



National Pesticide Information Center

- 2002 -

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Environmental & Molecular Toxicology

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This is the eighth 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 and Puerto Rico and the Virgin Islands, is a cooperative project between Oregon State University and the U.S. Environmental Protection Agency. This report, the 2002 Annual Report, covers the period April 1, 2002 - March 31, 2003, corresponding to NPIC's eighth 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. 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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NPIC 2001 Annual Report

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



Dixie - Pesticide Specialist

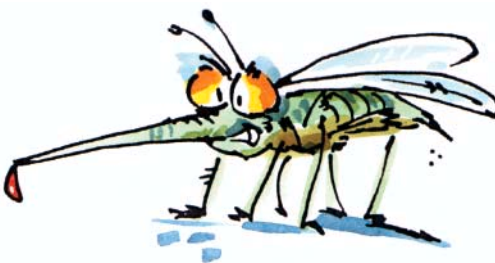


Executive Summary - NPIC 2002 Annual Report

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 "2002 Annual Report." This report covers the NPIC grant year: April 1, 2002 through March 31, 2003.

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 770,965 hits (a 153% increase). NPIC received 795 inquiries via email (Table 4.1, Graphs 4.1 - 4.6).
- NPIC responded to 300 inquiries about Hartz flea and tick control products for cats and kittens.
- NPIC received 1,083 inquiries about Chromated Copper Arsenate (CCA).
- NPIC greatly expanded its West Nile Virus Resource Guide.
- NPIC answered 24,549 inquiries during its eighth operational year. Eighty-four percent of the inquiries were received between March and October, coinciding with that part of the year when most pest pressures are the highest (Table 1.1, Graph 1.1).
- The majority of inquiries (92.0%) were for information only (i.e., not related to an incident); 5.9% 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 (38.7%) were health-related, whereas 31.8% were for information about pesticide usage, and 9.1% were of a regulatory nature (Table 6.1, Graph 6.1).
- Examples of "health-related" inquiries include:
 - Inquirer reports that she has used CCA (chromated copper arsenate) treated wood in a raised bed garden. Inquirer was concerned that she would be poisoning her family.
 - Inquirer reports that his neighbor is to have his yard treated with Astro Insecticide (permethrin), Lescro Three-Way Selective Herbicide, and Dithan DF Agricultural Fungicide. Inquirer was interested in learning about toxicity of each.
 - Inquirer reported her grandson had sprayed his face and mouth with Fred Meyer Ready to Use Insect Killer a few minutes before she called. According to inquirer, she was not sure if her grandson had symptoms but reported he kept sticking out his tongue. Inquirer stated her grandson's face and shirt were wet when she found him and his breath smelled like chemicals. Inquirer had wiped victims face and mouth with a wet washcloth.
 - Inquirer reported that her 6 month old dog had been poisoned by Corry's Slug and Snail Death. According to inquirer, she caught her dog licking the treated area. Approximately 30 minutes later, the dog "got wobbly, shaky, threw-up and started foaming at the mouth."
 - Inquirer reports that her 55 year old husband has been applying Malathion 50 (malathion) for the last few days. During that time he complained of burning eyes. Today he began presenting with vomiting, diarrhea, chills without a temperature, slow heart beat, and difficulty breathing.
 - Inquirers home was treated with Drione (pyrethrins, piperonyl butoxide, silica gel). Inquirer, a 60+ year old female, developed difficulty breathing, hot, red skin, and felt a pain in her stomach.
- Of the 24,549 inquiries, 7.7% (1,884) involved pesticide incidents, while 44.1% (10,831) were for information about specific pesticide active ingredients or products, and 45.4% (11,152) 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 is thinking of using Diazinon Crystals (diazinon) on her lawn to control roundworms. Inquirer wanted to know what health risks there may be for children.
 - Inquirer put a product called Fountec (EPA Registration Number 46978-4) into her pond/fountain to control algae. Inquirer would like to know if it is harmful to dogs, because her dog drinks out of the fountain.
- Of the 1,884 incident inquiries, 10.9% 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).



- The active ingredient permethrin generated more inquiries (1,339); corresponding to 5.5% of all inquiries, and 10.5% of pesticide-specific inquiries, than any other single active ingredient. Of these, 11.4% (153) were incident inquiries and 88.7% were inquiries for information. Of the 153 permethrin incident inquiries, 13.7% were assigned a certainty index of 1 (definite) or 2 (probable) (Table 10.1, Graph 10.1).
- For the remaining active ingredients (in the top 25) involved in incidents, there were a total of 1,526 incidents, with 11.9% of them assigned a certainty index of 1 or 2. It is interesting to note that the proportion of permethrin incidents assigned a certainty index of 1 or 2 was about the same as for the remaining top 24 pesticides taken as a group. Most of the reported incidents (44.3%) involved humans; 38.0% involved animals (Table 11.1, Graph 11.1).
- There were 2,007 entities involved in the incidents reported to NPIC - 43.4% were human, 38.2% animal, and 18.4% other (e.g., building, environment). Of the human entities, 39.6% were male, 50.6% female, 9.3% groups, and 0.6% where gender was not stated (Tables 14.1 and 15.1, Graph 14.1 and Chart 15.1).
- Of the 872 humans involved in incident inquiries, information about symptoms was given for 832. Of these, 55.5% were symptomatic (symptoms matched those for pesticide in question), 27.0% were asymptomatic, and 17.4% reported atypical symptoms (Table 16.1, Charts 16.1 and 16.2).
- Amongst the 872 human entities, 2 deaths were reported - this incident was judged to have a certainty index of 1, making it likely that the deaths were a result of pesticide exposure. Of the 766 animal entities, 61 deaths were reported; 29 of these incidents were assigned a certainty index of 1 or 2, indicating likely pesticide involvement (Table 17.1, Chart 17.1).
- Ages were available for 569 of the 872 human entities. A portion (14.2%) of the entities were less than 5 years old, 4.2% between the ages of 5 - 14, 3.5% between 15 - 24, 59.4% between the ages of 25 - 64, and 18.6% over age 64 (Table 18.1, Graph 18.1).
- Of the known locations (1,773) where incidents occurred, 91.5% were the home or yard, while 3.3% were agriculturally related, and 2.1% involved an office building or school (Table 12.1).
- Most of the inquiries (87.7%; 21,537) to NPIC came from the general public, while 4.2% came from federal/state/local agencies, 2.3% from medical personnel, 2.0% from information providers, and 2.6% from consumer users (Table 5.1, Graph 5.1 and Chart 5.1).
- Most of the inquiries to NPIC (92.3%; 22,660) were handled by providing verbal information to the inquirer. Other actions taken by Pesticide Specialists were to refer inquirers to EPA and SLA (1.7%), County Extension Service (0.6%), Oregon Poison Center (0.2%), National Animal Poison Control Center (0.4%), and other organizations (0.5%). Some inquirers (4.4%) received information via mail, Fax or email (Table 8.1, Charts 8.1 and 8.2).
- NPIC received 23,094 (94.1%) inquiries via telephone (Table 3.1).
- The largest number of inquiries originated from California, and Texas, New York - states ranked 1, 3, and 2, respectively, in terms of population (Table 9.1, Graph 9.1).
- By EPA region, 12.8% of the inquiries came from Region 5, 12.6% from Region 6, 12.6% from Region 4, 12.2% from Region 2, and 11.6% from Region 9 (Graph 9.2).

Organization

- NPIC hired six full-time Pesticide Specialists and promoted one Specialist to Project Coordinator during the 2002 grant year. Four student workers were hired to assist with office support. Seven pesticide specialists, and three student workers, resigned during this period. One graduate-level student was hired to assist with the active ingredient file management. NPIC's current staff includes thirteen full-time specialists, including the Project Coordinator, and a full-time information resource supervisor, a part-time personnel manager, three undergraduate student assistants, and one part-time graduate level student.
- NPIC made significant progress on development of its information delivery capabilities. The capacity of NPIC's UNIX server was improved with purchase of additional RAM and hard disk storage. Progress on the NPIC InfoBase was made with the addition of Convera RetrievalWare Enterprise Search software and development kit. NPIC is beginning a conversion of paper documents to a PDF format using a new high-speed Fujitsu fi-4750C color/duplex document scanner, Kofax Adrenaline 650i high-speed scanner controller, and Kofax Ascent Capture document scanning software.

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:

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

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

In addition, NPIC provides referrals for:

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

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

NPIC maintains a TDD 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. A recording device is provided 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 inquire, 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 Pesticide Specialists deliver information in a user-friendly manner and are adept at communicating scientific information to the lay public...



Sarah - 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 2002.

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 Pesticide Specialists in answering inquiries. Included in this collection are: NPIC's Active Ingredient (AI) file collection contains information on

over 800 pesticide AIs; 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 EXTOXNET (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.



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NPIC Update

Inquiry Update

NPIC responded to 24,549 inquiries, 1,884 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 Pesticide Specialist. 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

Resources

NPIC acquired many books, reports, and other documents to supplement the organizations library and serve as a resource for Specialists in responding to pesticide inquiries.

Books acquired or purchased during the 2002 grant year include: "Handbook of Pesticide Toxicology - Agents", R. Krieger, Academic Press, 2001; "Handbook of Pesticide Toxicology - Principles," Robert Krieger, Academic Press, 2001; "Organic Chemistry," K. Peter and C. Vollhardt, W.H. Freeman and Company, January, 1987; "Physical

Chemistry: Principles and Applications in Biological Sciences," I. Tinoco, Jr., K. Sauer, and J. Wong, Prentice Hall, January, 1995; "Turf & Ornamental Reference for Plant Protection Products," C&P Press, 2002; "How the Internet Works," P. Gralla, Sixth Edition, Que, October 2002; "Oregon Agricultural Resources Directory," October 2002; "The Complete Book of Pesticide



Management," Fred Whitford, Wiley-Interscience, 2002; "Small Animal Toxicology," M. E. Peterson & P. A. Talcott, W.B. Saunders, 2001; "The Practical Veterinarian: Veterinary Toxicology," J. D. Roder, Butterworth-Heinemann, 2001; "Crop Protection Handbook 2003," Meister Pro, January 2003; "The Dose Makes the Poison, 2nd Edition," M. A. Ottoboni, Vincente Publishers, 1997; "Turf & Ornamental Reference for Plant Protection Products," C&P Press, 2003.

NPIC obtained the following EPA publications: "Profile of Agricultural Chemical, Pesticide, and Fertilizer Industry," September, 2000; "Pest Control in the School Environment: Adopting Integrated Pest Management," CD-ROM version, January, 2003.

The following US EPA, Office of Pesticide Programs, Reregistration Eligibility Decision documents were obtained: "Methidathion (IREC)," March, 2002; "Pirimiphos-methyl (RED)," October, 2002; "Report of the FQPA Tolerance Reassessment Progress and Risk Management Decision (TRED) - Difenzoquat," April, 2002; "Report of the FQPA Tolerance Reassessment Progress and Risk Management Decision (TRED) - Diquat Dibromide," April, 2002; "Disulfoton (IREC)," July 2002; "Naled (IREC)," January 2002; "Acephate (RED)," September 2001; "Chlorpyrifos (IREC)," February 2002.

