

Real answers to real questions
from real people in real time!

National Pesticide Information Center

- 2004 -

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Environmental & Molecular Toxicology

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This is the tenth annual report for the National Pesticide Information Center (NPIC) since it began operation at Oregon State University in April, 1995. NPIC, a service providing a variety of pesticide and pesticide-related information to the general public and professionals across the United States, Puerto Rico and the Virgin Islands, is a cooperative project between Oregon State University and the U.S. Environmental Protection Agency. This report, the 2004 Annual Report, covers the period April 1, 2004 - March 31, 2005, corresponding to NPIC's tenth grant year.

DISCLAIMER

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

Submitted To:

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Director

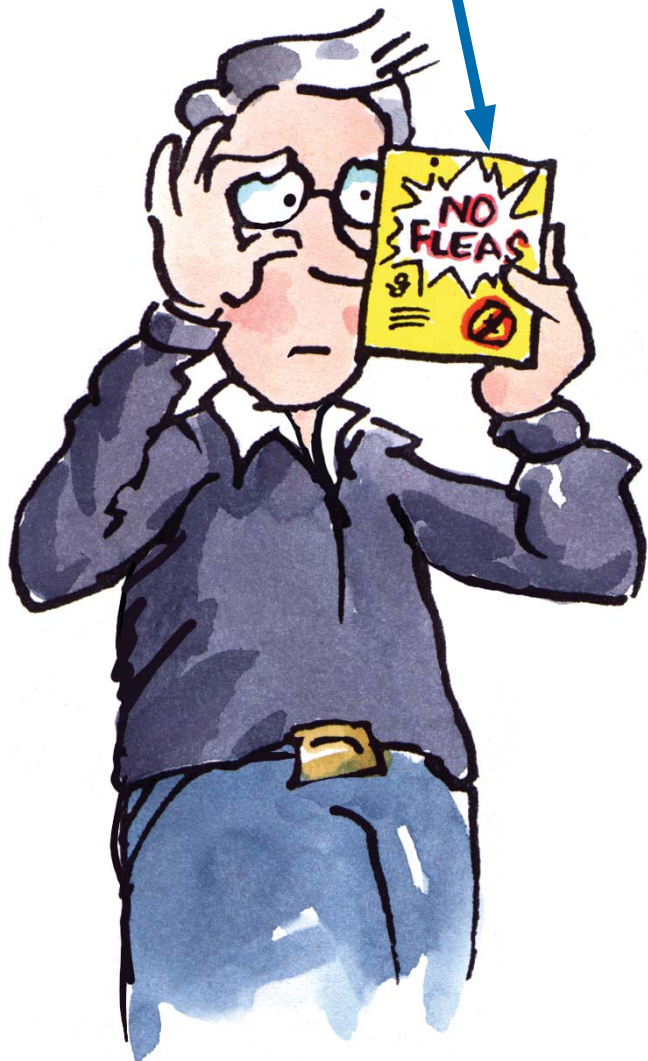
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NPIC 2004 Annual Report

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Read the Label First!
 – before you *buy*, *use*,
 or *store* a pesticide.



*“Pesticide Information . . .
. . . How May WE Help You?”*



The NPIC Team

Executive Summary - NPIC 2004 Annual Report

Note: The complete record of NPIC accomplishments for the current operational year includes the 12 monthly reports and 4 quarterly reports (submitted earlier), in addition to this "2004 Annual Report." This report covers the NPIC grant year: April 1, 2004 through March 31, 2005.

Operations

- The NPIC World Wide Web site continues to be a popular way of obtaining information from NPIC - during this operational year the site received 911,258 hits. NPIC received 897 inquiries via email (Table 4.1, Graphs 4.1 - 4.6, Table 3.1).
- NPIC updated its West Nile Virus Resource Guide, and responded to 981 inquiries related to WNV.
- NPIC addressed more than 400 inquiries about moth balls, including 165 incident inquiries.
- Over 380 inquiries about Chromated Copper Arsenate (CCA) were addressed.
- NPIC responded to 119 inquiries about Hartz flea and tick control products for cats and kittens.
- NPIC responded to 53 inquiries about counterfeit pesticide pet products.
- General and Medical Case Profiles were developed and posted to NPIC's web site.
- NPIC answered 24,765 inquiries during its tenth operational year. Eighty-three percent of the inquiries were received between March and October, coinciding with that part of the year when most pest pressures are highest (Table 1.1, Graph 1.1).
- The majority of inquiries (84.8%) were for information only (i.e., not related to an incident); 8.0% related to exposure concerns, and 1.7% concerned other non-health-related pesticide incidents (Table 7.1, Charts 7.1 and 7.2).
- The greatest number of inquiries (33.7%) were health-related, whereas 28.3% were for information about pesticide usage, and 9.7% were of a regulatory nature (Table 6.1, Graph 6.1).
- Examples of "health-related" inquiries include:
 - Inquirer reports the company she works for is spraying a product containing permethrin to control fleas. She is concerned since she is 21 weeks pregnant.
 - Inquirer seeking health information on sulfuryl fluoride, as her neighbor is having his home tented. Inquirer reports her daughter is young, has "suppressed immune system", and a bedroom window a few feet from the tent. She is concerned about possible health effects. .
 - Inquirer reports he has standing water in back yard, and his neighbor wants to put B.t. in the water to control mosquitos. Inquirer seeking health information on B.t.'s potential health effects on a dog.
- Of the 24,765 inquiries, 9.9% (2,455) involved pesticide incidents, while 40.0% (9,900) were for information about specific pesticide active ingredients or products, and 42.6% (10,547) were for general information about pesticides and pesticide-related issues (Table 2.1, Charts 2.1 and 2.2).
- Examples of pesticide incident inquiries include:
 - Inquirer said on friday morning she discovered two of her dogs dead. Sometime during the night, they chewed through a new box of Corry's Slug and Snail Death that she left on the table the night before.
 - Inquirer, pregnant female, reports her husband used four containters of Raid Concentrated Deep Reach Fogger in their apartment unit. Inquirer said the instructions indicated for the size of their apartment one or maybe two should have been used.
 - Inquirer reports 15 month baby "got hold of some" moth ball chips and may have eaten some. Inquirer reports no symptoms, but she can smell moth balls on hands and breath of child. Inquirer is at her mother's house, where moth crystals were spread throughout the garden.
- Of the 2,455 incident inquiries, 11.5% were assigned a certainty index of 1 or 2, thus judged to have been either definitely or probably caused by the pesticide in question (Table 12.1).

Pesticide Questions?

NPIC

- 7 days a week
- 6:30 am to 4:30 pm (PT)
- Phone: 1.800.858.7378
- Web: npic.orst.edu
- Email: npic@ace.orst.edu

We've Got Answers!

- Permethrin generated more inquiries (1,535) than any other active ingredient, accounting for 6.2% of all inquiries, and 15.5% of pesticide-specific inquiries. Of these, 15.2% (234) were incident inquiries and 84.8% were inquiries for information. Of the 234 permethrin incident inquiries, 13.7% were assigned a certainty index of 1 (definite) or 2 (probable) (Table 10.1, Graph 10.1).
- Metaldehyde was involved in more incidents (252) than any other active ingredient; 18.3% were assigned a certainty index of 1 or 2. Most of the metaldehyde incidents involved animals, particularly dogs.
- Although fewer incidents were involved, 48.6% of the 144 D-phenothrin incidents and 46.1% of the 76 methoprene incidents, respectively, had a certainty index of 1 or 2. For incidents involving capsaicin (48), pyrethrins (85), and permethrin (234), 27.1%, 14.1%, and 13.7%, respectively, had a certainty index of 1 or 2.
- Of the 1,339 times that one of the other top 25 active ingredients was mentioned during incident inquiries, in which human or animal entities were involved, 5.7% of the cases were assigned a certainty index of 1 (definite) or 2 (probable). Most of the reported incidents (41.9%) involved humans; 41.7% involved animals (Table 11.1, Graph 11.1).
- There were 2,709 entities involved in incidents reported to NPIC - 43.0% were human, 37.3% animal, and 19.6% other (e.g., building, environment). Of the human entities, 39.0% were male, 53.4% female, 7.5% groups, and 0.3% where gender was not stated (Tables 14.1 and 15.1, Graph 14.1 and Chart 15.1).
- Of the 1,167 humans involved in incident inquiries, information about symptoms was given for 1,112. Of these, 48.7% were symptomatic (symptoms matched those for pesticide in question), 39.9% were asymptomatic, and 20.4% reported atypical symptoms (Table 15.1, Table 16.1, Charts 16.1 and 16.2).
- Amongst the 1,167 human entities, one death was reported. This incident was judged to have a certainty index of 1, making it likely that the death was pesticide related. Of the 1,014 animal entities, 67 deaths were reported; 27 of these incidents were assigned a certainty index of 1 or 2, indicating likely pesticide involvement (Table 15.1, Table 17.1, Chart 17.1).
- Ages were available for 853 of the 1,077 individual human entities. A portion (16.3%) of the entities were less than 5 years old, 5.5% between the ages of 5 - 14, 4.8% between 15 - 24, 58.7% between the ages of 25 - 64, and 14.7% over age 64 (Table 18.1, Graph 18.1).
- Of the known locations (2,361) where incidents occurred, 93.5% were the home or yard, while 2.1% were agriculturally related, and 1.3% involved an office building or school (Table 12.1).
- Most of the inquiries (86.1%; 21,344) to NPIC came from the general public, while 3.4% came from federal/state/local agencies, 2.4% from medical personnel, 2.3% from information providers, and 3.2% from consumer users (Table 5.1, Graph 5.1 and Chart 5.1).
- Most of the inquiries to NPIC (61.9%; 15,335) were handled by providing verbal information/discussion to the inquirer. Other actions taken by Specialists were to transfer inquirers to Oregon Poison Center or Animal Poison Control Center (1.3%) and provide discussion and contact information for EPA, state lead agencies, cooperative extension, Poison Control, Animal Poison Control, and the manufacturer. Some inquirers (6.4%) received information via mail, fax or email (Table 8.1, Charts 8.1 and 8.2).
- NPIC received 23,242 (93.9%) inquiries via telephone (Table 3.1).
- For the 5 most populated states, the number of inquiries received was in the same order as the population, with the largest number of inquiries coming from California, followed by Texas, New York, Florida, and Pennsylvania (Table 9.1, Graph 9.1). Based on population, a disproportionate number of inquiries were received from Oregon.
- By EPA region, 14.8% of the inquiries came from Region 4 13.6% from Region 5, 13.4% from Region 9, 11.1% from Region 2, 11.1% from Region 6, and 11.0% from Region 3 (Graph 9.2).

Organization

- NPIC hired five full-time Pesticide Specialists during the 2004-05 grant year. Four Pesticide Specialists resigned during this period. One Pesticide Specialist reduced her hours after becoming a new mother. One student worker was hired to assist with office support and one graduate-level student was hired to assist with active ingredient file management. Recruitment for full-time Specialists and a graduate-level student was ongoing. NPIC's current staff includes a full-time Project Coordinator, eleven full-time Pesticide Specialists, a full-time information resource supervisor, a part-time fiscal/personnel manager, and three part-time undergraduate student assistants.
- NPIC purchased six Dell Precision 360 workstations to replace aging equipment. NPIC purchased a service contract for a Sun Microsystems Sunfire 280R in order to facilitate replacement of a failed main system board. Two, four-drawer file cabinets were purchased this year to accommodate the expanding English and Foreign Language Active Ingredient and General File collections. NPIC purchased a Secap Model 26K inkjet label printer to aid in outreach and marketing efforts.

NPIC Mission Statement

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

- recognition and management of pesticide poisoning
- toxicology
- environmental chemistry
- pesticide products.

In addition, NPIC provides referrals for:

- health and environmental effects
- safety practices
- clean-up and disposal
- emergency treatment, investigation of pesticide incidents, and laboratory analyses.

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

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

NPIC is open to questions from the public and professionals. It is staffed by highly qualified and trained Specialists who have the toxicology and environmental chemistry training needed to provide knowledgeable answers to questions about pesticides. NPIC Specialists deliver information in a user-friendly manner, and are adept at communicating scientific information to the lay public. Specialists can help inquirers interpret and understand toxicology and environ-

mental chemistry information about pesticides. The services provided by NPIC are strictly informational and have no regulatory or enforcement capability or authority.

NPIC maintains access to a Telephone Relay Service (TRS) to facilitate access to pesticide information by the hearing-impaired.

Objectives

The objectives of NPIC are:

- 1) To operate a toll-free telephone service to inquirers in the United States, Puerto Rico, and the Virgin Islands, including a recording device to capture off-hour inquiries.
- 2) Provide access to NPIC and pesticide-related information via the World Wide Web and email.
- 3) To serve as a source of factual, unbiased information on pesticide chemistry, toxicology, and environmental fate to all who in-

quire, including industry, government, medical, and agricultural personnel, as well as the general public.

- 4) To provide the medical community with diagnostic and crisis management assistance involving pesticide incidents in situations pertaining to both human and animal patients.
- 5) To acquire accurate and complete information on all inquiries considered to be pesticide incidents.
- 6) To computerize all inquiry information as well as pesticide incident data for easy retrieval.

NPIC provides objective, science-based information about pesticides and pesticide-related topics to empower inquirers to make informed decisions about pesticides and their use.



Polly - Pesticide Specialist

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 service, offered via telephone, was originally used to report pesticide incidents in EPA Region VI through the Pesticide Incident Monitoring System (PIMS). Later, callers from across the U.S. began using the service to obtain information on pesticides. In 1980, the network was designated as the National Pesticide Information Clearinghouse (NPIC). In 1984, the NPIC added the 24 hour responsibilities of South Carolina's National Pesticide Telecommunications Network (NPTN) and changed its name to NPTN.

The NPTN system remained in San Benito until April 1985, when it moved to the Department of Preventive Medicine and Community Health of the Texas Tech University Health Sciences Center in Lubbock, Texas. NPTN remained at Texas Tech through March, 1995. Following a competitive renewal process for the grant supporting the Cooperative Agreement between the U.S. Environmental Protection Agency and the co-sponsoring university, NPTN moved to Oregon State University on April 1, 1995. In addition to the telephone, NPTN began to place major emphasis on the World Wide Web and email as means of disseminating pesticide

information, and as alternate routes of contact with NPTN. To more accurately reflect the nature of its service, NPTN was renamed National Pesticide Information Center (NPIC) in 2000.

Inquiries and Resources

NPIC receives inquiries from across the U.S. and from Puerto Rico, the Virgin Islands, Canada, Mexico, and numerous other countries. Most of the inquiries to NPIC are from the general public. The nature of the

NPIC is a cooperative effort of Oregon State University and the U.S. Environmental Protection Agency.

inquiries range from requests for information about: health implications of pesticide use; pesticide toxicology, environmental chemistry, regulations, and use practices; product information; environmental effects of pesticides; pesticide safety, protective equipment, cleanup and disposal; and current pesticide-related issues in the news.

NPIC maintains an extensive collection of hard-copy and electronic resources for pesticide information, used as necessary by the Specialists in answering inquiries. Included in this collection are: NPIC's Active Ingredient (AI) file collection containing information on over 900

pesticide AIs; General File collection containing 58 pesticide-related topics; numerous compendia of pesticide information (e.g., Handbook of Pesticide Toxicology, Code of Federal Regulations - 40 CFR Parts 150 - 189, Pest Control Operations, Toxicology - The Science of Poisons, Farm Chemicals Handbook, WHO Environmental Health Criteria series, Herbicide Handbook, The Pesticide Manual, Common-Sense Pest Control, pesticide product labels - to name but a few); electronic access to EXTOWNET (EXTension TOXicology NETwork), CHEMBANK (HSDB, RTECS, IRIS), and PESTBANK; and on-line literature searching capabilities (e.g., Medline, Toxline).

Funding

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



Open minds. Open Doors.™

NPIC Update

Inquiry Update

NPIC responded to 24,765 inquiries, 2,455 of which were classified as pesticide incidents. A pesticide spill, a misapplication, a contamination of a non-target entity, or any purported exposure to a pesticide (regardless of injury) is classified as an incident. Incident inquiries are reviewed by Dr. Daniel Sudakin and/or a senior NPIC Pesticide Specialist (referred to as *Specialist* below). On the basis of information provided by the inquirer, and with reference to established criteria, all incident inquiries are assigned a certainty index (CI) - this is NPIC's assessment as to whether the effects were definitely (CI = 1), probably (2), possibly (3), or unlikely (4) to have been caused by exposure to a pesticide, or whether the effects were unrelated (5) to pesticide exposure. For incidents in which the inquirer reported an exposure, accident, or odor, but no health effects, a certainty index of zero (0) is assigned.

Achievements

Administrative and Operational Infrastructure -

Mission, Goals, & Values -

NPIC continued to operate under its *Mission, Goals, and Values* statement. The statement, which articulates NPIC's mission and goals, includes a set of values and attributes deemed to contribute to a positive workplace culture and promote a sustainable public service-oriented organization.

NPIC Policies - NPIC updated several policies. Upon completion,

policies are posted to the NPIC Intranet (Inet) and added to the hard-copy policy collection.

NPIC updated the following policies during this grant period: *Policy*



Guidance Overview; Faculty Position Descriptions, Annual Evaluations, and Salary Increases; Schedule Policy; Vacation-Leave Policy; and Sick-Leave Policy.

Standard Operating Procedures (SOP) -

The Executive Committee and staff worked together to enhance the NPIC SOP collections. Upon completion, NPIC posts each SOP to the Inet and adds each to its hard-copy collection. Master SOP collections include: *Operational/Administrative; Specialist Projects; and Student Assistants; all collections are accessible through the Inet.*

NPIC posted the following Operational/Administrative SOP to the Inet this year: *Responding to Telephone Inquiries (Skills Review); Telephone Quick Reference; Transferring Spanish Speaking Callers to Spanish Resource Specialist; Referrals for Suspicious Activity/Security Concerns; Requests for*

Quotes or Information that Might be Published; Requests for NPIC Pesticide Inquiry Database (NPIC PID) Data; Referrals to Other Organizations; NPIC Meetings: Specialist, Full Staff, & Continuing

Education; Posting Yearly Achievements; Requests for Pesticide-Related Material; Submitting Mail-out and Fax Requests to Student Assistants; Processing Fax Requests; E-mail Attachments in Pine; Spanish Audix Message; Reprogramming Staff-In/Staff-Out and Back-up Telephone Buttons; and Scams.

