SUMMARY REVIEW OF
HEALTH-RELATED PESTICIDE INCIDENT REPORTS: 1999-2006

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INTRODUCTION:

The Office of Public Health's Section of Environmental Epidemiology and Toxicology's (OPH/SEET) Pesticide Program and the Louisiana Department of Agriculture and Forestry's (LDAF) Pesticide and Environmental Programs jointly investigate all Health-Related Pesticide Incident Reports (HRPIRs). Louisiana has been investigating health-related pesticide complaints since 1991 when LDAF and OPH/SEET entered into an interagency agreement. The interagency agreement recognizes the participation and cooperation of both Agencies needed in order to handle health complaints involving possible pesticide exposure. These joint investigations involve the collection and review of environmental and health data relevant to the reported pesticide exposure incident. LDAF determines if a pesticide misapplication has occurred, and OPH/SEET evaluates the health effects associated with a pesticide exposure.

Most HRPIRs are initiated when LDAF receives a complaint of adverse health effects possibly associated with pesticide exposure. In November 2002, OPH/SEET began receiving case reports from the Louisiana Poison Control Center (PCC) for calls involving exposure to pesticides. These calls are reviewed by the OPH/SEET and, in some cases, are forwarded to LDAF for investigation. Calls selected for investigation by LDAF are based on criteria that consider the location of exposure, pesticide toxicity, and circumstance of exposure. OPH/SEET also forwards calls from their Indoor Air and Hazardous Substances Emergency Events Surveillance (HSEES) programs to LDAF if they involve a pesticide exposure. HSEES events are obtained from the Louisiana Department of Environmental Quality (DEQ) and state police reports.

Information collected by LDAF and/or OPH/SEET includes demographic data, circumstance and route of exposure, pesticide product information, type of application, location of pesticide application, medical signs and symptoms, biological and environmental monitoring information (e.g., results of cholinesterase and swab samples), severity of health effects and healthcare utilization. This information is obtained from a variety of sources: LDAF inspector reports, environmental samples, medical records, pesticide product labels and MSDSs, and complainant interviews. The collected data is entered into a database maintained by OPH/SEET. The database, data coding guides, and case classification and severity criteria were developed by the National Institute for Occupational Safety and Health's and are used by most states that have a pesticide surveillance program.

This report presents summary information on HRPIRs from 1999 through 2006. Referrals of PCC, Indoor Air, and HSEES calls are included in the report if they resulted in an HRPIR.

CASES & EVENTS:

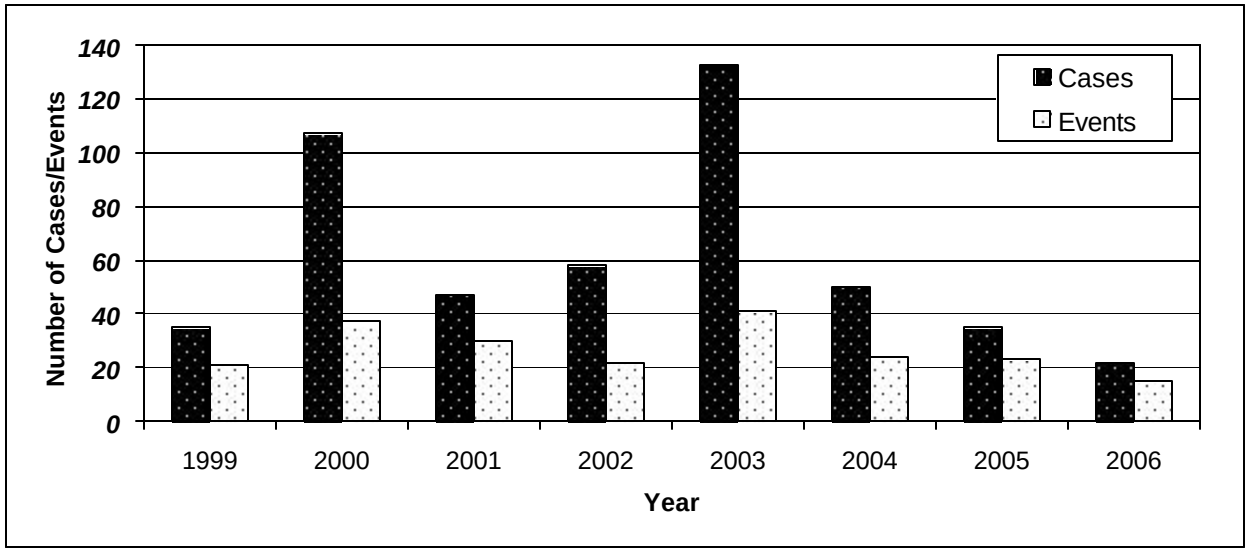
Throughout this report, an event is defined as a reported health-related pesticide incident affecting at least one person. Each individual affected by a single health-related pesticide incident is considered a *case*. Therefore, many cases may be included in one event. The health effects associated with a reported health-related pesticide incident are evaluated individually by case.

Over the course of 8 years (1999-2006), 213 events resulting in 487 cases were investigated. The median number of cases and events per year was 49 and 24, respectively. Events ranged from a low of 15 in 2006 to a high of 41 in 2003, and number of cases ranged from a low of 22 in 2006 to a high of 133 in 2003. In 2003, one event involved 58 people.

Table 1: Cases and Events, 1999-2006.

	1999-2006	1999	2000	2001	2002	2003	2004	2005	2006
	N	N	N	N	N	N	N	N	N
Cases	487	35	107	47	58	133	50	35	22
Events	213	21	37	30	22	41	24	23	15
Median Cases per year	49								
Median Events per year	24								

Figure 1: Cases and Events, 1999-2006.



Source of Complaint

Source of complaint refers to the agency that initially received the reported health-related pesticide incident. "PCC" refers to Poison Control Center calls, and "Other Agency" refers to OPH/SEET's Indoor Air or Hazardous Substances Emergency Events Surveillance (HSEES) program. Sometimes, the PCC and LDAF both receive complaints regarding the same incident. These are designated as "PCC and LDAF" and are not included in the number of cases reported to a single source.

Table 2: Source of Complaint by Cases and Events, 1999-2006.

	1999-2006	1999	2000	2001	2002	2003	2004	2005	2006
	N	N	N	N	N	N	N	N	N
Cases	**487**	**35**	**107**	**47**	**58**	**133**	**50**	**35**	**22**
Source									
LDAF	396	35	107	47	57	64	45	27	14
PCC and LDAF	70				1	67		2	
PCC	18					2	5	3	8
Other Agency	3							3	
Events	**213**	**21**	**37**	**30**	**22**	**41**	**24**	**23**	**15**
Source									
LDAF	188	21	37	30	21	32	19	16	12
PCC and LDAF	10				1	7		2	
PCC	13					2	5	3	3
Other Agency	2							2	

Figure 2: Source of Complaint by Cases, 1999-2006.

