are classified as dermatological (e.g., irritant, sloughing, ulcer), gastrointestinal (e.g., diarrhea, vomiting), neurological (e.g., depression, excited state, seizures, tremors), none, or other. Multiple symptoms may be reported for each animal. Of the reported symptoms, 57% were classified as neurological, 29% were classified as gastrointestinal, and 14% were classified as none.

Incident outcomes as reported may involve multiple animals in each VIRP report. Thus, totals reflect the number of animals, as opposed to the number of reports. Of the total number of animals (7) involved in VIRP incident reports, 75% of the cases were ongoing. The affected animals had recovered at the time of the report in 25% of cases. There was one reported feline death.

21. Ecological Incident Reporting

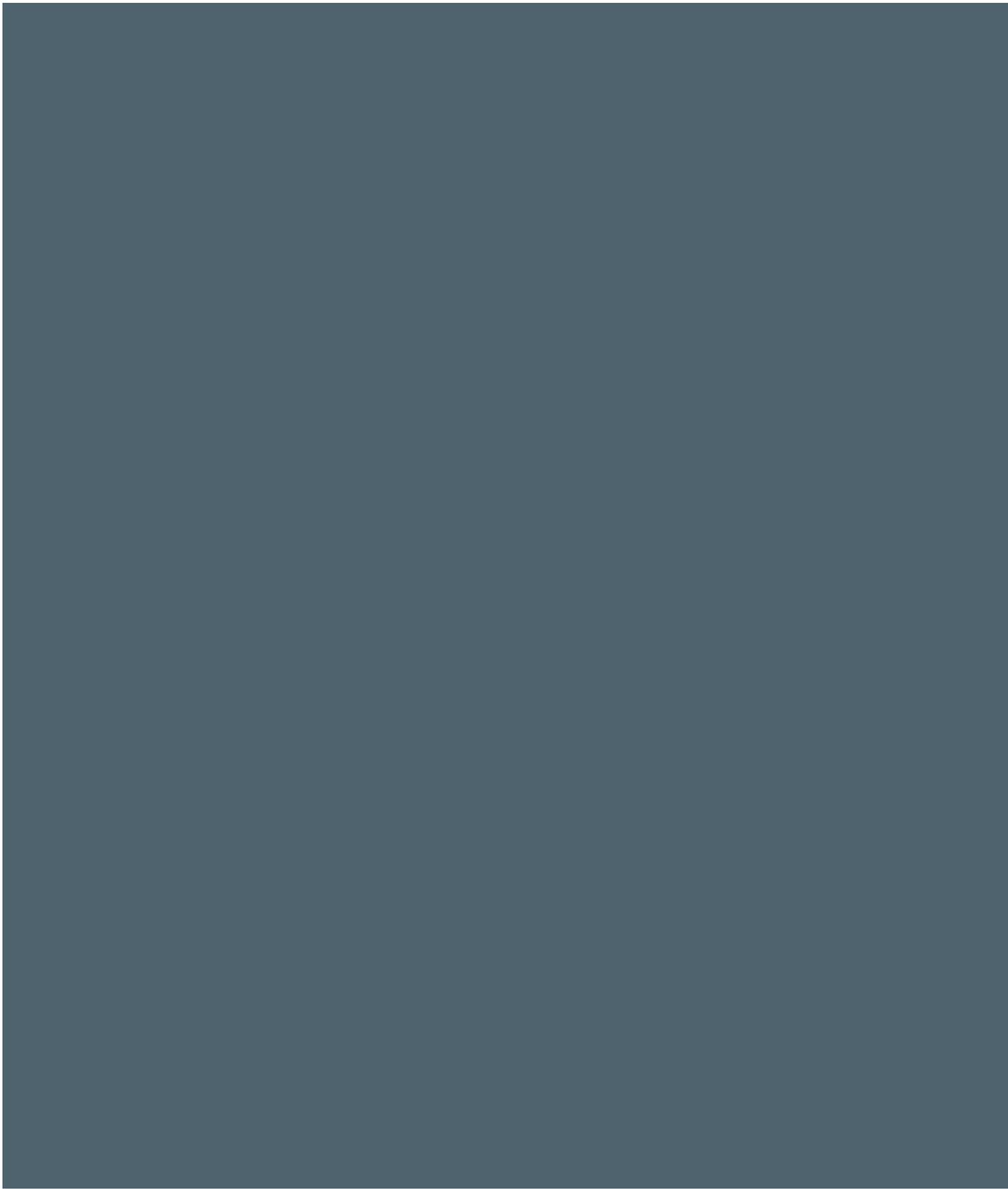
In 2009, NPIC developed a web-based portal to facilitate reporting of ecological incidents. It was designed by the U.S. EPA Office of Pesticide Programs (OPP), then built and hosted by Oregon State University.

NPIC does not verify reports through independent investigation, nor does NPIC conduct quality assurance of the information submitted into the Eco-portal. NPIC provides each report, without modification, to OPP quarterly. More recently, NPIC developed programming to make that delivery automatic and immediate.

Reports submitted to the Eco-portal in 2023 involved possible exposures to bees (26), plants (4), and terrestrial/aquatic (1). Table 21.1 summarizes the active ingredients involved in the 31 reports submitted to the Eco-portal.

Table 21.1. Active ingredients involved in the Eco-reports

Active Ingredient	Quantity
UNKNOWN OR N/A	33
NAPHTHALENE	1
L-CYHALOTHRIN	1



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