NPIC posted the following Specialist Project SOP to the

Inet this year: *Fact Sheet Resource Guide (for Specialists); Fact Sheet Project Overview (Facilitator use); Case Profiles (Specialist use); Case Profile Project Overview (Facilitator use); Continuing Education Proposals (Specialist use); Continuing Education Project Overview (Facilitator use); Active Ingredient Updating (Specialist/Facilitator use); and Printing NPIC Logs.* A Project Overview, incorporated in each Project SOP, describes the role of the Project Facilitator and identifies responsibilities and duties associated with managing a particular project.

NPIC posted the following Student Assistant SOP to the Inet this year: *Processing NPIC Staff Outreach Requests, Part I - Responsive Outreach Mail-outs (Part II - Proactive Outreach Requests continues to be developed as new processes are implemented and tested); Ordering Supplies; Performing the Mail-Run; Filing NPIC Logs; Generating Call*

Histograms; and Generating Show and Tell Bibliography.

Project and Information Review

Pesticide Incident Database (PID) - The Executive Committee and staff focused on a variety of Quality Assurance/Quality Control (QA/QC) procedures to enhance data acquisition and recording. Many of these enhancements were identified from discussions at weekly staff meetings, through routine incident/informational inquiry report reviews, and through NPIC training program events. As a result of these discussions and reviews, updates were made to the FoxPro data-entry screens, new report structures and commenting features were incorporated, numerous new codes were added to the field choices, and new approaches to improved QA/QC of logs were incorporated into Specialist training.

Application of codes and new designs for the FoxPro PID data entry screens will reduce the number of QA/QC steps manually conducted by the PID Facilitator, Dixie Jackson, and will reduce data entry errors by Specialists at the time of log entry. Proposed changes to FoxPro PID data entry fields were presented to the group, and additional feedback was collected, much of which was incorporated into the PID system and QA/QC processes.

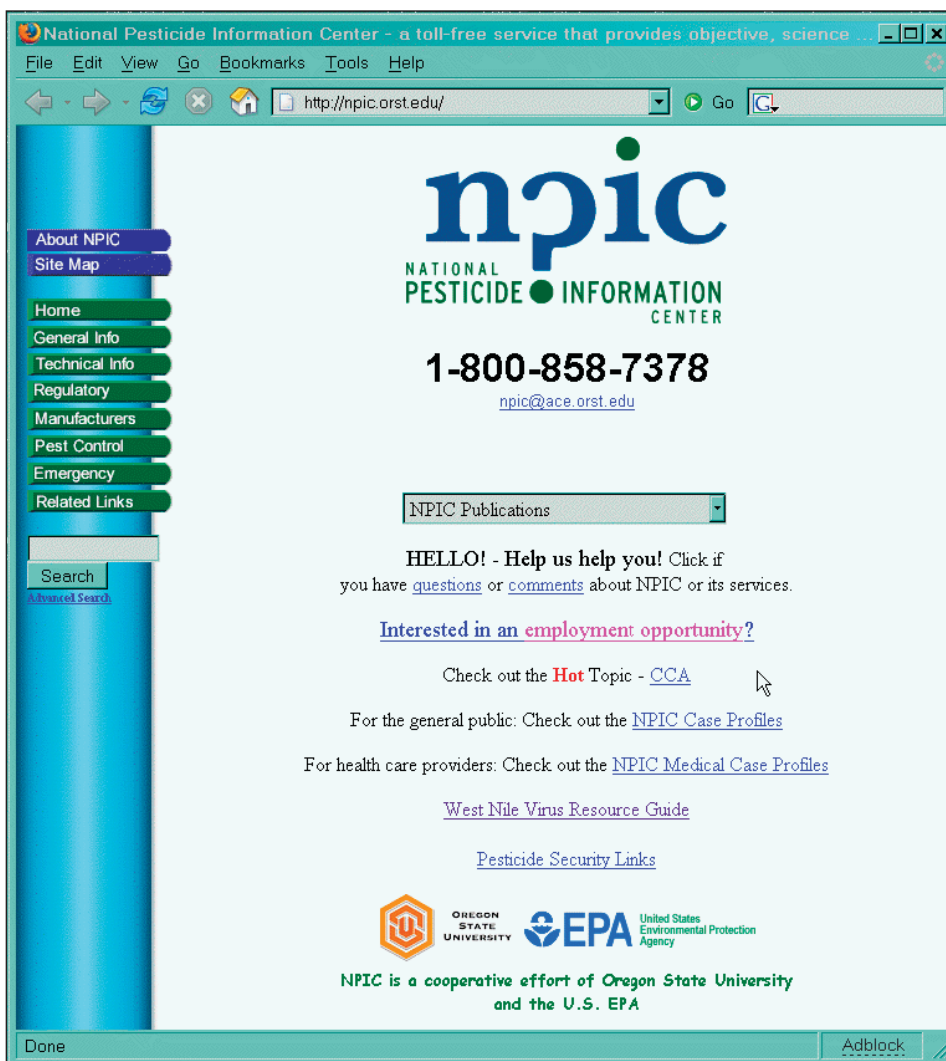
New uses of PDF technology made it possible for *Human Incident QA/QC Reports* to be generated from FoxPro directly into user-friendly reports. This format allows for comments to be imbedded into the electronic report, thus increasing efficiency in reviews and electronically documenting QA/QC efforts. In addition, *Log Assessment Reports* for trainees and new Specialists were also generated in this fashion, leading to creation of new

mechanisms for sharing feedback and tracking improved application of the *Log Coding Guidelines* by trainees and/or new Specialists.

Enhancements were made to the Certainty Index (CI) definitions in order to provide more objective and consistent CI assignment among Specialists coding incidents. A Certainty Index Matrix table was also created as a quick reference in CI criteria.

exposure has occurred, however, a specific active ingredient was not, or could not, be identified.

NPIC also established a narrative tag to assist in querying for inquiries describing the intent to use mothballs for an off-label use, in which the Specialist discussed the label and the law, and potential risks associated with off-label use, with the goal of deterring misuse and/or adverse effects.



Due to concern about missing potentially useful data from suspected incidents, a narrative tag was developed and applied to enable NPIC to query for suspected incidents. A suspected incident may include a case where the NPIC Specialist strongly suspects a pesticide

NPIC Web Site - The NPIC web site is useful to NPIC clientele and is an effective tool for providing pesticide-related information. The NPIC web site presently provides the user access to many types of pesticide information including:
1) NPIC fact sheets and other mate-

rials developed by NPIC; 2) Links to pesticide information at other web sites, demonstrated to be of use to NPIC clientele.

In many respects, the NPIC web site is a “Gateway” or “a one-stop shopping center” for pesticide information. NPIC anticipates access to its web site will continue to increase and proceeds with frequent updates and enhancements to the content and functionality of the main pages. In addition, NPIC continues to update specific resources including: WNV Resource Guide (with specific emphasis on WNV background, state contacts, and new science); Hot Topics; and Security Alerts Resource Guide.

NPIC hosted 911,250 total web hits to its website this year. The WNV Resource Guide received 144,000 of those hits.

NPIC created and posted an electronic version of its chromated copper arsenate (CCA) hard-copy resource collection to the website. The Hot Topic facilitator, Matt Sunseri, assessed available CCA resources and selected documents it deemed best for providing quality responses to common public inquiries. Topics include: regulation; industry and consumer perspectives; wood preservation; alternatives; leaching and speciation; wood coatings; dislodgeable residues; gardening; consumer safety; resources written in Spanish; disposal; and toxicology associated with each metal.

Routine link check processes were performed and maintenance on all broken and/or redirected links continued throughout the year. New links were added to the General Info web page under the title Food and Pesticides, including FDA con-

tacts for food residues, food safety and homeland security, USDA PDP report links, and the USDA meat and poultry hotline. The Pest Control web page was updated to include *Bed Bugs*. As more inquiries were received about this pest during the granting year, NPIC linked various university Extension publications as resources to common pest questions.

NPIC again updated its West Nile Virus Resource Guide to reflect the 2004 WNV season. Individual State human case counts for 1999-2003 were archived on the WNV Background page. New links were added to WNV Resource Guide, including links under the headings: Federal Information, Pesticides and Toxicology, WNV and Your Health, WNV and Mosquitoes, Veterinary/Wildlife, and International Information. CDC Morbidity and Mortality Weekly Reports section were also reorganized by year for easier accessibility by the audience.

InfoBase -

NPIC continued development of an extensive electronic “repository/collection” of pesticide-related information. NPIC has coined the term, InfoBase, for this repository. A major goal of the InfoBase project is to provide a user-friendly, powerful interface to pesticide information available from a variety of sources.

NPIC developed a prototype interface to the InfoBase that includes the ability to: search by specific word or phrase, as well as more sophisticated search methods; customize searches; “drill down” or narrow the search within a search-results set; and browse search results.

The InfoBase was made available to NPIC specialists for use in answering inquiries, fact sheet development, and other



Carley - Pesticide Specialist

work. NPIC also made the InfoBase available to the public and others through a user-friendly search interface on the NPIC website. The InfoBase was accessed more than 25,800 times this year.

The InfoBase makes use of Convera RetrievalWare Enterprise Search software and development kit. RetrievalWare indexes electronic documents of various types, and places them in a “library”. The library can be searched, using RetrievalWare’s sophisticated searching features (e.g., concept, pattern, and Boolean), and documents retrieved. NPIC has also purchased the RetrievalWare Spider. This software retrieves documents from specified websites and passes them to RetrievalWare for indexing. These documents can also be searched and retrieved by RetrievalWare.

NPIC used RetrievalWare and the spider to index several pesticide-related websites, to create pesticide libraries for: 40CFR, FFDC, OPP, NPIC, and some Extension sites. These libraries are being used to test RetrievalWare and various search interfaces.

Active Ingredient Files - NPIC added 50 new AI files to its collection, that totaled 918 files at the conclusion of the grant year. The AI committee updated 32 of NPIC’s Top 40 AI files (such as metaldehyde, D-phenothrin 2,4-D, chlorothalonil, bromadiolone, pyrethrins, sulfurlyl fluoride, mecoprop) by adding new and relevant data. NPIC acquired and indexed 1,445 new documents for addition into the AI file collections this year, including FQPA Risk Assessments, EPA Fact Sheets and Reregistration Eligibility Decisions and Tolerance Reregistration Eligibility Decisions (RED/TRED).

The AI committee performed a comprehensive update to the NPIC RED Master List, and subsequently verified each completed RED and RED Fact Sheet is located in the AI File collection and database and in the NPIC RED Library collection. As part of this QA/QC effort, the NPIC RED tracker was updated and redesigned to be more user-friendly. RED collection additions included six (6) new RED and six (6) new TRED during this granting period, increasing NPIC’s total RED collection to 303 bound RED/TRED.

New fields were added to the AI database, including a field for the URL of web documents, a field to describe the source (advocacy or science-based), and the type of user targeted (internal or external). These fields will allow for greater cohesiveness between the AI project and other information resource projects within NPIC, making the information data more readily indexed for public user’s accessibility.

Sunny Jones joined the AI team and was cross-trained as the AI Project Facilitator. Matt Sunseri, and a new team member, Bonnie Tam, each cross-trained on all AI maintenance activities to assist each other, as needed. Kristen Larson also joined the AI Committee and will lead the Foreign Language AI project. Kaci Agle, the prior AI Project Facilitator, and graduate student, Sonal Shetty, updated the Graduate Student Training Manual to include additional QA/QC procedures expected to lead to more effective and efficient training.

Foreign Language Active Ingredient Files - The new Foreign Language Active Ingredient project began this granting period with creation of a FoxPro database. Data structure and data entry mirrors that used for NPIC AI Files, and will contain all bibliographical information for the Foreign Language Active Ingredient publications acquired, both in hard-copy and electronically. Hard-copy file structures, as for AI Files, will be organized by placing specific source materials on colored backers for easy accessibility. In addition, draft SOP were developed for these new activities and to assist in continued QA/QC efforts amongst other various NPIC information resource collections.

General Files - NPIC maintains 58 General Files that contain 285 topic sub-files of specific pesticide topic information. Kelly Bahns continues to lead the General File project and updates NPIC’s col-



lection routinely. NPIC created and implemented a new General File database that mirrors that for NPIC AI Files, and will contain all publication bibliographical information obtained, both in hard-copy and electronic form. Similarly, hard-copy file structures are organized by placing specific source materials on colored backers for easy accessibility by Specialists. At the conclusion of the grant year, NPIC had restructured and updated 27 General Topic files, adding over 350 documents into the new database.

The General File Table of Contents was updated and posted to the Inet for easy access by Specialists. In addition, draft SOP were developed for these new activities and to assist in continued QA/QC efforts amongst other information resource collections. Kristen Larson joined the General File team to assist with NPIC's new Foreign Language General File project.

Foreign Language General Files - Following the same design and procedures as with other NPIC information resource collections, development began on the Foreign Language General files project. After development of a new database and draft SOP, NPIC opened and maintained 34 new Foreign Language General Files within its collection.

"Other" Ingredient Files - NPIC continues to update its inert or other ingredient files by addition of NTP, ATSDR, WHO, and other relevant scientific hard-copy documents received from various publishers.

Intranet (Inet) - The internal intranet page, NPIC's Inet, continued to be enhanced by updates on a weekly basis, including: schedules, calendars, meeting notes, staff directories and project related materials. Notable new additions included: *NPIC Incident Certainty Index Expanded Definitions*; *NPIC*

Incident Certainty Index Matrix; *SOP for AI Updating*; *Case Profile Development*; *Outreach Processing*; *Outreach Campaign Tracker and Associated PID Tags*; and *Hot Topic: Permethrin-Treated Clothing resource links*.

Desktop Resources - NPIC enhanced and updated the Resource Book throughout the year. Sections within this hard-copy resource provide Specialists quick access to frequently requested information. New additions to the Resource Book included a Rodenticide Information Sheet (Non-Target Species)

ers, including current addresses, telephone numbers, and web sites. This database was used to generate NPIC's Manufacturer contact list for the Resource book and for posting to its website. Development of this approach has allowed for more efficient use of Specialists time by utilizing updated data sets for various projects.

Fact Sheets - Fact sheet development occurred on the following active ingredient fact sheets: *Metaldehyde*; *Pendimethalin*; and *Deltamethrin*. Several new fact sheets are in preparation, including:



and a list of commonly requested pesticide-related materials available from other resources.

NPIC established new ways to generate directories for the Resource Book using its manufacturer outreach database as a trial. The manufacturer database contains contact information for 298 manufactur-

Aluminum Phosphide; *Capsaicin*; *Deltamethrin*; *Diazinon* - *Technical*; *Naphthalene*; and *Paradichlorobenzene*. Updates include incorporation of any new regulatory and/or scientific information available. Currently underway are *Diazinon* - *General*; *Glyphosate* - *General*; *Glyphosate* - *Technical*; and *DEET* - *General*.

NPIC imported the Fact Sheet status tracking database into an Excel format and developed search queries and status reports based on this data, and continues to enhance its on-line *Inet Fact Sheet Guidance* document for Specialist and Facilitator use.

Case Profiles - NPIC presents General and Medical Case Profiles on its website to provide an educational opportunity to the NPIC audience. During this granting period NPIC posted the following General Case Profiles: *What's Good for the Goose...; Get Rid of Slugs & Snails, Not Puppy Tails!;* and *A Mothball Mishap*. NPIC posted the following Medical Case Profile, developed by Dr. Sudakin, to the NPIC web site this year: *Pesticide Incident Reporting*. Another is currently in development - *Using DEET Safely*.

Bonnie Tam was cross-trained by Melanie Barnhill as the new General Case Profiles facilitator. NPIC continued developing its case profile guidance documents, and added a status tracking database and report generator, for documenting all Case Profile activity.

Training and Continuing Education

Training - The NPIC Training Manual Review and Revision team continued to focus on QA/QC measures during this grant period. Training manual updates included: detailed descriptions of the objectives and goals for NPIC; boundaries and information use; scientific and regulatory comprehension; methods and techniques used in communication and documentation; and additional assessment of training progress. Sections that received additional updates throughout the year included: *Introduction; Hot Topics;* and *Log Coding Guidelines*.

The Trainer, Kaci Agle, successfully cross-trained Carley Prince-Hansen who joined the Training Re-

view and Revision Team. With the departure of Ms. Agle, Ms. Hansen further participated in enhancing the training program, and all supporting documents to address rapid changes requested in the Training Manual. These changes better reflect current operational procedures and utilize new technologies for sharing feedback with trainees and management.

Specialists - Four Specialists completed the training program during this period. One Specialist completed the OSU 3-term series in graduate level toxicology including: Fundamentals of Toxicology, Target Organ Toxicity, and Environmental Toxicology and Risk assessment. Two Specialists have completed two terms and will complete the series by the end of Fall 2005.

Graduate Students - Recruitment was initiated for a graduate level student to assist NPIC with its Active Ingredient project.

Student Assistants - Deborah Pham successfully completed the student assistant training program and supports important tasks that assist in the smooth operation of NPIC.

Continuing Education - Each week the NPIC staff meets to further their knowledge of pesticide-related topics, discuss ways to fur-

ther improve the quality and service that NPIC provides the public, and to discuss administrative matters. Internal seminars were scheduled during many of those weekly sessions. The University also provides additional opportunities for continued learning including seminars, lectures, and conferences.