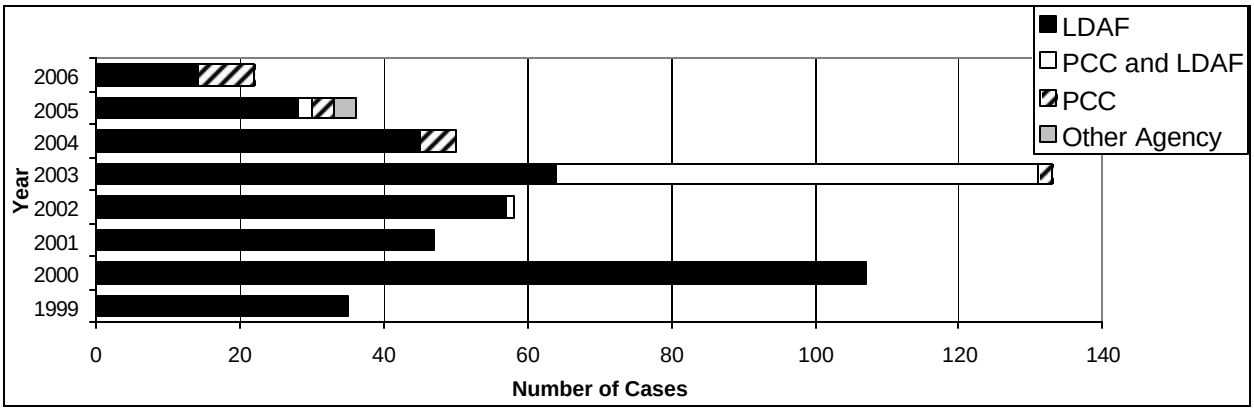
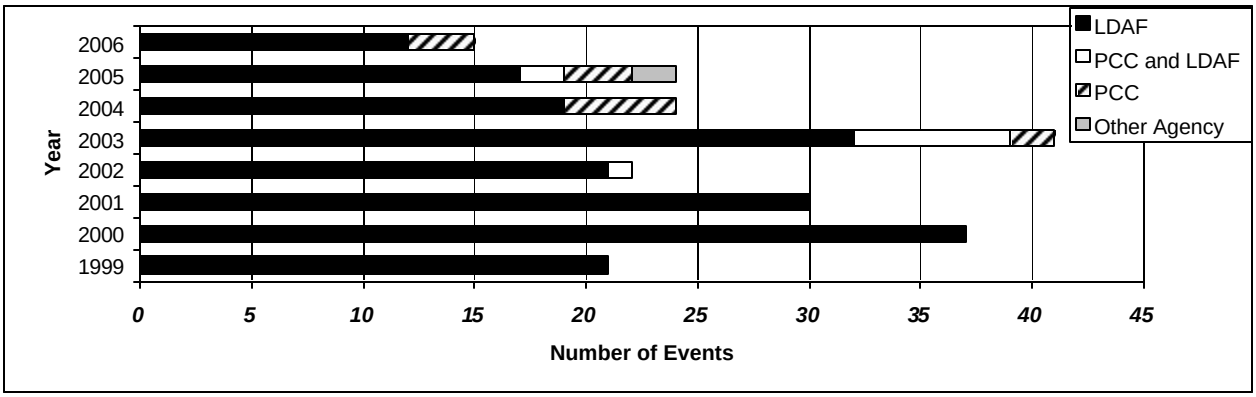


Figure 3: Source of Complaint by Events, 1999-2006.



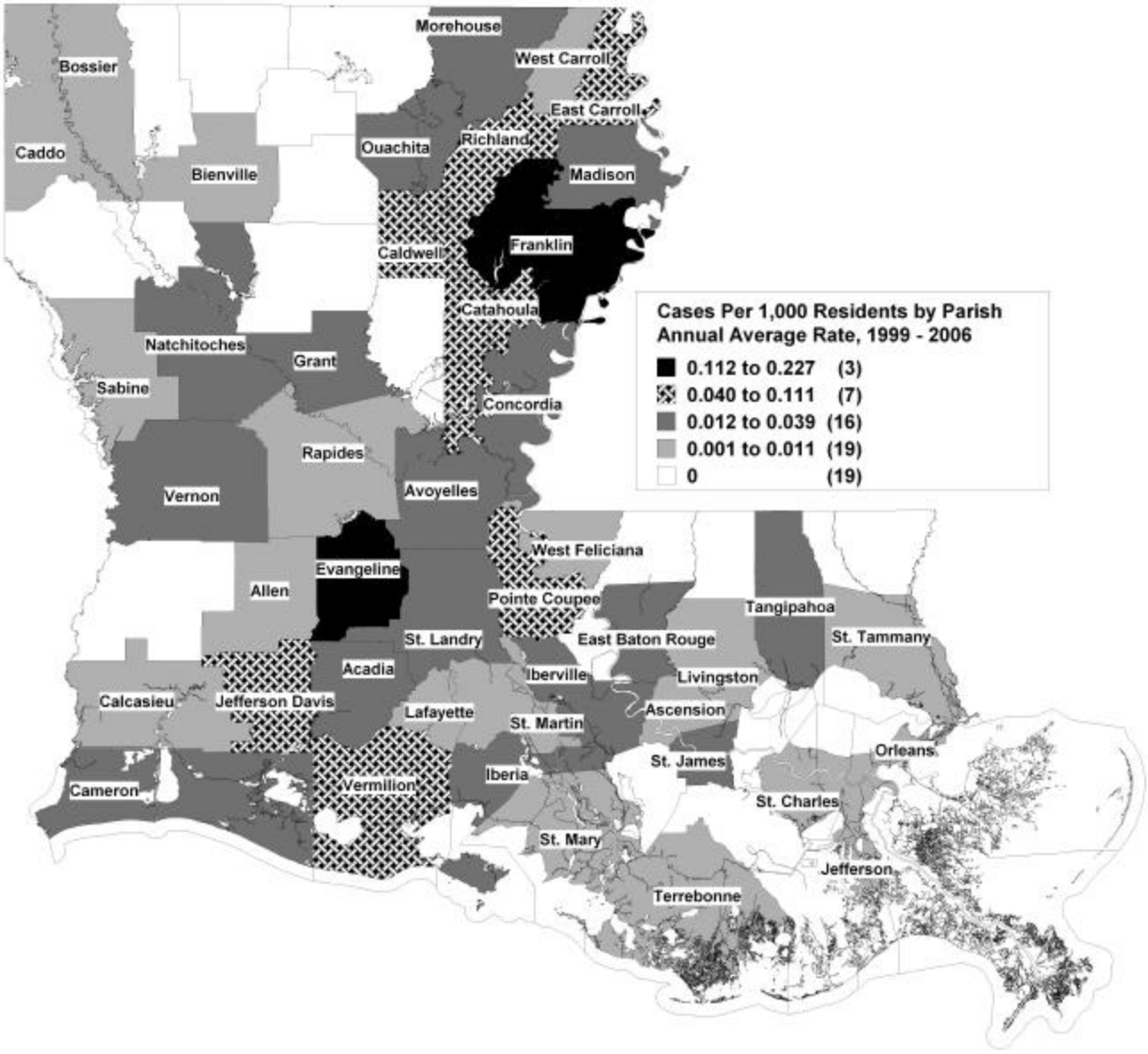
Cases & Events by Parish

The following table lists the total number of cases and events by parish.