The following publications were received from

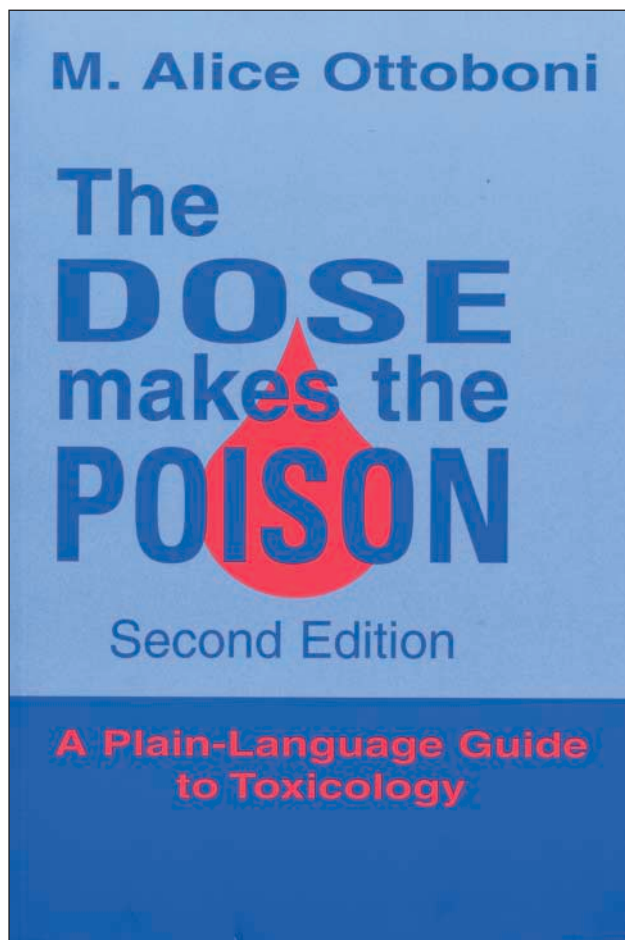
ATSDR, Department of Health and Human Services, during the year: "Guidance Manual for The Assessment of Joint Toxic Action of Chemical Mixtures," September 2002; "Interaction Profile for: Jet Fuels, Hydrazines, Trichloroethylene, Arsenic and Strontium-90," December 2001; "Interaction Profile for: Uranium, Fluoride, Cyanide, and Nitrate," June 2002; "Nurses and Environmental Health, Success Through Action," September 2002.

World Health Organization International Programme on Chemical Safety publications received by NPIC include: "The WHO Recommended Classification of Pesticides By Hazard and Guidelines for Classification, 2000-2002," 2002; "Pesticides Residues in Food

- 2001, *Evaluations 2001 Part II - Toxicological*,” 2002; “*Environmental Health Criteria 226: Palladium*,” 2002; “*Environmental Health Criteria 228: Principles and Methods for the Assessment of Risk from Essential Trace Elements*,” 2002; “*Environmental Health Criteria 227: Fluorides*,” 2002; “*Environmental Health Criteria 220, Dinitro-ortho-Cresol*,” 2000; “*Health & Safety Guide No. 103, White Spirit (Stoddard Solvent)*,” 1996; “*Health & Safety Guide No. 102, Thallium & Thallium Compounds*,” 1996; “*Health & Safety Guide No. 96, Warfarin*,” 1995; “*Concise International Chemical Assessment Document No. 33, Barium and Barium Compounds*,” 2002; “*Concise International Chemical Assessment Document No. 35, N-Methyl-2-pyrrolidone*,” January, 2002; “*Concise International Chemical Assessment Document No. 34, Chlorinated Naphthalenes*,” 2002; “*Concise International Chemical Assessment Document No. 8, Triglycidyl Isocyanurate*,” 1998; “*Concise International Chemical Assessment Document No. 9, n-Phenyl-l-naphthylamine*,” 1998; “*Concise International Chemical Assessment Document No. 37, Chlorine Dioxide (Gas)*,” 2002; “*Concise International Chemical Assessment Document No. 38, N-Nitrosodimethylamine*,” 2002; “*Concise International Chemical Assessment Document No. 39, Acrylonitrile*,” 2002; “*Concise International Chemical Assessment Document No. 40, Formaldehyde*,” 2002; “*Concise International Chemical Assessment Document No. 41, Diethylene Glycol Dimethyl Ether*,” 2002; “*Concise International Chemical Assessment Document, No. 42, Bromethane*,” 2002; “*Concise International Chemical Assessment Document, No. 43, Acrolein*,” 2002.

Other World Health Organization publications received by NPIC

include: “*Guidelines for Drinking-Water Quality: Addendum Microbiological Agents in Drinking-Water Second Ed.*,” 2002; “*Healthy Villages: A guide for communities and community health workers*,” 2002; “*Establishing a Dialogue on Risks from Electromagnetic Fields*,” 2002.



Other publications received by NPIC include: “*Children in the New Millennium: Environmental Impact on Health*,” United Nations Environmental Program, 2002; “*National Strategies for Health Care Providers: Pesticides Initiative*,” National Environmental Education and Training Foundation, 2002. (Implementation Plan); “*Help Yourself to a Healthy Home, Protect Your Children’s Health*,” U.S. Dept of Agriculture & U.S. Dept. Of Housing & Urban Development, 2002; “*Pesticide Data Program Annual Summary Calendar Year 2001*,” U.S. Dept of

Agriculture, 2001; “*10th Report on Carcinogens*,” U.S. Dept. of Health & Human Services (Public Health Services & National Toxicology Program), 2002; “*National Toxicology Program Annual Plan Fiscal Year of 2001*,” National Toxicology Program, Public Health Services, 2002; “*ICCVAM Evaluation of EPISKINTM EpiDermTM (EPI-200), and the Rat Skin Transcutaneous Electrical Resistance (TER) Assay: In Vitro Test Methods for Assessing Dermal Corrosivity Potential of Chemicals*,” Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM), National Toxicology Program (NTP) Interagency Center for the Evaluation of Alternative Toxicological Methods (NICEATM), 2002.

The NPIC *Hot Topics* notebook and on-line quick links were updated this granting period to include enhancements to the CCA Treated Wood section and a new section for Hartz Pet Care products. Review of project strategies and goals continued toward

updating work plans for the 2003 Hot Topics project. Maintenance and archive activities for 2002 topics were reviewed and established for prior topics: New York Neighbor Notification Law; Illegal Pesticides; and Terrorism.

Project and Information Review

Fact Sheets - The following pesticide active ingredient fact sheets were posted on the NPIC web site during the grant year: *Hydroprene - General*; *Hydroprene - Technical*. Several new fact sheets are in

preparation, including: *Resmethrin*, *D-Phenothrin (Sumithrin)*, *Met-aldehyde*, *Bendiocarb*, *Carbaryl*, *Captan*, *Hydramethylnon*, *DEET - Technical*, and *Triclopyr*.

Standard procedures were reviewed and updated to streamline NPIC fact sheet updates, and guidance documents were prepared for new writers. Updates include incorporation of any new regulatory and/or scientific information available. Currently underway are *Fipronil*, *Imidacloprid* and *Malathion*.

Active Ingredient Files - NPIC maintains over 800 active ingredient (AI) files. Kaci Agle joined the AI team as co-facilitator and began cross-training during this period. NPIC completed standardized restructuring and procurement of reference materials for all AI files. Thereafter, more than 200 active ingredient documents were added to specific AI files within the collection. Common updates to all hard-copy files include: new Federal Register notices with significant changes (10X or aPAD/cPAD), new human and ecological risk assessments, IRED, TRED, or RED, and SAP or other regulatory and scientific reports of significance (i.e. Q&A's, FYI's, CCA and exposure to children).

Routine review of the top 40 most commonly discussed active ingredients occurred again during the final quarter of this grant period and NPIC continues to verify that all pertinent data is available to Specialists in hard-copy files, either from updates to standardized references or through searches for newly available information from all objective sources.

In addition, the AI team continues creation of new active ingredient files; during this grant period, NPIC created 29 new active ingredient files.

NPIC continues its Instant Info project, aimed at collecting toxicology (e.g., LD50), health effects, exposure standards, ecological effects, environmental fate, and chemical and physical characteristics information for any given AI. This information will be entered into a database for eventual ready retrieval and display at each workstation.

“Other” Ingredient Files

NPIC continues to compile federal register notices, NTP, ATSDR, WHO and other scientific documents related to inert or “other” ingredients.

NPIC Web Site - The NPIC web site continues to be useful to NPIC clientele and to be an effective tool for providing pesticide-related information. The NPIC web site presently provides the user access to

many types of pesticide information including: a) NPIC fact sheets and other materials developed by NPIC; and b) Links to pesticide information at other web sites, demonstrated to be of use to NPIC clientele. In many respects, the NPIC web site can be thought of as a “Gateway” or “a one stop shopping center” for pesticide information. NPIC developed two new web pages to profile general and medical/health pesticide cases as an additional enhancement to the site. NPIC anticipates that 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. NPIC continued updating the WNV Resource Guide as new information was available this period, with specific emphasis on WNV background, state contacts and new science.

Training and Continuing Education

Updates to the NPIC Training Manual were on-going throughout the grant year, with an emphasis on revisions to format, procedures, resources, facilitated exercises, and development of advanced training activities.

Seven Specialists completed the training program and each of the seven attended, or will continue to attend, university lecture courses as part of a 3-term series in graduate-level toxicology, including: Fundamentals of Toxicology, Target Organ Toxicology, and Environmental Toxicology and Risk Assessment. Three of those Specialists will complete the 9-credit series in grant year 2003-4.

Each week the NPIC staff meets to further their knowledge of pesticide-related topics and to discuss administrative matters, as well as QA/QC activities, to further improve the service our organization provides the public. Internal seminars were scheduled during many of those weekly sessions. Oregon State University also provides additional opportunities for continued learning including seminars, lectures and conferences.

NPIC staff benefitted from the following presentations this year: Steve LeBoeuf, Manager of the OSU, Department of Health and Safety program, provided an overview on April 25, 2002, of the OSU services aimed at keeping the campus community safe. He reviewed policy related to hazardous materials, fire safety, earthquake preparedness, and security. He also discussed the use of pesticides on campus, in addition to pesticide training, storage, and notice. On May 30, 2002, Barbra Fick of OSU's Linn County Extension Service presented an overview of the

Master Gardener Program, specific to home horticulture and pesticides. Staff learned about their training programs, resources, trends, and advice Master Gardener's provide to the public.

Myron Shenk of the Integrated Plant Protection Center, and Pesticide Applicator Training Coordina-

Jeanne Davidson, Agricultural Chemical Reference librarian at the OSU Valley Library provided an overview of new services available to staff for research purposes.

Dr. Michael Peterson, DVM, provided our group with a veterinarian's overview of Small Animal Toxicology on October 24,

2002, with a focus on the family pet. State personnel from the Oregon Department of Agriculture, Pesticide Division, visited NPIC on February 20, 2003 to provide a state perspective on pesticide regulation and their activities with the EPA. Some topics of discussion included state interactions with EPA HQ and Regional offices, funding, registration of special local needs and minimum risk pesticides, inert ingredients, and worker training and protection.

NPIC Staff and Directors present to the full NPIC staff on various topics. This granting period staff discussions included: A June 13, 2002 presentation by Dr. Daniel Sudakin, M. D., M. P. H., Director of the National Pesticide

Medical Monitoring Program, on *Biomarkers of Exposure, Effect and Susceptibility - Organophosphates*, after a visual slide presentation. Focus areas included environmental samples, as it related to biological sampling, measuring variables with precision and accuracy, types of OP biomarkers and their measurements, and other factors affecting biomarkers not related to exposure.

Dr. Jeffrey Jenkins presented a visual and oral presentation on June



tor for Oregon, provided a visual and verbal presentation to our group related to drift on July 18, 2002. Information ranged from physical properties, applicator awareness, labels and regulation and outcomes of drift. On August 15, 2002, Wade Trevathan from Agricultural Chemistry Extension presented information obtained while attending the International Conference on Pesticide Exposure and Health sponsored by the Society of Environmental Health in Bethesda, Maryland. On September 26, 2002

20, 2002 titled *Fate of Pesticides in the Environment*. USDA-ARS's database history for risk assessment modeling was discussed and how this led to the development of the OSU Pesticide Properties Database (PPD). Caveats or limitations to use of the OSU PPD were also addressed. On June 27, 2002 Dr. Daniel Sudakin enhanced the staff's understanding of hypersensitivity reactions in a visual and oral presentation. Type I through IV reactions were described in detail. Using the pyrethrins/pyrethroids for discussion purposes, application of hypersensitivity information, case studies, literature and regulatory use were reviewed. Dr. Sudakin further presented to our group on August 27, 2002 on *DEET: Toxicology in Special Populations*, including a visual and verbal overview of various exposure pathways, exposure scenarios and case studies.