NPIC Staff benefitted from the following guest presentations this year: On May 20, 2004, Dr. Jay Pscheidt, an Extension Plant Pathologist at Oregon State University (Department of Botany and

Plant Pathology), reviewed different fungicide families, as defined by PR Notice 2001-5 (Guidance for Pesticide Registrants on Pesticide Resistance Management Labeling). He discussed mode of action, effectiveness, and other attributes. Dr. Pscheidt also described a method for field testing fungicides, discussed types of fungicide resistance, and reviewed terms (e.g., curative and fungistatic, which are used to describe the effect fungicides have on a target organisms).

NPIC staff and Directors gave presentations on various topics throughout this grant period, including: On August 12 and August 19 Dr. Jeffery Jenkins presented *What's Going on in the Spray Tank?* Discussion focused on product mixing, other ingredient interactions, and the effects of pH and temperature on the stability of compounds.

On January 13, 2005, Dr. Daniel Sudakin gave a presentation titled, *Biomarkers of Exposure: Pyrethroids*. Topics covered the difference between pyrethrin and pyrethrum, pyrethrin and pyrethroid mode of action, and effects of overexposure (via dermal, inhalation, or oral exposure). Dr. Sudakin also discussed metabolism of pyrethroids, including potential metabolites, resources identifying a relationship between pyrethroids and hypersensitivity reactions, and the relevancy and validity of biomarkers and biomonitoring studies relating to pyrethroid metabolism in humans.

Specialists presented staff development-related topics to the group during the grant year, including a presentation entitled *Merging with WordPerfect*. This interactive, hands-on presentation demonstrated how to sort and select data prior to merge for use in web page development, outreach and project tracking.

NPIC personnel also attended several off-site conferences, meetings or seminars during the period

including: On October 27, 2004, an OSU sponsored seminar was presented by the Center for Research on Occupational and Environmental Toxicology (CROET), Oregon Health & Sciences University (OHSU) titled *Organophosphate Pesticide-Induced Developmental Neurotoxicity*. Dr. Pamela J. Lein, PhD discussed developmental neurotoxicity related to organophosphate exposure and then presented results from her research focusing on identifying and characterizing the factors that affect neuronal morphogenesis, including internal (cellular, molecular) and external (xenobiotics) factors.

On September 16, 2005 NPIC staff attended an on-site University seminar. Dr. Stacey Harper of EPA's National Exposure Research Laboratory in Las Vegas Nevada spoke to the OSU community on the *Integration of Comparative Physiology and Computational Toxicology*, highlighting new goals to develop knowledge databases that could be utilized in a predictive model to address risk assessment. Pilot projects using one invertebrate species (*Daphnia*), and one chemical substance (pyrethroid), are in the planning stages.

An OSU two-day workshop titled *Pesticide and Nutrient Issues Related to Water Quality in the PNW*, sponsored by Integrated Soil Nutrient and Pesticide (iSNAP), was attended on November 9, 2004 by Kristen Larson and Sunny Jones. iSNAP members include OSU, WSU, University of Idaho, EPA, the National Resource Conservation Service (NRCS), and the National Integrated Water Quality Program. Numerous speakers addressed current issues related to the effects of pesticides and nutrients on water quality including: minor crops, drift, chemical fate

in the environment, progression of status quo, book values, analytical data and modeling, water quality education, pesticide and nutrient management practices that protect water quality, and, finally, considering new ideas, tools and practices to move along this progression in reality. Dr. Jeff Jenkins, Co-PI of NPIC, was also a speaker at this workshop, and demonstrated the water modeling software *WIN-PST* on behalf of OSU Cooperative Extension Service.

Sean Ross attended an ApacheCon conference on November 15-17, 2005. The Apache Software Foundation presented new and forthcoming technologies, and addressed novel ways to further leverage ASF software already used by NPIC and how NPIC can benefit from use of these products.

On April 6-9, 2004, Dr. Terry Miller, Dr. Daniel Sudakin, Dr. Jeffrey Jenkins, Crista Chadwick, Kelly Bahns, Kristen Larson, and Sunny Jones visited the Office of Pesticide Programs (OPP) in Arlington, Virginia. On April 6th, Dr. Miller gave a presentation to Arnold Layne, (IRSD), Sherri Street (PIRIB) and Frank Davido, NPIC's Project Officer on the status of NPIC. The group visited with Monisha Dandridge (Docket Manager) who provided an overview of E-Docket processes. NPIC also met with representatives from HED, including:



Dr. Jerry Blondell to learn about incident data and risk assessment, and Dr. Kit Farwell, who discussed issues concerning Hartz products. On April 7th, staff met with the NPIC Oversight and Monitoring Committee (OMC) which consists of representatives from the nine OPP Divisions and act as EPA liaisons for NPIC staff. Brian Steinwand (BPPD) updated the group on EPA's activities regarding pesticides and biotechnology. NPIC staff further met with FEAD-CSB to discuss outreach opportunities and explore new ideas of reaching the public. Leslie Davies-Hilliard and Les Hoot discussed the future plans for OPP's "tolerance" website. And finally, on April 8th, NPIC presented an overview of its services at an OPP Open Dialog meeting attended by many employees of OPP.

Of Special Interest -

Renewal Proposal - The RFP for the competition for funding of the NPIC was released in the Federal Register on August 23, 2004. OSU/NPIC submitted a Grant Proposal for the renewal of NPIC. On November 3, 2004 Oregon State University (OSU) received notice from EPA's IRSD that OSU had won the grant competition, and NPIC would continue under a new five-year cooperative agreement.

Issues - Topics of high interest this grant period included questions or concerns related to: West Nile virus (981), Mothball Products (409), Chromated Copper Arsenate treated wood (380 inquiries), Hartz Pet Care products (268), and Counterfeit Products (53).

WNV - The spread of West Nile virus across the United States increased the interest in mosquito control and repellent products in the West during this grant year and generated 981 inquiries.

States with the highest number of calls include: California (310); Florida (50); and Illinois (33). The most frequent topics discussed were: health effects (315); mosquito control (215); and reporting dead birds or breeding sites (196); inquiries about spray schedules (115), and inquiries about use, efficacy, or regulations (113).

Mothball Products - During the year NPIC received numerous inquiries (409) regarding the use of mothballs. Of these inquiries 165 were mothball related incidents, including 108 reports of misapplication. Inquiries primarily involved off-label use of mothballs to repel cats, rats, squirrels, and snakes in and around the home. Thirty-five of the mothball inquiries were coded as Incident Prevention, whereby the inquirer describes the intent to use mothballs for an off-label use and NPIC provided information that likely prevented the intended misuse.

Both naphthalene and paradichlorobenzene, the active ingredients

found in mothballs, made the *Top 25 Active Ingredients* tables for *All Inquiries*, while Naphthalene was contained within the *Top 25 Active Ingredient* list for a *All Incident Inquiries*.

CCA - During the year, NPIC received 380 inquiries related to Chromated Copper Arsenate (CCA) treated wood. Questions included safety of existing wood structures, permissible uses of CCA treated



wood after January 1, 2004, and potential sources for information on alternative wood preservatives.

Hartz Pet Care Products - During the period, NPIC continued to receive incident reports and other inquiries about the use of Hartz flea and tick products. Many incident reports (119) were taken during this year on Hartz products. Special reports were generated at the request of HED to supplement two prior reports provided for regulatory purposes.

Counterfeit Products - During the year, NPIC received 53 inquiries regarding counterfeit pet products. Inquiries were the result of an EPA consumer alert of a stop sale, use, and removal order issued for retailers and distributors of counterfeit Advantage and Frontline pet products for flea and tick control.

Publicity

Logo and Brochures - Due to the popularity of the NPIC full-color brochures, an additional order of 100,000 brochures was made this year. NPIC continues to increase the capabilities of its outreach program and brand its logo. Point-of-Sale marketing was pursued this year with NPIC brochures and display holders being provided to 205 Petco stores across the country, including all 137 retail stores in California, in an effort to outreach to animal caretakers. This effort will be used to obtain market research information and gauge success for future opportunities with all Petco stores.

NPIC Outreach Efforts

- Outreach administrative project structures and standard operating procedures (SOP) continued to be improved to address quality and consistency in data collection, streamlined processing of Outreach Processing Forms (OPF), tracking, sorting, and reporting capabilities. NPIC purchased

a Secap Model 26K inkjet label printer which allows printing OPF tracking numbers directly on each promotional piece (brochure, etc.) prior to dissemination. This tracking number can then be referred to by callers when they contact NPIC. These new reporting capabilities continued to improve NPIC's ability to evaluate outreach successes, track inventory, identify outreach priorities, and will assist in development of future outreach materials.

Jennifer Ketterman, Outreach Facilitator, developed an advertisement featuring NPIC services and contact information for publication in the *Seattle Times: Pacific Northwest Magazine Flower & Garden Show Guide* on February 6, 2005. Additionally, an advertisement was provided to *Parents Magazine*, resulting in NPIC's contact information being featured in the *Health and Safety Q&A* section of the April 2005 issue. As a result, NPIC has received numerous inquiries from the parents and children audience.

In addition, the American Mosquito Control Association yearly publication *WingBeats* featured a cover story about NPIC and its services at Oregon State University. Kaci Agle, an NPIC Specialist, was the primary author and directed her article to the mosquito control industry. As a result of the above outreach activities, NPIC has received numerous inquiries and disseminated NPIC brochures.

The NPIC Outreach program defines its activities as either Proactive or Responsive. Proactive outreach is initiated by NPIC, while Responsive outreach is NPIC responding to inquiries received. As a result of both Proactive and Responsive outreach this grant period, NPIC provided 58,952 brochures to our clientele. NPIC further defined outreach audiences of interest, and continues focused outreach to important groups targeting public health interests, children, elderly, tribal, and underserved populations.



Sebastian - Pesticide Specialist

Outreach Audience Definitions - Audience definitions assist NPIC in identifying and defining NPIC outreach categories, to enhance NPIC's ability to evaluate the quality and quantity of NPIC outreach efforts. The following audience codes (three letters in parentheses) are referenced in Outreach Status Reports for ease in tracking, sorting, and reviewing progress for a given audience.

Proactive Outreach - Outreach initiated by NPIC is considered proactive, and can be conducted through four methods: 1) Conferences and Events, 2) Mail-outs, 3) Publications and Editorials, or 4) Other means. NPIC proactively provided 28,896 NPIC brochures during this grant year.

The following is a summary of the number of activities performed with a particular audience and will be presented with the audience name, number of activities and number of NPIC Brochures provided by NPIC (e.g. Animal Caretakers (2/20,600)); This notation conveys that NPIC initiated 2 outreach activities with the Animal Caretakers audience and as a result, provided 20,600 NPIC brochures.

The following is a summary of the respective audiences proactively targeted this grant year:

Animal Caretakers (2/20,600); Emergency Services (1/30); Environmental Agencies and Municipal Offices (1/24); Environmental Protection Agency (3/1500); Farmers, Workers, and Applicators (16/3,005); Gardeners (2/150); General Public (1/100); Other (4/855); Physicians (2/150); State Pesticide Agencies (2/220); Tribes (3/750); Under-served (4/1,312).

Responsive Outreach - Responsive outreach relates to inquiries to NPIC by telephone, web comment, or e-mail, requesting NPIC outreach materials. NPIC provided 30,811

Audience Definitions and Codes	
<p>Animal Caretakers (ANI)</p> <p>a) Animal hospitals, zoos, retail outlets, publications, organizations, and rescue facilities which assist, educate, or have the ability to reach those who care for animals.</p> <p>b) Examples: Veterinarians, American Animal Hospital Association, PetCo Stores, Humane Society, National Zoo, Veterinary Medical Association.</p> <p>Emergency Services (EMS)</p> <p>a) Public safety organizations, publications, coordinated groups, agencies, or local governments with the mission of assisting the public during an emergency situation.</p> <p>b) Examples: Fire departments, hazardous waste management personnel, and public safety officers.</p> <p>Environmental Agencies and Municipal Offices (ENV)</p> <p>a) State, county, and municipal offices with jurisdiction over environmental regulations.</p> <p>b) Examples: USDA and state EPA/DEQ's (not pesticide regulatory agencies).</p> <p>EPA (EPA)</p> <p>a) All officials employed by the U.S. Environmental Protection Agency on a regional level or at EPA headquarters.</p> <p>Farmers, Workers, and Applicators (FAR)</p> <p>a) Organizations, publications, businesses, and farming programs who provide employment, education, support, or assistance to agriculture professionals, farm workers, and structural and landscape pest control operators.</p> <p>b) Examples: Pesticide Safety Education Programs, Pest Control Operators, and Future Farmers of America programs.</p> <p>Gardeners (GAR)</p> <p>a) Organizations, nurseries, retail outlets, coordinated groups, publications, and University Extension Service programs who provide information, assistance, or education to the non-professional gardening community.</p> <p>b) Examples: Master Gardeners; American Rose Society; Garden editors; Clubs.</p> <p>General Public/Non-targeted Audience (GEN)</p> <p>a) Organizations, agencies, general retail, and media who provide a means of reaching a large diverse group of public without classification.</p> <p>b) Examples: Readers of newspapers, customers of retail stores that cater to homeowners.</p> <p>Industry (IND)</p> <p>a) Manufacturers and distributors of pesticide products who reach the public through</p>	<p>distribution of products and/or company literature. Organizations representing industry.</p> <p>b) Examples: Manufacturers, Distributors, CropLife America, American Wood Preservative Institute.</p> <p>Other (OTH)</p> <p>a) Any other target audience, which is not represented in the other descriptions.</p> <p>Parents and Children (PAR)</p> <p>a) Organizations, associations, publications, and school, church, or extension programs whose mission is to reach out to children and/or their parents.</p> <p>b) Examples: Children's Foundation, National Childcare Foundation, parenting magazines.</p> <p>Physicians (PHY)</p> <p>a) Organizations, associations, educational programs, medical facilities, and media targeting human health care practitioners who may be interested in NPIC as an additional pesticide resource for themselves, their staff, or their patients.</p> <p>b) Examples: American Academy of Pediatrics, hospitals.</p> <p>Public Health Information Services (PHI)</p> <p>a) Organizations, associations, and state, county, or local health agencies providing public health information to diverse communities.</p> <p>b) Examples: Organization of Teratology Information Services, health departments.</p> <p>State Pesticide Agencies (SPA)</p> <p>a) State regulatory agencies involved in the registration, regulation, and/or enforcement of pesticide use within the state.</p> <p>b) Examples: Department of Agriculture (DOA), CA county agricultural commissioners.</p> <p>Tribes (TRI)</p> <p>a) Organizations, programs, and national, regional, state, or tribal governments serving nationally recognized and/or unrecognized native communities.</p> <p>b) Examples: USDA Indian Health Services, EPA regional tribal program.</p> <p>Underserved Communities (UND)</p> <p>a) Organizations, associations, and programs serving urban and rural communities of no specific ethnicity or race, and that experience minimal, or lack of quality financial, educational, and medical opportunities.</p> <p>b) Examples: National Rural Health Association, WIC, HUD, State or Local Social Services, Community Action Networks, USDA Food and Nutrition Services.</p>

NPIC Brochures in response to requests by inquirers this year.

The following is a summary of the number of inquiries received from a particular audience and will be presented with the audience name, number of inquiries and number of

NPIC brochures provided by NPIC (e.g. Animal Caretakers (13/939)); This notation conveys that NPIC responded to 13 outreach inquiries with the Animal Caretaker audience, and as a result, provided 939 NPIC Brochures.

The following is a summary of the respective audience who requested brochures this grant year: Animal Caretakers (13/939); Emergency Services (1/1); Environmental Agencies and Municipal Offices (6/1,151); Environmental Protection Agency (5/1,610); Farmers, Workers, and Applicators (24/10,844); Gardeners (13/1,530); General Public (54/4,768); Industry (7/36); Other (9/612); Parents and Children (12/1,356); Physicians (7/800); Public Health Information Services (18/3,811); State Pesticide Agencies (6/2,606); Tribes (4/510); Unserved (6/237).

In addition, NPIC mailed 38 brochures to individual households not identified or affiliated with an organization.

Special Projects - Oregon State University released two Press Releases (PR) in September 2004, after interviewing Dr. Daniel Sudakin and Dr. Terry Miller. The PR described the services offered by NPIC, how to contact NPIC, and discussed general guidelines for the safe use of DEET, other insecticides, and ways to minimize public health threats from WNV.

Dr. Daniel Sudakin was interviewed by a journalist with the Wall Street Journal and a subsequent article was published on June 23, 2004 featuring comments provided by Dr. Sudakin related to the safe use of the insect repellent DEET and, additionally, presenting the NPIC website address.

On August 27, 2004 a Central Oregon newspaper published a story related to WNV and use of Deet. Dr. Dan Sudakin was interviewed and quoted, and NPIC's telephone number was provided as a reference for insecticide and repellent information.

Efforts with OPP - NPIC was involved in outreach efforts with EPA Headquarters and OPP con-

tinues to include NPIC contact information on daily Press Advisories and, as updates are made to OPP's various web pages, NPIC is featured as a source for additional information.

In January and February 2005, CSB arranged for Spanish Radio Campaign spots on numerous radio stations in Florida. Media interviews with Lina Younes of OPP featured pesticide safety information and NPIC's telephone number was mentioned as a source of pesticide information.

Efforts with EPA Regions -

On June 21, EPA Region 2 launched a new Spanish language educational public service campaign on the Hispanic Radio Network (HRN) Planeta Azul (Blue Planet) program to highlight steps individuals may take to protect themselves from exposure to pesticides at home and at work. Listeners were referred to the EPA Publication Ten Tips to Protect your Children from Pesticides and Lead Poisoning, featuring NPIC's telephone number.

On September 29, 2004 Region 2 released an additional outreach campaign "EPA Draws Attention to Hazards of Illegal Pesticides" in Puerto Rico. NPIC's telephone number was offered as a resource for more information on illegal pesticides, their health effects, and how to dispose of these products.

Resources

NPIC acquired many books, reports, and other documents to supplement the organization's library, which serves as a resource for Specialists in responding to pesticide inquiries.