Table 3: Cases & Events by Parish, 1999-2006

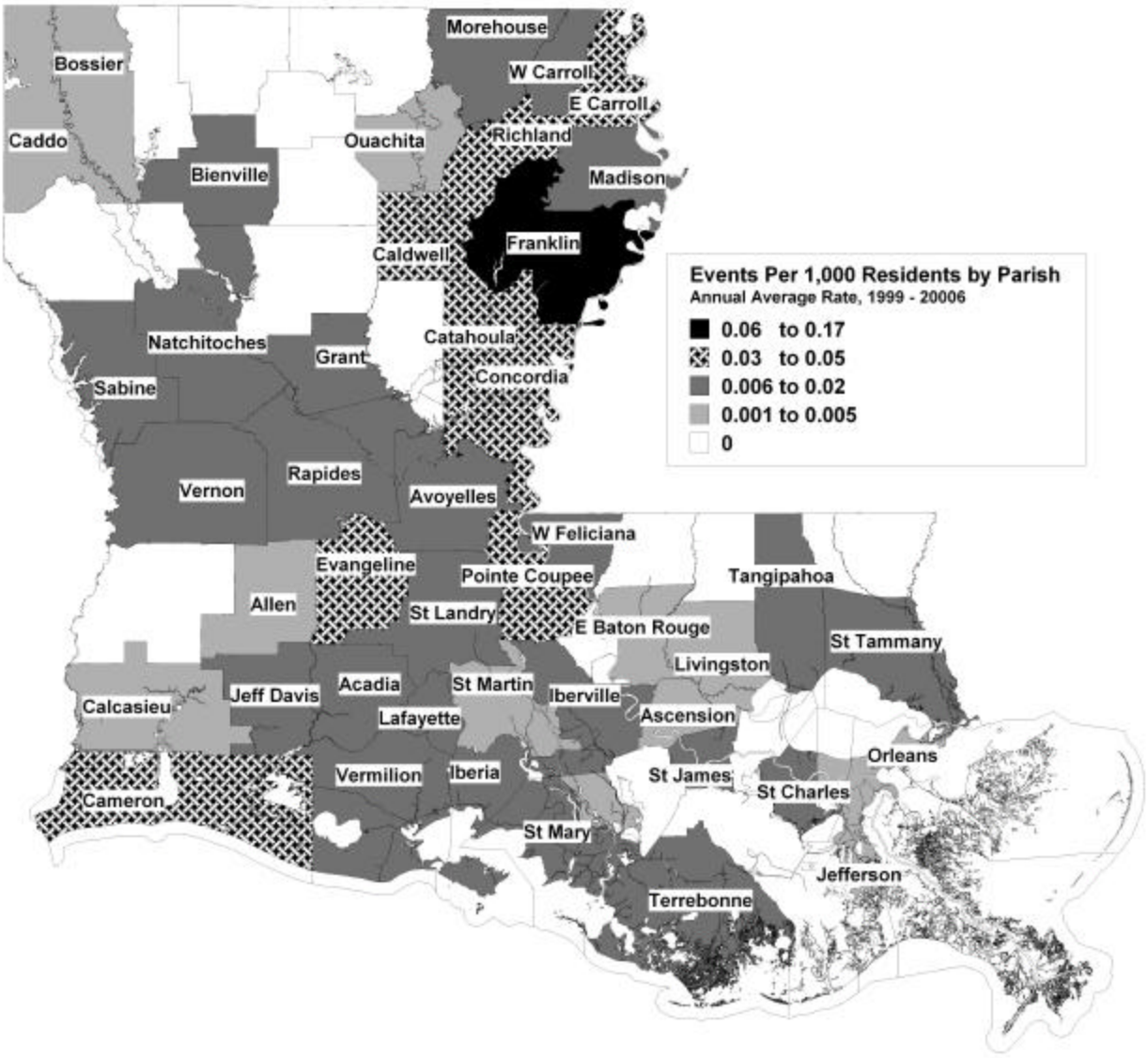
Parish Name	Cases	Events
Acadia	8	8
Allen	2	1
Ascension	1	1
Avoyelles	5	5
Bienville	1	1
Bossier	2	1
Caddo	5	5
Calcasieu	9	4
Caldwell	4	2
Cameron	2	2
Catahoula	4	4
Concordia	4	4
East Baton Rouge	74	12
East Carroll	3	2
Evangeline	45	7
Franklin	19	13
Grant	2	2
Iberia	7	6
Iberville	3	3
Jefferson	15	6
Jefferson Davis	12	4
Lafayette	16	8
Lafource	6	4
La Salle	1	1
Livingston	6	3
Madison	2	2
Morehouse	7	4
Natchitoches	6	6
Orleans	27	10
Ouachita	24	4
Pointe Coupee	14	6
Rapides	7	7
Richland	15	7
Sabine	1	1
St. Charles	4	2
St. James	3	2
St. John the Baptist	24	5
St. Landry	18	4
St. Martin	1	1
St. Mary	3	3
St. Tammany	15	9
Tangipahoa	11	6
Tensas	12	9
Terrebonne	4	4
Vermilion	25	6
Vernon	5	3
West Carroll	1	1
West Feliciana	1	1
Unknown	1	1

Figure 4: Annual Average Case Rate by Parish, 1999-2006



An annual average rate of cases by parish was calculated by dividing the total number of cases per parish by the total parish population according to 2000 US Census data. This rate was further divided by 8 to obtain an average annual case rate by parish. This rate reflects number of cases per 1,000 residents.

Figure 5: Annual Average Event Rate by Parish, 1999-2006



An annual average rate of events by Parish was calculated by dividing the total number of events per parish by the total parish population according to 2000 US Census data. This rate was further divided by 8 to obtain an average annual event rate by parish. This rate reflects the number of reported health-related pesticide incidents per 1,000 residents.

CASE INFORMATION:

The following tables present information on the 487 cases involved in the reported health-related pesticide incidents.