On December 5, 2002 Dr. Jeffery Jenkins & Dr. Sudakin reviewed the journal article *Developmental Toxicity of a Commercial Herbicide Mixture in Mice: I. Effects on Embryo Implantation and Litter Size*, Cavieres, et al, *Environmental Health Perspectives*, Vol 110, No. 11, November 2002. Both critical review concepts and article review strategies were subsequently discussed with all staff. Dr. Sudakin provided advanced instruction on taking and writing an incident narrative on December 12, 2002. This focused discussion further highlighted the



Crista - NPIC Project Coordinator

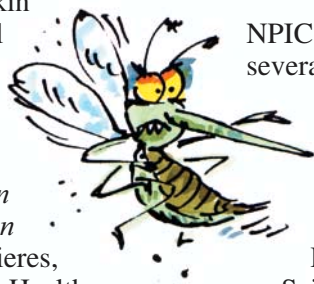
importance of detailed collection of information and clearly stating the "unstated" within narratives. Dr. Sudakin also discussed risk characterization with the NPIC staff on March 6, 2003, including qualitative and quantitative use of numeric

or descriptive terms. On March 27, 2003, David Spink, Pesticide Specialist, presented *Pesticides in the Garden*, covering topics and terms related to fruit tree development stages and closing with an overview of simple to complex spray equipment.

NPIC personnel also attended several off-site conferences, meetings or seminars during the period including: On November 25, 2002, NPIC staff attended a seminar presented by Dr. Roseanne Lorenzana, Science Liaison from EPA Region 10 related to *Approaches to Cumulative Risk Assessment at the US EPA*. One NPIC Specialist attended a lecture on December 3, 2002 titled *Herbicide Resistant Crops, Economic & Environmental Benefits and Risks*, presented by Dr. Don Suttner and Dr. Carol Mallory-Smith, and staff were subsequently

informed of new information. Terry Miller, Crista Chadwick, Daniel Sudakin, Kaci Agle, Jennifer Ajeto, Barbara Palermo, David Spink, Matt Sunseri, Steve Ziemak, and Kimberly Wallin attended the 2003 Chemical Applicator Short Course in Jantzen Beach, Oregon in January, 2003. Topics of interest included: pesticide poisoning-signs, symptoms and first aid, pesticide legislation, aerial applicator update, pesticides and domestic animals, pesticide information on the internet, noxious and exotic pests. On February 4 and 5, 2003, Tracie Caslin, Crista Chadwick, Matt Hamman, Sarah Peskin, David Spink and Amy Smoker attended the Non-Crop Vegetation Management Conference in Corvallis Oregon. Topics of interest included technology of drift, drift minimization, notice to the public of pesticide applications, risk assessment and the precautionary principle, and biotechnology in vegetation management.

The annual AAPCO meeting, held in Arlington, Virginia on March 10 through 12, 2003, was attended by Kaci Agle, Barbara Palermo, and Matt Sunseri, pesticide specialists, Crista Chadwick, the Project Coordinator, and NPIC Executive Committee members, Dr. Terry Miller and Dr. Daniel Sudakin. Highlights included an address from Jim Jones, the then Acting Office Director of OPP, and specific topics of the Endangered Species Act, West Nile virus and mosquito control activities, drift, homeland security, mold and indoor air, global harmonization classification and triazine update.



Publicity

Logo and Brochure - During this grant period, development of the NPIC logo and brochure was undertaken and, by 4th quarter end, NPIC was well underway toward a final version of each for reproduction and dissemination.

NPIC Outreach Efforts - The Outreach project standard operating procedures (SOP's), strategies, and goals were reviewed and new processing documents were developed to identify specific audiences, outreach methods, costs, database tracking and updating, conference tracking, evaluation procedures and evaluation tracking. In addition, new and past outreach campaign tracking mechanisms were reviewed with all staff and desktop resources were developed to increase and enhance the collection of internal and external outreach activity information.

During this grant period, NPIC developed a database of pesticide manufacturers and conducted a mailout to 1,941 registrants, announcing the NPIC name change, and reminding them of PR Notice 94-7 that encourages use of NPIC's 800# on product labels. Communications with Linn Haramis, Vector Control Program Manager for the Illinois Department of Public Health, resulted in a memo about NPIC services being distributed to all local health departments in Illinois. NPIC also provided a Press Release to Sarah Cahill of the National 4-H Food Production and Pesticides Program in Chevy Chase, Maryland, for her to include in an electronic newsletter sent to 4-H programs around the country.

NPIC conducted off-site outreach in October, 2002 when Crista Chadwick, Project Coordinator, was invited as a guest lecturer for a graduate level course in public health. The class presentation in-

assessment and risk management as they related to specific public health pesticide issues.

Many organizations requested NPIC brochures and supplies for dissemination at training sessions, conferences, events, or meetings including: Office of Minority Health Mobile Unit, Department of Health, New York, NY; The 55th Annual Meeting of the Utah Mosquito Abatement Association, Park City, UT; University of Missouri and Columbia University, Outreach and Extension, MO; New York Department of Environmental Conservation (NY DEC), Albany, NY; County of San Diego, Agricultural Commissioner, Weights and Measures, San Diego, CA; Department of Social Services, Richmond, VI; Lenoir Nature Preserve, Yonkers, NY; Department of Pesticide Regulation, San Diego, CA; Bureau of Pesticide Management, Las Cruces, NM; True Value Hardware, Ellensburg, WA; Child Care Council of Suffolk, Commack, NY; Riverside County Office of Aging, Riverside, CA; Department of Human Services, Office of Medical Assistance Programs (OMAP), Medicaid Enrollment Office, Portland, OR; Santa Clara Valley Urban Run-off Pollution Prevention Program, Sunnyvale, CA; Department of Health and Human Services, Tulare, CA; Department of Labor, Occupational Safety and Health Administration, Education Center, Getzville, NY; Georgetown Ace Hardware, Georgetown, CA; Poison

Pesticide Questions?
We've Got Answers!

Are you pregnant and wondering about using a pesticide inside your home ?

Do you have questions about the safe use of insect repellents on your children ?

npic
NATIONAL PESTICIDE INFORMATION CENTER

Real answers to real questions from real people in real time!
call toll-free
1.800.858.7378

cluded an overview of public health pests, food safety, toxicology, risk

and Drug Information Center, University of Arizona, Tucson, AZ; Century 21 Realty, Bend, OR; Talant Irrigation District, Talent, OR; Pennsylvania State University, Pesticide Education Department, Pesticide Safety Board, University Park, PA; Appalachian State University, Vilas, NC; Pesticide Division, Oregon Department of Agriculture, Salem, OR; County Commissioner Meeting, Hotchkiss, CO; Urban Storm Water Conference, Chicago, IL; Oregon Occupational Safety and Health Conference, Redmond, OR; Healthy Home Consulting, Inc., Phoenixville, PA; Shady Grove Adventis Hospital, Poison Prevention Week, Rockville, MD.

Outreach Projects with EPA -

NPIC provided EPA Office of Pesticide Programs with 1,000 NPIC brochures to distribute to OPP employees. Efforts by the OPP's Communications Services Branch, on behalf of NPIC, included the development and dissemination of posters and bumper stickers with NPIC contact information as part of the *Consumer Labeling Initiative (CLI)*, *Pesticide Information Campaign*. Posters were displayed on Washington D.C. Metro buses and Metrorail subway stations in underserved communities, and their distribution around the nation was encouraged in several OPP Press Releases.

Outreach Projects with EPA Regions -

The EPA Region 4 Urban Initiative - Atlanta Safe Pesticide Use Campaign continued into this grant period (since November, 2001), which included posting of bus shelter posters with the NPIC telephone number. Region 4 also distributed approximately 5,000 pesticide activity packets, containing the NPIC flyers, to elementary students. Public Service Announcements (PSAs) also occurred on Atlanta radio stations discussing "pesticide safety and awareness" and providing the NPIC telephone number. This Region 4 Campaign

has been a targeted effort to reach lower-income, African American and Spanish speaking children and women in the Atlanta area.

The EPA Region 2 *Urban Initiative - Illegal Pesticide Use Campaign* also continued into this grant period (since October 2001) with the development of new brochures that will be distributed to New York City Chinese-American communities. The brochures address the risks of illegal pesticides to children. NPIC also provided NPIC brochures to Jerry Oglesby, Mickey Flowers, and Linda Falk in EPA

Region 6,
for use in
their out-



reach programs and Brad Horchem and David Ramsey in EPA Region 7 for use in their outreach programs. NPIC supplied Julie Jordan in EPA Region 9 with NPIC brochures and flyers and EPA CLI outreach materials to display at the 2003 San Francisco Flower Show. Andrea Lindsay, in EPA Region 10, published an article about NPIC services titled "*Pesticide Info Center Offers Resources*" in a Region 10 bulletin, *Water Talk*, available to the Region 10 public.

Efforts with Master Gardeners -

NPIC provided brochures and other NPIC and EPA materials to the Southeast Master Gardener Conference in Raleigh, North Carolina, Oregon State University Master Gardener MiniCollege in Corvallis, Oregon, and several Oregon and

Ohio State Master Gardener Program offices.

Efforts with Tribal Programs

- NPIC has provided NPIC and EPA pesticide literature to the Wiyot Tribe at Table Bluff Reservation in Loleta, California, Phil Johnson of the Ak-Chin Indian Community in Maricopa, Arizona, and Clarice Olson of EPA Region 9 Indian Programs.

Other

Visit to OPP Headquarters -

Kaci Agle, Barbara Palermo, Matt Sunseri, Crista Chadwick, Dr. Terry Miller, and Dr. Daniel Sudakin, attended the annual meeting of the *Association of American Pest Control Officials* in Arlington, Virginia in March 2003. During the same week, these NPIC staff, along with Dr. Jeff Jenkins, also met with EPA/OPP personnel at the OPP headquarters in Arlington. Frank Davido, the NPIC Project Officer, arranged for NPIC personnel to visit with individuals from various OPP Divisions including, IRSD, HED, FEAD, EFED, and BPPD. NPIC further met with the NPIC Oversight and Monitoring Committee, which includes representatives from all OPP divisions. These individuals are liaisons between NPIC staff and OPP, as well as assist NPIC in obtaining active ingredient, regulatory, or process information, thus helping to assure that NPIC information is current.

NPIC staff also met with then Acting Office Director for OPP, Jim Jones, along with other OPP personnel, and NPIC had an opportunity to provide an overview of our operation, demonstrate various features of the NPIC website, and discuss current and future activities. During NPIC's March 2003 visit to EPA, an "Open Dialogue" provided an opportunity for EPA personnel to visit with NPIC staff, learn more

about its mission and services, and explore ways NPIC and EPA could better cooperate in the arena of pesticide information.

Site Visit - NPIC's Project Officer, Frank Davido, of the Office of Pesticide Programs/Information Resources and Services, visited NPIC in Corvallis, Oregon on November 4 through 8, 2002.

Issues - Topics of high interest this grant period included questions or concerns related to Chromated Copper Arsenate treated wood (1083 inquiries), Hartz Pet Care products (300 inquiries) and West Nile virus.

The continued spread of West Nile virus across the United States increased the interest in mosquito control and repellent products this grant year. This interest generated 1,604 inquiries to NPIC.

States with the highest number of inquiries concerning WNV include: Illinois (160); Texas (122); Louisiana (115); Ohio (78); Florida (68); and Georgia (67). The most frequent topics discussed were: health effects (31); product and/or chemical information (51); inquiries about spray schedules (13); concerns about encephalitis (22); mosquito control (51); and reporting dead birds (25).

In addition, NPIC served as a source of toxicology and environmental chemistry information for the Centers for Disease Control (CDC) in updates to its web site aimed at individuals with questions and concerns about the use of insect repellents.

Personnel Update

NPIC hired six full-time Pesticide Specialists and promoted one Specialist to Project Coordinator during the 2002 grant year. Four student workers were hired to assist with office support. Seven pesticide spe-

cialists, and three student workers, resigned during this period. One graduate-level student was hired to assist with the active ingredient file management.