Books acquired or purchased during the 2004 grant year include: *Clinical Veterinary Toxicology*, K. Plumlee, Mosby Inc., 2004; *Who Moved My Cheese?*, S. Johnson, Putnam, 2002; *Thinking for a Change*, J. Maxwell, Warner Books, 2003; *Pesticide Manual*, C.D.S. Tomlin, BCPC Publications, 2003; *The Pesticide Book*, MeisterPro Information Resources, 2004; *Safety of Genetically Engineered Foods: Ap-*



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proaches to Assessing Unintended Health Effects, The National Academies Press, 2004; *Ornamental and Turfgrass Pest Management: A Pesticide Applicator Certification Manual for the Carolinas and Georgia*, (English and Spanish versions) NC Cooperative Extension Service, 2004; *Health Effects of Permethrin-Impregnated Army Battle - Dress Uniforms*, Committee on Toxicology, 1994; *A Map for Inclusion: Building Cultural Competency*, E. Murphy and T. Nesby, Washington State University, 2002; *Crop Protection Handbook*, Meister Media Worldwide, 2005; *Turf & Ornamental Reference for Plant Protection Products*, Vance Communication Corporation, 2005.

NPIC obtained the following EPA publications: *Draft Report on the Environment 2003*, June 2003; *National Publications Catalog 2003*, September 2003; *2003 EPA Strategic Plan*, September 2003; *After The Storm*, February, 2004; *OPP Telephone Directory*, 2004; *EPA's Role in Water Security Research*, August 2004; *Pesticides Industry Sales and Usage: 2000 and 2001 Market Estimates*, May 2004; *The Worker Protection Standard For Agricultural Pesticides-How to Comply: What Employers Need to Know*, July 1993 (collection duplicate); *Environmental Labeling Issues, Policies, and Practices Worldwide*, December 1998.

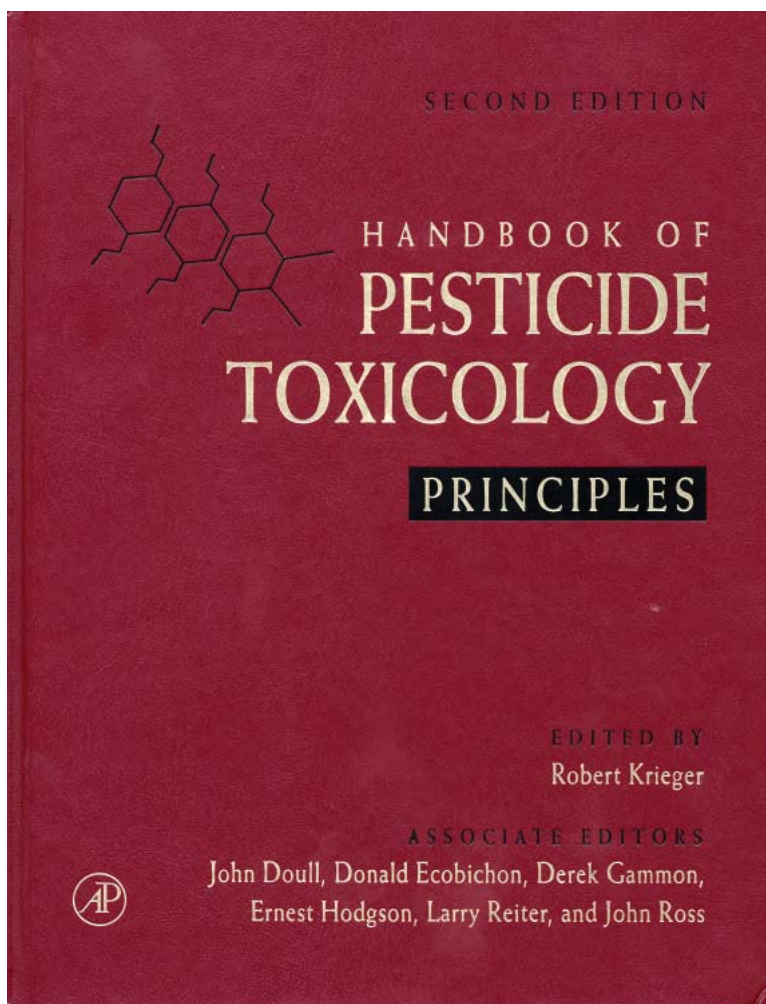
NPIC acquired the following EPA, OPP, Reregistration Eligibility Decision documents: *Oxyfluorfen (RED)*, October 2002; *Lindane*

(RED), April 2004; *Diazinon (IREG)*, May 2004; *Lactofen (TRED)*, September 2003; *Thiabendazole and Salts (RED) (official bound)*, August 2002; *Oryzalin (TRED)*, May 2004; *Diruon (RED)*, September 2003; *Methyl Parathion (IREG)*, May 2003; *4-Chlorophen-*

September 2004; *Captan Amendment (RED)*, November 2004; *Dinocap (RED)*, May 2003; *Ethoxyquin (RED)*, November 2004; *Chlorethoxyfos (IREG)*, June 2000; *Flumetsulam (TRED)*, September 2004; *Desmedipham (TRED)*, July 2004; *Pronamide (TRED)*, July

2002; *Chlorpropham (TRED)*, July 2002; *Asulam (TRED)*, August 2002; *Butylate (TRED)*, September 2001; *Cycloate (RED)*, September 2004; *Fluridone (TRED)*, September 2004; *Fenamiphos (IREG)*, May 2002; *Tebuthiuron (TRED)*, July 2002; *Carbaryl (Revised IREG)*, October 2004; *Atrazine (Revised IREG)*, January 2003; *Thiophanate-methyl (RED)*, March 2003; *Tetrachlorvinphos (TRED)*, July 2002; *Desmedipham (RED)*, March 1996; *Dicrotophos (IREG)*, May 2004; *Chlorimuron ethyl (TRED)*, September 2004; *Bromacil (RED)*, August 1996; *D-Limonene (TRED)*, July 2004; *Carbon Dioxide (TRED)*, April 2004; *Nitrogen (TRED)*, April 2004; *Imazamethabenzmethyl (TRED)*, February 2005; *2,4-DB (RED)*, January 2005; *Sodium Acifluorfen (RED)*, September 2003; *Thiram (RED)*, September 2004; *Nicosulfuron (TRED)*, December 2004; *Carboxin (RED)*, September 2004; *Methyl Eugenol (TRED)*, December 2004; *Oxycarboxin (RED)*, September 2004; and *Imazalil (RED)*, September 2003.

NPIC added the following publications from DHHS/ATSDR, to its library this year: *Propylene Glycol Mono-t-Butyl Ether (Inhalation Studies)*, March 2004; *NTP Techni-*



oxyacetic Acid, April 2003; *Di-n-propyl isocinchomeronate (MGK Repellent 326) (RED)*, September 2003; *Methoxychlor (RED)*, June 2004; *Oxadiazon (RED)*, September 2003; *Ziram (RED)*, September 2003; *Benfluralin (RED)*, July 2004; *Oxadiazon (RED)*, November 2004; *Fenbutatin-Oxide (TRED)*, May 2002; *Linuron (TRED)*, May 2002; *Hexazinone (TRED)*, August 2002; *Metolachlor (TRED)*, June 2002; *Norflurazon (TRED)*, May 2002; *Oxadixyl (TRED)*, October 2001; *Chlorsulfuron (TRED)*, August 2002; *MCPA (RED)*,

cal Report on the Toxicity Studies of 1,1,2,2-Tetrachloroethane, March 2004; *Toxicology and Carcinogenesis Studies of Stoddard Solvent IIC in F344/N Rats and B6C3F₁ Mice*, 2004; *Toxicology and Carcinogenesis Studies of Triethanolamine*, May 2004; *Toxicology and Carcinogenesis Studies of Elmiron*, May 2004; *Pocket Guide to Chemical Hazards*, February 2004; *Help Yourself to a Healthy Home, Protect Your Children's Health*, U.S. Department of Housing and Urban Development.

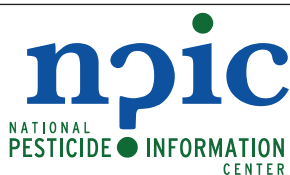
World Health Organization International Programme on Chemical Safety publications received by NPIC include: *Climate Change and Human Health*, 2003; *Concise International Chemical Assessment Document No. 57, Glyoxal*, 2004; *Concise International Chemical Assessment Document No. 58, Chloroform*, 2004; *Concise International Chemical Assessment Document No. 59, Asphalt (Bitumen)*, 2004; *Concise International Chemical Assessment Document No. 60, Chlorobenzenes other than Hexachlorobenzene: Environmental Aspects*, 2004; *Concise International Chemical Assessment Document No. 61, Hydrogen Cyanide and Cyanides: Human Health Aspects*, 2004; *Concise International Chemical Assessment Document No. 62, Coal tar creosote*, 2004; *Concise International Chemical Assessment Document No. 63, Manganese and its Compounds: Environmental Aspects*, 2004; *Risk Assessment Terminology*, 2004; and *The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification 2004*.

Other World Health Organization publications received by NPIC include: *Making a Difference: Indicators to Improve Children's Environmental Health*, (Full Report) 2003; *Making a Difference: Indicators to Improve Children's Environmental Health*, (Summary) 2003; *Journal of Water and Health*, Vol. 2, No. 1, 2004; *Journal of Water and Health*,

Vol. 2, No. 2, 2004; *Journal of Water and Health*, Vol. 2, No. 3, 2004; *Safe Piped Water: Managing Microbial Water Quality in Piped Distribution Systems*, 2004; *Water Treatment and Pathogen Control: Process Efficiency in Achieving Safe Drinking-Water*, 2004; *Pathogenic Mycobacteria in Water: A Guide to Public Health Consequences Monitoring and Management*, 2004; *Waterborne Zoonoses: Identification, Causes and Control*, 2004; *Meeting the MDG Drinking Water and Sanitation Target: A Mid-Term Assessment of Progress*, 2004; *Guidelines for Drinking-Water Quality*, 2004; *Water, Sanitation and Health Electronic Library [CD-ROM]*, 2004; and *Journal of Water and Health*, Vol. 2, No. 4, 2004.

Other publications received by NPIC include: *Pesticide Data Program: Annual Summary Calendar Year 2002*, U.S. Dept. of Agriculture, 2004; *County Agents Directory*, Doane Agricultural Services Co., 2004; *Renewable Agriculture*

and Food Systems, Cabi Publishing, 2004; *British Journal of Nutrition*, The Nutrition Society, 2004; *Idaho Pesticide Applicator Training Manual: A Guide to Safe Use and Handling for Applicators and Dealers*, Idaho State Department of Agriculture, 1999; *Toxicology and Carcinogenesis Studies of Urethane, Ethanol, and Urethane/Ethanol in B6C3F₁ Mice*, National Institutes of Health, 2004; *Recruiting and Supporting Latino Volunteers*, Oregon State University, 2000; *Homeowner's Guide to Pesticide Safety [Video]*, Washington State University, 2000; *Homeowner's Guide to Integrated Pest Management [Video]*, Washington State University, 2000; *Competency-To-Curriculum Toolkit: Developing Curricula For Public Health Workers*, Columbia University School, 2004; *21 Code of Federal Regulations: Protection of Environment, Parts 170 to 199*, National Archives and Records Administration, 2004; *40 Code of Federal Regulations: Protection of Environment, Parts*



Using DEET Safely

(Medical Case Profile)

Scenario:

An adult female presents to her primary care provider approximately 24 hours after a weekend camping trip. She is experiencing pain and redness in the antecubital fossa of her left arm. She does not report any known history of trauma or insect bites. Upon further history, it is learned that she had applied an insect repellent containing 50% DEET to exposed areas of the skin including the neck, arms, and lower extremities. She had used lower concentrations of DEET repellents in the past, with no reported history of adverse skin reactions. On this occasion, the insect repellent was applied approximately 18 hours prior to the onset of symptoms. She reports that she did not wash the treated skin at the end of the day. She does not report applying sunscreen or taking any medications prior to the onset of the rash. No other unusual exposures are reported.

Upon examination, a well-demarcated area of erythema is apparent in the left antecubital fossa. It is warm and tender to palpation. There are no other abnormal findings on physical examination. Upon re-evaluation 48 hours later, hemorrhagic blisters form in the erythematous area. Two days later the bullae spontaneously rupture, leaving a shallow ulceration which resolves over the course of the next 10 days.

Discussion:

DEET (chemical name N,N-diethyl-3-methylbenzamide, former nomenclature N,N-diethyl-*m*-toluamide—Figure 1) is a widely utilized active ingredient in insect repellents. It was first developed for use by military personnel in 1946. Adverse skin reactions associated with DEET have been

Figure 1: DEET



150 to 189, National Archives and Records Administration, 2004; *In Vitro Plant: Cellular & Development Biology*, Vol. 40, No. 6, Society for In Vitro Biology, CABI Publishing, 2004; *Renewable Agriculture and Food Systems*, Vol. 19, No. 4, CABI Publishing, 2004; *IMI Descriptions of Fungi and Bacteria*, Set 160, CABI Publishing, 2004; *IMI Descriptions of Fungi and Bacteria*, Set 161, CABI Publishing, 2004; and *Proceeding of the International Conference on Pesticide Application for Drift Management*, Washington State University, 2004.

Foreign Language Resources acquired by NPIC this grant year include the following books: *Manual para Aplicadores Privados de Pesticidas*, Cooperative Extension Service, Washington State University, 2001; *Los Principios de Manejo de la Malezas en Césped y Plantas Ornamentales: incluye las leyes y la seguridad con los plaguicidas*, Cooperative Extension Service, Washington State University, January, 2004; *Control de Plagas de pastos de césped y plantas ornamentales*, North Carolina Cooperative Extension Service, NC State University; Cooperative Extension Service, The University of Georgia; Clemson Cooperative Extension Service, Clemson University; CropLife Foundation, May, 2004; *La Seguridad General Para los Pesticidas - Illinois*, University of

Illinois, 1999; *Bilingual General Standards Workbook*, University of Illinois, 2004; *Guia sobre seguridad y salud en el uso de productos agroquimicos*, Oficina Internacional del Trabajo (OIT), 1993.

Foreign language EPA Publications include: *Qué Debo Hacer...Si he estado expuesto a los pesticidas?*, 2000; *Protect Yourself from Pesticides*, (Spanish, Haitian Creole, Vietnamese, Cambodian, Laotian), October 1995; *Una Breve Guia para el Moho, la Humedad y su Hogar*, 2003; *Como Proteger a los Niños de los Riesgos Ambientales*, Spanish Growth Chart, 2004.

Other Foreign Language resources include USDA Publications: *Pesticide Record Keeping Requirements*, (Spanish, 1998; Ilocano, 2002; Laotian, 1995; Korean, 2003); USDA and US Department of Housing and Urban Development's *Contribuya a tener un Hogar Sano; Proteja la salud de sus hijos*, 1992-2002.

Personnel Update

NPIC hired five full-time Pesticide Specialists during the 2004-05 grant year. Four Pesticide Specialists resigned during this period. One Pesticide Specialist reduced her hours after becoming a new mother. One student worker was hired to assist with office support and one graduate-level student was

hired to assist with active ingredient file management. Recruitment for full-time Specialists and a graduate-level student was ongoing.

NPIC's current staff includes a full-time Project Coordinator, eleven full-time Specialists, a full-time information resource supervisor, a part-time fiscal/personnel manager, and three part-time undergraduate student assistants. All Specialists have at least a bachelors degree in a scientific field; many have advanced degrees. Specialists come from a variety of scientific disciplines including toxicology, plant pathology, environmental science, microbiology, biotechnology, horticulture, botany, ecology, soil science, among others.

Facilities

NPIC purchased six Dell Precision 360 workstations to replace aging equipment. NPIC purchased a service contract for a Sun Microsystems Sunfire 280R in order to facilitate replacement of a failed main system board. Two, four-drawer file cabinets were purchased this year to accommodate the expanding English and Foreign Language Active Ingredient and General File collections. NPIC purchased a Se-cap Model 26K inkjet label printer to aid in outreach and marketing efforts.

Traffic Report

Traffic Report Summary

There are basically three main means of inquiry to NPIC - telephone, email, and the World Wide Web. For purposes of this report, use of the terms “inquiry”, “inquiries”, and “inquirer” generally refer to use of the telephone or email to contact NPIC. Unless otherwise specified, inquiries to NPIC via the WWW are referred to as “hits”.

NPIC answered 24,765 inquiries received via phone and/or email during its tenth year of operation (April 2004 - March 2005) at Oregon State University. Most of the inquiries received by NPIC are quite sophisticated, requiring extensive expertise on the part of the Specialists to be able to provide answers which are objective, science-based and, at the same time, presented in an understandable way to the inquirer.

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

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

The means by which people contact NPIC is shown in Table 3.1. The telephone was by far the most important verbal contact route. However, many people accessed NPIC through its World Wide Web site.

During this year, the web site received 911,258 hits. (Table 4.1 and

Graphs 4.1 - 4.6). In addition, 897 direct inquiries were made to NPIC via email.

The variety of inquirers to NPIC is shown in Table 5.1 and Chart 5.1. The predominant number of inquiries received by NPIC were from the general public.

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

Most of these information inquiries, and others listed in Table 6.1, were

Medical Monitoring Program (NPMMP, a cooperative project between Oregon State University and the U.S. EPA to provide medical consultation and follow-up to potential pesticide exposures), or a state lead agency (such as a State Department of Agriculture).

The inquirers to NPIC represented all 50 states, as well as Canada and other foreign nations. Table 9.1 shows the number of inquiries from each of the states, Puerto Rico, the Virgin Islands, and other locations. The 10 states where most of the inquiries were from is presented in Graph 9.1. Residents from Califor-



prompted by concern/knowledge of the inquirer (Table 7.1 and Charts 7.1 and 7.2). Only about 9.9% of the inquiries were to report a pesticide incident.