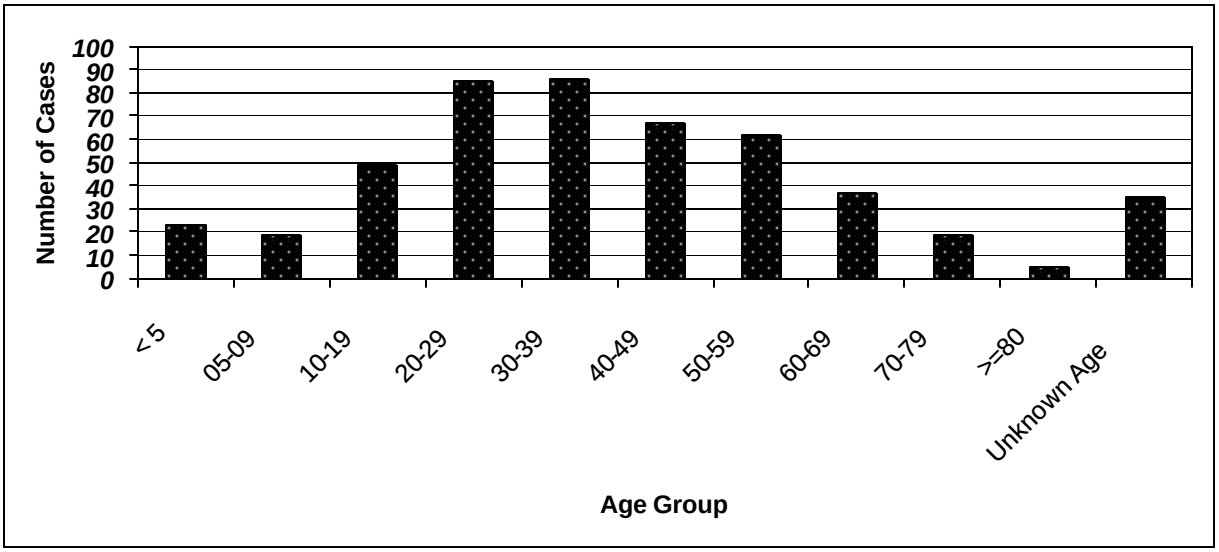
Demographics:

Overall, there were more female cases (55%) than male cases (45%). Thirty-five percent of the cases were between 20 and 39 years. Forty-two (9%) cases were less than ten years old.

Table 4: Cases by Age and Gender, 1999-2006.

	1999-2006 N	1999 N	2000 N	2001 N	2002 N	2003 N	2004 N	2005 N	2006 N
Total	**487**	**35**	**107**	**47**	**58**	**133**	**50**	**35**	**22**
Age									
< 5	23	1	2	2	6	7	2	2	1
05-09	19	3	3	2	2	6	1	2	0
10-19	49	5	22	3	3	11	2	3	0
20-29	85	3	13	5	5	48	5	2	4
30-39	86	7	13	8	11	22	13	8	4
40-49	67	4	9	11	9	10	12	7	5
50-59	62	7	3	6	15	15	6	5	5
60-69	37	4	7	6	3	6	5	4	2
70-79	19	0	1	2	4	7	3	2	0
>=80	5	0	0	2	0	1	1	0	1
Unknown Age	35	1	34	0	0	0	0	0	0
Gender									
Male	220	17	68	25	18	44	22	14	12
Female	266	18	39	22	39	89	28	21	10
Unknown	1	0	0	0	1	0	0	0	0

Figure 6: Cases by Age Group, 1999-2006.



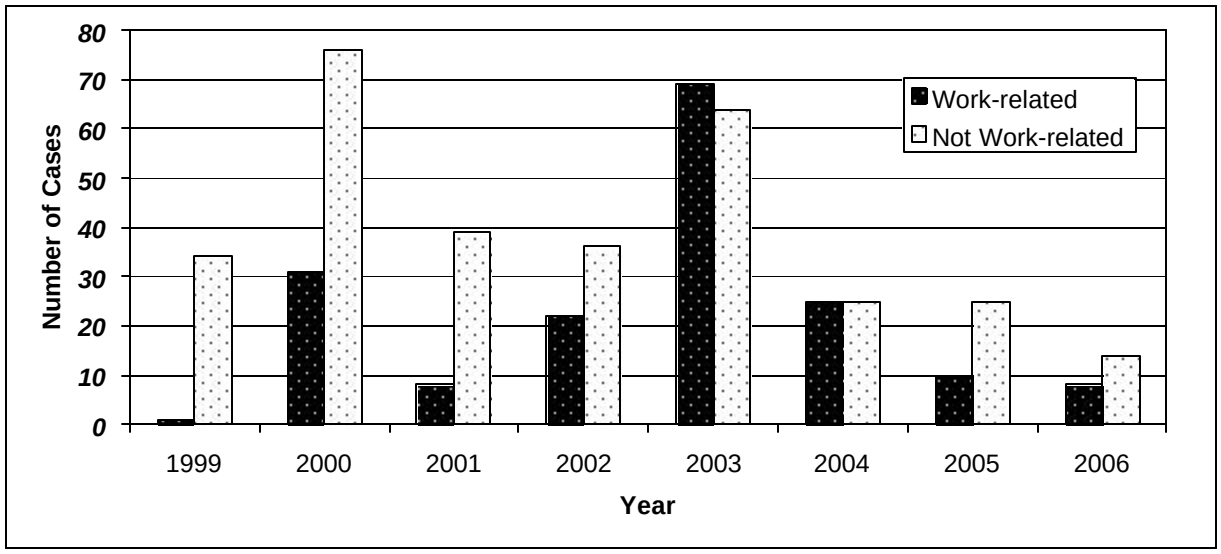
Work Status:

A case is considered work-related if the reported health-related pesticide incident occurred while the individual was working regardless if he/she was the applicator of the pesticide. Overall, 175 of the 487 cases (36%) were work-related.

Table 5: Cases by Work Status, 1999-2006.

	1999-2006 N	1999 N	2000 N	2001 N	2002 N	2003 N	2004 N	2005 N	2006 N
Total	**487**	**35**	**107**	**47**	**58**	**133**	**50**	**35**	**22**
Work Related									
Yes	174	1	31	8	22	69	25	10	8
No	313	34	76	39	36	64	25	25	14

Figure 7: Cases by Work Status, 1999-2006.



Case Classification:

The case classification matrix is used to rank evidence linking the illness and injury to the pesticide exposure. Cases are classified using the National Institute for Occupational Safety and Health's (NIOSH) case definition for acute pesticide-related illness and injury. Classification categories consider the level of certainty of exposure, documentation of health effects, and the plausibility of reported health effects based on the known toxicology of the pesticides. The strongest evidence of pesticide exposure is confirmation of exposure by environmental or biological samples and of health effects by medical records.