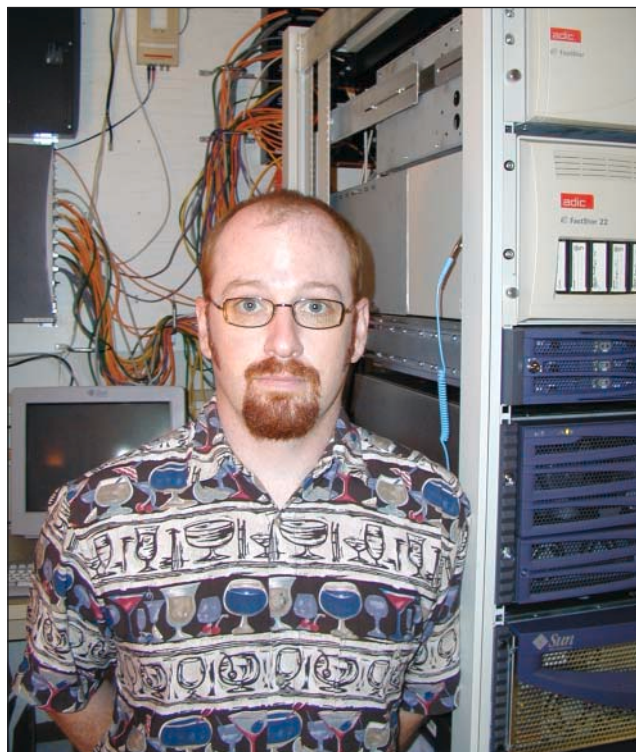
NPIC's current staff includes thirteen full-time specialists, including the Project Coordinator, and a full-time information resource supervisor, a part-time personnel manager, three undergraduate student assistants, and one part-time graduate level student. All Specialists have at least a bachelors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

Facilities

Due to unavoidable OSU space decisions, NPIC lost access to its weekly meeting room (Weniger 279 Conference Room). No new space in the building was allocated to replace this loss. NPIC is currently making due within its own space (Weniger 310). Additions to NPIC space included two brochure, flyer and publication wall exhibits purchased to display and house NPIC publications and other outreach materials for dissemination.

The reliability of NPIC's computer infrastructure was enhanced with upgrades to the main UNIX server, including a redundant hot-spare server power supply, an additional 1GB of RAM (now

3GB total), and a hot-swappable 36GB server hard disk. Information delivery capability was expanded with the addition of Convera RetrievalWare Enterprise Search software and development kit. NPIC is beginning a conversion of paper documents to a PDF format using a new high-speed Fujitsu fi-4750C color/duplex document scanner, Kofax Adrenaline 650i high-speed scanner controller, and Kofax Ascent Capture document scanning software. Continuing upgrades of NPIC's Legato Networker tape backup software were assured with the purchase of a one-year extension to the software maintenance/upgrade contract with Legato. A major enhancement to NPIC's disaster prevention and recovery system was made with the purchase of a new ADIC FastStor DLT8000 tape jukebox. This additional jukebox allows high-speed backup of critical data for secure on and off-site storage.



Sean - Supervisor, Information Resources

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 24,549 inquiries received via phone and/or email during its eighth year of operation (April 2002 - March 2003) at Oregon

State University. Most of the inquiries received by NPIC are quite sophisticated, requiring extensive expertise on the part of the Pesticide 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 770,965 hits. (Table 4.1 and Graphs 4.1 - 4.6). In addition, 795 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 Pesticide 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

prompted by concern/knowledge of the inquirer (Table 7.1 and Charts 7.1 and 7.2). Only about 7.7% of the inquiries are to report a pesticide incident.

Most inquirers received information verbally from a Pesticide 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 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 California, 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 indi-

cates 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

Pesticide Specialists record pertinent information for every inquiry received at NPIC via telephone or email. This information is entered into the NPIC Pesticide Incident 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 ex-

posure 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.

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 2002 NPIC operational year.

1. Monthly Inquiries

NPIC received 24,549 inquiries via telephone and/or email during the 2002 grant year. Graph 1.1 shows the number of inquiries received for each month. Eighty-four 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

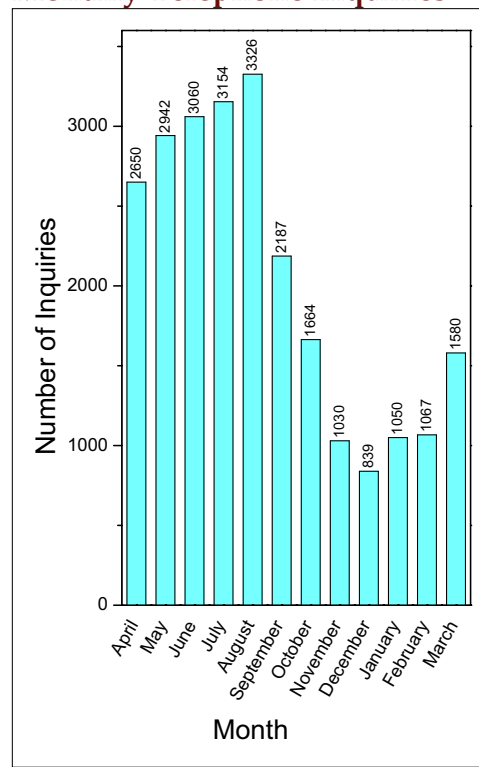


Table 1.1 - Monthly Telephone Inquiries

Month	Number of Inquiries				
	1998	1999	2000	2001	2002
April	2181	2266	2121	2358	2650
May	2486	2520	2680	3118	2942
June	2891	2693	3296	3097	3060
July	2608	2629	2901	3045	3154
August	2188	2342	2770	2676	3326
September	1790	2141	2059	1642	2187
October	1544	1671	1696	1621	1664
November	1132	1232	1177	1171	1030
December	938	817	795	825	839
January	1047	1137	983	1142	1050
February	1214	1393	997	1224	1067
March	1698	1880	1572	1592	1580
Calendar ¹⁾ Yr Tot	22206	22275	23911	23105	24810
Grant ²⁾ Yr Tot	21717	22721	23047	23511	24549

¹⁾ April 1 through December 31 for 1995; January 1 through December 31, other years.
²⁾ April 1 through March 31.



Barbara - Pesticide Specialist

“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?”

2. Type of Inquiry

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

The majority of inquiries (21,983 or 89.5%) 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 10,831 (44.1%) information inquiries about specific pesticides, for example: a) Inquirer has grubs in her yard and is going to use a granular diazinon product on the lawn. Inquirer is pregnant and has a one year old child, and wants to know how long to stay off the lawn, and b) Inquirer indicates that PCO has proposed use of Dagnet and Demon to control termites in the building and wanted to obtain a copy of any literature we could provide on these pesticides.

NPIC responded to 11,152 (45.4%) inquiries relating to pesticides in general, for example: Inquirer stated he is cleaning out his shed and has found some old pesticide products that he would like to dispose of, but his local waste disposal service no longer accepts household hazardous waste. Wanted to know where/how to dispose of products.

NPIC responded to 1,884 (7.7%) 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 1,884 incident inquiries, 826

(43.8%) involved a human entity, 740 (39.3%) involved an animal entity, and 318 (16.9%) involved damage to a building such as a home or office.

NPIC also took 682 (2.8%) inquiries that were not related to pesticides, for example: a) Inquirer's grandson swallowed an eucalyptus seed pod, and she wanted to know if it is poisonous, and b) Caller indicates he has concerns about the railroad using oil on the wheels of the boxcars and the "black soil" that is resulting on the properties.

Table 2.1 - Type of Inquiry

Type of Inquiry	Number of Inquiries				
	1998	1999	2000	2001	2002
Information - Specific Pesticide	8235	8595	9941	9952	10831
Information - General Pesticide	10621	10951	10093	11049	11152
Incidents	1562	1962	2193	1916	1884
Human Incidents	939	1258	1215	952	826
Animal Incidents	352	426	561	583	740
Building/Other	271	278	416	381	318
Other - Non-Pesticide	1299	1213	820	593	682
Grant Year Total =	21717	22721	23047	23511	24549

Chart 2.1 - Type of Inquiry

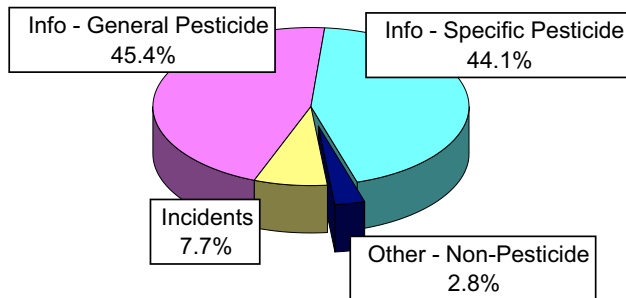
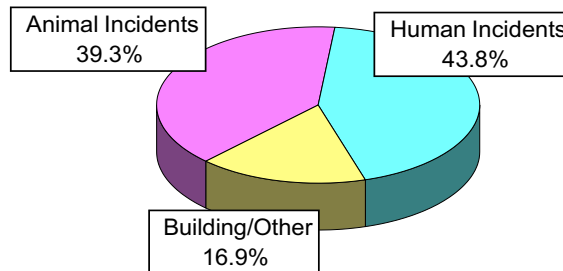


Chart 2.2 - Incidents



3. Origin of Inquiry

Table 3.1 summarizes the origin of inquiries received by NPIC. Most inquiries are received by telephone. Of the 24,549 inquiries, 23,094 (94.1%) were received by telephone, 607 (2.5%) were recorded by a voice mail system, 45 (0.2%) were received by postal mail, 2 were walk-in inquires, and 795 (3.2%) were by email.



Table 3.1 - Origin of Inquiry

Origin of Inquiry	Number of Inquiries				
	1998	1999	2000	2001	2002
Telephone	20950	21769	21838	22163	23094
Voice Mail	470	483	615	660	607
Mail	40	73	48	46	45
Walk In	4	7	2	6	2
E-Mail	215	380	544	620	795
Other	38	9	0	16	6
Grant Year Total =	21717	22721	23047	23511	24549



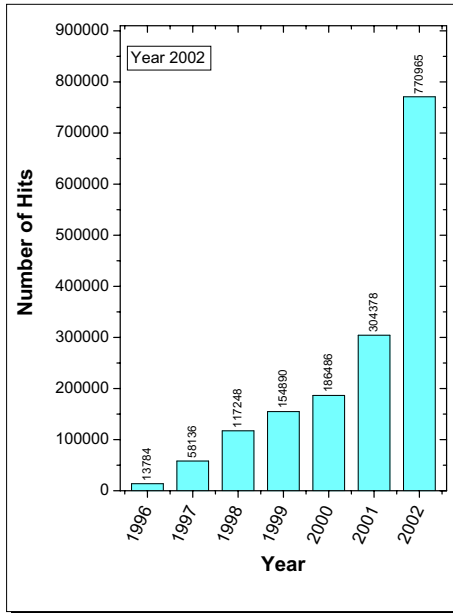
**READ ENTIRE LABEL BEFORE EACH USE
USE ONLY ON DOGS**

Read the Label!

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 770,965 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 (158,337) to the NPIC West Nile virus web pages is shown in Graph 4.4. And Graphs 4.5 and 4.6 detail the number of hits for NPIC fact sheets (>80,000 hits). Web hits are another form of inquiry to NPIC, in addition to telephone and email.