Most inquirers received information verbally from a Specialist (Table 8.1 and Charts 8.1 and 8.2). Some inquirers also requested and received written information. In addition, many inquiries were referred to either EPA, National Pesticide

nia, Texas, and New York initiated the greatest number of inquiries. Also shown in Table 9.1 and presented in Graph 9.2 are the number of inquiries from each of the EPA regions.

The total number of inquiries, as well as the number of information and incident inquiries, for the 25 most asked about pesticide active ingredients are presented in Table 10.1. For incident inquiries, the

value shown in parentheses indicates the number of incidents with a certainty index of 1 (definite) or 2 (probable). The 10 active ingredients mentioned most often in all inquiries are presented in Graph 10.1. The 25 active ingredients most frequently mentioned in incident inquiries are listed in Table 11.1. Incident inquiries are further classified by entity type. The 10 active ingredients most often mentioned in incident inquiries are presented in Graph 11.1.

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

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

The incident inquiries are further categorized by whether the incident involved a human, animal, or building/other (Table 14.1 and Graph 14.1). The incident inquiries for each entity type are qualified by the certainty index. The certainty index is an estimate by NPIC as to whether the incident was either definitely (1), probably (2), possibly (3), or unlikely (4) to have been caused by exposure to a pesticide, or whether the incident was unrelated (5) to pesticides. A certainty index of zero (0) reflects those inquiries where the inquirer reported being exposed to a pesticide, but no symptoms were present. For human entities presented in Table 14.1, the certainty index is further categorized by gender and group.

Table 15.1 and Chart 15.1 list the descriptions for the entities involved in incidents, as female, male, groups, animals, and other.

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

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

Ages were available for some of the entities and are presented in Table 18.1 and Graph 18.1.

Traffic Report Tables and Figures

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

Information collected and entered into the PID for information inquiries includes: origin of inquiry (e.g., telephone or e-mail), state from which the inquiry originated, type of person (e.g., general public, government agency, or medical

personnel), type of inquiry (e.g., request for pesticide information or report of pesticide incident), reason for inquiry (e.g., concern/knowledge in the case of information inquiries), and action required (e.g., verbal information, referral, or mailed information). If a specific pesticide product or active ingredient is discussed, the product and/or active ingredient is entered into the database. Details of an inquiry, including what the inquirer told or asked the Specialist, and how the Specialist responded to the inquirer, are recorded as a narrative statement in the PID.

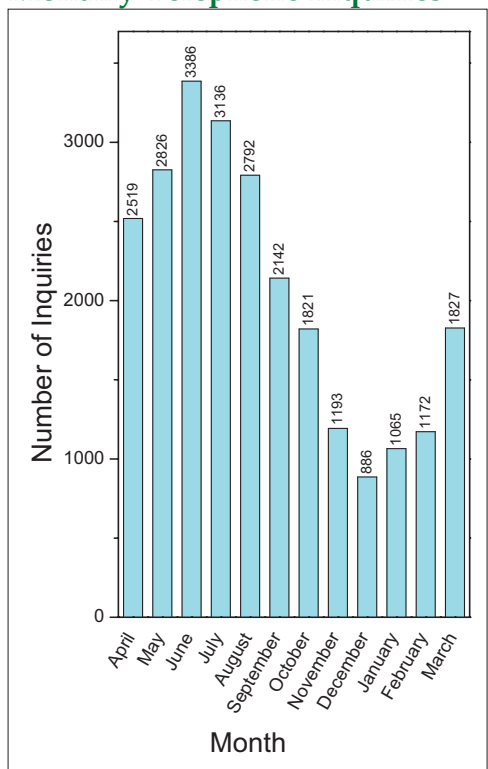
When incidents are reported, more detailed and specific information is recorded, including: type of incident (e.g., exposure, spill, drift), location of the incident and information about the entity, including age, gender, nature of the exposure, and reported symptoms. For incidents involving reported human or animal health effects, and for environmental incidents, a certainty index is assigned. The certainty index is an estimate by NPIC (based on information provided by the inquirer) as to the likelihood that the reported effects were caused by exposure to a pesticide. Additionally, if an incident involves an environmental impact, the nature of the impact is recorded in the database (e.g., impact to air, water, or soil).

Following is a summary of selected data from the NPIC Pesticide Incident Database for the 2004 NPIC operational year:

1. Monthly Inquiries

NPIC received 24,765 inquiries via telephone and/or email during the 2004 grant year. Graph 1.1 shows the number of inquiries received for each month. Eighty-three percent of the inquiries were received between March and October, coinciding with that part of the year when most pest pressures are highest. Total inquiries received during previous grant and calendar years is provided for comparison in Table 1.1.

**Graph 1.1 -
Monthly Telephone Inquiries**



NPIC Pesticide Specialists deliver information in a user-friendly manner and are adept at communicating scientific information to the lay public.

**Table 1.1 -
Monthly Telephone Inquiries**

Month	Number of Inquiries				
	2000	2001	2002	2003	2004
April	2121	2358	2650	2328	2519
May	2680	3118	2942	2891	2826
June	3296	3097	3060	3267	3386
July	2901	3045	3154	3143	3136
August	2770	2676	3326	2747	2792
September	2059	1642	2187	2026	2142
October	1696	1621	1664	1597	1821
November	1177	1171	1030	1032	1193
December	795	825	839	796	886
January	983	1142	1050	969	1065
February	997	1224	1067	1077	1172
March	1572	1592	1580	1736	1827
Calendar ¹⁾ Yr Tot	23911	23105	24810	23524	24483
Grant ²⁾ Yr Tot	23047	23511	24549	23609	24765

¹⁾ January 1 through December 31.

²⁾ April 1 through March 31.



Louisa - Pesticide Specialist

2. Type of Inquiry

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

The majority of inquiries (20,449 or 82.6%) to NPIC were information inquiries in which the inquirer requested information about pesticides or pesticide-related matters (Chart 2.1). Information inquiries may involve a discussion of a specific pesticide, or of pesticides in general. NPIC responded to 9,900 (40.0%) information inquiries about specific pesticides, for example: a) Caller wanted to know if Shotgun Deer and Rabbit Repellent (putrescent whole egg solids, garlic oil, capsaicin) would repel birds. Caller is trying to keep the squirrels out

of the bird feeder; and b) Caller reports she hired lawn company to apply organic pesticides to her lawn, they used EPA Registration Number 2217-709, 10404-62, 10404-82. Caller seeking health information on these products.

NPIC responded to 10,547 (42.6%) inquiries relating to pesticides in general, for example: Caller reports she will be having the inside of her home treated for cockroaches and the pest control company will be applying the pesticide to baseboards and crack/crevices. Caller reports she is concerned about the health risks to her two and four yr. old child.

NPIC responded to 2,455 (9.9%) inquiries about pesticide incidents. A pesticide incident is a spill, a misapplication, a contamination of

a non-target entity, or any purported exposure to a pesticide, regardless of injury. The majority of incident inquiries involved human and animal entities (Chart 2.2). Of the 2,455 incident inquiries, 1,089 (44.4%) involved a human entity, 984 (40.1%) involved an animal entity, and 382 (15.5%) involved damage to a building such as a home or office.

NPIC also took 1,863 (7.5%) inquiries that were not related to pesticides, for example: a) Caller wanted information on health effects of Vaseline petroleum jelly and bleach; and 2) Caller wanted to know why american stove pipe could not be used in Canada. Caller was trying to find the company “Do-It-Yourself”.

Table 2.1 - Type of Inquiry

Type of Inquiry	Number of Inquiries				
	2000	2001	2002	2003	2004
Information - Specific Pesticide	9941	9952	10831	9907	9900
Information - General Pesticide	10093	11049	11152	11056	10547
Incidents	2193	1916	1884	1777	2455
Human Incidents	1215	952	826	718	1089
Animal Incidents	561	583	740	763	984
Building/Other	416	381	318	296	382
Other - Non-Pesticide	820	593	682	869	1863
Grant Year Total =	23047	23511	24549	23609	24765

Chart 2.1 - Type of Inquiry

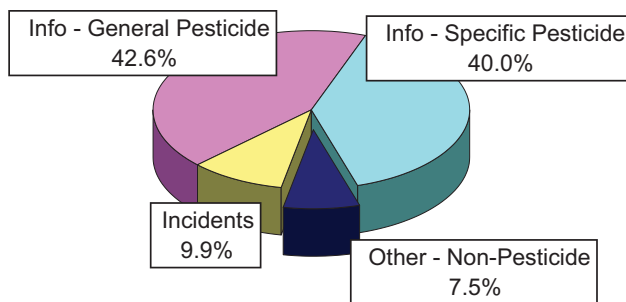
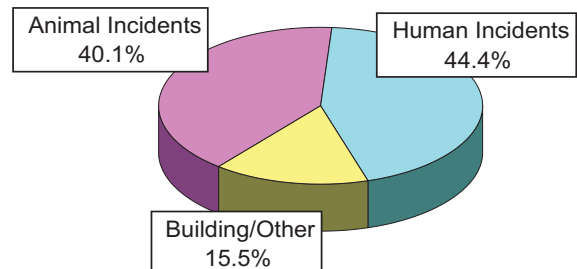


Chart 2.2 - Incidents



3. Origin of Inquiry

Table 3.1 summarizes the origin of inquiries received by NPIC. Most inquiries are received by telephone. Of the 24,765 inquiries, 23,242 (93.9%) were received by telephone, 598 (2.4%) were recorded by a voice mail system, 19 (0.1%) were received by postal mail, 8 were walk-in inquiries, and 897 (3.6%) were by email.

**Table 3.1 -
Origin of Inquiry**

Origin of Inquiry	Number of Inquiries				
	2000	2001	2002	2003	2004
Telephone	21838	22163	23094	21999	23242
Voice Mail	615	660	607	671	598
Mail	48	46	45	24	19
Walk In	2	6	2	12	8
E-Mail	544	620	795	901	897
Other	0	16	6	2	1
Grant Year Total =	23047	23511	24549	23609	24765

Read the Label *First!*



READ ENTIRE LABEL *FIRST!*

**- BEFORE YOU *BUY, USE,*
OR *STORE* A PESTICIDE.**

4. Web Site Access

The NPIC World Wide Web site continues to be a popular source of information for NPIC clientele. The NPIC web site received 911,258 hits.

Graph 4.1 shows the number of total hits per grant year. Table 4.1 and Graph 4.2 summarizes the number of web site hits to NPIC main web pages. Graph 4.3 shows the number of hits for emergency-related information. The number of hits (144,076) to the NPIC West Nile virus web pages is shown in Graph 4.4. Hits to case profiles, a new NPIC project, are shown in Graphs 4.5 and 4.6. Further, Graphs 4.7 and 4.8 detail the number of hits for NPIC fact sheets (>158,000 hits). Web hits are a major form of inquiry to NPIC, in addition to telephone and email. The NPIC InfoBase received 25,900 hits this year.

Graph 4.1 - NPIC Total Hits per Year

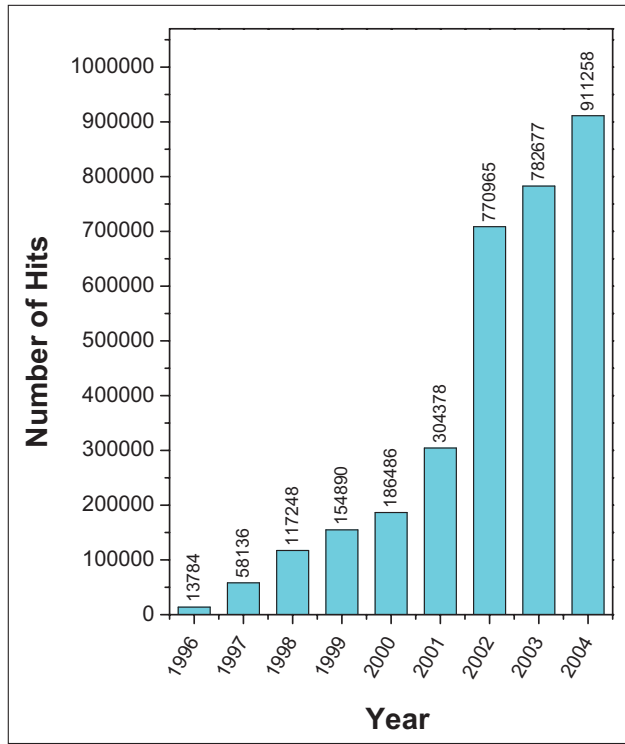
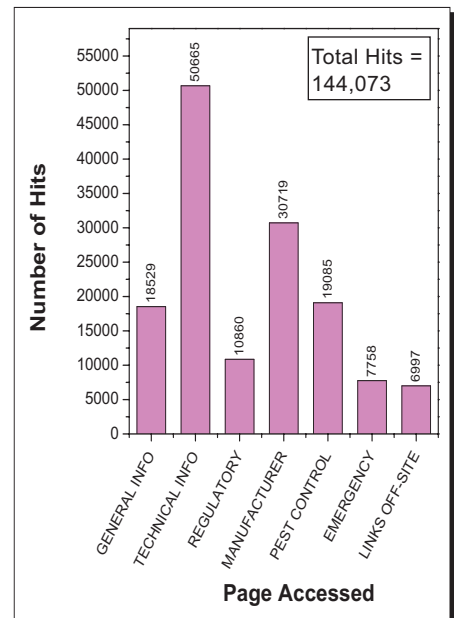


Table 4.1 - Selected Web Hits

Page Accessed	# of Hits NPIC
General Information	18529
Technical Information	50665
Fact Sheets	158601
State Regulatory Agencies	24733
Recognition & Management of Pesticide Poisoning	42519
Manufacturer Info	47111

Graph 4.2 - Hits to NPIC Main Web Pages

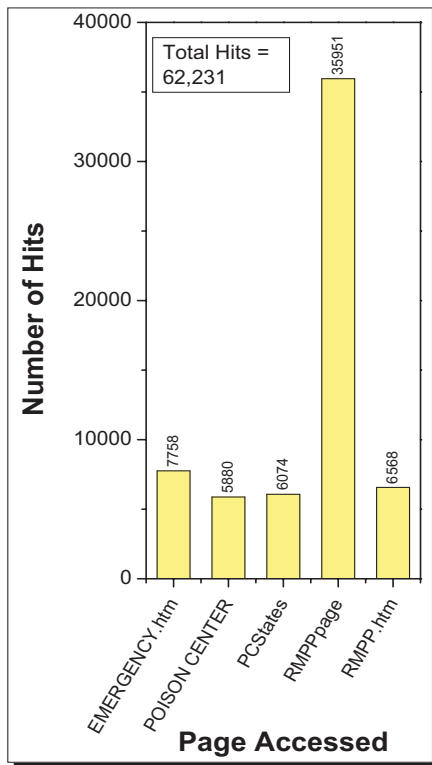


Feedback from Web Site Comment Form -

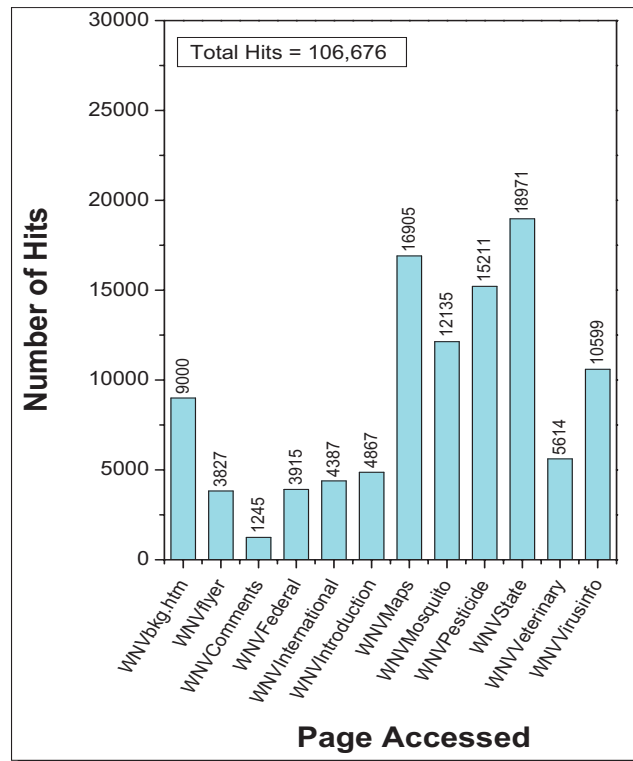
“Been doing some research over the past 4 days,,,your site has cut my time by 3/4’s. Yours’ is a great site and I appreciate your efforts.

Thank you!”