Definitions of case classification categories:

Definite: Objective evidence confirms the exposure and illness, and the temporally related illness is consistent with the known toxicology of the pesticide.

Probable: Objective evidence of either the pesticide exposure or the health effects is available, and the temporally related illness is consistent with the known toxicology of the pesticide.

Possible: Only subjective evidence of exposure and illness is available, and the temporally related symptoms are consistent with the known toxicology of the pesticide.

Suspicious: Insufficient toxicological information is available to determine whether a causal relationship exists between the pesticide exposure and the health effects.

Unlikely: The relationship between the reported exposure and illness is not consistent with the known toxicology of the pesticide.

Insufficient Information: Insufficient documentation was obtained about the exposure or health effects to determine whether the health effects were related to a pesticide exposure.

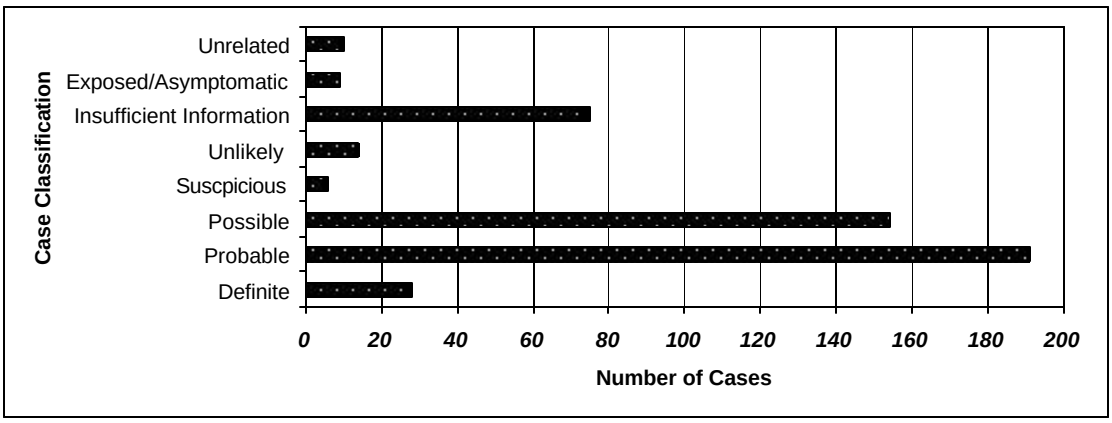
Asymptomatic: A case reported exposure to a pesticide, but was asymptomatic.

Unrelated: It was determined that health effects were due to a condition other than a pesticide exposure.

Table 6: Cases by Classification Category, 1999-2006.

	N	N	N	N	N	N	N	N	N
Total	**487**	**35**	**107**	**47**	**58**	**133**	**50**	**35**	**22**
Case Classification									
Definite	28	2	5	4	3	6	4	2	2
Probable	191	13	22	14	44	74	4	17	3
Possible	154	7	55	10	3	30	28	10	11
Suscpicious	6	2	0	0	1	2	0	1	0
Unlikely	14	3	5	0	1	4	1	0	0
Insufficient Information	75	7	18	15	4	14	7	4	6
Exposed/Asymptomatic	9	1	0	2	0	1	5	0	0
Unrelated	10	0	2	2	2	2	1	1	0

Figure 8: Cases by Classification Category, 1999-2006.



Severity:

Severity of pesticide exposure or illness is determined for each case. Severity depends on signs and symptoms, healthcare utilization, length of hospital stay, and lost time from work or disruption in normal activities due to pesticide exposure. Severity was not determined for cases that were classified as unlikely, insufficient information, asymptomatic, or unrelated.

Definitions of the severity categories:

Death: Pesticide exposure resulted in a fatality.

High: Symptoms due to pesticide exposure were life-threatening and medical treatment commonly involving hospitalization was required. Leave from work or inability to carry out normal activity was for an extended period of time (more than five days).

Moderate: Symptoms were less severe than life-threatening, but treatment is usually required. Less time is lost from work or normal activities (3-5 days) compared to "high" severity cases. No residual impairment is present although effects may be persistent.

Low: Exposure caused benign reactions to the skin, eye, or respiratory tract. Typically the illness or injury resolves without medical treatment, and fewer than three days of work or normal activity was lost.

Table 7: Severity by Case Classification, 1999-2006.

	1999-2006	1999	2000	2001	2002	2003	2004	2005	2006
	N	N	N	N	N	N	N	N	N
Total	**487**	**35**	**107**	**47**	**58**	**133**	**50**	**35**	**22**
Severity									
High	10	0	1	2	0	3	3	0	1
Moderate	42	1	6	4	5	22	1	3	0
Low	327	23	75	22	46	87	32	27	15
Evaluated, not applicable	108	11	25	19	7	21	14	5	6

EVENT INFORMATION:

Data for the 213 events are presented in the following tables.

Circumstance of Exposure:

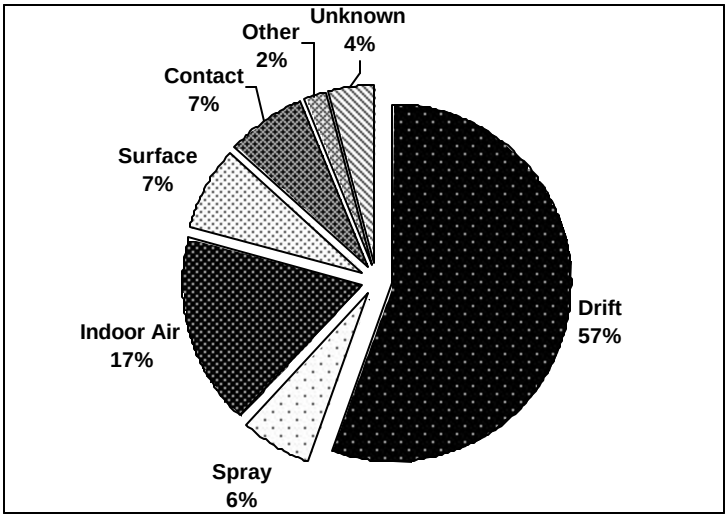
Events are classified based on the circumstance or manner in which the reported pesticide exposure occurred. Some events involved more than one mode of exposure- for these events each circumstance is counted independently. For example, someone could be exposed via drift of a pesticide and contact with a treated surface.

Definitions of circumstance of exposure categories:
Drift: Individual exposed by drift (ground or aerial application).
Spray: Individual exposed by direct spray.
Indoor Air: Individual exposed by indoor air contamination (residential, commercial, greenhouse).
Surface: Individual exposed by contact with a previously treated surface (plant material, carpets, treated animal) or entry into an outdoor previously treated area.
Contact: Individual exposed by direct contact during application to contaminated equipment or surface. Individuals exposed directly to pesticide leaks or spills are also included in this definition.
Other: Type of exposure does not fit any of the previously defined categories.
Unknown: Type of exposure is unknown.