Graph 4.1 - Hits per Year



Graph 4.3 - Hits to Emergency Information Pages

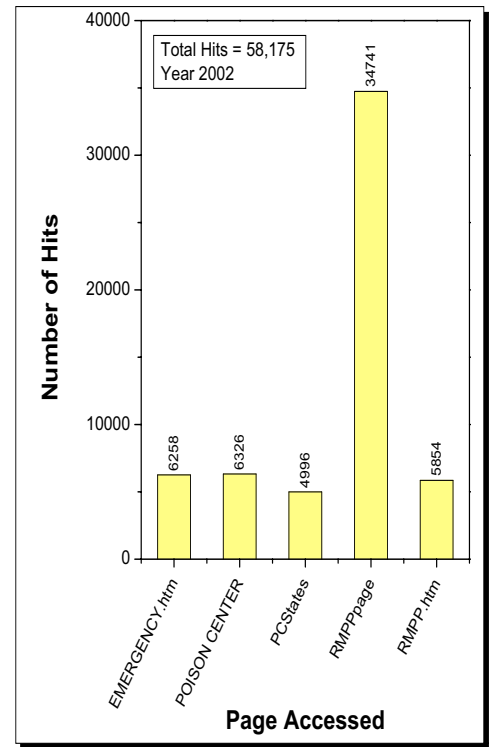
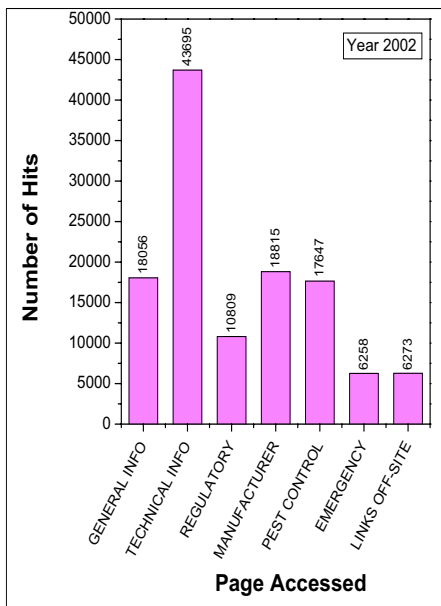


Table 4.1 - Web Hits

Page Accessed	# of Hits NPIC
General Information	18,056
Technical Information	43,695
Fact Sheets	81,459
State Regulatory Agencies	15,310
Recognition & Management of Pesticide Poisoning	34,741
Manufacturer Info	18,815

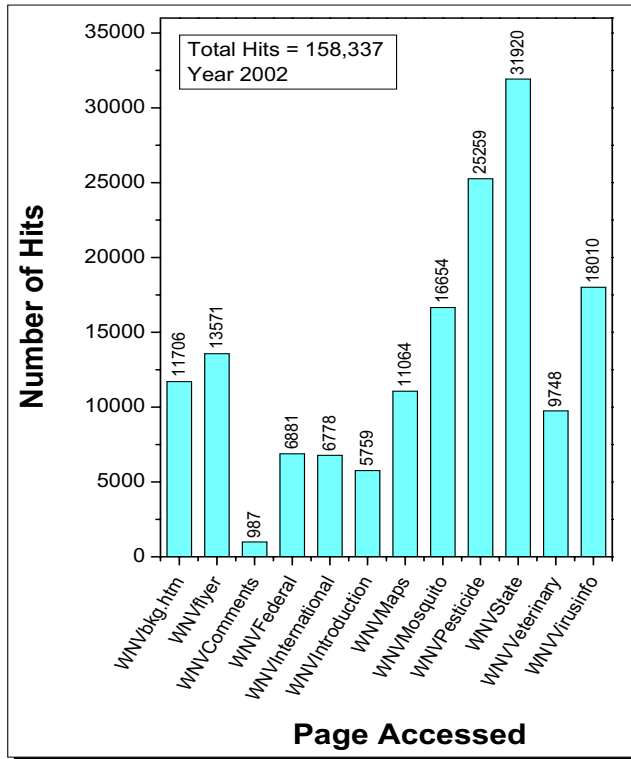
Graph 4.2 - Hits to NPIC Main Web Pages



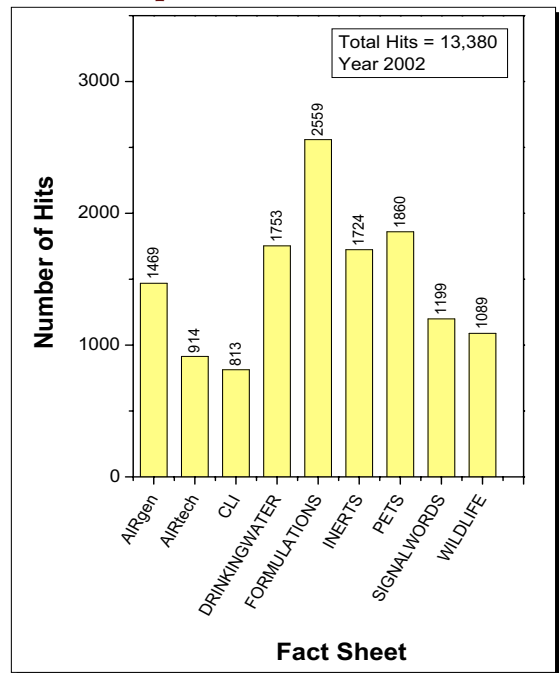
Feedback from Web Site Comment Form -

"Kaci was so helpful today. I am very impressed by your organization, the friendliness of the phone support and the overwhelming amount of information on your website. It's very impressive. Today I decided to track down environmental information on a commercial product called, Preen, and here I have found all of the information I ever could have needed. Thank YOU!"

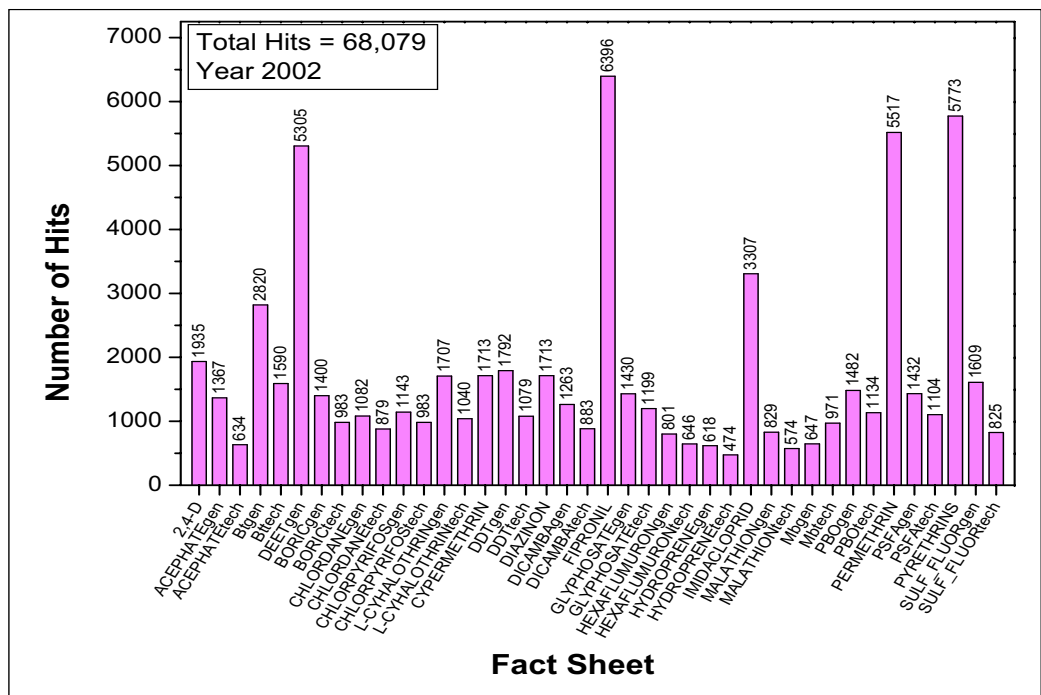
Graph 4.4 - Hits to WNV Pages



Graph 4.5 - Hits to Topic Fact Sheets



Graph 4.6 - Hits to Active Ingredient Fact Sheets



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 24,549 inquiries received, there were 21,537 (87.7%) from the general public; 1,037 (4.2%) from federal, state, or local government agencies; 570 (2.3%) from human and animal medical personnel; 493 (2.0%) from information groups including the media, unions, environmental organizations and pesticide manufacturing or marketing companies; 648 (2.6%) from consumer users including legal or insurance representatives, laboratory or consulting personnel, pest control operators, retail store personnel, or farm personnel; and 233 (1.0%) inquiries from other professions/occupations.

Graph 5.1 - Type of Inquirer

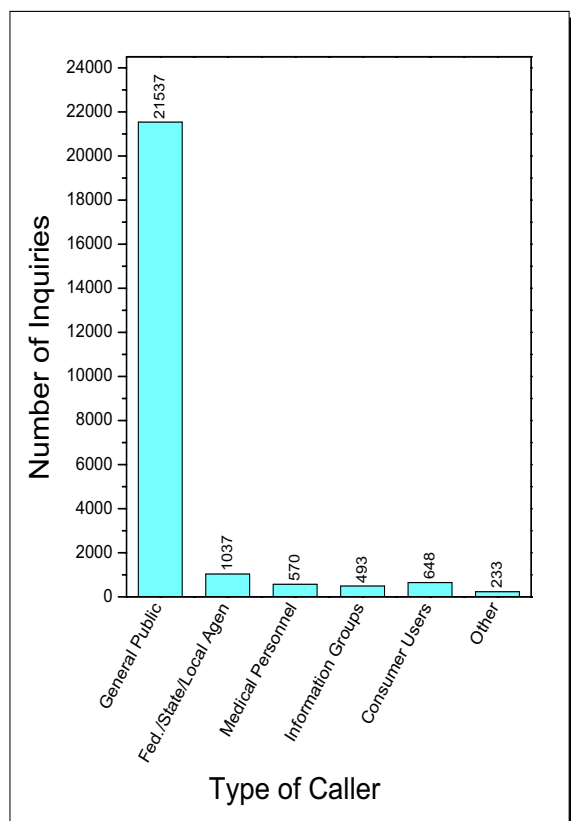
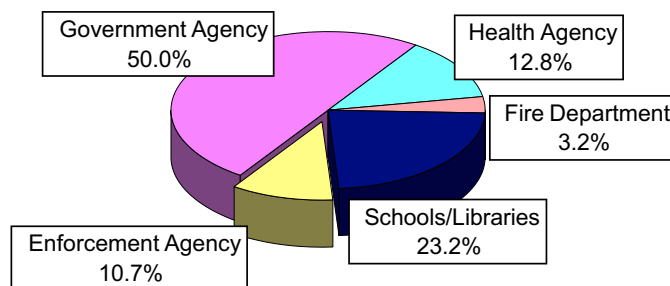


Table 5.1 - Type of Inquirer

Type of Inquirer	Number of Inquiries				
	1998	1999	2000	2001	2002
General Public	18802	20041	20209	20351	21537
Federal/State/Local Agency					
Health Agency	171	143	104	86	133
Government Agency	564	572	605	611	519
Enforcement Agency	43	11	2	23	111
Schools/Libraries	261	154	209	336	241
Fire Department	31	28	26	39	33
Medical Personnel					
Human Medical	395	351	290	315	333
Animal Vet./Clinic	168	195	252	268	230
Migrant Clinic	3	9	4	8	7
Information Groups					
Media	162	133	142	111	145
Unions/Info. Service	68	61	51	75	72
Environmental Org.	150	156	113	100	102
Pesticide Mfg./Mktg. Co.	133	106	136	173	174
Consumer Users					
Lawyer/Insurance	69	76	107	98	72
Lab./Consulting	96	105	100	80	65
Pest Control	202	131	149	183	196
Retail Store	51	154	197	286	257
Farm	57	50	44	63	58
Other	291	245	307	270	233
Grant Year Total =	21717	22721	23047	23511	24549

Chart 5.1 - Inquiries - Governmental Agencies



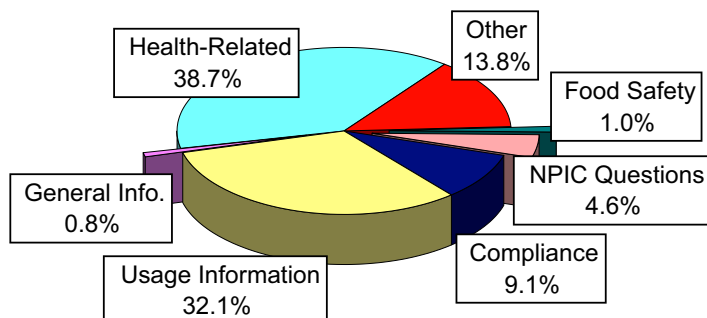
6. Type of Question

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 9,498 (38.7%) inquiries related to health effects of pesticides, including inquiries about general health, treatment and testing, and laboratory questions. In addition, there were 7,870 (32.1%) 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 2,236 (9.1%) inquiries involving compliance questions, including questions about regulations, disposal, and complaints. Lastly, there were 237 (1.0%) inquiries about other food safety issues, 201 (0.8%) inquiries involving general pesticide questions, 1,125 (4.6%) inquiries involving questions about NPIC, and 3,376 (13.8%) inquiries not classified according to type of question.