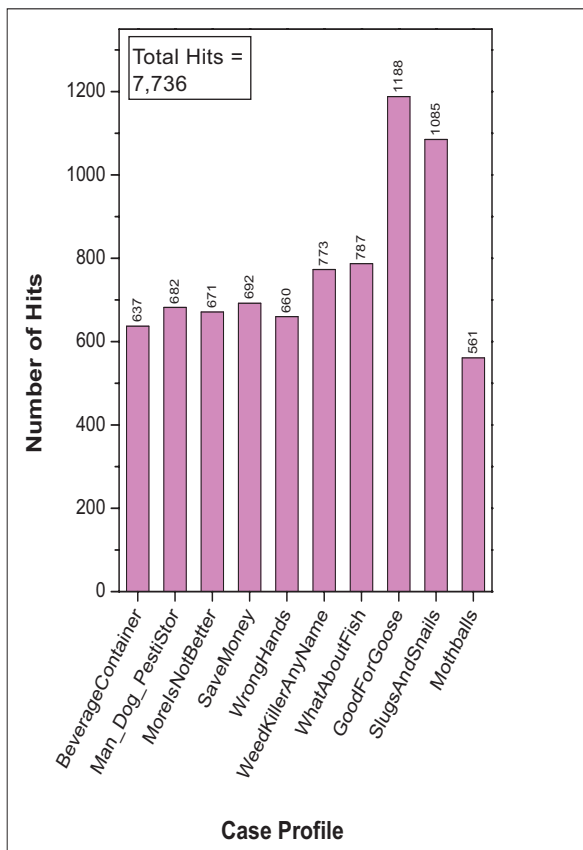
Graph 4.3 - Hits to Emergency Information Pages



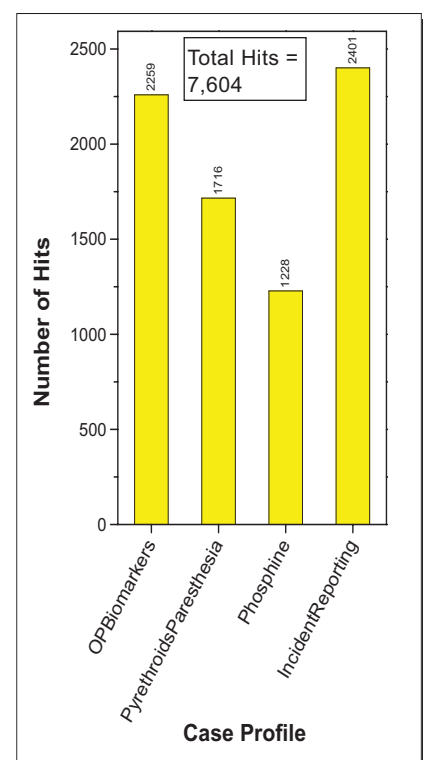
Graph 4.4 - Hits to WNV Pages



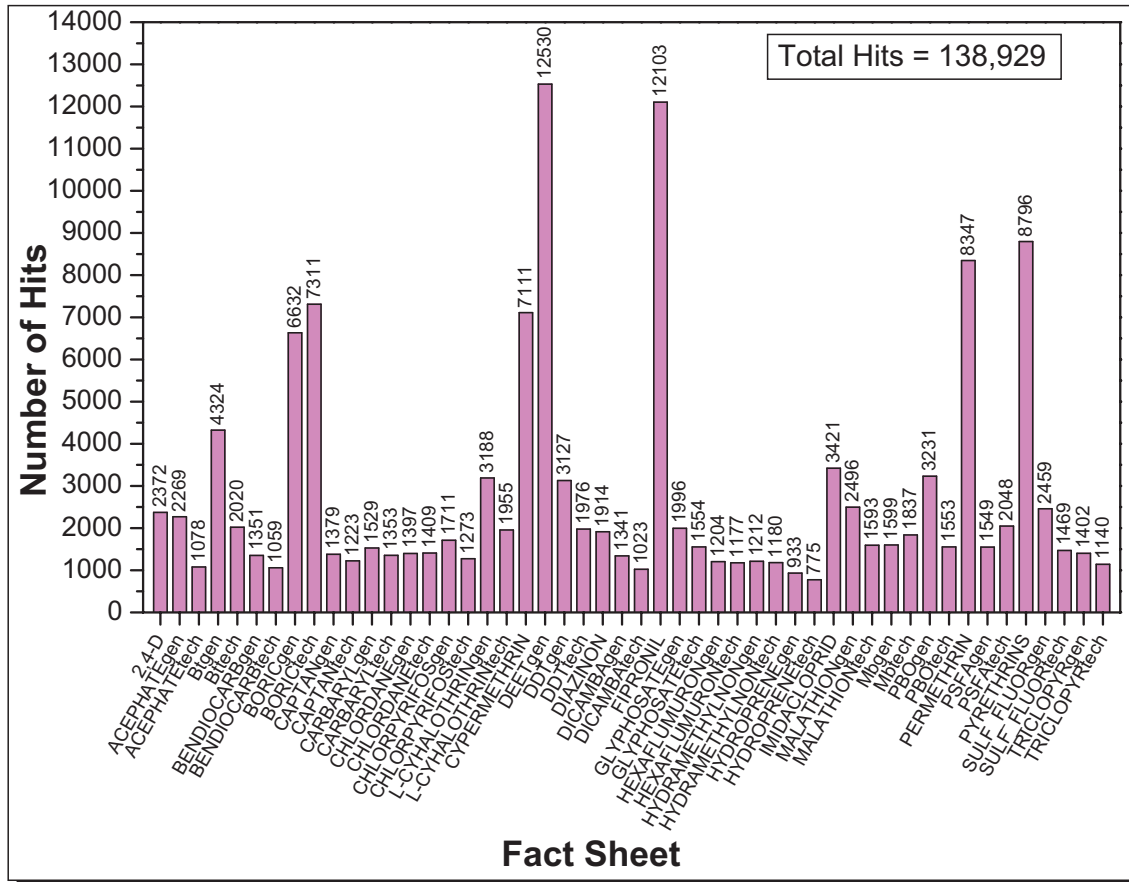
Graph 4.5 - Hits to Case Profiles



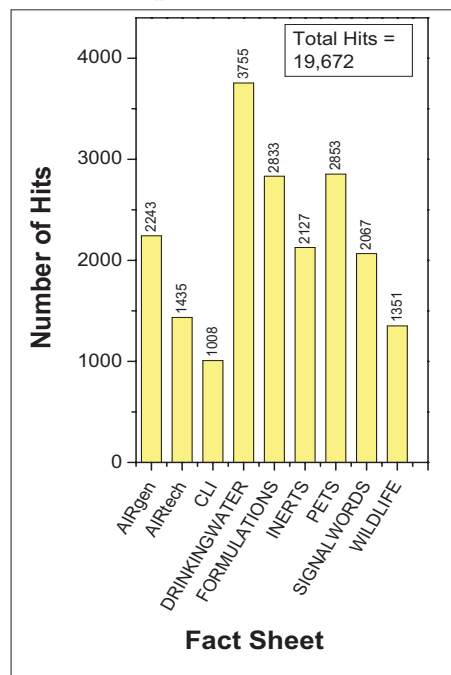
Graph 4.6 - Hits to Medical Case Profiles



Graph 4.7 - Hits to Active Ingredient Fact Sheets



Graph 4.8 - Hits to Topic Fact Sheets



NPTN General Fact Sheets are designed to answer questions that are commonly asked by the general public about pesticides that are regulated by the U.S. Environmental Protection Agency (US EPA). This document is intended to be educational in nature and helpful to consumers for making decisions about pesticide use.

National
Pesticide
Telecommunications
Network

DEET

(General Fact Sheet)
For more technical information please refer to the Technical Fact Sheet

The Pesticide Label: Labels provide directions for the proper use of a pesticide product. *Be sure to read the entire label before using any product.* A signal word, on each product label, indicates the product's short-term toxicity.

CAUTION - low toxicity WARNING - moderate toxicity DANGER - high toxicity

What is DEET?

- DEET (short for N,N-diethyl-m-toluamide) is a commonly used insect repellent for several types of biting and sucking insects, including mosquitoes, flies and ticks.
- DEET is one of the few pesticides that can be applied to human skin or clothes.
- DEET does not actually kill insects, but repels them from treated areas.

How does DEET work?

- Even though it has been in use for over 40 years, scientists are not completely sure how DEET repels biting insects.
- DEET most likely affects the insect's ability to locate animals to feed on. Scientists believe that DEET disturbs the function of special receptors in mosquito antennae that sense chemicals that are produced by humans and other animals (1).

5. Type of Inquirer

Graph 5.1, Table 5.1, and Chart 5.1 summarize the profession/occupation of individuals contacting NPIC. The majority of inquiries made to NPIC are from the general public. Of the 24,765 inquiries received, there were 21,334 (86.1%) from the general public; 840 (3.4%) from federal, state, or local government agencies; 590 (2.4%) from human and animal medical personnel; 560 (2.3%) from information groups including the media, unions, environ-

mental organizations and pesticide manufacturing or marketing companies; 794 (3.2%) from consumer users including legal or insurance representatives, laboratory or consulting personnel, pest control operators, retail store personnel, or farm personnel; and 621 (2.5%) inquiries from other professions/occupations.

Graph 5.1 - Type of Inquirer

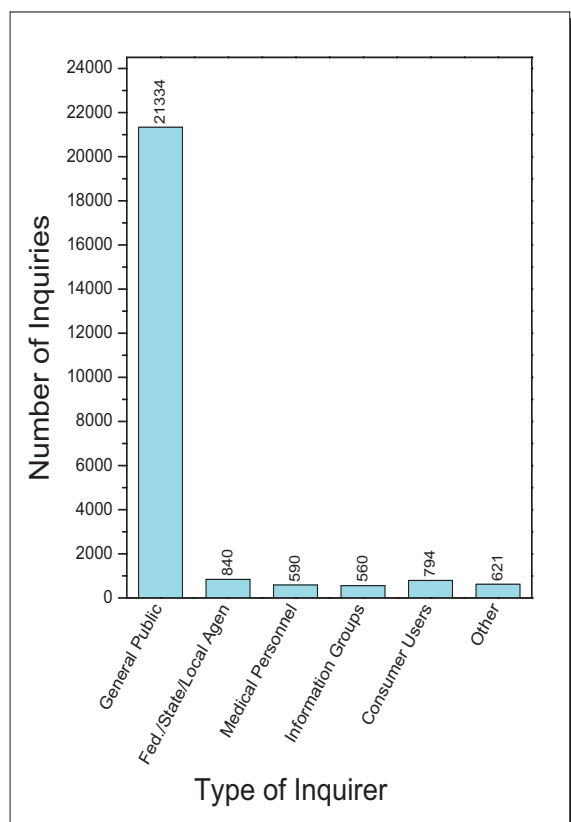
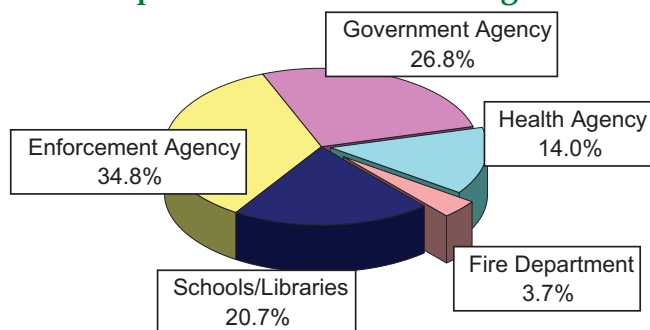


Table 5.1 - Type of Inquirer

Type of Inquirer	Number of Inquiries				
	2000	2001	2002	2003	2004
General Public	20209	20351	21537	20443	21334
Federal/State/Local Agency					
Health Agency	104	86	133	116	118
Government Agency	605	611	519	221	225
Enforcement Agency	2	23	111	387	292
Schools/Libraries	209	336	241	165	174
Fire Department	26	39	33	32	31
Medical Personnel					
Human Medical	290	315	333	315	290
Animal Vet./Clinic	252	268	230	238	292
Migrant Clinic	4	8	7	10	8
Information Groups					
Media	142	111	145	121	101
Unions/Info. Service	51	75	72	180	147
Environmental Org.	113	100	102	82	114
Pesticide Mfg./Mktg. Co.	136	173	174	202	198
Consumer Users					
Lawyer/Insurance	107	98	72	62	50
Lab./Consulting	100	80	65	56	106
Pest Control	149	183	196	161	183
Retail Store	197	286	257	308	384
Farm	44	63	58	37	71
Other	307	270	233	435	621
Grant Year Total =	23047	23511	24549	23606	24765

Chart 5.1 - Governmental Agencies Inquiries - Governmental Agencies



6. Type of Question

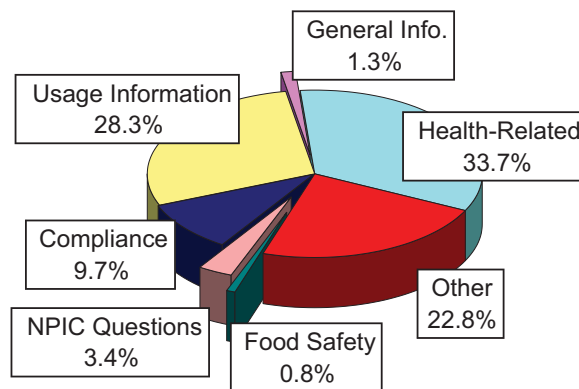
The types of questions received at NPIC are most often related to health effects of pesticides (Chart 6.1 and Table 6.1). NPIC responded to 8,357 (33.8%) inquiries related to health effects of pesticides, including inquiries about general health, treatment and testing, and laboratory questions. In addition, there were 7,019 (28.3%) inquiries involving requests for pesticide usage information, including questions about use on specific pests or crops, chemical information, pros and cons of application, safety and application questions, cleanup questions, questions about preharvest intervals, and lawn care usage questions.

NPIC also responded to 2,395 (9.7%) inquiries involving compliance questions, including questions about regulations, disposal, and complaints. Lastly, there were 184 (0.7%) inquiries about other food safety issues, 325 (1.3%) inquiries involving general pesticide questions, 847 (3.4%) inquiries involving questions about NPIC, and 5,638 (22.8%) inquiries not classified according to type of question.

**Table 6.1 -
Type of Question**

Type of Question	Number of Inquiries				
	2000	2001	2002	2003	2004
Health Related					
Health	8717	9283	9287	7850	7891
Treatment	100	125	125	159	278
Testing Lab.	104	97	86	169	188
Usage Information					
Pest/Crop	1570	1732	2292	1918	2007
Chemical	2482	2342	2252	824	697
Pros and Cons	74	65	67	75	69
Safety/Application	2038	2446	2885	3559	3760
Cleanup	376	290	274	255	296
Harvest Intervals	123	111	88	123	162
Lawn Care	30	18	12	40	28
Compliance					
Regulations	1427	1587	1565	1597	1484
Complaints	321	390	506	492	747
Disposal	211	178	165	134	164
Food Safety					
General	189	234	237	227	184
NPIC Questions	544	325	201	323	325
Non-Pesticide Related	918	1139	1125	1042	847
Other	12	1	6	3	0
Grant Year Total =	23047	23511	24549	23608	24765

**Chart 6.1 -
Type of Question**



"I've been told that my home needs to be treated with pesticides to kill termites. I am pregnant, and I am wondering if the chemicals will hurt my unborn baby? What about my other children?"

7. Reason for Inquiry

Specialists identify the reason for inquiry for all inquiries received by NPIC (Table 7.1 and Charts 7.1 and 7.2). The reason for inquiry for all information inquiries is Concern/Knowledge. The reason for inquiry for incident inquiries varies according to the nature of the incident. Of the 2,455 inquiries for which a reason was available, there were 1,969 (80.3%) about pesticide exposure, and 409 (16.7%) about accidents. There were 42 (1.7%) inquiries about odor only, and 33 (1.3%) inquiries for other reasons. The reason for all other (non-pesticide) inquiries is N/A–Unknown.

Table 7.1 - Reason for Inquiry

Reason for Inquiry	Number of Inquiries				
	2000	2001	2002	2003	2004
Information Inquiries					
Concern/Knowledge	20719	21465	22586	21476	20988
Incident Inquiries					
Exposures					
Dermal - Acute	336	315	496	482	655
Dermal - Chronic	4	10	10	12	18
Ingestion - Acute	382	359	400	443	647
Ingestion - Chronic	3	3	6	7	3
Inhalation - Acute	248	153	140	115	227
Inhalation - Chronic	6	18	12	20	61
Exposure Possible	324	215	150	127	163
Unknown/Many	258	268	219	176	181
Occupational	23	26	20	7	14
Accidents					
Misapplic. - Homeowner	189	198	172	165	229
Misapplic. - PCO	72	59	41	37	42
Misapplic. - Other	31	31	17	24	29
Spill - Indoor	115	102	74	59	44
Spill - Outdoor	19	25	19	10	16
Contamination - Home	11	2	3	3	5
Contamination - Other	11	7	2	2	7
Drift	62	48	49	33	37
Fire - Home	1	1	0	0	0
Fire - Other	3	1	0	1	0
Industrial Accident	0	0	0	0	0
Odor Only	77	55	32	24	42
Testing Laboratory	0	1	0	0	0
Other	39	27	22	30	33
N/A-Unknown	114	122	79	356	1324
Grant Year Total =	23047	23511	24549	23609	24765

Chart 7.1 - Pesticide Exposures

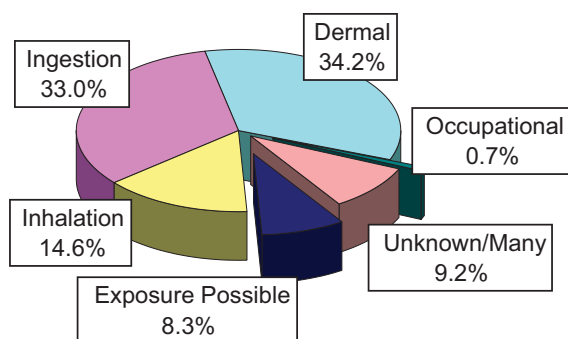
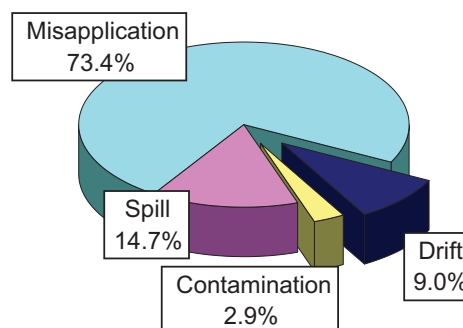


Chart 7.2 - Pesticide Accidents



8. Action Taken

NPIC Specialists respond to inquiries in many ways, including the provision of verbal information, transfer to poison control, discussion and contact information for other agencies or organizations, and information sent by email, mail, or fax. Actions taken by Specialists in response to inquiries are summarized in Table 8.1, and Charts 8.1 and 8.2. Most inquiries (15,335; 61.9%) were answered by providing discussion and verbal information to the inquirer.

Some inquiries (314; 1.3%), where the Specialist determined a need, were transferred to Oregon Poison Control, Animal Poison Control Center, or the National Pesticide Medical Monitoring Program, as appropriate. For other inquiries, information in addition to that provided by NPIC was required to meet the needs of the inquirer - for those inquiries, NPIC provided discussion and contact information for other

agencies or organizations (7,525; 30.4%). Common NPIC referrals were to the EPA (2.1%); state lead agencies (3.1%); to cooperative/county extension service (6.6%); and to Poison Control (1.3%) and Animal Poison Control (0.5%); and the manufacturer/registrant (17.0%). Some inquirers received information via mail or email (994; 4.0%) or fax (587; 2.4%).