Table 8: Events by Circumstance of Exposure, 1999-2006.

	1999-2006	1999	2000*	2001*	2002	2003*	2004*	2005*	2006
	N	N	N	N	N	N	N	N	N
Total	**216**	**20**	**37**	**31**	**22**	**43**	**25**	**23**	**15**
Circumstance of Exposure									
Drift	120	7	20	10	15	27	14	16	11
Spray	14	3	1	7	0	0	1	2	0
Indoor Air	37	4	4	6	6	9	6	1	1
Surface	16	3	5	4	0	2	1	0	1
Contact	16	3	2	1	1	1	3	3	2
Other	4	0	0	2	0	1	0	1	0
Unknown	9	0	5	1	0	3	0	0	0
** 1 event involved several circumstances of exposure*									

Figure 9: Events by Circumstance of Exposure, 1999-2006.



Site of Pesticide Event:

The site of the pesticide event is the location where the pesticide application or event (e.g., airplane application, spill) occurred. Note that the location of the event may differ from the location where the person was exposed such as when someone is exposed via aerial drift. In some instances, the event site could not be determined. For example, a complainant reports symptoms but there is no identified pesticide application.

Table 9: Events by Site of Pesticide Application, 1999-2006.

	1999-2006	1999	2000	2001	2002	2003	2004	2005	2006
	N	N	N	N	N	N	N	N	N
Total	**213**	**21**	**37**	**30**	**22**	**41**	**24**	**23**	**15**
Event Site									
Farm	111	9	20	14	9	19	15	16	9
Forest	4	1	0	0	0	1	1	0	1
Single Family Home	41	7	4	9	6	10	2	2	1
Mobile Home	5	1	3	0	0	0	1	0	0
Multi-unit housing	9	0	2	3	1	2	0	0	1
Residential Institution	1	0	1	0	0	0	0	0	0
School	4	1	1	0	1	1	0	0	0
Prison	1	0	0	0	0	1	0	0	0
Other Institution	2	0	1	0	0	0	0	1	0
Pesticide Mfg/Form Facility	1	0	0	1	0	0	0	0	0
Office/Business	7	1	2	0	0	2	2	0	0
Retail Establishment	3	0	0	1	0	0	1	1	0
Along Road/Rail/Right-of-Way	9	1	2	1	2	3	0	0	0
Park	1	0	0	0	0	1	0	0	0
Private vehicle	1	0	1	0	0	0	0	0	0
Other	4	0	0	0	0	1	0	2	1
More than one site	3	0	0	0	0	0	2	0	1
Unknown	6	0	0	1	3	0	0	1	1

Equipment Used For Application:

This variable refers to the type of equipment or application method used in the event. Equipment is coded regardless of whether it was used by the exposed individual or another individual who performed the pesticide application.

Definitions of equipment categories:

Aerial application equipment: Application by a fixed-wing plane or helicopter.

Pressurized can or aerosol bomb: Pesticides that are combined with an inert compressed gas propellant in a disposable or refillable self-dispensing container. The container may release the pesticide as a spray, mist or fog. Aerosol foggers or bombs are single use disposable units designed to for total release of the contents in a single use.

Aerosol generator or fogger (thermal or cold): Equipment designed to disperse pesticide as small airborne droplets into confined spaces such as greenhouses and warehouses or for outdoor control of mosquitoes and other public health or nuisance insects.

Soil injector: Any mechanism used to inject fumigant or other pesticide material into soil, e.g. chisel cultivator, blade or shovel, sweep cultivator shovels, planter shoes, plow.

Handheld granular or dust applicator: Squeeze bulb, bellows, tube, shaker, sliding tube, or fan powered by a hand crank.

Spray line, hand held: Hose end sprayers, hand held lines attached to powered spray tanks.

Trigger pump, push-pull, or compressed air hand sprayer: Handheld units used for spot spraying.

Ground sprayer not otherwise specified: Sprayers attached to or pulled by tractor or ATV.

Manual placement: Circumstances where pesticide is poured directly onto a target surface from a container (e.g. gopher bomb, bait station, pellets, hand toss of briquette, placement of fumigant pellet packs).

Dip tank or tray: Dipping of animals, produce, bulbs, plant material, etc.

More than one type of application equipment used

Other: All other equipment such as non-handheld mechanical granule applicators.

Table 10: Event by Pesticide Application Equipment and Year, 1999-2006.

	1999-2006	1999	2000	2001	2002	2003	2004	2005	2006
	N	N	N	N	N	N	N	N	N
Total	**213**	**21**	**37**	**30**	**22**	**41**	**24**	**23**	**15**
Equipment									
Aerial application equipment	103	8	18	13	8	18	14	15	9
Pressurized can/bomb	4	2	1	0	0	1	0	0	0
Aerosol generator/fogger	5	0	0	1	0	2	2	0	0
Soil injector	1	0	1	0	0	0	0	0	0
Handheld granular/dust applic.	1	0	1	0	0	0	0	0	0
Spray line, hand held	14	1	2	3	1	3	1	2	1
Trigger pump/compressed air	11	0	3	3	1	3	0	1	0
Ground sprayer, NEC	18	2	2	0	5	5	1	1	2
Manual Placement	5	0	1	0	0	1	0	2	1
Dip take or tray	1	0	0	0	0	1	0	0	0
More then on type of equip.	2	0	2	0	0	0	0	0	0
Other	4	0	2	1	0	0	1	0	0
Not applicable	11	0	0	4	1	1	2	1	2
Unknown	33	8	4	5	6	6	3	1	0

Target:

Target refers to the actual or intended target of the pesticide application. Definitions are included for targets requiring explanation.

Definitions of target categories:

Building structure: Applications to the building structure including wall void injection, treatment of structural building members to eradicate pests, crack and crevice treatment as well as treatment of air conditioning systems and heating ducts.

Building surface: Applications to building surfaces such as spraying of carpets, flea foggers, interior area surface sprays in living/working areas other than crack and crevice.

Building space treatment: Structural applications to residences or commercial buildings using fumigants.

Undesired plant: Spot weed control applications.

Aquatic: Pond, stream, lake, irrigation canal, waste pond.

Other: Mixed crop and non-crop areas, mammal feeding and nesting areas (if mammals are the target pest), industrial or food processing equipment, boats and docks antifouling treatments, disinfection of medical equipment, toilets, and materials in beauty and barber shops, morgues, mortuaries and funeral homes, and other special target sites not otherwise specified.

Community-wide application: Mosquito or boll weevil control

Not applicable: Application not involved (e.g., preparing pesticide solutions, accidental ingestion).