**Table 6.1 -
Type of Question**

Type of Question	Number of Inquiries				
	1998	1999	2000	2001	2002
Health Related					
Health	8396	8976	8717	9283	9287
Treatment	284	151	100	125	125
Testing Lab.	115	84	104	97	86
Usage Information					
Pest/Crop	1575	1846	1570	1732	2292
Chemical	2111	2196	2482	2342	2252
Pros and Cons	104	55	74	65	67
Safety/Application	531	686	2038	2446	2885
Cleanup	252	270	376	290	274
Harvest Intervals	89	64	123	111	88
Lawn Care	43	30	30	18	12
Compliance					
Regulations	1714	1587	1427	1587	1565
Complaints	328	288	321	390	506
Disposal	236	174	211	178	165
FQPA	33	31	10	5	0
Food Safety	42	227	189	234	237
Consumer Report Article	18	5	5	12	0
General	653	619	544	325	201
NPIC Questions	1266	1185	918	1139	1125
Non-Pesticide Related	5	1	12	1	6
Other	3922	4246	3796	3129	3376
Grant Year Total =	21717	22721	23047	23511	24549

**Chart 6.1 -
Type of Question**



7. Reason for Inquiry

Pesticide 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 1,884 inquiries for which a reason was available, there were 1,453 (77.1%) about pesticide exposure, and 378 (20.1%) about accidents. There were 32 (1.7%) inquiries about odor only, and 22 (1.2%) inquiries for other reasons. The reason for all other (non-pesticide) inquiries is N/A–Unknown.

Chart 7.1 - Pesticide Exposures

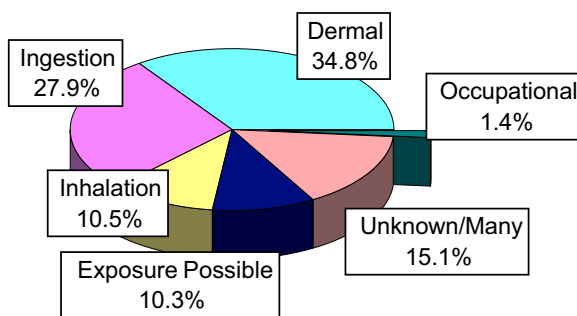


Chart 7.2 - Pesticide Accidents

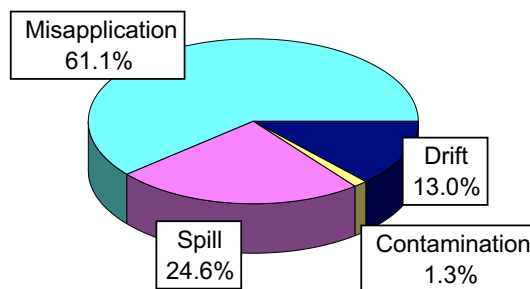


Table 7.1 - Reason for Inquiry

Reason for Inquiry	Number of Inquiries				
	1998	1999	2000	2001	2002
Information Inquiries					
Concern/Knowledge	19817	20474	20719	21465	22586
Incident Inquiries					
Exposures					
Dermal - Acute	200	293	336	315	496
Dermal - Chronic	13	15	4	10	10
Ingestion - Acute	228	298	382	359	400
Ingestion - Chronic	7	4	3	3	6
Inhalation - Acute	147	308	248	153	140
Inhalation - Chronic	22	25	6	18	12
Exposure Possible	335	314	324	215	150
Unknown/Many	133	211	258	268	219
Occupational	22	17	23	26	20
Accidents					
Misapplic. - Homeowner	120	137	189	198	172
Misapplic. - PCO	80	70	72	59	41
Misapplic. - Other	32	37	31	31	17
Spill - Indoor	75	75	115	102	74
Spill - Outdoor	29	20	19	25	19
Contamination - Home	15	6	11	2	3
Contamination - Other	8	9	11	7	2
Drift	51	60	62	48	49
Fire - Home	0	1	1	1	0
Fire - Other	2	1	3	1	0
Industrial Accident	0	0	0	0	0
Odor Only	28	55	77	55	32
Testing Laboratory	0	1	0	1	0
Other	26	21	39	27	22
N/A-Unknown	327	269	114	122	79
Grant Year Total =	21717	22721	23047	23511	24549

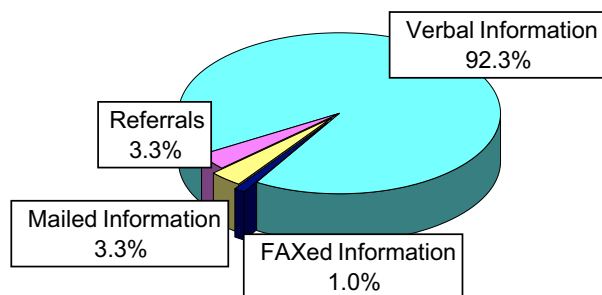
8. Action Taken

NPIC Specialists respond to inquiries in many ways, including the provision of verbal information, referrals to other agencies or organizations, and hard-copy information sent by mail, Fax, or email. Actions taken by Pesticide Specialists in response to inquiries are summarized in Table 8.1, and Charts 8.1 and 8.2. Most inquiries (22,660; 92.3%) were answered by providing verbal information to the inquirer. If Specialists determine that other agencies or organizations are better able to respond to an inquiry than NPIC, a referral is made. Referrals were made for 810 (3.3%) inquiries. Common NPIC referrals were to the EPA, state lead agencies or the National Pesticide Medical Monitoring Program; to county extension services; and to Oregon Poison Center and National Animal Poison Control Center. Some inquirers (1,079; 4.4%) received hard-copy information via mail, Fax, or email.

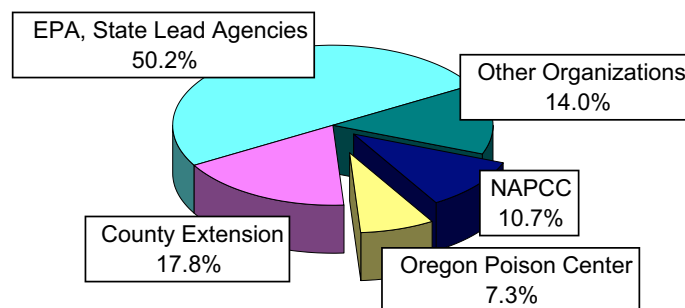
**Table 8.1 -
Action Taken**

Action Taken	Number of Inquiries				
	1998	1999	2000	2001	2002
Verbal Information	18180	17070	19277	21318	22660
Referrals to:					
EPA, State Lead Agencies, National Pesticide Medical Monitoring Program	1095	1245	708	613	407
County Extension	583	1435	495	109	144
Oregon Poison Center	112	72	43	77	59
National Animal Poison Control Center	155	81	112	111	87
National Antimicrobial Information Network	178	213	207	202	0
Other Organizations	973	1992	1475	316	113
Mailed Information, Brochure, Publication	340	472	611	664	822
Other/FAXED Information	101	141	119	101	257
Grant Year Total =	21717	22721	23047	23511	24549

**Chart 8.1 -
Action Taken**



**Chart 8.2 -
Referrals Made**

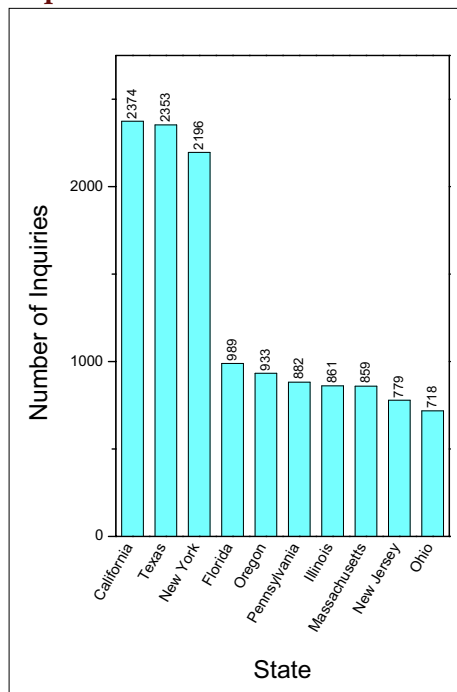


9. Inquiries by State

Table 9.1 lists the number of inquiries received by NPIC from each state. The largest number of inquiries were received from California, Texas, and New York (Graph 9.1) - states ranked 1, 3, and 2, respectively, in terms of population.

Graph 9.2 summarizes inquiries by EPA region. NPIC received 12.8% of inquiries from Region 5, 12.6% from Region 6, 12.6% from Region 4, 12.2% from Region 2, and 11.6% from Region 9.

Graph 9.1 - Top 10 States



Graph 9.2 - Inquiries by EPA Region

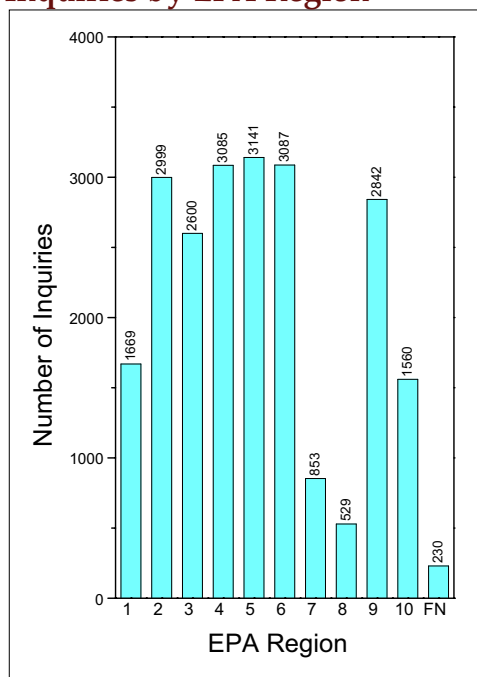


Table 9.1 - Listing of States and Foreign Nations Using NPIC

EPA Region	State Code	State	# of Inquiries
		Not recorded	1955
10	AK	Alaska	48
4	AL	Alabama	238
6	AR	Arkansas	169
9	AZ	Arizona	310
9	CA	California	2374
FN	CN	Canada	123
8	CO	Colorado	296
1	CT	Connecticut	383
3	DC	DC	290
3	DE	Delaware	58
4	FL	Florida	989
FN	FN	Foreign	107
4	GA	Georgia	532
9	HI	Hawaii	73
7	IA	Iowa	168
10	ID	Idaho	91
5	IL	Illinois	861
5	IN	Indiana	346
7	KS	Kansas	189
4	KY	Kentucky	203
6	LA	Louisiana	309
1	MA	Massachusetts	859
3	MD	Maryland	634
1	ME	Maine	128
5	MI	Michigan	615
5	MN	Minnesota	296
7	MO	Missouri	379
4	MS	Mississippi	124
8	MT	Montana	61
4	NC	North Carolina	522
8	ND	North Dakota	26
7	NE	Nebraska	119
1	NH	New Hampshire	130
2	NJ	New Jersey	779
6	NM	New Mexico	93
9	NV	Nevada	88
2	NY	New York	2196
5	OH	Ohio	718
6	OK	Oklahoma	161
10	OR	Oregon	933
3	PA	Pennsylvania	882
2	PR	Puerto Rico	15
1	RI	Rhode Island	100
4	SC	South Carolina	176
8	SD	South Dakota	33
4	TN	Tennessee	301
6	TX	Texas	2353
8	UT	Utah	92
3	VA	Virginia	628
2	VI	Virgin Islands	7
1	VT	Vermont	69
10	WA	Washington	488
5	WI	Wisconsin	305
3	WV	West Virginia	109
8	WY	Wyoming	18
		Total =	24549

10. Top 10 Active Ingredients for All Inquiries

When inquiries to NPIC involve discussion of a specific product or active ingredient, Pesticide Specialists record the product and the active ingredient in the NPIC Pesticide Incident Database. The active ingredient permethrin was discussed in more inquiries than any other single active ingredient (Table 10.1). Of the 1,339 inquiries involving permethrin, 153 (11.4%) were incident inquiries and 1,187