Table 8.1 - Action Taken

Action Taken	Number of Inquiries				
	2000	2001	2002	2003	2004
Provided Verbal Information/Discussion	16757	16300	17304	16703	15335
Provide Transfer to:					
Oregon Poison Center	43	77	59	71	70
Animal Poison Control Center	112	111	87	95	51
National Pesticide Medical Monitoring Program	709	614	407	209	193
Provide Discussion and Contact Information for:					
EPA HQ or Regional Office	272	231	365	337	515
State Lead Agencies	350	632	746	544	757
Cooperative/County Extension	1165	1336	1461	1171	1624
Human Poison Control	51	55	81	74	315
Animal Poison Control	93	135	110	104	115
Manufacturer/Registrant	1292	2939	2743	2803	4199
e-Mail, Mailed Information, Brochure, Publication	611	664	822	1018	994
Other/FAXED Information	119	101	251	454	587
Grant Year Total =	23047	23511	24549	23609	24765

Chart 8.1 - Action Taken

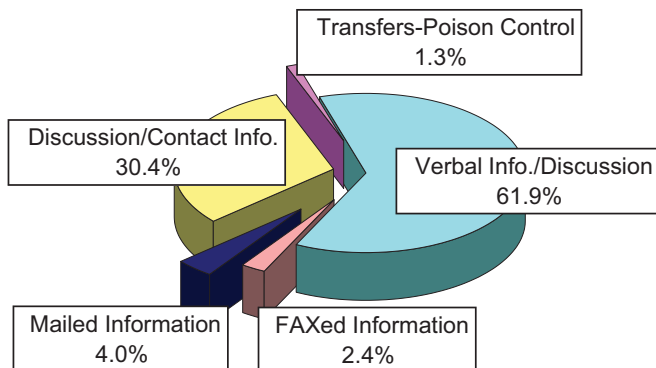
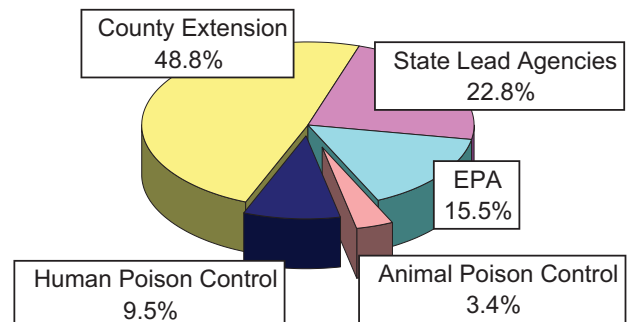


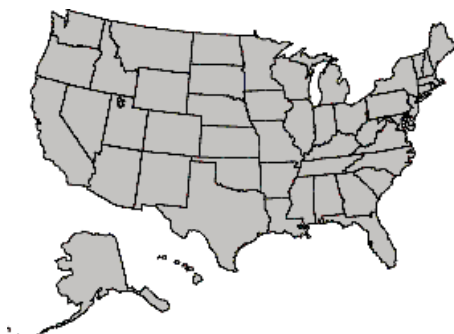
Chart 8.2 - Discussion/Contact Information



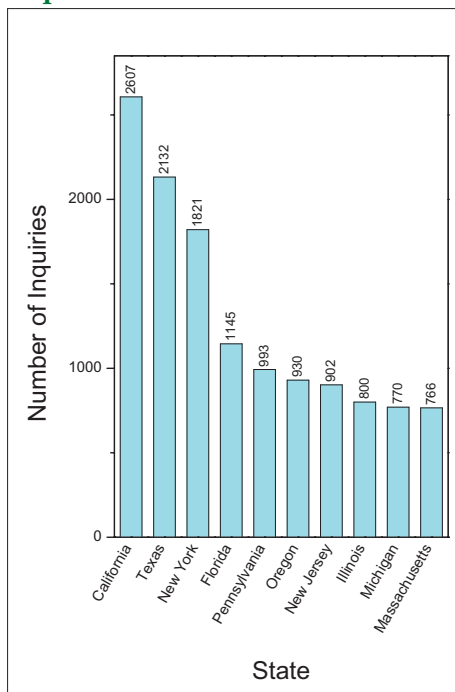
9. Inquiries by State

Table 9.1 lists the number of inquiries received by NPIC from each state. For the 5 most populated states, the number of inquiries received was in the same order as the population, with the largest number of inquiries coming from California, followed by Texas, New York, Florida, and Pennsylvania (Graph 9.1). Based on population, a disproportionate number of inquiries were received from Oregon.

Graph 9.2 summarizes inquiries by EPA region. NPIC received 14.8% of inquiries from Region 4, 13.6% from Region 5, 13.4% from Region 9, 11.1% from Region 2, 11.1% from Region 6, and 11.0% from Region 3.



Graph 9.1 - Top 10 States



Graph 9.2 - Inquiries by EPA Region

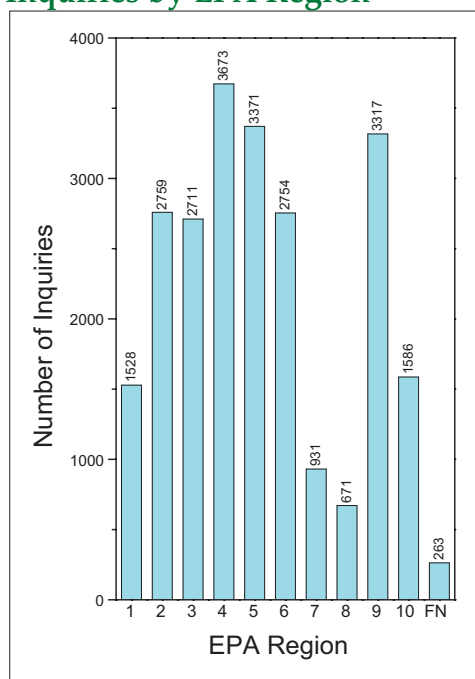


Table 9.1 - Listing of States and Foreign Nations Using NPIC

EPA Region	State Code	State	# of Inquiries
0		Not recorded	1204
10	AK	Alaska	40
4	AL	Alabama	222
6	AR	Arkansas	151
9	AZ	Arizona	558
9	CA	California	2607
FN	CN	Canada	100
8	CO	Colorado	356
1	CT	Connecticut	364
3	DC	DC	255
3	DE	Delaware	59
4	FL	Florida	1145
FN	FN	Foreign	162
4	GA	Georgia	712
9	HI	Hawaii	67
7	IA	Iowa	214
10	ID	Idaho	78
5	IL	Illinois	800
5	IN	Indiana	351
7	KS	Kansas	162
4	KY	Kentucky	271
6	LA	Louisiana	191
1	MA	Massachusetts	766
3	MD	Maryland	616
1	ME	Maine	94
5	MI	Michigan	770
5	MN	Minnesota	328
7	MO	Missouri	411
4	MS	Mississippi	122
8	MT	Montana	87
4	NC	North Carolina	636
8	ND	North Dakota	38
7	NE	Nebraska	142
1	NH	New Hampshire	143
2	NJ	New Jersey	902
6	NM	New Mexico	106
9	NV	Nevada	88
2	NY	New York	1821
5	OH	Ohio	734
6	OK	Oklahoma	176
10	OR	Oregon	930
3	PA	Pennsylvania	993
2	PR	Puerto Rico	32
1	RI	Rhode Island	106
4	SC	South Carolina	179
8	SD	South Dakota	45
4	TN	Tennessee	383
6	TX	Texas	2132
8	UT	Utah	116
3	VA	Virginia	659
2	VI	Virgin Islands	1
1	VT	Vermont	56
10	WA	Washington	537
5	WI	Wisconsin	387
3	WV	West Virginia	131
8	WY	Wyoming	29
		Total =	24765

10. Top 10 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 NPIC Pesticide Inquiry Database. The active ingredient permethrin was discussed in more inquiries than any other single active ingredient (Table 10.1, Graph 10.1). Of the 1,535 inquiries involving permethrin, 234 (15.2%) were incident inquiries and 1,302

(84.8%) were inquiries for information. See Table 10.1 and Graph 10.1 for this and similar information for the 25 active ingredients most commonly discussed in inquiries made to NPIC. Note that an inquiry may involve discussion of more than one active ingredient; thus totals reflect the number of times active ingredients are discussed during all inquiries. Table 10.1 also shows the number of times a certainty index of 1 or 2 was assigned to these incident inquiries. The certainty index is an estimate by NPIC as to whether the incident was definite-

ly (1), probably (2), possibly (3), or unlikely (4) to have been caused by exposure to a pesticide, or whether the incident was unrelated (5) to pesticides. A certainty index of zero (0) is assigned to those inquiries where the inquirer reported an exposure, accident, or odor, but no health effects were reported. Of the 234 times that permethrin was mentioned during incident inquiries in which effects were reported, 13.7% of the cases were assigned a certainty index of 1 (definite) or 2 (probable).

Graph 10.1 - Top 10 Active Ingredients for All Inquiries

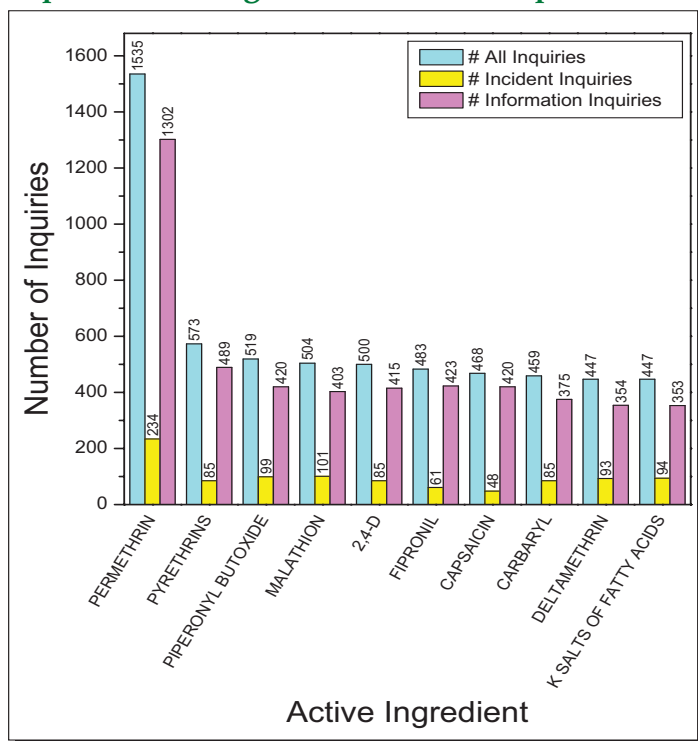


Table 10.1 - Top 25 Active Ingredients for All Inquiries

Active Ingredient	Total Inquiries	Incident ¹⁾ Inquiries	Information Inquiries
PERMETHRIN	1535	234 (32)	1302
PYRETHRINS	573	85 (12)	489
PIPERONYL BUTOXIDE	519	99 (12)	420
MALATHION	504	101 (7)	403
2,4-D	500	85 (6)	415
FIPRONIL	483	61 (3)	423
CAPSAICIN	468	48 (13)	420
CARBARYL	459	85 (3)	375
DELTAMETHRIN	447	93 (7)	354
POTASSIUM SALTS OF FATTY ACIDS	447	94 (2)	353
METALDEHYDE	434	252 (46)	182
PETROLEUM HYDROCARBONS	409	44 (2)	365
BACILLUS THURINGIENSIS	400	48 (1)	352
DEET	384	33 (2)	351
CHROMATED COPPER ARSENATE	380	22 (0)	358
DICAMBA	360	50 (4)	310
BORIC ACID	329	43 (4)	286
MECOPROP	315	49 (3)	266
D-PHENOTHRIN	306	144 (70)	162
NAPHTHALENE	293	128 (10)	165
BIFENTHRIN	276	38 (2)	238
CAPTAN	267	39 (0)	228
GLYPHOSATE	249	52 (1)	197
CHLOROTHALONIL	236	24 (1)	212
RESMETHRIN	234	36 (3)	198
Total - Above Pesticides	10807	1987 (246)	8824

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

11. Top 10 Active Ingredients for Incident Inquiries

The most common active ingredients reported during incident inquiries are listed in Table 11.1 and Graph 11.1. Also, Table 11.1 summarizes the number of reported incidents involving human and animal entities exposed to specific active ingredients. Metaldehyde was reported to be involved in more incidents (252) than any other active ingredient - 18.3% of these incidents had a certainty index of 1 or 2. Although fewer incidents were involved, 48.6% of the 144 D-phenothrin incidents and 46.1% of the 76 methoprene incidents, respectively, had a certainty index of 1 or 2. For capsaicin, 27.1% of the incidents (48) had a certainty

index of 1 or 2. Pyrethrins and permethrin also had a relatively high proportion of incidents with a certainty index of 1 or 2 - 14.1% of 85 incidents, and 13.7% of 234 incidents, respectively.

Of the 1,344 times that one of the other top 25 active ingredients was mentioned during incident inquiries, in which human or animal entities were involved, 5.7% of the cases were assigned a certainty index of 1 (definite) or 2 (probable).

Graph 11.1 - Top 10 Active Ingredients for Incident Inquiries

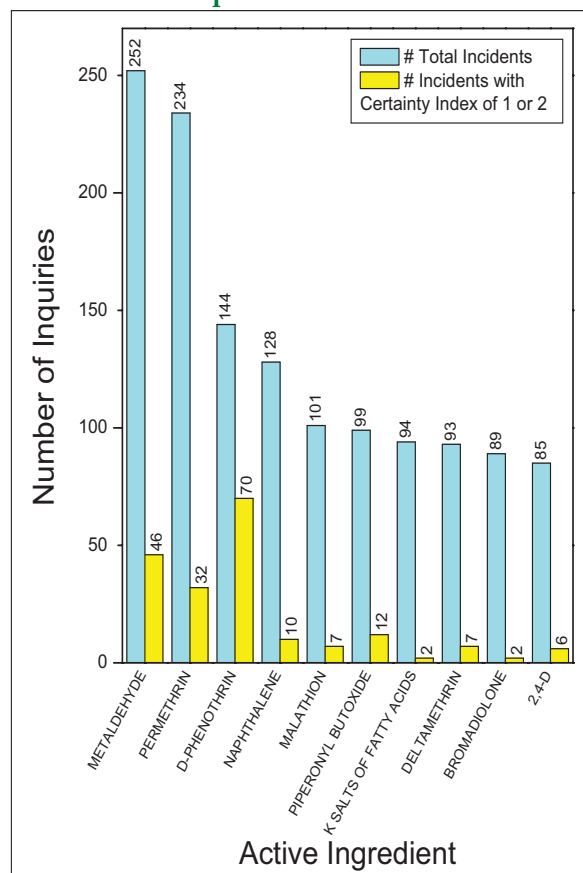


Table 11.1 - Top 25 Active Ingredients for Incident Inquiries

Active Ingredient	Total Incidents ¹⁾	Human Incidents	Animal Incidents	Other Incidents	Information Inquiries
METALDEHYDE	252 (46)	45 (3)	195 (43)	12 (0)	182
PERMETHRIN	234 (32)	111 (7)	90 (25)	33 (0)	1302
D-PHENOTHRIN	144 (70)	32 (1)	110 (69)	2 (0)	162
NAPHTHALENE	128 (10)	74 (10)	15 (0)	39 (0)	165
MALATHION	101 (7)	54 (7)	3 (0)	44 (0)	403
PIPERONYL BUTOXIDE	99 (12)	61 (6)	24 (6)	14 (0)	420
POTASSIUM SALTS OF FATTY ACIDS	94 (2)	40 (2)	31 (0)	23 (0)	353
DELTAMETHRIN	93 (7)	57 (4)	26 (3)	10 (0)	354
BROMADIOLONE	89 (2)	11 (0)	78 (2)	0 (0)	125
2,4-D	85 (6)	46 (6)	13 (0)	26 (0)	415
CARBARYL	85 (3)	39 (1)	17 (2)	29 (0)	375
PYRETHRINS	85 (12)	47 (6)	26 (6)	12 (0)	489
METHOPRENE	76 (35)	5 (0)	70 (35)	1 (0)	113
PARADICHLOROBENZENE	66 (6)	50 (6)	4 (0)	12 (0)	137
FIPRONIL	61 (3)	22 (0)	28 (3)	11 (0)	423
DIAZINON	59 (2)	27 (2)	6 (0)	26 (0)	160
ZINC PHOSPHIDE	56 (4)	3 (0)	41 (4)	12 (0)	104
GLYPHOSATE	52 (1)	29 (1)	14 (0)	9 (0)	197
DICAMBA	50 (4)	29 (4)	9 (0)	12 (0)	310
MECOPROP	49 (3)	29 (3)	6 (0)	14 (0)	266
BACILLUS THURINGIENSIS	48 (1)	26 (1)	20 (0)	2 (0)	352
CAPSAICIN	48 (13)	29 (13)	14 (0)	5 (0)	420
PETROLEUM HYDROCARBONS	44 (2)	28 (2)	11 (0)	5 (0)	365
BORIC ACID	43 (4)	17 (1)	22 (3)	4 (0)	286
DIPHACINONE	42 (0)	4 (0)	37 (0)	1 (0)	84
Total - Above Pesticides	2183 (287)	915 (86)	910 (201)	358 (0)	7962

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

D-Phenothrin and methoprene were named in the highest percentage of incident inquiries with a certainty index of 1 or 2, 48.6% and 46.1%, respectively. Permethrin and metaldehyde were involved in the highest number of incidents, 234 and 252, respectively, with ~16% of the incidents with a certainty index of 1 or 2.

12. Location of Incident

For incident inquiries, NPIC Specialists record the reported location of the reported exposure. Of the 2,361 known locations where incidents occurred, 93.5% occurred in the home or yard, 2.1% occurred in an agricultural setting, and 1.3% occurred in an office building or school (Table 12.1).