Table 11: Events by Target, 1999-2006.

	1999-2006	1999	2000	2001	2002	2003	2004	2005	2006
	N	N	N	N	N	N	N	N	N
Total	**213**	**21**	**37**	**30**	**22**	**41**	**24**	**23**	**15**
Target									
Landscape/ornamentals	5	0	3	1	0	1	0	0	0
Forest trees/land	5	1	0	1	0	1	1	0	1
Build structure	20	1	4	4	2	6	2	1	0
Building surface	28	7	6	5	3	3	1	2	1
Building space treatment	2	0	1	0	0	0	1	0	0
Undesired plant	12	0	3	0	4	5	0	0	0
Aquatic-pond,stream,lake,canal	3	0	0	0	0	1	0	1	1
Soil injector	2	0	0	0	2	0	0	0	0
Wood product	1	0	0	1	0	0	0	0	0
Tree nuts	1	1	0	0	0	0	0	0	0
Vegetable crops (corn, etc)	2	0	2	0	0	0	0	0	0
Curcurbit vegetables (canteloupe)	1	0	0	0	0	1	0	0	0
Seed/pod vegetables - BEANS	4	0	0	2	0	0	0	0	2
Grain/grass/fiber crops	6	0	2	0	0	1	2	1	0
Fiber crops - COTTON	28	1	5	5	0	5	3	6	3
Forage,fodder,silage legumes-	2	0	1	0	0	0	1	0	0
Cereal grain crops RICE	25	5	2	2	3	6	5	2	0
Sugar crops - SUGARCANE	24	1	4	2	4	5	2	4	2
Community-wide applications	12	0	2	3	1	3	2	0	1
Other	2	1	1	0	0	0	0	0	0
Not applicable	14	1	0	2	0	1	3	4	3
Unknown	14	2	1	2	3	2	1	2	1

Pesticide Product Information:

This section presents the distribution of pesticide active ingredients classified by type of pesticide: insecticide, herbicide, fungicide, and other. Types of pesticides are further categorized by class of pesticide such as organophosphate, pyrethroids, etc. The pesticide type 'other' includes pesticides that do not fall in any other classification. Some events involved reported exposure to non-pesticidial products such as fertilizer or dust. Information on these products is not included in this section.

Each event may involve multiple products and each product may contain multiple active ingredients. For example, the herbicide Misty Repco Kill contains both bromacil and 2,4-D. Because each event may involve multiple ingredients, the active ingredient totals are greater than the number of events (213).

Figure 11 displays the overall distribution of types of active ingredients involved in the 213 events. Tables 12 through 15 display the breakdown of specific active ingredients by year.

Figure 10: Active Ingredients by Pesticide Type, 1999-2006.

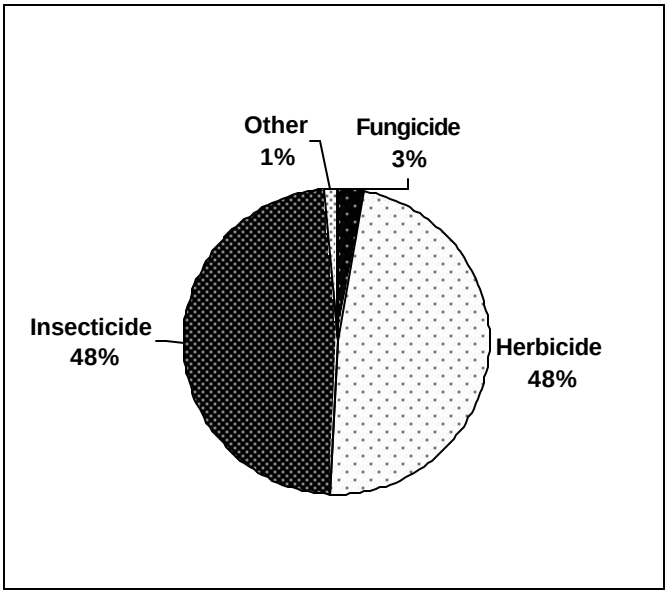


Table 12: Insecticides by Year, 1999-2006.

	1999-2006	1999	2000	2001	2002	2003	2004	2005	2006
	N	N	N	N	N	N	N	N	N
Total	**145**	**17**	**25**	**22**	**15**	**27**	**20**	**12**	**7**
Organochlorine Compounds	**4**	**2**	**0**	**0**	**1**	**1**	**0**	**0**	**0**
Chlordane	2	1	0	0	1	0	0	0	0
Endosulfan	1	0	0	0	0	1	0	0	0
Dicofol	1	1	0	0	0	0	0	0	0
Organophosphorous Compounds	**60**	**4**	**11**	**12**	**8**	**13**	**7**	**3**	**2**
Acephate	9	0	0	3	2	2	1	0	1
Chlorpyrifos	11	0	5	2	3	1	0	0	0
Diazinon	4	1	1	0	1	1	0	0	0
Dicrotophos	4	1	0	0	0	1	1	1	0
Dimethoate	1	0	0	0	0	0	0	1	0
Malathion	12	0	3	1	2	5	0	1	0
Methyl parathion	13	2	2	4	0	1	4	0	0
Naled	2	0	0	0	0	1	1	0	0
Profenofos	2	0	0	1	0	1	0	0	0
Tribufos	2	0	0	1	0	0	0	0	1
N-methyl carbamates	**8**	**3**	**1**	**1**	**0**	**2**	**0**	**1**	**0**
Carbofuran	2	1	1	0	0	0	0	0	0
Propoxur	4	2	0	0	0	2	0	0	0
Thiodicarb	1	0	0	1	0	0	0	0	0
Carbaryl	1							1	
Pyrethrins	**7**	**1**	**1**	**0**	**0**	**2**	**1**	**1**	**1**
Pyrethrins	7	1	1	0	0	2	1	1	1
Pyrethroids	**47**	**5**	**11**	**7**	**5**	**4**	**8**	**5**	**2**
Bifenthrin	4	1	0	0	0	2	0	0	1
Cyfluthrin	4	0	0	2	0	0	2	0	0
d-Allethrin	1	0	0	1	0	0	0	0	0
Deltamethrin	3	1	0	0	1	1	0	0	0
Esfenvalerate	1	0	0	0	0	0	1	0	0
lambda-Cyhalothrin	7	0	2	1	0	0	1	3	0
Permethrin	15	1	3	1	4	1	2	2	1
Phenothrin	4	1	2	1	0	0	0	0	0
Resmethrin	2	0	0	1	0	0	1	0	0
Tetramethrin	3	1	2	0	0	0	0	0	0
Tralomethrin	2	0	2	0	0	0	0	0	0
Zeta-Cypermethrin	1	0	0	0	0	0	1	0	0
Organometallic Compounds	**3**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**
Fentin hydroxide	1	1	0	0	0	0	0	0	0
Abamectin	2	0	0	0	0	2	0	0	0
Other	**16**	**1**	**1**	**2**	**1**	**3**	**4**	**2**	**2**
Emamectin benzoate	2	0	0	0	1	0	0	1	0
Fipronil	2	0	0	1	0	1	0	0	0
Hydramethylnone	2	0	1	0	0	0	0	0	1
Imidacloprid	3	0	0	1	0	0	2	0	0
Naphthalene	2	0	0	0	0	0	1	1	0
Pyriproxyfen	1	0	0	0	0	0	1	0	0
Tebufenozide	3	1	0	0	0	2	0	0	0
Thiamethoxam	1	0	0	0	0	0	0	0	1

Table 13: Herbicides by Year, 1999-2006.