(88.7%) 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 definitely

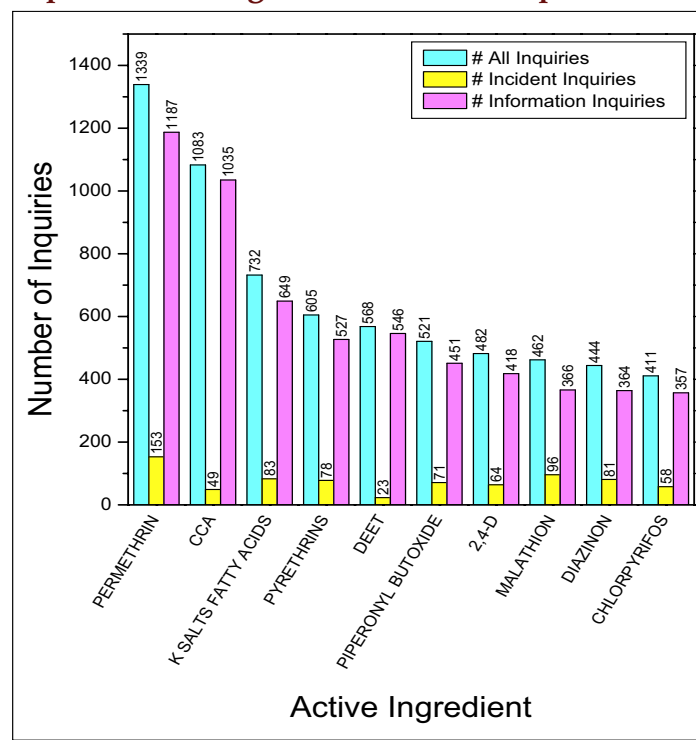
(1), probably (2), possibly (3), or unlikely (4) to have been caused by exposure to a pesticide, or whether the incident was unrelated (5) to pesticides. A certainty index of zero (0) is assigned to those inquiries where the inquirer reported an exposure, accident, or odor, but no health effects were reported. Of the 153 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).

**Table 10.1 -
Top 25 Active Ingredients
for All Inquiries**

Active Ingredient	Total Inquiries	Incident ¹⁾ Inquiries	Information Inquiries
PERMETHRIN	1339	153 (21)	1187
CHROMATED COPPER ARSENATE	1083	49 (1)	1035
POTASSIUM SALTS OF FATTY ACIDS	732	83 (1)	649
PYRETHRINS	605	78 (5)	527
DEET	568	23 (3)	546
PIPERONYL BUTOXIDE	521	71 (4)	451
2,4-D	482	64 (1)	418
MALATHION	462	96 (4)	366
DIAZINON	444	81 (5)	364
CHLORPYRIFOS	411	58 (3)	357
CARBARYL	401	68 (5)	333
DELTA METHRIN	356	55 (4)	303
PETROLEUM HYDROCARBONS	352	33 (1)	319
GLYPHOSATE	345	39 (1)	307
D-PHENOTHRIN	342	150 (69)	192
FIPRONIL	334	38 (5)	297
BACILLUS THURINGIENSIS	333	12 (0)	321
BORIC ACID	333	38 (1)	298
MECOPROP	330	52 (0)	278
DICAMBA	311	44 (0)	267
CYFLUTHRIN	304	46 (5)	259
BIFENTHRIN	268	33 (8)	236
IMIDACLOPRID	264	38 (3)	226
METALDEHYDE	260	133 (16)	127
CAPTAN	241	47 (2)	195
Total - Above Pesticides =	11421	1582 (168)	9858

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).

**Graph 10.1 -
Top 10 Active Ingredients for All Inquiries**



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. Table 11.1 also summarizes the number of human and animal entities involved in reported incidents of exposure to specific active ingredients. Permethrin was reported to be involved in more incidents than any other active ingredient. Of the 1,251 times that one of the other top 25 active ingredients was mentioned during incident inquiries, in which human or animal entities were involved, 14.6% of the cases were assigned a certainty index of 1 (definite) or 2 (probable).

Graph 11.1 - Top 10 Active Ingredients for Incident Inquiries

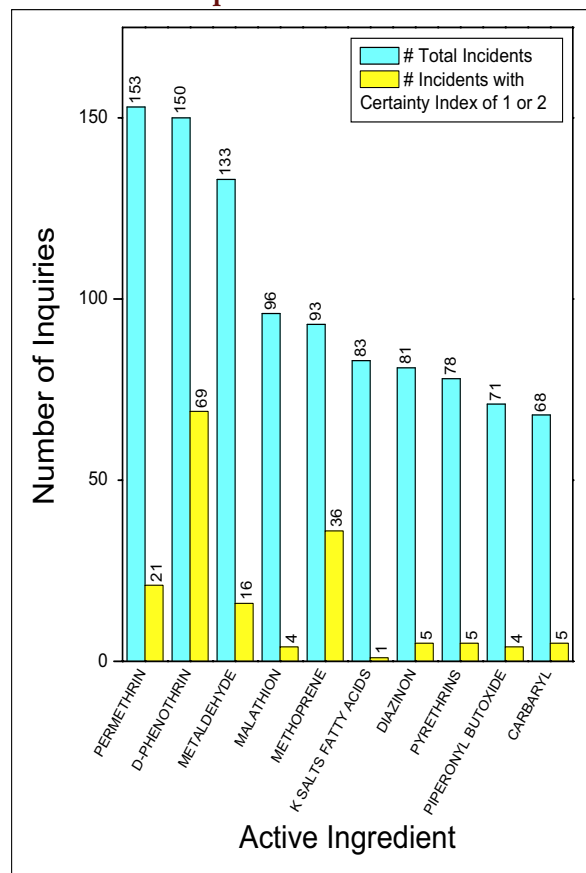


Table 11.1 - Top 25 Active Ingredients for Incident Inquiries

Active Ingredient	Total Incidents ¹⁾	Human Incidents	Animal Incidents	Other Incidents	Information Inquiries
PERMETHRIN	153 (21)	81 (9)	50 (12)	22 (0)	1187
D-PHENOTHRIN	150 (69)	10 (1)	135 (68)	5 (0)	192
METALDEHYDE	133 (16)	11 (1)	117 (15)	5 (0)	127
MALATHION	96 (4)	49 (4)	7 (0)	40 (0)	366
METHOPRENE	93 (36)	8 (1)	85 (35)	0 (0)	90
POTASSIUM SALTS OF FATTY ACIDS	83 (1)	44 (1)	21 (0)	18 (0)	649
DIAZINON	81 (5)	43 (4)	14 (1)	24 (0)	364
PYRETHRINS	78 (5)	51 (3)	14 (2)	13 (0)	527
PIPERONYL BUTOXIDE	71 (4)	44 (3)	15 (1)	12 (0)	451
CARBARYL	68 (5)	28 (4)	14 (1)	26 (0)	333
2,4-D	64 (1)	31 (1)	13 (0)	20 (0)	418
CHLORPYRIFOS	58 (3)	38 (3)	5 (0)	15 (0)	357
DELTA METHRIN	55 (4)	42 (4)	7 (0)	6 (0)	303
MECOPROP	52 (0)	37 (0)	6 (0)	9 (0)	278
CHROMATED COPPER ARSENATE	49 (1)	43 (1)	6 (0)	0 (0)	1035
CAPTAN	47 (2)	23 (2)	4 (0)	20 (0)	195
CYFLUTHRIN	46 (5)	32 (3)	10 (2)	4 (0)	259
DICAMBA	44 (0)	27 (0)	7 (0)	10 (0)	267
DIPHACINONE	39 (2)	2 (0)	34 (2)	3 (0)	50
GLYPHOSATE	39 (1)	22 (1)	7 (0)	10 (0)	307
BORIC ACID	38 (1)	20 (1)	12 (0)	6 (0)	298
FIPRONIL	38 (5)	11 (1)	22 (4)	5 (0)	297
IMIDACLOPRID	38 (3)	17 (0)	13 (3)	8 (0)	226
BIFENTHRIN	33 (8)	15 (5)	12 (3)	6 (0)	236
PETROLEUM HYDROCARBONS	33 (1)	15 (0)	8 (1)	10 (0)	319
Total - Above Pesticides =	1679 (203)	744 (53)	638 (150)	297 (0)	9131

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).

It is interesting to note that, even though more inquiries were received about permethrin than any other active ingredient, the proportion of permethrin incidents assigned a certainty index of 1 or 2 was about the same as for the remaining top 24 pesticides taken as a group.

12. Location of Incident

For incident inquiries, NPIC Specialists record the reported location of the reported exposure. Of the 1,773 known locations where incidents occurred, 91.5% occurred in the home or yard, 3.3% occurred in an agricultural setting, and 2.1% occurred in an office building or school (Table 12.1).

**Table 12.1 -
Location of Pesticide Incident**

Location	Number of Incident ¹⁾ Inquiries				
	1998	1999	2000	2001	2002
Unclear/Unknown	32 (6)	105 (13)	115 (12)	83 (8)	47 (3)
Home or Yard	1246 (97)	1565 (121)	1704 (104)	1543 (107)	1622 (178)
Agriculturally Related	91 (8)	114 (14)	122 (7)	68 (4)	59 (11)
Industrially Related	12 (1)	13 (1)	12 (1)	10 (2)	7 (1)
Office Building, School	65 (2)	39 (2)	65 (1)	59 (2)	37 (1)
Pond, Lake, Stream Related	5 (0)	9 (2)	8 (0)	7 (1)	8 (0)
Nursery, Greenhouse	10 (0)	9 (1)	13 (0)	6 (0)	9 (0)
Food Service/Restaurants	4 (0)	5 (1)	2 (0)	5 (1)	3 (2)
Retail Store/Business	17 (2)	15 (3)	19 (1)	27 (2)	15 (2)
Roadside/Right-of-Way	9 (1)	8 (0)	15 (0)	20 (1)	4 (1)
Park/Golf Course	9 (1)	8 (0)	17 (1)	6 (0)	9 (0)
Other	62 (12)	72 (6)	101 (14)	82 (5)	64 (7)
Total =	1562 (130)	1962 (164)	2193 (141)	1916 (133)	1884 (206)

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 342 times that a specific environmental impact was reported, 4.7% 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				
	1998	1999	2000	2001	2002
Air	13 (0)	11 (0)	23 (0)	29 (0)	17 (2)
Water	17 (1)	9 (1)	15 (2)	21 (2)	14 (1)
Soil	21 (3)	15 (3)	23 (0)	18 (0)	8 (0)
Food Crops/Process	38 (0)	40 (1)	83 (0)	78 (0)	64 (0)
Property	93 (7)	136 (6)	234 (8)	209 (9)	168 (11)
Poultry/Livestock	3 (1)	13 (2)	7 (1)	11 (0)	6 (2)
Plants/Trees	25 (2)	48 (1)	71 (2)	65 (1)	65 (0)
Not Applicable	1333 (112)	1675 (147)	1728 (125)	1463 (120)	1527 (190)
Other	19 (4)	15 (3)	9 (3)	22 (1)	15 (0)
Total =	1562 (130)	1962 (164)	2193 (141)	1916 (133)	1884 (206)

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).