**Table 12.1 -
Location of Pesticide Incident**

Location	Number of Incident ¹⁾ Inquiries				
	2000	2001	2002	2003	2004
Unclear/Unknown	115 (12)	83 (8)	47 (3)	50 (5)	27 (6)
Home or Yard	1704 (104)	1543 (107)	1622 (178)	1556 (174)	2207 (248)
Agriculturally Related	122 (7)	68 (4)	59 (11)	35 (3)	50 (5)
Industrially Related	12 (1)	10 (2)	7 (1)	4 (0)	6 (0)
Office Building, School	65 (1)	59 (2)	37 (1)	23 (1)	29 (5)
Pond, Lake, Stream Related	8 (0)	7 (1)	8 (0)	7 (0)	5 (1)
Nursery, Greenhouse	13 (0)	6 (0)	9 (0)	8 (1)	8 (1)
Food Service/Restaurants	2 (0)	5 (1)	3 (2)	4 (1)	4 (0)
Retail Store/Business	19 (1)	27 (2)	15 (2)	16 (2)	21 (3)
Roadside/Right-of-Way	15 (0)	20 (1)	4 (1)	10 (1)	13 (1)
Park/Golf Course	17 (1)	6 (0)	9 (0)	3 (0)	18 (2)
Other	101 (14)	82 (5)	64 (7)	60 (14)	67 (9)
Total =	2193 (141)	1916 (133)	1884 (206)	1776 (202)	2455 (281)

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



13. Environmental Impact

NPIC Specialists record reported environmental impacts discussed in incident inquiries. The most common reported environmental impacts are damage to property and damage to plant material, including food crops and other plants or trees. Multiple environmental impacts may be reported for each incident inquiry; thus totals reflect the number of times these sites were discussed during the course of all incident inquiries. Of the 519 times that a specific environmental impact was reported, 5.6% of the cases were assigned a certainty index of 1 (definite) or 2 (probable). (Table 13.1)

**Table 13.1 -
Reported Environmental Impact**

Environmental Impact	Number of Incident ¹⁾ Inquiries				
	2000	2001	2002	2003	2004
Air	23 (0)	29 (0)	17 (2)	18 (2)	48 (5)
Water	15 (2)	21 (2)	14 (1)	8 (0)	8 (1)
Soil	23 (0)	18 (0)	8 (0)	9 (0)	24 (0)
Food Crops/Process	83 (0)	78 (0)	64 (0)	85 (1)	85 (0)
Property	234 (8)	209 (9)	168 (11)	168 (6)	261 (21)
Poultry/Livestock	7 (1)	11 (0)	6 (2)	4 (1)	5 (1)
Plants/Trees	71 (2)	65 (1)	65 (0)	43 (0)	88 (1)
Not Applicable	1728 (125)	1463 (120)	1527 (190)	1423 (189)	1926 (252)
Other	9 (3)	22 (1)	15 (0)	19 (3)	10 (0)
Total =	2193 (141)	1916 (133)	1884 (206)	1777 (202)	2455 (281)

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



14. Certainty Index

Table 14.1 and Graph 14.1 summarize the assignment of certainty indexes for all incident inquiries received by NPIC. Inquiries are sorted according to type of entity; human entities are further sorted according to gender and groups of entities. Multiple entities may be discussed in one incident inquiry; thus

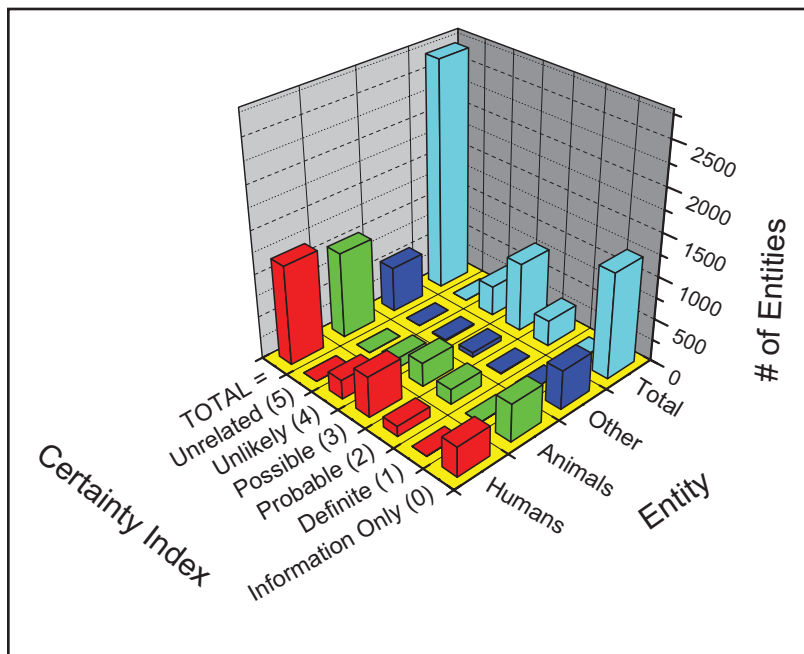
totals reflect the number of entities (as opposed to number of incidents) discussed during the course of incident inquiries to NPIC. Of the total number of entities discussed in incident inquiries to NPIC (2,709), 0.2% of the cases were assigned a certainty index of definite (1), 11.1% of the cases were assigned a certainty index of probable (2), 29.8% of the cases were assigned

a certainty index of possible (3), 13.0% of the cases were assigned a certainty index of unlikely (4), 0% of the cases were assigned a certainty index of unrelated (5), 45.9% of the cases did not involve effects and so were assigned the certainty index of zero (0), information only.

Table 14.1 - Incident Inquiries by Certainty Index (CI)

CI for All Categories of Entities					Breakdown of Human Entity Incident			
Certainty Index	Humans	Animals	Other	Total	Male	Female	Groups	Gender Not Stated
Total Inquiries in Operational Year = 24765								
Non-Incident Inquiries = 23466								
Information Only (0)	347	442	454	1243	145	171	28	3
Definite (1)	2	4	0	6	0	2	0	0
Probable (2)	119	174	9	302	47	59	13	0
Possible (3)	475	277	55	807	174	264	37	0
Unlikely (4)	223	114	14	351	88	126	9	0
Unrelated (5)	0	0	0	0	0	0	0	0
TOTAL =	1166	1011	532	2709	454	622	87	3

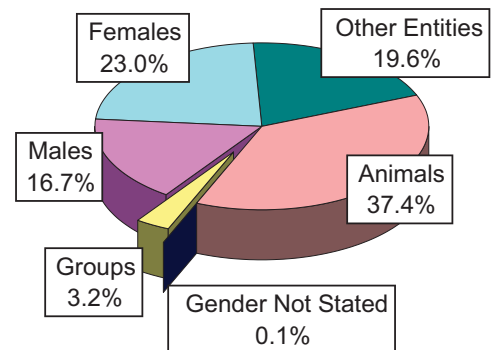
Graph 14.1 - Certainty Index for Incidents



15. Description of Entities

Table 15.1 and Chart 15.1 provide a more detailed summary of categories of entities discussed in incident inquiries. Of the 2,713 entities involved in incidents reported to NPIC, 43.0% were human, 37.4% animal, and 19.6% were other types of non-target entities (building or environment, for example).

**Chart 15.1 -
Description of Entities**



**Table 15.1 -
Description of Entities**

Description of Entities	Number of Entities ¹⁾				
	2000	2001	2002	2003	2004
All females -					
Female	692 (39)	539 (29)	416 (28)	388 (25)	599 (58)
Female-pregnant	49 (0)	34 (2)	25 (0)	26 (1)	22 (1)
Female suicide attempt	1 (0)	0 (0)	0 (0)	0 (0)	2 (2)
Total all females =	742 (39)	573 (31)	441 (28)	414 (26)	623 (61)
All males -					
Male	445 (35)	375 (26)	345 (42)	292 (30)	452 (47)
Male suicide attempt	1 (0)	1 (1)	0 (0)	2 (1)	2 (0)
Total all males =	446 (35)	376 (27)	345 (42)	294 (31)	454 (47)
All groups -					
Family	98 (3)	58 (5)	68 (7)	38 (4)	75 (8)
Non-family group	40 (4)	22 (3)	13 (1)	13 (4)	12 (5)
Total all groups =	138 (7)	80 (8)	81 (8)	51 (8)	87 (13)
Gender not stated -					
Child - sex unknown	1 (0)	7 (0)	4 (0)	6 (0)	2 (0)
Adult - sex unknown	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)
Other - sex unknown	6 (1)	0 (0)	1 (0)	1 (1)	1 (0)
Total gender not stated =	8 (2)	7 (0)	5 (0)	7 (1)	3 (0)
Total all humans =	1334 (83)	1036 (66)	872 (78)	766 (66)	1167 (121)
All animals -					
Single animal	513 (53)	563 (69)	715 (130)	717 (136)	954 (169)
Group of animals	70 (16)	38 (6)	44 (7)	60 (11)	54 (9)
Wildlife	4 (1)	7 (1)	7 (0)	10 (0)	6 (1)
Total all animals =	587 (70)	608 (76)	766 (137)	787 (147)	1014 (179)
Other entities:					
Building-home/office	155 (0)	167 (1)	127 (0)	128 (2)	234 (7)
Other places	282 (1)	270 (1)	242 (1)	211 (1)	298 (2)
Total other entities =	437 (1)	437 (2)	369 (1)	339 (3)	532 (9)
Total all entities =	2358 (154)	2081 (144)	2007 (216)	1892 (216)	2713 (309)

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

16. Entity Symptoms

Of the 1,167 human entities discussed in incident inquiries to NPIC, symptoms, or absence of symptoms, were reported for 1,112 entities (Table 16.1). Of these entities, 48.7% reported symptomatic health effects (effects that are consistent with a significant exposure to the pesticide in question), 39.9% reported asymptomatic health effects, and 20.4% reported atypical health effects (Chart 16.1). Table 16.1 and Chart 16.2 provide this and similar information for animal entities.

Table 16.1 - Reported Symptoms of Entities

Reported Symptoms	Number of Entities ¹⁾				
	2000	2001	2002	2003	2004
Human symptoms -					
Symptomatic	751 (160)	480 (116)	462 (107)	345 (97)	542 (172)
Asymptomatic	255 (30)	244 (28)	225 (23)	223 (19)	344 (31)
Atypical	184 (26)	203 (19)	145 (14)	157 (19)	226 (17)
Total humans =	1190 (216)	927 (163)	832 (144)	725 (135)	1112 (220)
Animal symptoms -					
Symptomatic	273 (91)	252 (101)	376 (160)	391 (174)	456 (207)
Asymptomatic	241 (13)	273 (23)	275 (15)	319 (15)	446 (33)
Atypical	48 (7)	65 (7)	72 (12)	73 (11)	121 (13)
Total animals =	562 (111)	590 (131)	723 (187)	783 (200)	1023 (253)
Total symptoms =	1752 (327)	1517 (294)	1555 (331)	1508 (335)	2135 (473)

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

Chart 16.1 - Symptoms - Humans

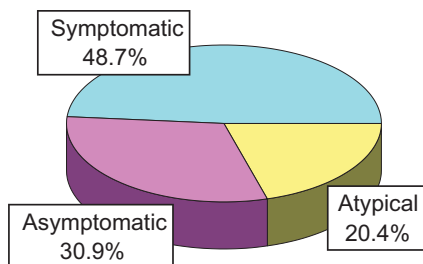
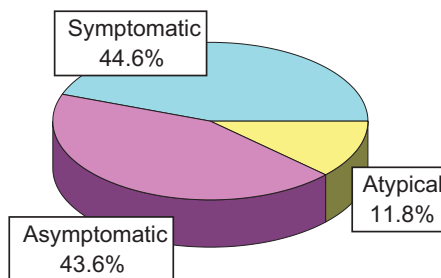


Chart 16.2 - Symptoms - Animals



17. Deaths and Other Outcomes

Amongst the 1,167 human entities, one death was reported (Table 17.1). Based on information provided by the inquirer, this incident was assigned a certainty index of 1, making it likely that the death was a result of pesticide exposure.

The number of animal and human deaths and other outcomes has been fairly constant over the last 5 years. For the current year, of the 1,014 animal victims, there were 67 deaths, with 27 of the cases assigned a certainty index of 1 or 2, indicating likely pesticide involvement. Table 17.1 and Chart 17.1 summarize this information and also list the number of entities associated with life threatening conditions or interesting or strange circumstances.

Table 17.2 shows the active ingredients involved in the majority of the animal deaths. D-Phenothrin, metaldehyde, permethrin, piperonyl butoxide, pyrethrins, imidacloprid, methoprene, and N-octyl bicycloheptene dicarboximide were reported to be associated with the largest number of deaths.

Table 17.2 - Active Ingredients Involved in Animal Deaths

Active Ingredient ¹⁾	Number of Deaths
D-PHENOTHRIN	14
METALDEHYDE	10
PERMETHRIN	9
PIPERONYL BUTOXIDE	6
PYRETHRINS	6
IMIDACLOPRID	5
METHOPRENE	5
N-OCTYL BICYCLOHEPTENE DICARBO	5
FIPRONIL	4
PYRIPROXYFEN	4
CARBARYL	3
BACILLUS THURINGIENSIS	2
CARBOFURAN	2
CLOPYRALID	2
GLYPHOSATE	2
METHOMYL	2
TERBUFOS	2
TETRACHLORVINPHOS	2

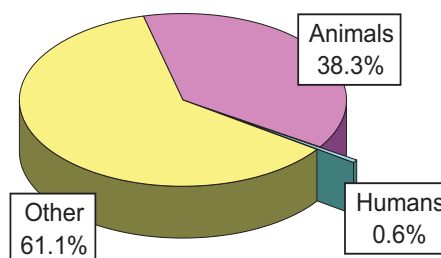
¹⁾ Note that a pesticide product may contain more than one active ingredient.

Table 17.1 - Additional Outcomes for Entities

Additional Outcomes	Number of Entities ¹⁾				
	2000	2001	2002	2003	2004
Human deaths -					
Male	1 (0)	2 (0)	1 (1)	0 (0)	0 (0)
Female	0 (0)	0 (0)	1 (1)	0 (0)	1 (1)
Total human deaths =	1 (0)	2 (0)	2 (2)	0 (0)	1 (1)
Animal deaths -					
Single animal	27 (7)	45 (10)	45 (25)	33 (11)	55 (24)
Group of animals	20 (6)	12 (5)	9 (4)	10 (3)	10 (2)
Wildlife	2 (1)	7 (1)	7 (0)	4 (0)	2 (1)
Total animal deaths =	49 (14)	64 (16)	61 (29)	47 (14)	67 (27)
Other -					
Life threatening	6 (3)	2 (1)	0 (0)	0 (0)	0 (0)
Interesting/strange	141 (26)	88 (17)	116 (21)	95 (21)	107 (26)
Total other =	147 (29)	90 (18)	116 (21)	95 (21)	107 (26)
Total additional outcomes =	197 (43)	156 (34)	179 (52)	142 (35)	175 (54)

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

Chart 17.1 - Deaths and Other Outcomes



18. Entity Age

Entity ages were available for 853 (79.2%) of the 1,077 individual human entities for which NPIC attempted to obtain ages. Table 18.1 and Graph 18.1 summarize information about the ages of human entities discussed in incident inquiries to NPIC. Of these 853 entities, 16.3% were less than 5 years of age, 5.5% were between the ages of 5 and 14, 4.8% were between the ages of 15 and 24, 58.7% were between the ages of 25 and 64, and 14.7% were over age 64.

Graph 18.1 - Age of Human Entities

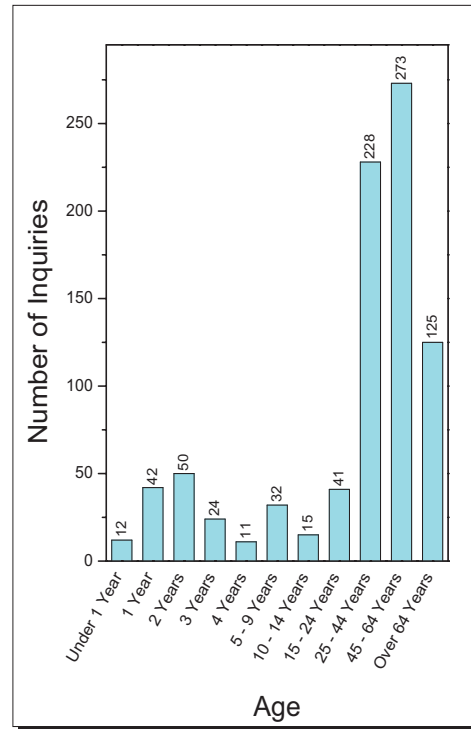


Table 18.1 - Reported Ages of Human Entities

Age Category	Number of Entities				
	2000	2001	2002	2003	2004
Under 1 Year	6	14	9	7	12
1 Year	22	12	23	26	42
2 Years	16	20	24	22	50
3 Years	15	20	15	15	24
4 Years	9	10	10	10	11
5 - 9 Years	25	21	14	29	32
10 - 14 Years	17	15	10	8	15
15 - 24 Years	32	37	20	30	41
25 - 44 Years	269	217	156	148	228
45 - 64 Years	216	203	182	200	273
Over 64 Years	99	99	106	82	125



Report on Subcontracts

Oregon Poison Center

NPIC Specialists transferred 70 inquiries to the Oregon Poison Center. These inquiries were transferred to the Center because the Specialists deemed that the inquirer's situation represented an acute poisoning emergency. The NPIC Quarterly Reports present information for the inquiries transferred in that quarter.

National Animal Poison Control Center

In the current year, 51 inquiries were transferred to the National Animal Poison Control Center (NAPCC). The situation presented in each inquiry was considered to be an emergency; therefore, the inquiry was transferred to NAPCC. The nature of the inquiries transferred is detailed in the NPIC Quarterly Reports.