	1999-2006	1999	2000	2001	2002	2003	2004	2005	2006
	N	N	N	N	N	N	N	N	N
Total	**145**	**8**	**25**	**15**	**24**	**22**	**17**	**23**	**11**
Chlorophenoxy Compounds	**29**	**0**	**6**	**0**	**5**	**9**	**3**	**4**	**2**
2,4-D	26	0	5	0	5	8	2	4	2
Bromacil	3	0	1	0	0	1	1	0	0
Dipyridyl Compounds	**5**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**2**
Diquat dibromide	2	0	0	0	0	1	0	1	0
Paraquat dichloride	3	0	0	0	0	1	0	0	2
Triazines	**10**	**1**	**1**	**1**	**2**	**1**	**2**	**2**	**0**
Atrazine	8	1	1	0	2	1	2	1	0
Hexazinone	2	0	0	1	0	0	0	1	0
Thiocarbamates	**9**	**3**	**4**	**1**	**0**	**0**	**1**	**0**	**0**
EPTC	1	0	1	0	0	0	0	0	0
Molinate	8	3	3	1	0	0	1	0	0
Other	**92**	**4**	**14**	**13**	**17**	**10**	**11**	**16**	**7**
Bensulfuron	8	1	3	1	2	0	1	0	0
Chlorimuron	1	0	0	0	0	0	1	0	0
Clethodim	1	0	0	0	0	0	0	1	0
Clomazone	1	0	0	0	1	0	0	0	0
Clopyralid, monoethanolamine salt	1	0	0	0	0	1	0	0	0
Dicamba, dimethylamine salt	6	0	0	0	2	1	1	2	0
Dimethipin	1	0	0	0	0	0	0	1	0
Diuron	5	0	1	0	3	0	0	1	0
Endothall	1	0	0	1	0	0	0	0	0
Ethephon	3	0	0	0	0	0	0	2	1
Glyphosate	28	3	5	5	4	3	3	2	3
Halosulfuron	3	0	0	1	1	0	0	1	0
Hexazinone	2	0	0	1	0	1	0	0	0
Imazapyr, isopropylamine salt	1	0	1	0	0	0	0	0	0
Mepiquat chloride	3	0	1	0	1	0	0	1	0
Oxyfluorfen	1	0	1	0	0	0	0	0	0
Pendimethalin	6	0	1	0	1	1	1	2	0
Propanil	5	0	1	1	0	1	2	0	0
Propanoic acid	1	0	0	0	0	0	1	0	0
Quinclorac	3	0	0	1	1	0	1	0	0
Sulfometuron methyl	3	0	0	1	1	0	0	0	1
Thidiazuron	4	0	0	1	0	0	0	2	1
Triethylamine triclopyr	1	0	0	0	0	1	0	0	0
Trifluralin	2	0	0	0	0	1	0	1	0
Metsulfuron methyl	1	0	0	0	0	0	0	0	1

Table 14: Fungicides by Year, 1999-2006.

	1999-2006	1999	2000	2001	2002	2003	2004	2005	2006
	N	N	N	N	N	N	N	N	N
Total	**9**	**1**	**0**	**1**	**0**	**1**	**5**	**1**	**0**
Azoxystrobin	3	0	0	0	0	0	2	1	0
Barium metaborate	1	0	0	1	0	0	0	0	0
Imazalil	1	0	0	0	0	1	0	0	0
Paraformaldehyde	1	1	0	0	0	0	0	0	0
Propiconazole	1	0	0	0	0	0	1	0	0
Pyraclostrobin	1	0	0	0	0	0	1	0	0
Trifloxystrobin	1	0	0	0	0	0	1	0	0

Table 15: Other Pesticides by Year, 1999-2006.

	1999-2006	1999	2000	2001	2002	2003	2004	2005	2006
	N	N	N	N	N	N	N	N	N
Total	**4**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**1**
Chlorine dioxide	3	0	0	1	1	1	0	0	0
Pentachlorophenol	1	0	0	0	0	0	0	0	1

Summary:

Over the course of eight years (1999-2006), 213 reported health-related pesticide incidents or events resulting in 487 cases were investigated by OPH/SEET and LDAF. The median number of cases and events per year was 49 and 24, respectively. The number of events ranged from 15 to 41, and the number of cases ranged from 22 to 133. There was an average 2.28 cases per event. Most of the reported health-related pesticide incidents originated from a complainant directly contacting LDAF. About 7% of the reported health-related pesticide incidents originated from other sources, primarily the Poison Control Center. Reporting from the Poison Control Center began in 2002. Franklin and Tensas Parishes had the highest annual average rate of reported health-related pesticide incidents; nineteen parishes had no reported health-related pesticide incidents for the eight-year period.

Overall, there were more female cases (55%) than male cases (45%). Thirty-five percent of the cases (171 cases) were between 20 and 39 years. Forty-two cases (9%) were less than ten years old. 175 cases (36%) were working when the reported pesticide exposure occurred. Eighty-six percent of the cases had mild health effects. There were no deaths.

The main circumstance of exposure was drift (56%, or 120 events), followed by indoor air (17%, or 37 events). The most common site of an event was a farm (52%, or 111 events), followed by single family home (19%, or 41 events). Applications via aerial application equipment accounted for 48% of the events (103 events). Five target sites accounted for 58% of all the event targets: building surface (13%, or 28 events), fiber crops [primarily cotton] (13%, or 28 events), cereal crops [primarily rice] (12%, or 25 events), sugar crops [primarily sugarcane] (11%, or 24 events), and building structure (9%, or 20 events). There were an equal number of insecticide and herbicide active ingredients involved in the 213 reported events. Of the 145 insecticides, 60 (41% of all insecticides) were organophosphates and 47 (32% of all insecticides) were pyrethroids. Of the 145 herbicides, 28 (19% of all herbicides) were glyphosate and 26 (18% of all herbicides) were 2,4-D.