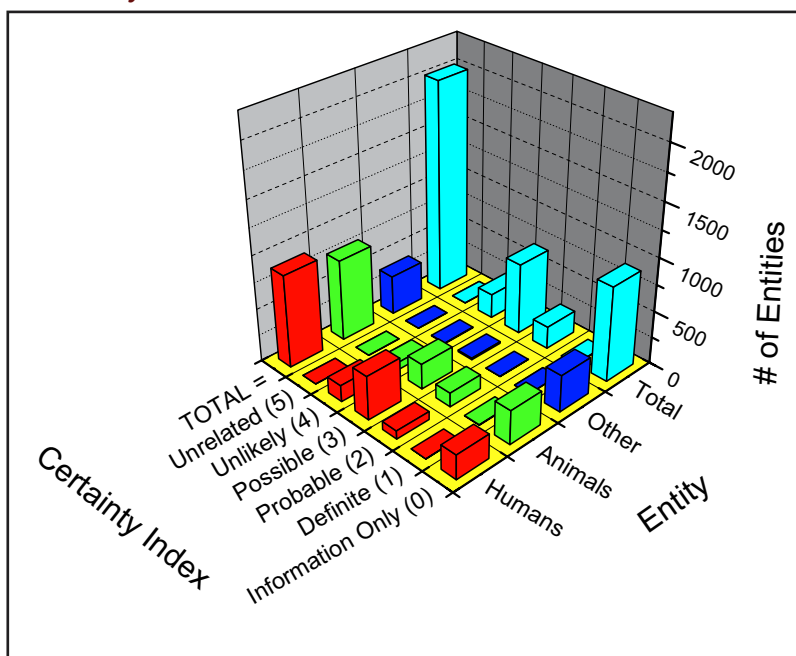
14. Certainty Index

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 (2,007), 0.3% of the cases were assigned a certainty index of definite (1), 10.5% of the cases were assigned a certainty index of probable (2), 33.3% of the cases were assigned a certainty index of possible (3), 11.5% of the cases were assigned a certainty index of unlikely (4), 0% of the cases were assigned a certainty index of unrelated (5), 44.5% 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 = 24,549								
Non-Incident Inquiries = 23,524								
Information Only (0)	229	319	345	893	94	108	25	2
Definite (1)	1	5	0	6	1	0	0	0
Probable (2)	77	132	1	210	41	28	8	0
Possible (3)	412	239	17	668	152	218	40	2
Unlikely (4)	153	71	6	230	57	87	8	1
Unrelated (5)	0	0	0	0	0	0	0	0
TOTAL =	872	766	369	2007	345	441	81	5

Graph 14.1 - Certainty Index for Incidents



15. Description of Entities

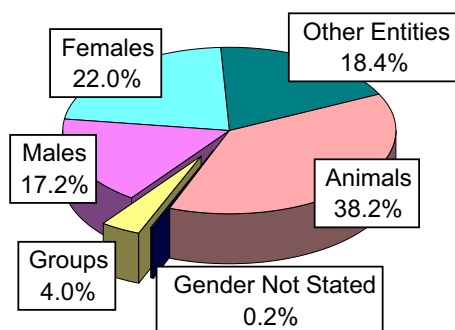
Table 15.1 and Chart 15.1 provide a more detailed summary of categories of entities discussed in incident inquiries. Of the 2,007 entities involved in incidents reported to NPIC, 43.4% were human, 38.2% animal, and 18.4% were other types of non-target entities (building or environment, for example).

**Table 15.1 -
Description of Entities**

Description of Entities	Number of Entities ¹⁾				
	1998	1999	2000	2001	2002
All females -					
Female	502 (37)	686 (44)	692 (39)	539 (29)	416 (28)
Female-pregnant	12 (0)	24 (1)	49 (0)	34 (2)	25 (0)
Female suicide attempt	3 (1)	0 (0)	1 (0)	0 (0)	0 (0)
Total all females =	517 (38)	710 (45)	742 (39)	573 (31)	441 (28)
All males -					
Male	367 (35)	452 (48)	445 (35)	375 (26)	345 (42)
Male suicide attempt	2 (0)	4 (0)	1 (0)	1 (1)	0 (0)
Total all males =	369 (35)	456 (48)	446 (35)	376 (27)	345 (42)
All groups -					
Family	94 (7)	138 (12)	98 (3)	58 (5)	68 (7)
Non-family group	31 (2)	27 (1)	40 (4)	22 (3)	13 (1)
Total all groups =	125 (9)	165 (13)	138 (7)	80 (8)	81 (8)
Gender not stated -					
Child - sex unknown	7 (1)	9 (0)	1 (0)	7 (0)	4 (0)
Adult - sex unknown	0 (0)	1 (0)	1 (1)	0 (0)	0 (0)
Other - sex unknown	12 (0)	15 (1)	6 (1)	0 (0)	1 (0)
Total gender not stated =	19 (1)	25 (1)	8 (2)	7 (0)	5 (0)
Total all humans =	1030 (83)	1356 (107)	1334 (83)	1036 (66)	872 (78)
All animals -					
Single animal	312 (39)	371 (53)	513 (53)	563 (69)	715 (130)
Group of animals	45 (16)	70 (16)	70 (16)	38 (6)	44 (7)
Wildlife	2 (1)	3 (0)	4 (1)	7 (1)	7 (0)
Total all animals =	359 (56)	444 (69)	587 (70)	608 (76)	766 (137)
Other entities:					
Building-home/office	135 (0)	123 (1)	155 (0)	167 (1)	127 (0)
Other places	144 (1)	161 (0)	282 (1)	270 (1)	242 (1)
Total other entities =	279 (1)	284 (1)	437 (1)	437 (2)	369 (1)
Total all entities =	1668 (140)	2084 (177)	2358 (154)	2081 (144)	2007 (216)

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 15.1 -
Description of Entities**



16. Entity Symptoms

Of the 872 human entities discussed in incident inquiries to NPIC, symptoms, or absence of symptoms, were reported for 832 entities (Table 16.1). Of these entities, 55.5% reported symptomatic health effects (effects that are consistent with a significant exposure to the pesticide in question), 27.0% reported asymptomatic health effects, and 17.4% reported atypical health effects (Chart 16.1). Table 16.1 and Chart 16.2 provide this and similar information for animal entities.

Chart 16.1 - Symptoms - Humans

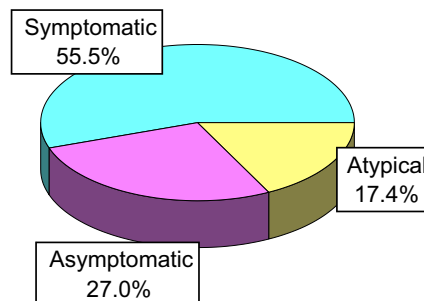


Chart 16.2 - Symptoms - Animals

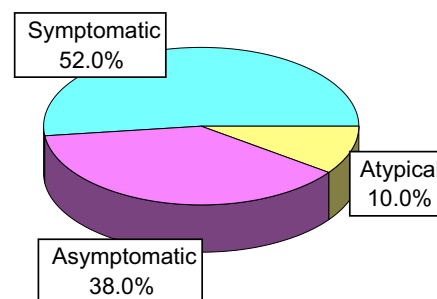


Table 16.1 - Reported Symptoms of Entities

Reported Symptoms	Number of Entities ¹⁾				
	1998	1999	2000	2001	2002
Human symptoms -					
Symptomatic	614 (138)	843 (188)	751 (160)	480 (116)	462 (107)
Asymptomatic	180 (24)	240 (15)	255 (30)	244 (28)	225 (23)
Atypical	174 (19)	178 (15)	184 (26)	203 (19)	145 (14)
Total humans =	968 (181)	1261 (218)	1190 (216)	927 (163)	832 (144)
Animal symptoms -					
Symptomatic	165 (59)	201 (81)	273 (91)	252 (101)	376 (160)
Asymptomatic	147 (5)	196 (1)	241 (13)	273 (23)	275 (15)
Atypical	48 (5)	44 (4)	48 (7)	65 (7)	72 (12)
Total animals =	360 (69)	441 (86)	562 (111)	590 (131)	723 (187)
Total symptoms =	1328 (250)	1702 (304)	1752 (327)	1517 (294)	1555 (331)

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).

17. Deaths and Other Outcomes

Amongst the 872 human entities, 2 deaths were reported (Table 17.1); both deaths were associated with the same incident. Based on information provided by the inquirer, this incident was assigned a certainty index of 1, making it likely that the deaths were a result of pesticide exposure. Both deaths (one male and one female) resulted from accidental exposure to aluminum phosphide following a misuse.

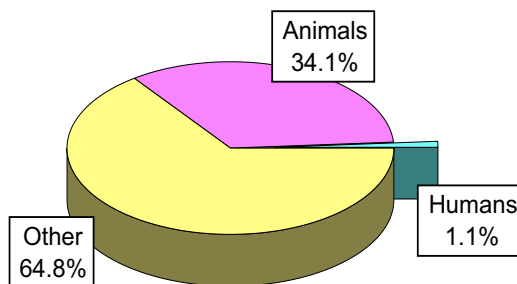
Of the 766 animal victims, there were 61 deaths, with 29 of the cases assigned a certainty index of 1 or 2, indicating likely pesticide involvement. Table 17.1 and Chart 17.1 summarize this information and also list the number of entities associated with life threatening conditions or interesting or strange circumstances.

Table 17.1 - Additional Outcomes for Entities

Additional Outcomes	Number of Entities ¹⁾				
	1998	1999	2000	2001	2002
Human deaths -					
Male	2 (0)	4 (0)	1 (0)	2 (0)	1 (1)
Female	1 (1)	1 (0)	0 (0)	0 (0)	1 (1)
Total human deaths =	3 (1)	5 (0)	1 (0)	2 (0)	2 (2)
Animal deaths -					
Single animal	27 (4)	22 (11)	27 (7)	45 (10)	45 (25)
Group of animals	20 (10)	25 (10)	20 (6)	12 (5)	9 (4)
Wildlife	2 (1)	2 (0)	2 (1)	7 (1)	7 (0)
Total animal deaths =	48 (15)	49 (21)	49 (14)	64 (16)	61 (29)
Other -					
Life threatening	5 (1)	4 (4)	6 (3)	2 (1)	0 (0)
Interesting/strange	60 (12)	79 (21)	141 (26)	88 (17)	116 (21)
Total other =	65 (13)	83 (25)	147 (29)	90 (18)	116 (21)
Total additional outcomes =	117 (29)	137 (46)	197 (43)	156 (34)	179 (52)

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).

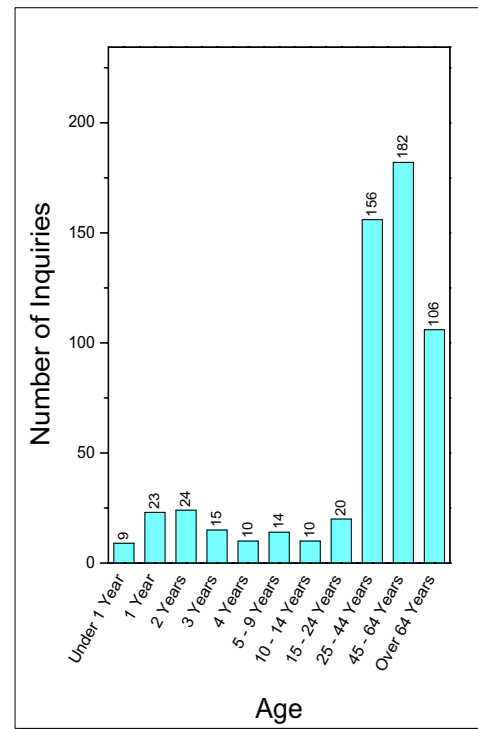
Chart 17.1 - Deaths and Other Outcomes



18. Entity Age

Entity ages were available for 569 of the 872 human entities. Table 18.1 and Graph 18.1 summarize information about the ages of human entities discussed in incident inquiries to NPIC. Of these 569 entities, 14.2% were less than 5 years of age, 4.2% were between the ages of 5 and 14, 3.5% were between the ages of 15 and 24, 59.4% were between the ages of 25 and 64, and 18.6% were over age 64.

**Graph 18.1 -
Age of Human Entities**



**Table 18.1 -
Reported Ages of Human Entities**

Age Category	Number of Entities				
	1998	1999	2000	2001	2002
Under 1 Year	49	39	6	14	9
1 Year	39	25	22	12	23
2 Years	41	42	16	20	24
3 Years	23	18	15	20	15
4 Years	29	13	9	10	10
5 - 9 Years	68	55	25	21	14
10 - 14 Years	19	30	17	15	10
15 - 24 Years	28	45	32	37	20
25 - 44 Years	245	200	269	217	156
45 - 64 Years	196	184	216	203	182
Over 64 Years	73	78	99	99	106



Report on Subcontracts

Oregon Poison Center

NPIC Pesticide Specialists transferred 59 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, 87 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.

